

CURRICULUM VITAE

Vera Schulte-Pelkum

CIRES and Department of Geological Sciences

University of Colorado Boulder

2200 Colorado Ave., Boulder, CO 80309-0399

vera.schulte-pelkum@colorado.edu

<http://cires.colorado.edu/researcher/vera-schulte-pelkum>

January 2021

PROFESSIONAL PREPARATION

Postdoc, CIRES, University of Colorado Boulder, 2002-2004

Postdoc, University of California San Diego, Scripps Institution of Oceanography, 2001-2002

Ph.D., Geosciences, University of California San Diego, Scripps Inst. of Oceanography, 2001

M. Sc. (Diplom), *summa cum laude*, Geophysik, Ruhr-Universität Bochum, Germany, 1994

B. Sc. (Vordiplom), Geophysik, Ruhr-Universität Bochum, Germany, 1992

ACADEMIC APPOINTMENTS

2020 – Present	Lecturer , Department of Geological Sciences, CU Boulder
2019 - Present	Associate Research Professor , Dept. Geol. Sci., CU Boulder
2018 - Present	Research Scientist III , CIRES, CU Boulder
2004 - 2018	Research Scientist II , CIRES, CU Boulder
2014 – 2015	Lecturer , Dept. of Geological Sciences, CU Boulder
2013	Research Scientist , SUNY Binghamton
2003 – 2004	Research Scientist I , CIRES, CU Boulder
2002 - 2003	Postdoctoral Fellow , CIRES, CU Boulder
2001 - 2002	Postdoctoral Fellow , Institute of Geophysics and Planetary Physics, Scripps Institution for Oceanography, University of California, San Diego

HONORS AND AWARDS

- 2017 Elected to Board of Directors, Incorporated Research Institutions for Seismology
- 2017 Geophysical Journal International outstanding reviewer award
- 2011 American Geophysical Union Editor's citation for excellence in refereeing
- 2011 Geophysical Journal International outstanding reviewer award
- 2003 CIRES innovative research program award
- 2002-2004 CIRES Visiting Fellow postdoctoral fellowship
- 2001 American Geophysical Union outstanding student presentation award
- 1994-1995 Studienstiftung Fellowship
German Academic Scholarship Foundation 1-year overseas research fellowship
- 1994 Best Diplom (M.Sc.) thesis of the year, Ruhr-Universität Bochum, Germany
- 1991-1994 Studienstiftung scholarship
Studienstiftung (German Academic Scholarship Foundation) funds top ~0.5% students in Germany

PUBLICATIONS

PEER-REVIEWED PUBLICATIONS (h-index: 18, Web of Science, January 2020)

Schulte-Pelkum, V. J. S. Caine, J. V. Jones III, T. W. B. Becker (2020), Imaging the tectonic grain of the Northern Cordillera orogen using Transportable Array receiver functions, *Seismological Research Letters*, Focus section on EarthScope in Alaska and Canada, 91(6), 3086-3105, doi:10.1785/0220200182.

Schulte-Pelkum, V., Z. Ross, K. Mueller, Y. Ben-Zion (2020), Tectonic inheritance with dipping faults and deformation fabric in the brittle and ductile southern California crust, *Journal of Geophysical Research*, 125(8), e2020JB019525. doi:10.1029/2020JB019525.

Berg, E., Fan-Chi Lin, A. Allam, V. **Schulte-Pelkum**, K. Ward, W. Shen (2020), Shear velocity model of Alaska via joint inversion of Rayleigh wave ellipticity, phase velocities, and receiver functions across the Alaska Transportable Array. *Journal of Geophysical Research*, 125(2), doi:10.1029/2019JB018582.

Wang, K., Jiang, C., Yang, Y., **Schulte-Pelkum**, V., & Liu, Q. (2020). Crustal deformation in Southern California constrained by radial anisotropy from ambient noise adjoint tomography. *Geophysical Research Letters*, 47, e2020GL088580, doi:10.1029/2020GL088580.

