

Valerie Sahakian

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Personal Information

Full name, Valerie Jean Sahakian.
Date of Birth, September 8th, 1990.
Citizenship, United States of America.

Education

- 2009–2015 **Ph.D.**, Scripps Institution of Oceanography, UCSD, La Jolla, CA.
Geophysics
- 2009–2010 **M.S.**, Scripps Institution of Oceanography, UCSD, La Jolla, CA.
Geophysics
- 2007–2009 **B.S.**, University of Rhode Island, Kingston, RI.
Major: Pure Mathematics, Minor: Geosciences

Positions and Experience

- 2016–Present **Mendenhall Postdoctoral Fellow**, U.S. Geological Survey, Menlo Park CA.
- 2015–2016 **Postdoctoral Researcher**, Scripps Institution of Oceanography, La Jolla CA.
Earth Science
- 2009–2015 **Graduate Student Researcher**, Scripps Institution of Oceanography, La Jolla CA.
Geophysics

Awards

- 2013–2014 **Scripps Classroom Connection, NSF GK12 Fellow.**
- 2010–2012 **NASA Earth and Space Science Fellowship.**

Publications

- V. Sahakian**, A. Baltay, T. Hanks. *Taking a look at the leftovers: Event, path, and site residuals from a small-magnitude ANZA-region GMPE*, **in review**, **BSSA**
- A. Kell, **V. Sahakian**, A. Harding, G. Kent, N. Driscoll, **in review**. *New constraints on the architecture and evolution of the Imperial-San Andreas pull-apart system beneath the Salton Sea, California*, Geosphere.
- V. Sahakian**, J. Bormann, N. Driscoll, A. Harding, G. Kent, S. Wesnousky, **2017**. *Seismic Constraints on the Architecture of the Newport Inglewood Rose Canyon Fault: Implications for the Length and Magnitude of Future Earthquake Ruptures*, J. Geophys. Res. Solid Earth, **122**, doi:10.1002/2016JB013467

V. Sahakian, A. Kell, A. Harding, N. Driscoll, G. Kent, **2016**. *Geophysical evidence for a San Andreas subparallel transtensional fault along the north eastern shore of the Salton Sea*, Bull. Seis. Soc. Am., **106**(5), doi:10.1785/0120150350

E. Lindsey, **V. Sahakian**, Y. Fialko, Y. Bock, S. Barbot, T. Rockwell, **2014**. *Interseismic strain localization in the San Jacinto fault zone*, Pure Appl. Geophys. doi:10.1007/s00024-013-0753-z.

Mendenhall Postdoctoral Project

title *Constraining the Path Effect: Reducing Uncertainty in Ground Motion Prediction Equations*

advisers Annemarie Baltay, Tom Hanks, Brad Aagaard

PhD Dissertation

title *Architecture and Segmentation of Strike-Slip Faults in Southern California*

committee Neal Driscoll (co-chair), Alistair Harding (co-chair), Jose Restrepo, David Sandwell, Lisa Tauxe

Teaching and Mentoring

Jun 2017 - present **Alexis Klimasewski, IRIS summer intern mentor**, *Earthquake Science Center, USGS, Menlo Park, CA.*

Design project and mentor IRIS intern for summer project and AGU presentation

Apr 2014 – present **Scripps Graduate Student Mentor**, *Scripps Institution of Oceanography, La Jolla, CA.*

Mentor junior graduate students, M.S. and Ph.D.

Jul 2016 & 2017 **AAUW Grace Hopper Girl's STEM camp career night panelist**, *Stanford University, Palo Alto, CA.*

Serve in a question and answer session for career night, to encourage and support middle school girls in pursuing a STEM field career

May 30 2014 **Guest Speaker, NASA night**, *Vintage Magnet Elementary School, Los Angeles, CA.*

Jun 2013-Jun 2014 **Scripps Classroom Connection GK12 Fellow.**

Partner with San Diego Unified School District middle and high school teachers to develop and co-teach a science unit based on my research. Digital Lesson Plans for one of two units are available at <http://earthref.org/SCC/lessons/2013/naturaldisasters/>

Winter 2013 **Teaching Assistant, "Water"**, *University of California, San Diego, La Jolla, CA.*

2008–2009 **Supplemental Instruction Leader**, *Academic Enhancement Center, University of Rhode Island, Kingston, RI.*

Prepare and lead supplemental instruction sessions for "Introduction to Finite Mathematics". Aimed to increase students' confidence in the subject matter, as well as improve understanding of course material.

