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CURRICULUM VITAE

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EDUCATION

Ph.D., Earth Science (Geophysics), University of California, Santa Cruz, June 2004.
B.S., magna cum laude with honors in the liberal arts, Geophysics and Mathematics, Southern Methodist University, May 1999.

PROFESSIONAL EXPERIENCE

2021-present Chair, Roy M. Huffington Department of Earth Sciences, Southern Methodist University
2020-present Professor, Roy M. Huffington Department of Earth Sciences, Southern Methodist University
2012-2020 Associate Professor, Roy M. Huffington Department of Earth Sciences, Southern Methodist University. *w/ tenure 2016*
2007-2012 Assistant Research Professor, Center for Earthquake Research and Information (CERI), University of Memphis
2006-2007 Assistant Scientist, University of Wisconsin-Madison
2004-2006 Postdoctoral Research Associate, University of Wisconsin-Madison
2004 Postdoctoral Research Associate, Institute of Geophysics and Planetary Physics, University of California-Santa Cruz

CURRENT RESEARCH INTERESTS

- Earthquake physics, focus on subduction zones and intraplate faults
- Induced seismicity
- Earthquake tomography, location and waveform cross-correlation techniques
- Seismogenic zone processes and fault complexity
- Volcano seismology

HONORS and RECOGNITION

2021 Gerald J. Ford Research Fellowship, SMU
2017 Rotunda Outstanding Professor, awarded by the SMU Rotunda (Yearbook) based on student nominations
2015-2016 Earthscope Distinguished Speaker, NSF Earthscope Program
2013 Downey Family Award for Faculty Excellence, Institute for the Study of Earth and Man
2012-2014 GeoPRISMS Distinguished Lecturer, NSF GeoPRISMS Subduction Cycles and Deformation program

- 2003 Honorable Mention, NSF MARGINS program Outstanding Student Presentation Award at the American Geophysical Union Fall Meeting
- 2001-2002 ARCS Scholarship Recipient, Achievement Rewards for College Scientists Foundation
- 2000 Invited participant, 5th Workshop on Three-Dimensional Modeling of Seismic Waves Generation, Propagation, and Inversion, Trieste, Italy
- 1999 Regents Fellowship, University of California Santa Cruz
- 1999 Phi Beta Kappa, inducted 1999
- 1999 Mustang Award (“M” award), Southern Methodist University
- 1997-1999 President’s Scholar, Southern Methodist University
- 1997-1999 Barry Goldwater Research Scholarship for Science and Engineering, Barry Goldwater Foundation

PROFESSIONAL AFFILIATIONS

American Geophysical Union (AGU)
 Seismological Society of America (SSA)
 Dallas Geophysical Society (DGS)
 Society of Exploration Geophysicists (SEG)
 American Association for the Advancement of Science (AAAS)

PUBLICATIONS

^Graduate student advisee ^^Undergraduate student advisee #Postdoctoral advisee
Google Scholar Statistics: Citations 4488 h-index 30 i10-index 48 (last accessed 7.10.22)

I. Peer-Reviewed Publications

64. Anderson, J.G., G.M. Atkinson, J.W. Baker, K.W. Campbell, H.R. DeShon, T.H. Jordan, K.I. Kelson, N. Shome, and J.P. Steward (2024), Recommendations on Best Available Science for the United States National Seismic Hazard Model, reviewed conference paper, World Conference on Earthquake Engineering, Milan, Italy, accepted January 2024 for meeting July 2024.
63. Jordan, T.H., N. Abrahamson, J.G. Anderson, G. Biasi, K. Campbell, T. Dawson, H.R. DeShon, M. Gerstendberger, N. Gregor, K. Kelson, Y. Lee, N. Luco, W. Marzocchi, B. Rawshandel, D. Schwartz, N. Shome, G. Toro, R. Weldon, I. Wang (2023), Panel Review of the USGS 2023 Conterminous U.S. Time-Independent Earthquake Rupture Forecast, *Bulletin of the Seismological Society of America*, XX, 1-36, doi:10.1785/0120230140.
62. Jeong, S.-J., B. Stump, and H.R. DeShon (2022), Stress Drop Variations of Induced Earthquakes Near the Dallas-Fort Worth Airport, Texas, *The Seismic Record*, 2, 68-77, doi:10.1785/032022000361.
61. Jeong, S.-J., B. Stump, and H.R. DeShon (2022), Site Amplifications from Earthquake Data and V_{S30} in the Fort Worth Basin, Texas, *Seismological Research Letters*, 93(3), 1787–1799, doi:10.1785/0220210140.
60. Hennings, P., J-P. Nicot, R. Gao, H.R. DeShon, J-E. Lund Snee, A. Morris, M. Brudzinski, E. Horne, C. Breton (2021), Pore Pressure Threshold and Fault Slip Potential for Induced Earthquakes in the Dallas-Fort Worth Area of North Central Texas, *Geophysical Research Letters*, 48(15), doi: 10.1029/2021GL093564.
59. Jeong, S.-J., B. Stump, H.R. DeShon and L. Quinones (2021), Stress Drop Estimates for Induced Seismic Events in the Fort Worth Basin, Texas, *Bulletin of the Seismological Society of America*, 111(3), 1405–1421. doi: 10.1785/0120200268.