- Monsalve, G. J. Jaramillo, A. C. Molina, V. **Schulte-Pelkum**, G. Posada, V. Valencia, E. Poveda (2019). Deep crustal faults, shear zones and magmatism in the Eastern Cordillera of Colombia: Growth of a plateau from teleseismic receiver function and geochemical Miocene volcanism constraints. *Journal of Geophysical Research*, doi: 10.1029/2019JB017835.
- Schulte-Pelkum**, V., G. Monsalve, A. F. Sheehan, P. Shearer, F. Wu, S. Rajaure (2019). Mantle earthquakes in the Himalayan collision zone. *Geology*, 47(9), 815–819, doi:10.1130/G46378.1.
- Gal., M., A. Reading, N Rawlinson, V. **Schulte-Pelkum** (2018). Matched field processing of 3 component seismic array data applied to Rayleigh and Love microseisms. *Journal of Geophysical Research*, doi: 10.1029/2018JB015526.
- Brownlee, S. J., V. **Schulte-Pelkum**, A. Raju, K. Mahan, C. Condit, O. F. Orlandini (2017). Characteristics of deep crustal seismic anisotropy from a compilation of rock elasticity tensors and their expression in receiver functions. *Tectonics*, 36, 1835–1857, doi:10.1002/2017TC004625. (Eos highlight)
- Schulte-Pelkum**, V., K. H. Mahan, W. Shen, J. C. Stachnik (2017). The distribution and composition of high-velocity lower crust across the continental U.S.: Comparison of seismic and xenolith data and implications for lithospheric dynamics and history. *Tectonics*, 36, 1455–1496, doi:10.1002/2017TC004480. (Editor's highlight)
- Allam, A. A., V. **Schulte-Pelkum**, Y. Ben-Zion, C. Tape, N. Ruppert, Z. E. Ross (2017). Ten kilometer vertical Moho offset and shallow velocity contrast along the Denali fault zone from double-difference tomography, receiver functions, and fault zone head waves. *Tectonophysics*, 721, 56-69, doi:10.1016/j.tecto.2017.09.003.
- McNamara, D.E., W. Yeck, W. Barnhart, V. **Schulte-Pelkum**, E. Bergman, L. B. Adhikari, A. Dixit, S. Hough, H. Benz, P. Earle (2016). Source Modeling of the 2015 Mw 7.8 Nepal (Gorkha) Earthquake Sequence: Implications for Geodynamics and Earthquake Hazards. *Tectonophysics*, 714-715, 21-30, doi:10.1016/j.tecto.2016.08.004.
- Schulte-Pelkum**, V., K. H. Mahan (2014). Imaging faults and shear zones using receiver functions. *Pure Appl. Geophys.*, 171, 2967–2991, doi: 10.1007/s00024-014-0853-4.
- Levandowski, W., C. Jones, W. Shen, M. H. Ritzwoller, V. **Schulte-Pelkum** (2014). Mapping crustal and upper mantle density variations using a uniform seismic velocity model. *J. Geophys. Res.*, 119, 2375-2396, doi: 10.1002/2013JB010607.
- Schulte-Pelkum**, V., K. H. Mahan (2014). A method for mapping crustal deformation and anisotropy with receiver functions and first results from USArray. *Earth Planet. Sci. Lett.*, 402, 221-233, doi:10.1016/j.epsl.2014.01.050.