Fieldwork

- Sep 2017 **UNOLS Training cruise**, Early-career scientist marine seismic training cruise, R/V Roger Revelle.
Planning, organization, collection, processing, and interpretation of cruises for marine active-source seismic reflection data
- Mar 2016 **Imperial Fault Survey**, *Funding granted in October 2014 from the SIO Graduate Office to conduct the investigation*, Imperial Valley, Imperial County, California.
Project PI. Conducted in March 2016: Pilot study for collection of CHIRP data collection in the All American Canal by Calexico, to image and better constrain architecture and slip rate on the Imperial Fault system
- Jan 2016 **SONGS Coring Survey**, Inner Continental Borderlands, R/V Thomas G. Thompson.
Collection of Gravity and Piston cores to constrain information regarding fault slip rates, sedimentation rates, and potential connections between gravity flows and seismic events
- Aug 2013 **SONGS 2D MCS Survey**, Offshore San Diego County, R/V New Horizon.
Collection of 2D MCS Data to study the structure and potential hazards of faults offshore San Diego
- Oct 2013 **SONGS 3D MCS Survey**, Offshore San Onofre, R/V New Horizon.
Collection of 3D P-Cable MCS Data to observe the Newport-Inglewood Fault and San Mateo/Carlsbad trend
- 2011–present **CHIRP, Multibeam Data Collection**, Offshore San Diego (CA), San Diego Bay (CA), Laguna Beach and Dana Point (CA), Walker Lake (NV).
- 2010–present **Permanent and Temporary Seismic Station Installations, Anza network**, Southern California (San Jacinto Fault), Under PI Frank Vernon.
- 2009–present **GPS Campaigns**, Southern California, Northwestern Mexico (Laguna Salada).

Committees and Service

- Sep 2016 – present **USGS Earthquake Response Summary Event Coordinator**, *USGS Earthquake Science Center*, Menlo Park, CA.
- Dec 2015 – present **Reviewer for the Bulletin of the Seismological Society of America, and the Journal of Seismology, and internal USGS reviewer.**
- Feb 2017 – **USGS Earthquake Science Center Social/Coffee Hour Organizer**, *USGS Earthquake Science Center*, Menlo Park, CA.
- Sep 2017 *Earthquake Science Center*, Menlo Park, CA.
- Jul 2016 – present **USGS Earthquake Science Center Seminar Organizer**, *USGS Earthquake Science Center*, Menlo Park, CA.
- Jan 2013 – **Educational Policy Committee Student Representative**, *Scripps Institution of Oceanography*, La Jolla, CA.
- Jun 2015 *Oceanography*, La Jolla, CA.
- May 2014 – **Scripps Student Symposium (S³) - Student Organizer and Founder**, *Scripps Institution of Oceanography*, La Jolla, CA, Website: sss.ucsd.edu.
- Sep 2014 *Institution of Oceanography*, La Jolla, CA, Website: sss.ucsd.edu.
- Fall 2010 – **Geophysics Student Representative**, *Scripps Institution of Oceanography*, La Jolla, CA.
- Fall 2012 *Jolla*, CA.

Presentations

Invited Presentations

- Oct 2017 **UC Berkeley**, Berkeley Seismo Lab Seminar, 24 Oct. 2017.
- Jul 2017 **USGS Menlo Park**, Two seminars for Saudi Geological Survey Training Course, 26 Jul./2 Aug. 2017.
- Apr 2017 **Stanford University**, Seismology seminar, 10 Apr. 2017.
- Mar 2017 **University of Oregon**, Earth Sciences seminar, 13 Mar. 2017.
- Mar 2017 **University of Texas at El Paso**, Geophysics seminar, 1 Mar. 2017.
- Feb 2017 **University of Hawaii**, SOEST seminar, 22 Feb. 2017.
- Feb 2017 **Lamont Doherty Earth Observatory**, MG&G/S&T seminar, 15 Feb. 2017.
- Oct 2016 **USGS Menlo Park**, Shaking, Damage, and Failure meeting, 11 Oct. 2016.
- Aug 2016 **USGS Menlo Park**, Earthquake Science Center Seminar Series, 24 Aug. 2016.