58. Jeong, S., B. Stump and H.R. DeShon (2020), Spectral Characteristics of Ground Motion from Induced Earthquakes in the Fort Worth Basin, Texas, Using the Generalized Inversion Technique, *Bulletin of the Seismological Society of America*, 110, 2058-2076. doi: 10.1785/0120200097.
57. Horne, E., P. Hennings, J. Osmond, H.R. DeShon (2020), Structural characterization of potentially seismogenic faults in the Fort Worth Basin, *Interpretation*, 8(2), T323-T347, doi:10.1190/INT-2019-0188.1
56. Frohlich, C., C. Hayward, J. Rosenblit^{^^}, C. Aiken, P. Hennings, A. Savvaidis, C. Lemons, J.I. Walter, H.R. DeShon (2020), Onset and cause of increased seismic activity near Pecos, West Texas, USA from observations at the Lajitas TXAR Seismic Array, *Journal of Geophysical Research: Solid Earth*, 125(1), doi:10.1029/2019JB017737
55. DeGrandpre, K., Z. Lu, J. Pesicek, D. Roman and H.R. DeShon (2019), Surface Deformation and Source Model at Semisopochnoi Volcano from InSAR and Seismic Analysis During the 2014 and 2015 Seismic Swarms, *Geochemistry, Geophysics, Geosystems*, 20(12), 6163-6186. doi: 10.1029/2019GC008720
54. Kwong, K.B.[^], H.R. DeShon, J. Saul, C.H. Thurber (2019), Constraining the Oceanic Lithosphere Seismogenic Zone Using Teleseismic Relocations of the 2012 Wharton Basin Great Earthquake Sequence, *Journal of Geophysical Research: Solid Earth*, 124(11), 11938-11950. doi:10.1029/2019JB017549
53. Kwong, K.B.[^], H.R. DeShon, J-W. Kim, Z. Lu (2019), Resolving Teleseismic Earthquake Catalog and InSAR Data Discrepancies in Absolute Space to Explore Rupture Complexity Along the Ecuadorian Megathrust Fault, *Journal of Geophysical Research: Solid Earth*, 124, 6703-6719. doi:10.1029/2018JB016271
52. Hennings, P.H., J. Lund Snee, J. Osmond, H.R. DeShon, R. Dommissie, E. Horne, C. Lemons, and M.D. Zoback (2019), Injection-Induced Seismicity and Fault Slip Potential in the Fort Worth Basin, Texas, *Bulletin of the Seismological Society of America*, 109(5), 1615-1634. doi:10.1785/0120190017
51. Quinones, L.[^], H.R. DeShon, S. Jeong, P. Ogwari[#], O. Sufri[#], M.M. Holt[^], and K.B. Kwong[^] (2019), Tracking Induced Seismicity in the Fort Worth Basin: A Summary of the 2008-2018 North Texas Earthquake Study Catalog, *Bulletin of the Seismological Society of America*, 190(4), 1203-1216. doi: 10.1785/0120190057.
50. DeShon, H.R., C.T. Hayward, P.O. Ogwari[#], L. Quinones[^], O. Sufri[#], B. Stump and M.B. Magnani (2019), Summary of the North Texas Earthquake Study Seismic Networks, 2013-2018, *Seismological Research Letters*, 90(1), 387-394. doi:10.1785/0220180269.
49. Sweet, J., K. R. Anderson, S. Bilek, M. Brudzinski, X. Chen, H. DeShon, C. Hayward, M. Karplus, K. Keranen, C. Langston, F-C Lin, M.B. Magnani and R.L. Woodward (2018), A Community Experiment to Record the Full Seismic Wavefield in Oklahoma, *Seismological Research Letters*, 89(5), 1923-1930. doi:10.1785/0220180079.
48. Quinones, L.A.[^], H.R. DeShon, M.B. Magnani, and C. Frohlich (2018), Stress orientations in the Fort Worth Basin, Texas, determined from earthquake focal mechanisms, *Bulletin of the Seismological Society of America*, 108(3A), 1124-1132. doi: 10.1785/0120170337.
47. Cao, A.F., B. Stump, and H.R. DeShon (2018), High Resolution Seismic Data Regularization and Wave Field Separation, *Geophysical Journal International*, 213, 694-694. doi:10.1093/gji/ggy009.
46. Ogwari, P.[#], H.R. DeShon and M.J. Hornbach (2018), The Dallas-Fort Worth Airport Earthquake Sequence: Seismicity Beyond Injection Period, *Journal of Geophysical Research*, 123(1), 553-563. doi:10.1002/2017JB015003.
45. Magnani, M.B., M.L. Blanpied, H.R. DeShon and M.J. Hornbach (2017), Discriminating between natural versus induced seismicity from long-term deformation history of intraplate faults, *Science Advances*, 3, e1701593.
44. Scales, M.M.[^], H.R. DeShon, M.B. Magnani, J.I. Walter, L. Quinones[^], T.L. Pratt and M.J. Hornbach (2017), A decade of induced slip on the causative fault of the 2015 Mw 4.0 Venus earthquake, northeast Johnson County, Texas, *Journal of Geophysical Research*, 122, 7879-7894. doi: 10.1002/2017JB014460.