- Yeck, W., A. F. Sheehan, V. **Schulte-Pelkum** (2013).
Sequential H-kappa Stacking to Obtain Accurate Crustal Thicknesses beneath Sedimentary Basins. *Bulletin of the Seismological Society of America*, 103, 2142-2150, doi:10.1785/0120120290.
- Shen, W., M.H. Ritzwoller, V. **Schulte-Pelkum** (2013).
Crustal and uppermost mantle structure in the central US encompassing the Midcontinent Rift. *J. Geophys. Res.*, 118, 4325-4344, doi:10.1002/jgrb.50321.
- Shen, W., M. H. Ritzwoller, V. **Schulte-Pelkum** (2013).
A 3-D model of the crust and uppermost mantle beneath the Central and Western US by joint inversion of receiver functions and surface wave dispersion. *Journ. Geophys. Res.*, 118(1), 262-276, doi:10.1029/2012JB009602.
- Shen, W., M. H. Ritzwoller, V. **Schulte-Pelkum** (2013).
Joint inversion of surface wave dispersion and receiver functions: a Bayesian Monte-Carlo approach. *Geophys. Journ. Int.*, 192(2), 807-836, doi:10.1093/gji/ggs050.
- Schulte-Pelkum**, V., Y. Ben-Zion (2012).
Apparent vertical Moho offsets under continental strike-slip faults from lithology contrasts in the seismogenic crust. *Bulletin of the Seismological Society of America*, 102(6), 2757-2763, doi:10.1785/0120120139.
- Mahan, K., V. **Schulte-Pelkum**, T. J. Blackburn, S. A. Bowring, F. O. Dudas (2012).
Seismic structure and lithospheric rheology from deep crustal xenoliths, central Montana, USA. *Geochem. Geophys. Geosystems*, 13(10), Q10012, doi:10.1029/2012GC004332.
- Ward, D., K. Mahan, V. **Schulte-Pelkum** (2012).
Roles of quartz and mica in seismic anisotropy of mylonites. *Geophys. J. Int.*, 190(2), 1123-1134, doi:10.1111/j.1365-246X.2012.05528.x.
- van Wijk, K., T. D. Mikesell, V. **Schulte-Pelkum**, J. Stachnik (2011).
Estimating the Rayleigh-wave impulse response between seismic stations with the cross terms of the Green tensor. *Geophys. Res. Lett.*, 38, L16301, doi: 10.1029/2011gl047442.
- Schulte-Pelkum**, V., G. P. Biasi, A. Sheehan, C. H. Jones (2011).
Differential motion between surface and lithospheric mantle in the Central Basin and Range. *Nature Geoscience*, 4, 619-623, doi:10.1038/ngeo1229.
- Schulte-Pelkum**, V. (2009).
Tectonics: Draining Nevada. News and Views, *Nature Geoscience*, 2, 381-382, doi:10.1038/ngeo532.
- Becker, T.W., V. **Schulte-Pelkum**, D.K. Blackman, J. B. Kellogg, R. J. O'Connell (2006).
Mantle flow under the western United States from shear wave splitting. *Earth Planet. Sci. Lett.*, 247, 235-251, doi:10.1016/j.epsl.2006.05.010.

- Becker, T.W., S. Chevrot, V. **Schulte-Pelkum**, D. K. Blackman (2006).
Statistical properties of seismic anisotropy predicted by upper mantle geodynamic models. *J. Geophys. Res.*, 111, B08309, doi:10.1029/2005JB004095.
- Monsalve, G., A. Sheehan, V. **Schulte-Pelkum**, S. Rajaure, F. Wu (2006).
Seismicity and one-dimensional velocity structure of the Himalayan collision zone: Earthquakes in the crust and upper mantle. *J. Geophys. Res.*, 111, B10301, doi:10.1029/2005JB004062.
- Schulte-Pelkum**, V., G. Monsalve, A. Sheehan, M. Pandey, S. Sapkota, R. Bilham, F. Wu (2005).
Imaging the Indian Subcontinent beneath the Himalaya. *Nature*, 435, 1222-1225, doi:10.1038/nature03678.
- Sheehan, A., V. **Schulte-Pelkum**, O. Boyd, C. Wilson (2005).
Passive Source Seismology of the Rocky Mountain Region. In: The Rocky Mountain Region: An Evolving Lithosphere - Tectonics, Geochemistry, and Geophysics (eds. K. E. Karlstrom, G. R. Keller), American Geophysical Union, Washington, D. C., doi:10.1029/154GM23.
- Schulte-Pelkum**, V., P. S. Earle and F. L. Vernon (2004).
Strong directivity of ocean-generated seismic noise. *G-Cubed*, 5, Q03004, doi:10.1029/2003GC000520.
- Schulte-Pelkum**, V., F. L. Vernon, J. Eakins (2003).
Large teleseismic P wavefront deflections observed with broadband arrays. *Bull. Seis. Soc. Am.*, 93, 747-756, doi:10.1029/2003GC000520.
- Schulte-Pelkum**, V., D. K. Blackman (2003).
A synthesis of seismic P and S anisotropy. *Geophys. J. Int.*, 154, 166-178, doi:10.1046/j.1365-246X.2003.01951.x.
- Schulte-Pelkum**, V., G. Masters, P. M. Shearer (2001).
Upper mantle anisotropy from long-period P polarization. *J. Geophys. Res.*, 106, 21,917-21,934, doi:10.1029/2001JB000346.

