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RESEARCH TOPICS: Earthquake geodesy & geology, continental active tectonics, fault interaction, and seismic & volcanic hazards

EDUCATION:

Columbia University Ph.D. in Geology, 1989
Thesis Title: *Active Tectonics of the Salton Trough, So. Calif.*
M.Phil. in Geology, 1989; M.A. in Geology, 1986

Dartmouth College A.B. with High Honors in Earth Sciences, 1983
Thesis Title: *Geophysical Survey of Irazu Volcano, Costa Rica.*

EXPERIENCE & AFFILIATIONS:

2002 - present	*Chief, So. Calif. Earthquake Hazard Assessment Project; Geophysicist, GS-15*	
1992 - 2002	*Geophysicist, GS-13 & 14*	U. S. Geological Survey, Pasadena
1997 - present	*Visiting Assoc. in Geophysics*	Division of Geological & Planetary
1989-1992	*Research Fellow*	Sciences, California Inst. of Technology
1984-1989	*Graduate Research Assistant*	Lamont-Doherty Geological Observatory
1983-1984	*Field Assistant*	U.S.G.S., Branch of Tectonophysics
1983	*Field Supervisor*	Dartmouth College, Volcanology Group

EDITORIAL:

1994 - 1996	**Associate Editor; Geodesy**	Journal of Geophysical Research (Solid Earth)

DISTINCTIONS:

U. S. Geological Survey	1999	**Special Act Award** - Hector Mine earthquake
U. S. Geological Survey	1997	**Exceptional Service Award**
American Geophysical Union	1994	**Invited Contributor** - Quadrennial U.S. National Report to IUGG (1991-1994) Title: *Earthquake Geodesy and Hazard Monitoring*
U. S. Geological Survey	1994	**Special Act Award** - Northridge earthquake
Dartmouth College	1983	• **Upham Geology Prize** - Outstanding Senior Honors Thesis in Earth Sciences • **Academic Citation** - Thesis Research • **Casque and Gauntlet -** Senior Honor Society

ORGANIZATIONS:

Global Positioning System & GNSS	2002 – present	Member, U. S. and international working groups for future signal design of GPS and other systems
UNAVCO, Inc.	2001 – 2004	Board of Directors (elected position; served term limit)
Plate Boundary Observatory	1999 – 2002 2001 – 2004	Steering Committee member and PBO Geology Committee (GeoPBO)
Southern California Integrated GPS Network	1999 – 2003 1994 – 2003	Chair (elected position; served four terms) Executive Committee member and Coordinating Board member
Southern California Earthquake Center	2001 – 2003 1998 – 2002 1996 – 1998 1990 – present	Planning Committee member Board of Directors (USGS representative) Chair; Crustal Deformation Working Group Crustal Deformation & Tectonic Geodesy groups
University NAVSTAR Consortium (UNAVCO)	2000 – 2001 1995 – 1997	Elected member of Steering Committee same (served one term previously)
California Department of Transportation	1998 – present	Appointed to advisory panel for assessing Caltrans' GPS real-time system development
American Geophysical Union	1992 – 1996	Member of Geodesy Section Executive Comm. (Chair, Student Paper Evaluation, 1992-1994)
California Spatial Reference Center	1998 – present	Coordinating Council member
International Assoc. of Geodesy (IUGG)	1996 – present	International GPS Service, associate member and IAG affiliate member

TEACHING AND RESEARCH ADVISORY EXPERIENCE:

AT UNIVERSITY OF CALIFORNIA, SAN DIEGO -

2000 - present	Advising UCSD Ph.D. candidate Adrian Borsa (student of Bernard Minster) on airborne laser swath mapping project, a quantitative study on surface faulting and tectonic geomorphology