43. Hornbach, M.J., M. Jones, M. Scales[^], H.R. DeShon, M.B. Magnani, C. Frohlich, B. Stump, C. Hayward and M. Layton^{^^} (2016), Ellenburger wastewater injection and seismicity in North Texas, *Physics of the Earth and Planetary Interiors*, 261(A), 54-68. doi:10.1016/j.pepi.2016.06.012.
42. Frohlich, C., H.R. DeShon, B. Stump, C. Hayward, M.J. Hornbach, J.I. Walter (2016), A Historical Review of Induced Earthquakes in Texas, *Seismological Research Letters*, 87(4), doi:10.1785/0220160016.
41. Frohlich, C., H.R. DeShon, B. Stump, C. Hayward, M.J. Hornbach, J.I. Walter (2016), Reply to “Comment on ‘A Historical Review of Induced Earthquakes in Texas’ by Frohlich, C., H.R. DeShon, B. Stump, C. Hayward, M.J. Hornbach, J.I. Walter” by Steve Everly, *Seismological Research Letters*, 87(6), doi:10.1785/0220160148.
40. Hornbach, M., H.R. DeShon, W.L. Ellsworth, B.W. Stump, C. Hayward, C. Frohlich, H.R. Oldham[^], J.E. Olson, M.B. Magnani, C. Brokaw, J.H. Luetgert (2015), Causal factors for seismicity near Azle, Texas, *Nature Communications*, 6, 6728, doi:10.1038/ncomms7728. Authors prefer citation as Hornbach, DeShon and others but this is not what happens.
39. Bockholt, B.M., C.A. Langston, H.R. DeShon, S. Horton and M. Withers (2014), Mysterious Tremor-like Signals Seen on the Reelfoot Fault, Northern Tennessee, *Bulletin of the Seismological Society of America*, 104 (5), 2194-2205, doi:10.1785/0120140030.
38. Bisrat, S.T.[^], H.R. DeShon, J. Pesicek, C. Thurber (2014), High-resolution 3-D P-wave Attenuation Structure of the New Madrid Seismic Zone, *Journal of Geophysical Research*, 119 (1), 409-424, doi: 10.1002/2013JB010555.
37. Dunn, M., H.R. DeShon, C.A. Powell (2013), Imaging the New Madrid Seismic Zone using Double-Difference Tomography, *Journal of Geophysical Research*, 118 (10), 5404-5416, doi:10.1002/jgrb.50384.
36. Hansen, S., H.R. DeShon, M. Moore-Driskell[^], A. Al-Amri (2013), Investigating the P-wave Velocity Structure beneath Harrat Lunayyir, northwestern Saudi Arabia, using Double-Difference Tomography and Earthquakes from the 2009 Seismic Swarm, *Journal of Geophysical Research*, 118(9), 4814-4826, doi:10.1002/jgrb.50286.
35. Moore-Driskell, M.[^], H.R. DeShon, W. Rabbel, M.M. Thorwart, Y. Dzierma (2013), Integration of arrival time datasets for consistent quality control: A case study of amphibious experiments along the Middle America Trench, *Bulletin of the Seismological Society of America*, 103(5), doi: 10.1785/0120120274, 2752-2766.
34. El Hariri, M., S.L. Bilek, E.R. Engdahl, H.R. DeShon, and S.T. Bisrat[^] (2013), Along-strike variability of rupture duration in subduction-zone earthquakes, *Journal of Geophysical Research*, 118(2), 646-664, doi: 10.1029/2012JB009548.
33. Bilek, S., H.R. DeShon and E.R. Engdahl (2012), Spatial variations in earthquake source characteristics within the 2011 Mw 9.0 Tohoku, Japan rupture zone, *Geophysical Research Letters*, 39, L09304, doi:10.1029/2012GL051399.
32. Bisrat, S.T.[^], H.R. DeShon, and C. Rowe (2012), Microseismic Swarm Activity in the New Madrid Seismic Zone, *Bulletin of the Seismological Society of America*, 102(3), 1167-1178, doi: 10.1785/0120100315.
31. Graham, S.E., C. DeMets, H.R. DeShon, R. Rogers, M. Rodriguez Maradiaga, W. Strauch, K. Wiese, and D. Hernandez (2012), GPS and seismic constraints on the M = 7.3 2009 Swan Islands earthquake: implications for stress changes along the Motagua fault and other nearby faults, *Geophysical Journal International*, 190(3), 1625-1639, doi: 10.1111/j.1365-246X.2012.05560.x.
30. Pesicek, J.D., E.R. Engdahl, C.H. Thurber, H.R. DeShon, and D. Lange (2012), Mantle subducting slab structure in the region of the 2010 M8.8 Maule earthquake (30-40°S), Chile, *Geophysical Journal International*, 191(1), doi: 10.1111/j.1365-246X.2012.05624.x.
29. Van Arsdale, R.B., H.R. DeShon, and M.P. Tuttle (2012), New Madrid Seismic Zone field trip guide, in *From the Blue Ridge to the Coastal Plain: Field Excursions in the Southeastern United*