OTHER PUBLICATIONS

Mantle structure and anisotropy from the particle motion and slowness of compressional body waves, Ph.D. thesis, Scripps Institution of Oceanography, 2001.

Multiparameter inversion of elastic scattering, M.Sc. thesis (*summa cum laude*), Ruhr-Universität Bochum, 1994.

FUNDING

Active awards

NSF Geophysics (pending, recommended for funding as of 1/2021)

Title: Volcanic transcrustal magmatic systems imaged with teleseismic converted phases

Principal Investigators: V. Schulte-Pelkum, M. Haney (Alaska Volcano Observatory)

Period: 2021-2024

Amount: \$115,158 (pending).

NSF Geoinformatics

Title: Collaborative research: Implementation of Tensor Visualization guide (TVguide), an interactive visualization, analysis and database tool for seismic anisotropy

Principal Investigators: V. Schulte-Pelkum, S. Brownlee (Wayne State U)

Period: 2020-2022

Amount: \$79,387.

NSF Geophysics

Title: Collaborative research: Structure and depth extent of lithospheric shear zones surrounding continental transform faults

Principal Investigators: V. Schulte-Pelkum, T Becker (U Texas Austin)

Period: 2019-2022

Amount: \$135,052.

NSF EarthScope/EarthCube

Title: Building a continent: Integration of surface geology, rock physics, and seismic observations to investigate the tectonic history of the contiguous United States

Principal Investigators: V. Schulte-Pelkum, K. Mahan

Period: 2017-2020

Amount: \$284,196.

NSF Geophysics

Title: Collaborative research: A joint seismic and geodetic investigation into the structure and behavior of an intracontinental subduction zone, Nepal

Principal Investigators: W. Barnhart (U. Iowa), V. Schulte-Pelkum

Period: 2017-2019

Amount: \$77,278 (CU portion).

Southern California Earthquake Center

Title: Improving near surface crustal model across southern California by jointly inverting Rayleigh wave phase velocity/ellipticity and receiver functions

Principal Investigators: Fan-Chi Lin (U. Utah), V. Schulte-Pelkum

Period: 2020-2021

Amount: \$11,602 (CU portion).

Past awards (CU PI on all grants)

- Southern California Earthquake Center, Improved lithospheric structure and Moho across Southern California from joint inversion of broadband Rayleigh wave ellipticity/phase dispersion and harmonic receiver functions, 2019-2020, \$10,995.
- Southern California Earthquake Center, Interpreting crustal and lithospheric structure in the Eastern California Shear Zone underneath the Mojave Broadband Array, 2019-2020, \$8,000.
- U.S. Geological Survey National Earthquake Hazard Program, Determination of near-surface shear velocity and V_s , V_p , and thickness of unconsolidated sediments using high-frequency teleseismic receiver functions across the U.S., 2018-2019, \$49,777.
- Southern California Earthquake Center, Testing the effect of anisotropic rheology on lithospheric deformation in Southern California, 2018-2019, \$8,000.
- Southern California Earthquake Center, Deep Fault Structure Beneath the Mojave from a High Density, Passive Seismic Profile, 2017-2018, \$8,000.
- NSF Geophysics, The role of hot crust in mountain building: Testing the alpha-beta quartz transition as a crustal geothermometer, 2014-2018, \$84,433.
- NSF Geophysics/Office of International Science and Engineering, Is continental collision thick- or thin-skinned? Combining local seismicity with receiver functions in the Zagros Fold-and-Thrust Belt (PI), 2013-2018, \$184,579.
- Southern California Earthquake Center, Imaging ductile fault roots with deep crustal anisotropy: Implications for the distribution of lithospheric deformation in Southern California, 2017-2018, \$20,000.
- NSF EarthScope, Crustal deformation across the U.S. from harmonic analysis of receiver functions (PI), 2013-2017, \$184,873.
- NSF Geophysics, Collaborative Research: Dynamics of the Southern Rocky Mountains from Cross-term Estimates of the Seismic Green Tensor (Co-PI), 2012-2016, \$64,161.
- NSF EarthScope, Lowrider: The Where, When, and How of Continental Crustal Underplating (PI), 2011-2015, \$95,077.
- NSF Tectonics, Collaborative Research: An Exhumed Field Example of Heterogeneous Lower Crustal Flow, Athabasca Granulite terrane, Canada (Co-PI), 2010-2014, \$224,275.
- NSF Geophysics, Collaborative Research: High-resolution receiver function imaging of crustal structure in the Southern Great Basin, Nevada (PI), 2009-2012, \$75,564.
- NSF Geophysics, Himalayan Seismotectonics and Deep Structure (PI), 2006-2011, \$194,100.
- NSF SGER, Integrated Petrophysical and Seismological Investigation of Crustal Fabric and Seismic Anisotropy of a Major Crustal Suture Zone, the Cheyenne Belt, Wyoming (PI), 2007-2010, \$75,000.
- NSF CSEDI, Collaborative Research: Toward a Comprehensive Model of Mantle Flow & Seismic Anisotropy in the Western US - Using Mineral Physics to Directly Link Geodynamics & Seismology (Co-PI), 2004-2008, \$105,604.
- NSF Geophysics, Depth Resolution of Anisotropy using Body Waves (PI), 2003-2007, \$99,181.
- CIRES Innovative Research Program, Can directional seismic noise be used to hindcast ocean waves? (PI), 2003, \$23,060.