Talks and Posters

- A. Klimasewski, V. Sahakian, A. Baltay, J. Boatwright, J. Fletcher, L. Baker (2017)**, *Path spectra derived from inversion of source and site spectra for earthquakes in Southern California (2017)*, Poster S41B-0754, AGU Fall Meeting 2017, 11 - 15 December.
- V. Sahakian, A. Baltay, T. Hanks, J. Buehler, D. Kilb, F. Vernon (2017)**, *Path and site effects in GMPEs: Incorporating crustal physical properties for region-specific ground motion estimation using small magnitude data from Southern California (2017)*, Talk S51F-05, AGU Fall Meeting 2017, 11 - 15 December.
- V. Sahakian, A. Baltay, T. Hanks, J. Buehler, D. Kilb, F. Vernon (2017)**, *Path and site effects in GMPEs: Incorporating crustal physical properties for region-specific ground motion estimation using small magnitude data from Southern California (2017)*, Poster 084, SCEC Annual Meeting 2017, 10 - 13 September.
- V. Sahakian, A. Baltay, T. Hanks, J. Buehler, D. Kilb, F. Vernon (2017)**, *Investigating Physical Explanations for Path Effects to Reduce Uncertainty in GMPEs (2017)*, Poster, PSHA Workshop, 5 - 7 September.
- V. Sahakian, A. Baltay, T. Hanks, J. Buehler, D. Kilb, F. Vernon (2017)**, *Investigating Physical Explanations for Path Effects to Reduce Uncertainty in Ground Motion Prediction Equations (2017)*, Talk SSS09-05, JpGU-AGU Joint Meeting, Chiba, Japan, 20 - 25 May.
- V. Sahakian, A. Baltay, T. Hanks, J. Buehler, D. Kilb, F. Vernon (2017)**, *Investigating Physical Explanations for Path Effects to Reduce Uncertainty in Ground Motion Prediction Equations*, Oral, 2017 Seismological Society of America Annual Meeting, Denver, CO, 18 - 20 Apr.
- V. Sahakian, A. Baltay, T. Hanks, F. Vernon, J. Buehler, D. Kilb (2016)**, *Reducing Uncertainty in GMPEs Through Physical Explanations of the Path Term*, Abstract S31C-2793 presented at the 2016 Fall Meeting, AGU, San Francisco, Calif., 12 - 16 Dec..

- V. Sahakian, A. Baltay, T. Hanks (2016)**, *Reducing Uncertainty in Ground Motion Prediction Equations by Understanding Path Effects*, Oral and Poster presented at the USGS Postdoctoral Colloquium, Menlo Park, Calif., 23 Sep.
- V. Sahakian, A. Baltay, T. Hanks (2016)**, *Reducing Uncertainty in Ground Motion Prediction Equations by Understanding Path Effects*, Poster 175 presented at 2016 SCEC Annual Meeting, Palm Springs, Calif., 11-14 Sep.
- V. Sahakian, J. Bormann, N. Driscoll, A. Harding, G. Kent, S. Wesnousky (2016)**, *Segmentation along the Newport-Inglewood Rose Canyon Fault Zone: Mapping and Implications for rupture propagation*, Oral, 2016 Seismological Society of America Annual Meeting, Reno, Nevada, 19-21 Apr.
- V. Sahakian, J. Bormann, N. Driscoll, A. Harding, G. Kent, S. Wesnousky (2014)**, *Segmentation in the Newport-Inglewood/Rose Canyon Fault Zone; Implications for Rupture Propagation*, Abstract T23C-2971 presented at 2015 Fall Meeting, AGU, San Francisco, Calif., 14-18 Dec.
- V. Sahakian, J. Bormann, S. Klotsko, J. Holmes, N. Driscoll, A. Harding, G. Kent, S. Wesnousky (2015)**, *Imaging the Newport-Inglewood/Rose Canyon Fault Zone; Implications for Current Fault Models*, Oral, 2015 Seismological Society of America Annual Meeting, Pasadena, Calif., 21-23 Apr.
- V. Sahakian, J. Bormann, S. Klotsko, J. Holmes, N. Driscoll, A. Harding, G. Kent, S. Wesnousky (2014)**, *Structure of the Newport-Inglewood/Rose Canyon and Palos Verdes Fault Zones and Implications for Current Fault Models*, Abstract OS33A-1036 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
- N. Driscoll, V. Sahakian, J. Bormann, S. Klotsko, J. Holmes, A. Harding, G. Kent, S. Wesnousky (2014)**, *New Geophysical constraints on the Rose Canyon/Newport-Inglewood and Palos Verdes Fault Zones*, Poster 249 presented at 2014 SCEC Annual Meeting, Palm Springs, Calif., 7-10 Sep.
- V. Sahakian, A. Kell, A. Harding, G. Kent, N. Driscoll (2014)**, *Geophysical Evidence for a Southwestward dipping Southern San Andreas Fault*, Poster 206 presented at 2014 SCEC Annual Meeting, Palm Springs, Calif., 7-10 Sep.
- V. Sahakian, J. Holmes, A. Kell, A. Harding, N. Driscoll, G. Kent (2013)**, *New constraints on the geometry and evolution of the Southern San Andreas Fault and Salton Pull-apart basin*, Abstract T11D-2481 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.
- V. Sahakian, J. Holmes, A. Kell, A. Harding, G. Kent, N. Driscoll (2013)**, *New constraints on the geometry and evolution of the Southern San Andreas Fault and Salton Pull-apart basin*, Poster 098 presented at 2013 SCEC Annual Meeting, Palm Springs, Calif., 8-11 Sep.
- V. Sahakian, A. Kell, A. Harding, G. Kent, N. Driscoll (2012)**, *Imaging the upper crustal velocity structure in the northern Salton Sea: Results from the Salton Sea Imaging Project's (SSIP) marine refraction experiment*, Poster 277 presented at 2012 SCEC Annual Meeting, Palm Springs, Calif., 9-12 Sep.