AT CALIFORNIA INSTITUTE OF TECHNOLOGY -

1992 - present	Advising Caltech students on various tectonic and geological projects Ph.D. candidates: T. Melbourne, B. Zajac, R. Wolf, J. Spotilla, J. Zachariasen, D. Yule; Undergraduates: R. Zitola, C. Machacek
1992	*GE 277* - Quaternary Tectonics Seminar: Active Tectonics of the Los Angeles Basin. Led seminars on geodetic studies of regional tectonics
1990 - 1992	*GE 177* - Quaternary Geology & Tectonics / Geology of Earthquakes. Lectured on The Earthquake Cycle and on Earthquake Geodesy

AT COLUMBIA UNIVERSITY -

1984 - 1989	Graduate Research Assistant - Advanced Structural Geology (and other classes)

PUBLICATIONS:[*]

First-authored: (REVERSE CHRONOLOGICAL)

Hudnut, K. W. and B. Titus, *GPS L1 Civil Signal Modernization (L1C)*, Interagency GPS Executive Board, Report on Stewardship Project #204, 30 July 2004, 443 pp.

Hudnut, K. W., G. J. Anderson, A. Aspiotes, N. E. King, R. Moffitt, K. F. Stark, GPS fault slip sensors, *2002 Asia-Pacific Economic Cooperation (APEC) Symposium on Confronting Urban Earthquakes & Seismic Early Warning*, Academia Sinica, Taipei, Taiwan, pp. 93-96, 2002.

* Hudnut, K. W., A. Borsa, C. Glennie, and J.-B. Minster, High-resolution topography along surface rupture of the 16 October 1999 Hector Mine, California, earthquake (Mw7.1) from airborne laser swath mapping, *Bull. Seismol. Soc. Amer.*, v. 92, No. 4, 1570-1576, 2002.

* Hudnut, K. W., N. E. King, J. E. Galetzka, K. F. Stark, J. A. Behr, A. Aspiotes, S. van Wyk, R. Moffitt, S. Dockter, and F. Wyatt, Continuous GPS observations of postseismic deformation following the 16 October 1999 Hector Mine, California, earthquake (Mw7.1), *Bull. Seismol. Soc. Amer*., v. 92, No. 4, pp. 1403-1422, 2002.

Hudnut, K. W., Y. Bock, J. E. Galetzka, F. H. Webb, and W. H. Young, The Southern California Integrated GPS Network (SCIGN), Seismotectonics in Convergent Plate Boundary, *Y. Fujinawa and A. Yoshida (Eds.), TERRAPUB, Tokyo, Japan*, ISBN 4-88704-129-2, pp. 167-189, 2002.

Hudnut, K. W., Decimeter-order spatial resolution: imaging and swath mapping systems for tectonic, volcanic, geodetic and paleoseismic research, in *Proceedings of EarthScope 'Making and Breaking a Continent' workshop; Snowbird, Utah*, pp. 230-235, 2001.

Hudnut, K. and N. King, SCIGN – New Southern California GPS Network Advances the Study of Earthquakes, *USGS Fact Sheet #069-01*; U. S. Government Printing Office #2001-J-684-957, 2001.

Hudnut, K. W., Y. Bock, J. E. Galetzka, F. H. Webb, and W. H. Young, The Southern California Integrated GPS Network (SCIGN), in *Proceedings of 10th FÉDÉRATION INTERNATIONALE DES GÉOMÈTRES (FIG) International Symposium on Crustal Deformation Measurement, C. Whitaker (Ed.)*, March, 2001.

Hudnut, K. W., Y. Bock, J. E. Galetzka, F. H. Webb, and W. H. Young, The Southern California Integrated GPS Network (SCIGN), *Proceedings of the International Workshop on Seismotectonics at the Subduction Zone, Y. Fujinawa (Ed.), NIED, Tsukuba, Japan*, pp. 175-196, 1999.

* Hudnut, K. W. and J. A. Behr, Continuous GPS monitoring of structural deformation at Pacoima Dam, California, *Seismol. Res. Lett.*, Vol. 69, No. 4, pp. 299-308, 1998.