INVITED SEMINAR TALKS

- Controls on deformation from reactivation of inherited rock fabric and shear zones in response to a changed stress regime: Examples from Southern California. University of Texas at Austin, UTIG seminar, Austin, TX, April 27, 2018.
- Subsurface deformation in the crust and lithosphere from seismology and rock properties. University of Florida, Department of Geological Sciences seminar, Gainesville, FL, November 14, 2017.
- Deciphering continental deformation history using seismic data. University of Utah, Department of Geology and Geophysics Distinguished Lecture Series, Salt Lake City, UT, November 12, 2015.
- The seismic signature of the deformation history of continents. Scripps Institution of Oceanography Geophysics seminar, University of California, San Diego, CA, October 9, 2015.
- Reading the signature of continental deformation and collision in the Earth's crust. University of New Mexico geophysics seminar, Albuquerque, NM, April 17, 2015.
- Reading lithospheric deformation history recorded by petrofabrics using dip and anisotropic tilt in seismic data. University of Southern California geophysics seminar, Los Angeles, CA, November 18, 2014.
- Crustal seismic anisotropy, geological ground truth from the Canadian Shield, and application to Taiwan. National Taiwan University Geophysics seminar, Taipei, Taiwan, November 15, 2013.
- Constraints on crustal deformation and mantle dynamics using new approaches for receiver functions. Workshop on Seismology and Geodynamics, Academia Sinica, Taipei, Taiwan, November 11, 2013.
- Waiter, there's an eclogite in my jelly sandwich. Colorado State University Geophysics seminar, Fort Collins, CO, March 26, 2012.
- Waiter, there's an eclogite in my jelly sandwich. Stanford Geophysics seminar, Stanford, CA, March 8, 2012.
- Constraints on crustal and mantle deformation in the western U.S. from new approaches using receiver functions and surface waves, University of Southern California, October 14, 2011.
- From seismic measurements to anisotropy: Cartoons versus the Grand Unified Theory of mantle dynamics. Gordon conference on Interior of the Earth, Mount Holyoke College, MA, June 10, 2003.

SELECTED CONFERENCE PRESENTATIONS

2020

- (Invited)* Schulte-Pelkum, V., S. Brownlee. Lowering the Access Threshold to 3-dimensional Visualization and Programming Benchmarks via an Interactive Web Tool: Tensor Visualization Guide (TVguide) for Elasticity Tensor and Seismic Anisotropy Analysis. Fall AGU, ED11-01.
- Schulte-Pelkum, V., A. Ross, K. Mueller, Y. Ben-Zion, Inherited tectonic grain in southern California inferred from receiver functions and seismicity and possible effects on present-day deformation. Fall AGU, T032-02.
- Caine, J. S., V. Schulte-Pelkum, T. W. Becker, J. V. Jones, Continuity Between Surface and Deep Lithospheric Deformational Grain for the Northern Cordillera Using Transportable Array Receiver Functions. Fall AGU, T0350-06.

Schulte-Pelkum, V., S. Li, B. Barnhart, M. Karplus, Anisotropic strength of fault zones suggested from geodesy and seismic imaging: Example from the Main Himalayan Thrust. SCEC annual meeting abstract 128.

