

LORRAINE J. HWANG

Professional Preparation:

University of California, Berkeley	Geophysics	BA, Honors, Phi Beta Kappa, 1985
California Institute of Technology	Seismology	MS, NSF Graduate Fellow, 1987
California Institute of Technology	Seismology	PhD, 1990
United States Geological Survey	Seismology	NRC Postdoctoral Fellow, 1991-93
University of California Extension	Financial Accounting	2006
University of California Extension	Management Accounting	2007
University of California Extension	Foundations of Public Policy	2009

Appointments:

2012-present	Associate Director, Computational Infrastructure for Geodynamics, University of California, Davis, Davis, CA
2007-2012	Research Coordinator, California Institute for Energy and Environment, University of California, Berkeley, Sacramento, CA
2007	Implementations Manager, Revionics, Granite Bay, CA
2005-2006	Consultant/Analyst, Network for Earthquake Engineering Simulation, Davis, CA
2001-2005	Senior Implementation Manager, Decision Academic Graphics, Ottawa, ON
2001	Project Analyst, University of California, Davis
2000	Project Manager, Community College Foundation, Sacramento, CA
1993-1994	Visiting Assistant Professor of Physics, Claremont McKenna College
1991-1993	Research Associate (National Research Council Postdoctoral Fellow), United States Geological Survey, Pasadena, CA
1993	Network Analyst, California Institute of Technology, Pasadena, CA
1985-1990	Graduate Teaching Assistant, Graduate Research Assistant, California Institute of Technology, Pasadena, CA
1982-1986	Physical Science Aide, United States Geological Survey, Menlo Park, CA
1982-1985	Student Assistant, Berkeley Seismological Laboratory, Lawrence Berkeley Laboratory, UC Berkeley, Berkeley, CA

Products:

Selected Relevant Publications:

- Cooper K., Mittelstadt E., Currie C. van Wijk J., Kellogg L., Hwang L. and Arrowsmith R (2015). Moving Lithospheric Modeling Forward: Attributes of a community computer code, *GSA Today*, doi:10.1130/GSATG230GW.1
- Hwang, L., A. Fish, L. Soito, M. K. Smith, and L. H. Kellogg (2017), Software and the Scientist: Coding and Citation Practices in Geodynamics: Software and the Scientist, *Earth and Space Science* 4(11), 670–680, doi:10.1002/2016EA000225.
- Kellogg, L.H., W. Bangerth, L. J. Hwang, T. Heister and R. Gassmoller (2018). The role of scientific communities in creating reusable software: lessons from geophysics, in *Computing in Science & Engineering*. doi: 10.1109/MCSE.2018.2883326
- Matsui, H., E. Heien, J. Aubert, J. M. Aurnou, M. Avery, B. Brown, B. A. Buffett, F. Busse, U. R. Christensen, C. J. Davies et al. (2016), Performance benchmarks for a next generation numerical dynamo model, *Geochemistry, Geophysics, Geosystems*, doi:10.1002/2015GC006159.
- Smith AM, Katz DS, Niemeyer KE, FORCE11 Software Citation Working Group. (2016) Software citation principles. *PeerJ Computer Science* 2:e86 <https://doi.org/10.7717/peerj-cs.86>

Other Significant Publications:

- Hwang L, Mooney W. (1986). Velocity and Q structure of the Great Valley, California, based on synthetic seismogram modeling of seismic refraction data. *Bull. Seism. Soc. Am.*, 76: 1053-1067.
- Bliss K, Bengal L, Tew, Jr. B. (2010), *IOGCC CCGS Task Force Phase II Biennial Review of the Legal and Regulatory Environment for the Storage of Carbon Dioxide in Geologic Structures*, Interstate Oil and Gas Compact Commission, September 30, 2010.
- Hwang, L. and H. Kanamori (1988). Comparison of teleseismic and strong motion source spectra. *Seismological Research Letters*, 59, 11.
- Hwang L, Magistrale H, Kanamori H. (1990). Teleseismic source parameters and rupture characteristics of the 24 November 1987, Superstition Hills earthquake. *Bull. Seism. Soc. Am.*, 80: 43 - 56.
- James D. et al. (2014). Standing Together for Reproducibility in Large-Scale Computing: report on reproducibility@XSEDE, arXiv:1412.5557.
- Katz, D S et al. 2016 Report on the Third Workshop on Sustainable Software for Science: Practice and Experiences (WSSSPE3). *Journal of Open Research Software*, 4: e37, DOI: <http://dx.doi.org/10.5334/jors.118>

Synergistic Activities:

- **Project Management:**
 - Manage day-to-day operations, project planning, outreach and strategic initiatives for the Computational Infrastructure for Geodynamics, an NSF supported cyberinfrastructure facility with 79 national and international member institutions and its collaborations and partnerships including initiatives in high performance computing and software citation.
 - Provide project management and program development elements for Electric Grid Research and West Coast Carbon Sequestration Partnership (WESTCARB) working with partners across multiple private, public and governmental institutions contributing to program planning, project development and implementation, budget and schedule tracking, reporting, technical assistance, public outreach, and coordination. Serve as program lead for WESTCARB Regional Characterization coordinating and managing over \$5 million of research for geologic characterization and seismic risk for carbon sequestration. Develop statements of work and budgets, and review deliverables. Manage contract and budget changes. Develop science program for next project phase identifying research and principal investigators.
- **Professional Service:** Meeting Organizer and Program Committee Member for WSSSPE 3, WSSSPE 4, WSSSPE 5 and 2016 & 2017 Science Gateways. Member of FORCE11 Software Citation and Software Citation Implementation, and IRIS HPC Working Groups. WESTCARB representative to the Interstate Oil and Gas Compact Commission Task Forces on Carbon Capture and Geologic Storage, and on Offshore CO₂ Storage – Legal and Regulatory issues; participates on the Technical Advisory Team for the California Carbon Capture and Storage Review Panel.
- **Innovations in Teaching and Training** – Led development of web based tool and database for software citation. Development of Jupyter notebook for software training. Initiated and run CIG webinar series which draws from a pool of experts from mathematicians, to computer scientists, and to geoscientists, to bring together a cross-cutting community of faculty, students and researchers to both inform and disseminate knowledge on the tools and methodologies employed to further the study of problems in geodynamic. Worked in conjunction with UC Berkeley to redesign portal for the online WESTCARB Carbon Atlas for research and outreach/education.
- **Industry Collaborations** – Projects managed by California Institute for Energy and Environment included collaborations with EPRI, PG&E, SDG&E, SCEC, CAISO, PNNL, BPA & Southern Company as contractors or stakeholders providing in-kind support.