- States*, eds. M.C. Eppes and M.J. Bartholomew, Geological Society of America Field Guide 29, p. 1-14, doi: 10.1130/2012.029(04).
28. Bilek, S.L., E.R. Engdahl, H.R. DeShon, and M. El Hariri (2011), The 24 October 2010 Sumatra tsunami earthquake: Slip in a slow patch, *Geophysical Research Letters*, 38, L14306, doi:10.1029/2011GL047864.
 27. Hamburger, M., K. Shoemaker, S. Horton, H.R. DeShon, M. Withers, G. Pavlis, and E. Sherrill (2011), Aftershocks of the 2008 Mt. Carmel, Illinois Earthquake: Evidence for Conjugate Faulting near the Termination of the Wabash Valley Fault System, *Seismological Research Letters*, 82, 735-747, doi:10.1795/gssrl.82.5.735.
 26. DeShon, H.R., C.H. Thurber, and J. Power (2010), Earthquake waveform similarity and evolution at Augustine volcano, Alaska, from 1993-2006, in *The 2006 Eruption of Augustine Volcano, Alaska*, eds. J.A. Power, M.L. Coombs, J.T. Freymueller, USGS Professional Paper 1769, p. 103-118.
 25. Dunn, M., S. Horton, C.A. Powell and H.R. DeShon (2010), High Resolution Earthquake Location in the New Madrid Seismic Zone, *Seismological Research Letters*, 81, 406-413.
 24. Pesicek, J.D., C.H. Thurber, S. Widiyantoro, E.R. Engdahl, and H.R. DeShon (2010), Sharpening the Tomographic Images of the Subducting Slab below the Sumatra-Andaman Region, *Geophysical Research International*, 182, 433-453, doi:10.1111/j.1365-246X.2010.04630.x.
 23. Pesicek, J.D., C.H. Thurber, H. Zhang, H.R. DeShon, and E.R. Engdahl (2010), Teleseismic Double-difference Relocation of the Earthquakes along the Sumatra-Andaman Subduction Zone using a Three-dimensional Model, *Journal of Geophysical Research*, 115, B10303, doi:10.1029/2010JB007443.
 22. Powell, C.A., H.R. DeShon, and M. Withers (2010), Intrusions and Anomalous Vp/Vs Ratios Associated with the New Madrid Seismic Zone, *Journal of Geophysical Research*, 115, B08311, doi:10.1029/2009JB007107.
 21. Sumiejski, L., C.H. Thurber, and H.R. DeShon (2009), Relocation of eruption-related earthquake clusters at Augustine volcano, Alaska, using station-pair differential times, *Geophysical Journal International*, 176, 1017-1022.
 20. Pesicek, J., C.H. Thurber, S. Widiyantoro, E.R. Engdahl, and H.R. DeShon (2008), Folded slab subduction beneath Sumatra, *Geophysical Research Letters*, 35, L20303, doi:10.1029/2008GL035262.
 19. Pesicek, J., C.H. Thurber, H.R. DeShon, S.G. Prejean, and H. Zhang (2008), Three-dimensional P-wave velocity structure and precise earthquake relocation at Great Sitkin Volcano, Alaska, *Bulletin of the Seismological Society of America*, 98 (5), 2428-2448, doi:10.1785/0120070213.
 18. DeShon, H.R., C.H. Thurber, and C.A. Rowe (2007), High-precision earthquake location and three-dimensional P-wave velocity determination at Redoubt Volcano, Alaska, *Journal of Geophysical Research*, 112, B07312 1-24, doi:10.1029/2006JB004751.
 17. Engdahl, E.R., A. Villasenor, H.R. DeShon, and C. Thurber (2007), Teleseismic relocation and assessment of seismicity (1918-2005) in the region of the 2004 Mw 9 Sumatra-Andaman and 2005 M 8.7 Nias great earthquakes, *Bulletin of the Seismological Society America*, 97, S43-S61, doi:10.1785/0120050614.
 16. Hutnak, M., A.T. Fisher, C.A. Stein, R. Harris, K. Wang, E. Silver, G. Spinelli, M. Pfender, H. Villinger, R. MacKnight, P. Costa Pinani, H.R. DeShon, and C. Diamente (2007), The thermal station of 18-24 Ma upper lithosphere subducting below the Nicoya Peninsula, northern Costa Rica, in *The Seismogenic Zone of Subduction Thrust Faults*, eds. T. Dixon and J.C. Moore, Columbia University Press, New York, 86-122.
 15. Schwartz, S.Y. and H.R. DeShon (2007), Evidence for multiple mechanical transitions along the updip limit, Nicoya Peninsula, Costa Rica, in *The Seismogenic Zone of Subduction Thrust Faults*, eds. T. Dixon and J.C. Moore, Columbia University Press, New York, 576-599.
 14. DeShon, H.R., S.Y. Schwartz, A.V. Newman, V. Gonzalez, J.M. Protti, L.M. Dorman, T. Dixon, E. Norabuena and E. Flueh (2006), Seismogenic zone structure beneath the Nicoya Peninsula, Costa