2019

(Invited) Schulte-Pelkum, V., Monsalve, G., Orlandini, O.F., Condit, C., Sheehan, A., Shearer, P., Mahan, K., Wu, F., Rajaure, S. Seismic observations of processes in collisional continental lithosphere: Rheological changes, phase changes, and deformation. Fall AGU.

(Invited) Schulte-Pelkum V, Monsalve G, Li S, Barnhart W, Sheehan A, Shearer P, Wu F, Rajaure S. "(invited) Deep Structure of the Main Himalayan Thrust and Indian Mantle From Structural Imaging, Geodetic Modeling, and Seismicity. Fall AGU.

2018

(Invited) Schulte-Pelkum, V., K. H. Mahan, C. Condit, W. Shen, J. Stachnik. Mapping modification of deep crustal structure in the Wyoming province using xenoliths, crystalline basement exposures, and receiver functions. Fall AGU.

Schulte-Pelkum, V., E. Karasozen, E. Bergman. K. Motaghi, A. Ghods. Thick- versus thin-skinned tectonics in the continental collision zone of the Zagros Fold-and-Thrust Belt from crustal delay time imaging with seismicity and receiver functions. Fall AGU.

Schulte-Pelkum, V., Z. Ross, K. Mueller, Y. Ben-Zion. Dipping fault structures near the brittle-ductile transition and deep foliation fabric in southern California, SCEC annual meeting, Palm Springs, CA.

Schulte-Pelkum, V., G. Monsalve, K. Mahan, O. Orlandini, C. Condit, A. Sheehan, P. Shearer, Structural, seismicity, and thermal mapping with receiver functions, IRIS workshop, June 12-14, Albuquerque, NM.

2017

Schulte-Pelkum, V., W. Barnhart, D. McNamara, M. Karplus, G. Monsalve. The 2015 Gorkha Earthquake and the Structure of a Himalayan Intracontinental Subduction Channel from Geodesy, Seismicity, and Seismic Imaging, Fall AGU, T54C-02.

Mahan, K., V. Schulte-Pelkum, W. Shen, J. Stachnik, J. S. Caine, R. Russo. Distributions of high-velocity lower crust and seismic anisotropy across the continental U.S.: Integration of seismic, xenolith, and surface geologic data to address lithospheric dynamics and history, Fall AGU, T13G-07.

Schulte-Pelkum, V., K. Mueller, T. Becker, S. Brownlee, K. Mahan. Constraints on seismic anisotropy in ductile rock fabric and application to imaging fault roots in southern California, SCEC annual meeting, Palm Springs, CA.

(plenary talk) Schulte-Pelkum, V., K. Mahan, T. Becker, S. Brownlee, R. Russo. Fault roots, shear zones, and lithospheric deformation from receiver functions and rock sample anisotropy, with quantitative comparisons to other structural, stress, and strain observables, Earthscope National Meeting, Anchorage.

Schulte-Pelkum, V., T. Becker, M. Miller. Lithospheric fabric and shear zones in Southern California and the Basin and Range from anisotropic receiver function conversions and other stress and strain observables, SSA annual meeting, Denver, Seismological Research Letters 88(2B), 607.

Schulte-Pelkum, V. K. Mueller, S. Brownlee, T. W. Becker, K. H. Mahan. Constraints on seismic anisotropy in ductile rock fabric and application to imaging fault roots in southern California, SCEC annual meeting, Palm Springs, CA.

2016

(Invited) Schulte-Pelkum, V., K. Mahan, W. Shen, J. Stachnik. Contrasts in Lower Crustal Structure and Evolution Between the Northern and Southern Rocky Mountains From Xenoliths and Seismic Data. Fall AGU, T53D-01.

Schulte-Pelkum, V., K. Mahan, W. Shen, J. Stachnik. Proterozoic assembly signature and its overprint in lower crustal seismic velocity structure across North America. GSA annual meeting, Denver, CO. Abstracts with Programs - GSA 48(7), Abstract no. 230-5.

Schulte-Pelkum, V., S. Brownlee, K. Mahan, A. Raju, C. Condit. Expression of lithospheric shear zones in rock elasticity tensors and in anisotropic receiver functions and inferences on the roots of faults and lower crustal deformation. Fall AGU, T14B-01.

