Grace Parker

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Education

University of California Los Angeles, PhD **2014 – 2018 (Expected)**

- PhD Candidate in Civil and Environmental Engineering, with a major field of geotechnical engineering, and a minor field of geosciences
- Advisor: Jonathan Stewart, committee members: Scott Brandenberg, Yousef Bozorgnia, Robert Kayen, and An Yin
- GPA 3.7 out of 4.0 as of Spring 2018

University of California Los Angeles, B.S. **2010 – 2014**

- Bachelor of Science in Applied Geophysics
- Cumulative GPA of 3.85 out of 4.0; Magna Cum Laude; Earth, Planetary, and Space Sciences (EPSS) departmental highest honors

Work Experience

Graduate Research Assistant, UCLA **2014 - present**
PI: Jonathan Stewart

Development of a Ground Motion Model for Global Subduction Zones

- Ongoing work within the framework of the Next Generation Attenuation-Subduction Project to develop a global ground motion model for interface and intraslab subduction events. Model development has included regionalization of the path term for different subduction zones and for the forearc and back-arc regions, as well as the development of a simulation-constrained, subduction-specific near-source saturation model.

Development of Recommendations to the USGS on Seismic Site Amplification in CEUS

- Convened an expert panel to evaluate existing site amplification models for the central and eastern U.S. (CEUS) and to make recommendations to the U.S. Geological Survey (USGS) for use in the National Seismic Hazard Mapping Project. Recommendations are summarized in PEER reports 2017/04 and 2017/05, and work is ongoing in aiding the USGS to implement recommendations.

Development of an Empirical Linear Seismic Site Amplification Model for CENA

- Utilized the Next Generation Attenuation-East database and ground motion models to develop an empirical linear seismic site amplification model using a combination of mixed-effects, Bayesian and least-squares techniques.

Development of a V_{S30} Proxy for CENA

- Developed a hybrid geology-slope approach for V_{S30} estimation that utilized newly considered large-scale geologic maps, the extent of Wisconsin glaciation, sedimentary basin structure, and 30 arc-sec topographic gradient for application in central and eastern North America (CENA). Then applied proxy to estimate V_{S30} at 94% of recording stations in NGA-East database without V_{S30} measurements.

Teaching Assistant, UCLA **2016 - 2018**

Department of Civil and Environmental Engineering, Course 245 **Winter 2016, 2017, 2018**

- Graduate level course on ground motion characterization and PSHA
- Instructor: Yousef Bozorgnia
- Responsibilities included holding office hours, maintaining course website, grading homework and exams, and managing the gradebook.

Undergraduate Research Assistant **2011 –2014**

UCLA, Department of Earth, Planetary, and Space Sciences **2013 - 2014**

- PI: Professor Caroline Beghein
- Worked on 1-dimensional modeling of the shear wave velocity, compressional wave velocity, and density of the Earth's core using frequency data from free oscillations of the Earth
- Project summarized in a departmental senior honors thesis

UCLA, Department of Earth, Planetary, and Space Sciences **2013**

- PI: Professor An Yin
- Developed a kinematic model for the emplacement of triangle plutons, and evaluated model against field observations of the Birch Creek Pluton, Inyo County, CA

Pacific Gas and Electric **2011**

- PI: Norman Abrahamson
- Developed a model for the hanging wall effect for areal source zones using ground motion simulations from the Abrahamson and Silva (2008) GMM
- Model is being implemented in PSHA code HAZ45

Awards

Seismological Society of America Student Presentation Award	May 2017
Martin Rubin Scholarship, UCLA CEE Department	December 2016
Dirty Bruin Award, UCLA CEE Department	May 2016
NSF Graduate Research Fellowship Program Honorable Mention	March 2015
John and Frances Handin Award, UCLA EPSS Department	June 2014
Deane Oberste-Lehn Award, UCLA EPSS Department	June 2013
Undergraduate Student Paper Competition Winner, EERI	January 2012
Los Angeles Basin Geological Society Scholarship Award	May 2011

Publications

- **Parker, G.A.**, J.P. Stewart, Y.M.A. Hashash, E.M. Rathje, K.W. Campbell, and W.J. Silva (201x). Empirical Linear Seismic Site Amplification in Central and Eastern North America. *Earthq. Spectra*, *preprint.*
- **Parker G.A.**, Stewart J.P., Hassani B., Atkinson G.M., and Boore D.M. (2018). Preliminary NGA-Subduction Global Ground Motion Model with Regional Path Effects. *Proceedings of the 11th National Conference in Earthquake Engineering*, Earthquake Engineering Research Institute, Los Angeles, CA.
- Hashash, Y.M.A., J. A. Harmon, O. Ilhan, **G.A. Parker**, and J.P. Stewart (2017). Recommendations for Ergodic Nonlinear Site Amplification in Central and Eastern North America. *PEER Report 2017/05*. PEER, Berkeley, CA.
- Stewart, J.P., **G.A. Parker**, J.A. Harmon, G.M. Atkinson, D.M. Boore, R.B. Darragh, W.J. Silva, and Y.M.A. Hashash (2017). Expert Panel Recommendations for Ergodic Site Amplification in Central and Eastern North America. *PEER Report 2017/04*. PEER, Berkeley, CA.
- Kwak, D.Y., T.D. Ancheta, D. Mitra, S.K. Ahdi, P. Zimmaro, **G.A. Parker,** S.J. Brandenberg, and J.P. Stewart (2017). Performance evaluation of V_{SZ}-to-V_{S30} correlation methods using global V_S profile database. *Proc. 3rd international conference on performance-based design in earthquake geotechnical engineering*, Paper 399.
- Ahdi, S.K., T.D. Ancheta, V. Contreras, T. Kishida, D.Y. Kwak, A.O. Kwok, **G.A. Parker**, Y. Bozorgnia, and J.P. Stewart (2017). NGA-Subduction Site Database. *Proc. 16th World Conf. on Earthquake Eng.,* Jan 9-12, 2017, Santiago, Chile. Paper No. 4926.

- Kishida T., Y. Bozorgnia, N.A. Abrahamson, S.K. Ahdi, T. Ancheta, D. Boore, K. Campbell, B. Chiou, R. Darragh, N. Gregor, R. Kamai, D.Y. Kwak, A.O. Kwok, P. Lin, H. Magistrale, S. Midorikawa, **G.A. Parker**, H. Si, W.J. Silva, J.P. Stewart, C. Tsai, K. Wooddell and R. Youngs (2017). Development of the NGA-Subduction Database. *Proc. 16th World Conf. on Earthquake Eng.*, Jan 9 -12, 2017, Santiago, Chile. Paper No. 3452.
- **Parker, G.A**., J.A. Harmon, J.P. Stewart, Y.M. A. Hashash, A.R. Kottke, E.M. Rathje, W.J. Silva, and K.W. Campbell (2017). Proxy-Based VS30 Estimation in Central and Eastern North America. *Bull. Seismol. Soc. Am.*, **107**(1), 117-131.