- Rica, from 3D local earthquake *P*- and *S*-wave tomography, *Geophysical Journal International*, 164, 109-124, doi:10.1111/j.1365-246X.2005.02809.x.
13. Hansen, S.E., S.Y. Schwartz, and H.R. DeShon (2006), Earthquake relocation and focal mechanism determination using waveform cross-correlation, Nicoya Peninsula, Costa Rica, *Bulletin of the Seismological Society of America*, 96 (3), 1003-1011, doi: 10.1785/0120050129.
 12. Brown, K.M., M. Tryon, H.R. DeShon, L.M. Dorman, and S.Y. Schwartz (2005), Transient fluid pulsing and seismic tremor: Evidence of episodic creep at the updip edge of the seismogenic zone, Costa Rica? *Earth Planetary Science Letters*, 238, 189-203.
 11. DeShon, H.R., E.R. Engdahl, C.H. Thurber, and M. Brudzinski (2005), Constraining the boundary between the Sunda and Andaman subduction systems: Evidence from the 2002 M_w 7.3 Northern Sumatra earthquake and aftershock relocations of the 2004 and 2005 great earthquakes, *Geophysical Research Letters*, 32, L24307, doi:10.1029/2005GL024188.
 10. Lay, T., H. Kanamori, C.J. Ammon, M. Nettles, S.N. Ward, R. Aster, S.L. Beck, S.L. Bilek, M.R. Brudzinski, R. Butler, H.R. DeShon, G. Ekström, K. Satake, and S. Sipkin (2005), The great Sumatra-Andaman earthquake of 26 December 2004, *Science*, 308, 1127-1133.
 9. Lay, T., H. Kanamori, C.J. Ammon, M. Nettles, S.N. Ward, R. Aster, S.L. Beck, S.L. Bilek, M.R. Brudzinski, R. Butler, H.R. DeShon, G. Ekström, K. Satake, and S. Sipkin (2005), Response to Comment on "The great Sumatra-Andaman earthquake of 26 December 2004". [Editorial Material] *Science*, 310, NIL 3.
 8. DeShon H.R. (2004), Seismogenic zone structure along the Middle America subduction zone, Costa Rica, Ph.D. Dissertation, pp. 359, University of California-Santa Cruz, Santa Cruz, CA, June.
 7. DeShon, H.R., and S.Y. Schwartz (2004), Evidence for serpentization of the forearc mantle wedge along the Nicoya Peninsula, Costa Rica, *Geophysical Research Letters*, 31, L21611 1-4, doi:10.1029/2004GL021179.
 6. Norabuena, E., T.H. Dixon, S.Y. Schwartz, H.R. DeShon, M. Protti, L. Dorman, E.R. Flueh, P. Lundgren, A. Newman, F. Pollitz, D. Sampson (2004), Geodetic and seismic constraints on seismogenic zone processes in Costa Rica, *Journal of Geophysical Research*, 109, B11403 1-25, doi:10.1029/2003JB002931.
 5. Silver, E., P. Costa Pisani, M. Hutnak, A. Fisher, H.R. DeShon, and B. Taylor (2004), An 8-10 Ma tectonic event on the Cocos Plate offshore Costa Rica: Result of Cocos Ridge collision?, *Geophysical Research Letters*, 31, L18601 1-4, doi:10.1029/2004GL020272.
 4. Bilek, S.L., S.Y. Schwartz, and H.R. DeShon (2003), Control of seafloor roughness on earthquake rupture behavior, *Geology*, 31, 455-458.
 3. DeShon, H.R., S.Y. Schwartz, S.L. Bilek, L.M. Dorman, V. Gonzalez, J.M. Protti, E.R. Flueh, and T.H. Dixon (2003), Seismogenic zone structure of the southern Middle America Trench, Costa Rica, *Journal of Geophysical Research*, 108, doi:10.1029/2002JB002294.
 2. Newman, A.V., S.Y. Schwartz, V. Gonzalez, H.R. DeShon, J.M. Protti, and L.M. Dorman (2002), Along-strike variability in the seismogenic zone below Nicoya Peninsula, Costa Rica, *Geophysical Research Letters*, 29, 1977 1-4, doi: 10.1029/2002GL015409.
 1. DeShon, H.R., D.A. Young and V.L. Hansen (2000), Geologic evolution of southern Rusalka Planitia, Venus, *Journal of Geophysical Research*, 105, 6983-6995.