Schulte-Pelkum, V., K. Mueller. Fault-parallel shear fabric in the ductile crust of Southern California imaged using receiver functions. SCEC annual meeting, Palm Springs, CA.

2015

Schulte-Pelkum, V., E. Bergman, A. Ghods, J. Lave, K. Motaghi. Seismicity and crustal structure of the Zagros Fold-and-Thrust Belt, SEE7 (7th international conference on seismology and earthquake engineering, 18-21 May 2015, Tehran, Iran.

(Invited) Schulte-Pelkum, V., K. Mahan. 4-D structure of the conterminous U.S.: Continental assembly, crustal growth, and deformation history from receiver functions, xenoliths, and structural mapping. Fall AGU, T14A-08.

Schulte-Pelkum, V., V. Levin. A comparison of seismic crustal and mantle deformation indicators along the Himalayan arc. Fall AGU 2015, T21C-2839.

2014

Schulte-Pelkum, V., K. Mahan. Mapping Shear Zones, Faults, and Crustal Deformation Fabric with Receiver Functions. Fall AGU, S21C-4453.

Schulte-Pelkum, V., K. Mahan. Crustal deformation and anisotropy across USArray from receiver functions. IRIS annual meeting, Sunriver, Oregon.

2013

Schulte-Pelkum, V., F. T. Wu; H. Kuo-Chen. Coherent Deformation Throughout the Lithosphere in the Taiwan Orogen From Foliation Mapping Using Receiver Functions. Fall AGU, T21G-04.

Mahan, K., V. Schulte-Pelkum. Foliation Mapping at Depth Using Receiver Functions. Fall AGU, DI21C-01.

Schulte-Pelkum, V., E. Bergman, J. Lave, A. Ghods. Investigating basement involvement in the Zagros fold-and-thrust belt using S-P delay time mapping of seismicity and receiver functions. GSA Denver, Denver, CO. Abstracts with Programs – GSA 45(7), 671.

(Invited) Schulte-Pelkum, V., F. T. Wu; H. Kuo-Chen.: Taiwan crustal anisotropy from receiver functions. Taiwan Geosciences Assembly, Taoyuan, Taiwan.

1996 – 2012

30 first-author/presenter posters and talks, 4 invited.

DEPARTMENTAL TALKS

NSF grant writing and soft-money research. Geological Sciences researcher and graduate student Friday lunch seminar series, January 20, 2017.

Linking geodynamics and seismology: Mantle flow under the western U.S. from shear wave splitting. Geological Sciences colloquium, September 20, 2006.

Finding half-digested India under the Himalaya. Geological Sciences colloquium, September 23, 2005.

PROFESSIONAL SERVICE

Editor

Deputy Editor-in-Chief, The Seismic Record, Seismological Society of America, 2021-present
Associate Editor, Journal of Geophysical Research-Solid Earth, 2018-2020

Committees

Incorporated Research Institutions for Seismology (IRIS) board of directors, 2018-2020
Incorporated Research Institutions for Seismology (IRIS) president search committee, 2019-2020
AGU honors committee for Aki award, 2017-2018
IRIS Electromagnetic Advisory Committee, 2015-present
IRIS Data Management System Standing Committee, 2012-2015
EarthScope Transportable Array Advisory Committee, 2014
Chair, EarthScope Transportable Array Working Group, 2012-2013
EarthScope Transportable Array Working Group, 2010-2012

Reviews and Panels

Panelist, NSF Geophysics program, 2018, 2019
Panelist, NSF postdoctoral fellowship program, several rounds
NSF ad-hoc reviewer (Geophysics, EarthScope, SEDI, Tectonics, CAREER, MG&G, GeoPRISMS, Instr./Fac., Postdoc programs; avg. 5 proposals/yr)
Journal peer reviewer (avg. ~12 papers/yr)

Convened/Co-convened sessions

Fall AGU 2019: Life and Death of Cratons: Craton Interactions with Collision, Subduction, and Volcanism - Global Perspectives and the Wyoming Province as an Example
Fall AGU 2017: Seismic Anisotropy and Deformation in the Continental Crust
Fall AGU 2015: Crustal structure and evolution across the continental U.S.: What did we glean from EarthScope?
Fall AGU 2014: Seismic Anisotropy in the Continental Crust: Combining Perspectives of Seismology, Petrology, and Mineral Physics
Fall AGU 2006: Crustal Fabric, Seismic Anisotropy, and Deformation