* Hudnut, K. W., Z. Shen, M. Murray, S. McClusky, R. King, T. Herring, B. Hager, Y. Feng, P. Fang, A. Donnellan, and Y. Bock, Coseismic displacements of the 1994 Northridge, Calif., earthquake, *Bull. Seis. Soc. Amer.*, v. 86, No. 1, Part B, pp. S19-S36, 1996.

Hudnut, K. W., J. Mori, W. Prescott and P. Stauffer, Southern Californians cope with earthquakes, U. S. Geological Survey Fact Sheet #225-95, 2 pp., 1995.

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* Hudnut, K.W., Earthquake geodesy and hazard monitoring, *Reviews of Geophysics; Supplement: U. S. National Report to IUGG, 1991-1994*, pp. 249-255, 1995.

* Hudnut, K. W., Y. Bock, M. Cline, P. Fang, Y. Feng, J. Freymueller, X. Ge, K. Gross, D. Jackson, M. Kim, N. King, J. Langbein, S. Larsen, M. Lisowski, Z. Shen, J. Svarc and J. Zhang, Co-seismic displacements of the 1992 Landers earthquake sequence, *Bull. Seis. Soc. Amer.*, v. 84, No. 3, pp. 625-645, 1994.

Hudnut, K.W., Geodesy tracks plate motion, *Nature*, v. 355, No. 6362 (20 February), pp. 681-682, 1992.

Hudnut, K.W., Faults, in *Encyclopedia of Earth System Science, Volume 2*, Academic Press, Inc., San Diego, pp. 219-225, 1992.

Hudnut, K. W., Seismology: Recent Advances in the Study of Prehistoric Earthquakes, in *The 1991 McGraw-Hill Yearbook of Science and Technology*, McGraw-Hill, Inc., New York, pp. 377-379, 1990.

* Hudnut, K. and J. Beavan, Vertical deformation (1952-1987) in the Salton Trough, California, from water level recordings, *J. Geophys. Res.,* v. 94, pp. 9463-9476, 1989.

* Hudnut, K. and M. Clark, New slip along parts of the 1968 Coyote Creek fault rupture, California, *Bull. Seis. Soc. Amer.*, v. 79, No. 2, pp. 451-465, 1989.

* Hudnut, K., L. Seeber, and T. Rockwell, Slip on the Elmore Ranch fault during the past 330 years and its relation to slip on the Superstition Hills fault, *Bull. Seis. Soc. Amer.*, v. 79, No. 2, pp. 330-341, 1989.

* Hudnut, K. and K. Sieh, Behavior of the Superstition Hills fault during the past 330 years, *Bull. Seis. Soc. Amer.*, v. 79, No. 2, pp. 304-329, 1989.

* Hudnut, K., L. Seeber, T. Rockwell, J. Goodmacher, R. Klinger, S. Lindvall, and R. McElwain, Surface ruptures on cross-faults in the 24 November 1987 Superstition Hills earthquake sequence, California, *Bull. Seis. Soc. Amer.*, v. 79, No. 2, pp. 282-296, 1989.

* Hudnut, K.W., L. Seeber, and J. Pacheco, Cross-fault triggering in the November 1987 Superstition Hills earthquake sequence, southern California, *Geophys. Res. Lett.*, v. 16, No. 2, pp. 199-202, 1989.

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* Hudnut, K. and J. Taber, Transition from double to single Wadati-Benioff zone in the Shumagin Islands, Alaska, *Geophys. Res. Lett.*, v. 14, pp. 143-146, 1987.

Co-authored: (REVERSE CHRONOLOGICAL)

* Aagaard, B. T., G. Anderson, and K. Hudnut, Dynamic rupture modeling of the transition from thrust to strike-slip motion in the 2002 Denali Fault, Alaska, earthquake, *revised*, June 10, 2004, *Bull. Seis. Soc. Amer.* special issue on Denali event, 2004.

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* Scientists from the USGS, SCEC, and CDMG, A preliminary report on the 10/16/99 M7.1 Hector Mine, Calif., earthquake, *Seismol. Res. Lett*., v. 71, No. 1, pp. 11-23, 2000.