II. Peer-Reviewed Geologic Maps

- M1. Hansen, V.L. and H.R. DeShon (2002), Geologic map of the Diana Chasma Quadrangle (V-37), Venus, Geologic Investigations Series - U. S. Geological Survey, Report: I-2752, U. S. Geological Survey, Reston, VA, USA.

III. Submitted or In Preperation Peer-Reviewed Publications

- S4. Sharma, J., S. Arrowsmith, C. Hayward, H.R. DeShon, and A Chavarria, Measuring Earthquakes with Distributed Acoustic Sensing using Dark Fiber in Urban Environments: Application to the Dallas Fort-Worth Area, in preparation
- S3. Aziz Zanjani, A., H.R. DeShon, and A. Savvaidis, Insights into spatiotemporal evolution of induced seismicity in the Delaware Basin near Pecos, Texas, since 2009, in preparation
- S2. Quinones, L., H.R. DeShon, T. Sawi, S. Arrowsmith, and K. Kerenan, Local Earthquake Catalogs Created Using Broadband and Large-N Seismic Arrays for the Community Wavefields Demonstration Experiment, in preparation.
- S1. Quinones, L., H.R. DeShon and others, The Irving-Dallas Earthquakes triggered by far-field stresses from wastefluid injection, in preparation for *The Seismic Record*.