TEACHING EXPERIENCE

INSTRUCTOR OF RECORD

Spring 2021	Exploring Earth (GEOL 1010), CU Boulder
Summer 2020	Exploring Earth (GEOL 1010), CU Boulder
Spring 2020	Principles of Geophysics (GEOL 3330), CU Boulder

Spring 2015
Fall 2014

Principles of Geophysics (GEOL 4310), CU Boulder
Field Geophysics (GEOL 4714), CU Boulder

MENTORING

Postdoctoral scholars advised:

William Shinevar, NSF postdoctoral fellow, 2021-2023

Omero Felipe Orlandini, postdoctoral fellow, 2019

Graduate student advised/co-advised:

Michael Frothingham, PhD in progress (Geological Sciences)

Ph.D. and/or comprehensive exam committee member for:

Elize Chavez, degree in progress (Geological Sciences)

Kyren Bogolub, degree in progress (Geological Sciences)

Omero Felipe Orlandini, PhD 2019 (Geological Sciences)

Lili Feng, PhD 2019 (Physics)

Melissa Bernardino, PhD 2019 (Geological Sciences)

Ye Tian, graduated 2017 (Physics)

Cailey Condit, graduated 2017 (Geological Sciences)

Justin Ball, graduated 2016 (Geological Sciences)

Jiayi Xie, graduated 2016 (Physics)

Daniel Zietlow, graduated 2016 (Geological Sciences)

William Yeck, graduated 2015 (Geological Sciences)

Weisen Shen, graduated 2014 (Physics)

Undergraduate students advised/co-advised:

Makayla Mather, RESESS intern, Native American, 2020, GSA presentation

Zulliet Cabrera Gomez, RESESS intern, Dominican American, 2020, AGU presentation

Jordan Wachholtz, RESESS intern, LGBTQ, 2018, AGU presentation, now graduate student,
UNLV

Anissha Raju, Malaysian, honors thesis “Characterization of Elastic Tensors of Rocks with respect to Seismic Anisotropy”, summa cum laude, graduated 2017; coauthored peer-reviewed publication, now at Petronas, Malaysia

Travis Payeur, UROP project, graduated 2016, now at NanoSeis

Diana Rattanasith, RESESS intern, Lao American, AGU presentation, 2013-2014, now senior geologist, Haley & Aldrich

Mollie Pettit, IRIS intern, AGU presentation, 2008, now data scientist, Netflix

Arianne Dean, IRIS intern, AGU presentation, 2007

OUTREACH

The Himalayan continental collision: Tectonics and reconstruction after the Nepal earthquake, three years on. Nederland community library talk in conjunction with non-profit Educate the Children, Nepal, April 25, 2018.

Snowball Earth and hothouse Earth: Climate in deep time. Nederland community library local scientist seminar series, March 14, 2017.

Procurement, installation help, and interpretation materials for educational TC-1 slinky school seismometers: Estes Park high school, Estes Park, CO (2012; assistance for building additional seismometer from scratch by high school science club, 2014) and Bureau of Land Management Mojave Trails National Monument visitor center, Needles, CA, 2017.

Rock types and food tectonics unit (field trip and lab), Nederland Elementary school, Fall 2015.

FIELD WORK AND EXPEDITIONS

Mojave fault roots experiment, Co-PI, 15-station passive array in Mojave, CA, 2017-2019.

The North Face climbing expedition, Leader (6 climbers and 4 film crew), Czech Republic, 2008.

Himalayan Nepal Tibet broadband seismic experiment, field crew, Nepal, 2002.

Fault zone guided waves seismic experiment, field crew, Anza-Borrego desert, CA, 2000.

Hector Mine aftershock experiment, field crew, 29 Palms Marine base, CA, 1999.

LANGUAGES

German (fluent), Japanese (fluent speaking), English (fluent).

PROFESSIONAL AFFILIATIONS

American Geophysical Union (since 1996)

Geological Society of America (since 2010)

Seismological Society of America (since 2012)