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Wald, D. J., K. W. Hudnut, and T. H. Heaton, Estimation of uniformly spaced, near-source, broadband ground motions for the 1994 Northridge earthquake from forward and inverse modeling, *Proceedings of the NEHRP conference & workshop on research on the Northridge earthquake of Jan. 17, 1994, California Universities for Research in Earthquake Engineering (CUREe),* Volume II, Earth Sciences, pp. 429-436, 1998.

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Stein, R. S., K. W. Hudnut, J. Satalich, K. M. Hodgkinson, Monitoring damage to bridges and highways with GPS: insights from the 1994 Northridge earthquake, *in Proceedings of the National Seismic Conference on Bridges and Highways* [Sacramento, CA; July 8-11, 1997], pp. 347-360, 1997.

* Bock, Y., S. Wdowinski, P. Fang, J. Zhang, S. Williams, H. Johnson, J. Behr, J. Gengrich, J. Dean, M. van Domselaar, D. Agnew, F. Wyatt, K. Stark, B. Oral, K. Hudnut, R. King, T. Herring, S. Dinardo, W. Young, D. Jackson, and W. Gurtner, Southern California permanent GPS geodetic array: continuous measurements of regional crustal deformation between the 1992 Landers and 1994 Northridge earthquakes, *J. Geophys. Res.,* v. 102, B8, pp. 18013-18033, 1997.

* Kurushin, R. A., A. Bayasgalan, M. Olziybat, B. Enhtuvshin, P. Molnar, Ch. Bayarsayhan, K. W. Hudnut, J. Lin, The surface rupture of the 1957 Gobi-Altay, Mongolia, earthquake, *Geological Society of America*, Special Paper #320, 143 pp., 1997.

* Melbourne, T., I. Carmichael, C. DeMets, K. Hudnut, O. Sanchez, J. Stock, G. Suarez, and F. Webb, The geodetic signature of the M8.0 October 9, 1995 Jalisco subduction earthquake, *Geophys. Res. Lett.*, v. 24, No. 6, pp. 715-718, 1997.

Hodgkinson, K.M., R. S. Stein, K. Hudnut, J. Satalich and J. Richards, Damage and restoration of geodetic infrastructure caused by the 1994 Northridge, Calif., earthquake, *U. S. Geological Survey Open-File report #96-517*, 70 pp., 1996.

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* Wald, D. J., T. H. Heaton, and K. W. Hudnut, The slip history of the 1994 Northridge, Calif., earthquake determined from strong-motion, teleseismic, GPS and leveling data, *Bull. Seis. Soc. Amer.*, v. 86, No. 1, Part B, pp. S49-S70, 1996.

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* Bennett, R., R. Reilinger, W. Rodi, Y. Li, K. Hudnut, Coseismic fault slip associated with the 1992 M_W 6.1 Joshua Tree, California earthquake: Implications for the Joshua Tree - Landers earthquake sequence, *J. Geophys. Res*., v. 100, No. 4, pp. 6443-6461, 1995.

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* USGS and SCEC Scientists (Jones, L. et al., including K. Hudnut), The magnitude 6.7 Northridge, Calif. earthquake of 17 January 1994, *Science*, v. *266* (Oct. 21 issue), pp. 389-397, 1994.

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* Johnson, H. O., D. C. Agnew, K. Hudnut, Extremal bounds on earthquake moment from geodetic data, *Bull. Seis. Soc. Amer.*, v. 84, No. 3, pp. 660-667, 1994.

* Sieh, K., L. Jones, E. Hauksson, K. Hudnut, D. Eberhart-Phillips, T. Heaton, S. Hough, K. Hutton, H. Kanamori, A. Lilje, S. Lindvall, S. McGill, J. Mori, C. Rubin, J. Spotila, J. Stock, H.K. Thio, J. Treiman, B. Wernicke, and J. Zachariasen, Near-field investigations of the Landers earthquake sequence, April to July, 1992, *Science*, v. 260, pp. 171-176, 1993.

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