IV. Other Publications (not peer-reviewed)

- O15. DeShon, H.R., S. Arrowsmith and N. Makris (2024), 2023 Eastern Section SSA Annual Meeting Report, *Seismological Research Letters*, XX, 1-7, doi: 10.1785/0220230428.
- O14. Jordan, T.H., N. Abrahamson, J.G. Anderson, G. Biasi, K. Campbell, T. Dawson, H.R. DeShon, M. Gerstendberger, N. Gregor, K. Kelson, Y. Lee, N. Luco, W. Marzocchi, B. Rawshandel, D. Schwartz, N. Shome, G. Toro, R. Weldon, I. Wang (2023), Panel Review of the USGS 2023 Conterminous U.S. Time-Independent Earthquake Rupture Forecast, submitted to the US Geological Survey, June 2023.
- O13. Wang, R., M. Weingarten, C. Langenbruch, and H.R. DeShon (2020). Introduction to the Special Section on Observations, Mechanisms, and Hazards of Induced Seismicity, *Bull. Seismol. Soc. Am.* 110, 1999-2004, doi: 10.1785/ 0120200236
- O12. DeShon, H.R., Earthquakes in Dallas-Fort Worth? Untangling the complex ways official and unofficial earthquake catalogs are reported to a concerned public, in *The Hazards of Hazard Communication: Importance, Rewards, and Challenges of Science in the Public Sphere: A white paper summary of presentations from session PA23B at the 2018 Fall Meeting of the American Geophysical Union*, Editors Beth Bartel and Wendy Bohon, online April 2019.
- O11. DeShon, H.R., Your Question Answered: How do you balance research and teaching?, *The Seismogram*, an online newsletter, Seismological Society of America, 9(5), December, 2018.
- O10. DeShon, H.R., and M.B. Magnani, Final Technical Report for G16AC00247: Imaging faults in induced earthquake zones using earthquake and controlled source data – North Texas and Oklahoma, submitted to the USGS on March 31, 2017.
- O9. Tuttle, M. and workshop instructors (includes H.R. DeShon), NRC Training Workshop Presentations-Nov. 2015, US Nuclear Regulatory Commission, Accession Number ML17023A0033, <https://www.nrc.gov/docs/ML1702/ML17023A033.html>, available on January 23, 2017.
- O8. DeShon, H.R., and M.B. Magnani, Final Technical Report for G15AC00141: North Texas Earthquake Studies and Network Operations, submitted to the USGS on October 4, 2016.
- O7. DeShon, H.R., Final Technical Report for G12AP20136: Integrating USArray and Cooperative New Madrid Seismic Network Data to Establish Central US Catalog Location and Magnitude Sensitivities, submitted to the USGS on July 1, 2013.
- O6. DeShon, H.R., Preliminary Technical Report for G12AP20011: Integrating USArray and Cooperative New Madrid Seismic Network Data to Establish Central US Catalog Location and Magnitude Sensitivities, submitted to the USGS on July 30, 2012.
- O5. DeShon, H.R., C.A. Langston, B. Bockholt, and S.P. Horton, Final Technical Report for G11AP20005: Continuation of Detection and Location of Non-volcanic Tremor in the New Madrid Seismic Zone, submitted to the USGS on April 9, 2012.
- O4. Morgan, J. and 20 others (includes H.R. DeShon), GeoPRISMS Implementation Plan (Subduction Cycles and Deformation), submitted to the National Science Foundation, March 2, 2011.
- O3. DeShon, H.R. and R. van Arsdale, Field Trip Guide: Taking a New Look at the New Madrid Seismic Zone, published by the Seismological Society of America as part of the 2011 annual meeting.

- O2. DeShon, H.R., C.A. Langston, S.P. Horton, and M. Withers, Final Technical Report for G09AP00141: Detection and location of non-volcanic tremor in the New Madrid Seismic Zone, submitted to the USGS on March 31, 2011.
- O1. DeShon, H.R. and S.T. Bisrat, Final Technical Report for G10AP00013: Imaging Body Wave Attenuation Heterogeneity within the New Madrid Seismic Zone using Local Earthquakes, submitted to the USGS on May 20, 2011.