V. Sahakian, Y.Fialko, Y.Bock, T.Rockwell (2011), *Space geodetic investigation of interseismic deformation due to the San Jacinto Fault near Anza, CA*, Abstract T43I-05 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.

Workshops

- Sep 2017 **UNOLS Training cruise**, *UNOLS Early-career scientist marine seismic training cruise, UO Marine Facility, 2017*, Newport, OR.
- Nov 2017 **2017 Annual COSMOS Meeting**, *"The evolving process of determining site-specific design ground motions in areas of high seismicity"*, Consortium of Organizations for Strong Motion Observation Systems Annual Meeting, 2017, Burlingame, CA.
- Sep 2017 **PSHA Workshop**, *Future directions for probabilistic seismic hazard assessment at a local, national, and transnational scale*, Lenzburg, CH.
- Feb 2017 **Induced Seismicity Ground Motion Workshop**, *Induced seismicity GMPEs and stress drops*, Menlo Park, CA.
- Nov 2016 **2016 Annual COSMOS Meeting**, *"Moving Towards Site-Specific Ground-Motion Hazard"*, Consortium of Organizations for Strong Motion Observation Systems Annual Meeting, 2016, Burlingame, CA.
- Sep 2016 **2016 SCEC-ERI-DPRI International Summer School on Earthquake Science**, *Large crustal earthquakes: fault geometry, dynamic rupture, and strong ground motion*, Lake Arrowhead, CA.
- May 2015 **2015 ENAM Seismic Refraction Processing Workshop**, *University of Texas in Austin*, Austin, TX.
- Sep/Oct 2014 **2014 SCEC-ERI Summer School for Earthquake Science**, *Wave and Rupture Propagation with Realistic Velocity Structures*, Oxnard, CA.
- Aug 2014 **Lidar One week Short Course (Professor Michael Olsen)**, *Oregon State University*, Corvallis, OR.
- May 2014 **CARIS HIPS and SIPS Training Workshop**, *San Diego State University*, San Diego, CA.
- Feb 2014 **Friends of the Pleistocene Fieldtrip**, *Laguna Salada, Mexico*, Surface Ruptures of the 2010 M7.2 El Mayor-Cucapah and 1892 M7.1 Laguna Salada Earthquakes.
- Jan 2014 **64th UNB-OMG/UNH-CCOM Multibeam Sonar Training Course**, *Westin New Orleans Canal Place*, New Orleans, LA.
- Jan 2014 **Kingdom Suite Seismic Interpretation Course**, *IHS Kingdom*, Houston, TX.
- May 2013 **Pan-American Advanced Studies Institute (PASI) - Magma-Tectonic Interactions in Central America**, *Leon, Nicaragua*.
- Sep 2012 **Friends of the Pleistocene Fieldtrip**, *Lake Tahoe, NV*, Tectonics and geology of the Walker Lane and Lake Tahoe region.
- Jun 2012 **CIG Workshop on Crustal Deformation Modeling**, *Colorado School of Mines*, Golden, CO.

Jul 2011 **Informal Course: Theory and Applications of InSAR**, *Scripps Institution of Oceanography*, La Jolla, CA.
Informal course with David Sandwell and Rob Mellors - Theory and applications of InSAR, and use of GMTSAR

Skills

Languages: MATLAB, Python, Unix, R	Seismic/Acoustic Processing: ObsPy, SIOSEIS, pltsegy, Caris
GPS: GAMIT GLOBK	Mapping/Seismic Interpretation: IVS Fledermaus, IHS Kingdom Suite, ArcGIS
InSAR: GMTSAR, ROI PAC	Ground Motion Modeling: MA-CME, SW4

Languages

English **Native**
French **Professional Working Proficiency**
Spanish **Limited Working Proficiency**