IV. Archived seismic data sets

- A4. H.R. DeShon, C. Hayward, J. Walter, M.B. Magnani, M. Hornbach, B. Stump (2015), North Texas Earthquake Study: Venus (Johnson County), TX. International Federation of Digital Seismograph Networks. Other/Seismic Network. doi:10.7914/SN/4F_2015.
- A3. H.R. DeShon, C. Hayward, B. Stump, M.B. Magnani, M. Hornbach (2013), North Texas Earthquake Study: Azle and Irving/Dallas. International Federation of Digital Seismograph Networks. Other/Seismic Network. doi:10.7914/SN/ZW_2013.
- A2. Langston, C., H. DeShon, C. Powell, S. Horton, C. Ammon, R. Herrmann, W. Thomas (2011), Northern Embayment Lithospheric Experiment. International Federation of Digital Seismograph Networks. Other/Seismic Network. doi:10.7914/SN/ZL_2011.
- A1. Langston, C., H. DeShon (2009), Detection and location of non-volcanic tremor in the New Madrid Seismic Zone, International Federation of Digital Seismograph Networks. Other/Seismic Network. doi:10.7914/SN/Y8_2009.

STUDENT and POSTDOCTORAL RESEARCH ADVISEES

I. Postdoctoral Advisees

Current advisees

- Dr. Asiye Aziz Zanjani, (2022-2024)
- Dr. Jyoti Sharma, (2022-2024) *joint with Stephen Arrowsmith*

Past advisees

- Dr. Paul Ogwari, (2016-2018). *Current: Research Scientist, Oklahoma Geological Survey.*
- Dr. Oner Sufri, (2016-2019). *Current: IBM, Dallas*

II. Graduate Student Advisees

Current advisees at SMU – primary advisor

- Prajwal Neupane, Ph.D., expected 2026
- Julia Rosenblit, MS, expected 2024

Past advisees at SMU – primary advisor

- Louis Quinones, PhD 2021. *Current: Researcher at Sandia National Labs*
- Kevin B. Kwong, PhD 2019. *Current: Postdoctoral Researcher at Los Alamos National Labs*
- Louis Quinones, MS 2018.
- Monique Holt, née Scales, MS 2017.
- Harrison (Remi) Oldham, MS 2016.
- Kara Jones, née Cahoon, MS 2014.

Past advisees at University of Memphis – primary advisor

- Shishay T. Bisrat, Ph.D. 2013.
- Melissa M. Driskell, née Moore or Moore-Driskell, Ph.D. 2012.

Thesis/Dissertation Committee Memberships (excluding primary advisees):

- Hanh Bui, Ph.D., University of Alberta, 2024 [reviewer]
- Ketan Singha Roy, Ph.D., Southern Methodist University, TBD
- Vamshi Keranam, Ph.D., Southern Methodist University, TBD
- Fransiska Dugick, née Danneman, Ph.D., Southern Methodist University, 2021
- Sarah McComas, Ph.D., Southern Methodist University, 2021
- SeongJu Jeong, Ph.D., Southern Methodist University, 2021 [co-advised with B. Stump]
- Iason Grigoratos, Ph.D., Scuola Universitaria Superiore IUSS Pavia, 2020 [reviewer]
- Kimberly DeGrandpre, Ph.D., Southern Methodist University, 2020
- Vashane Wright, Ph.D., Southern Methodist University, 2019
- Mason MacPhail, Ph.D., Southern Methodist University, 2018
- Xie Hu, Ph.D., Southern Methodist University, 2018
- Yanjun Hao, Ph.D., Southern Methodist University, 2015
- Stephany Sit, Ph.D., Miami Univ. in Ohio, 2013 [reviewer]
- Meredith Dunn, Ph.D., Univ. of Memphis, 2009 [co-advised with C.A. Powell]
- Chuntao Liang, Ph.D., Univ. of Memphis, 2008

- Nnamdi Ofeifufe, M.S., Southern Methodist University, 2023
- Mary Elizabeth Layton, *expected* M.S., Southern Methodist University, 2021
- Madeline Jones, M.S., Southern Methodist University, 2016
- Fransiska Danneman, M.S., Southern Methodist University, 2016
- Sarah McComas, M.S., Southern Methodist University, 2015
- Ryan Christiansen, M.S., Southern Methodist University, 2015
- Onur Mataracioglu, M.S., Univ. of Memphis, 2012
- Chigozie Obikili, M.S. Univ. of Memphis, 2011
- Solomon Ayele, M.S., Univ. of Memphis, 2010

Undergraduate Interns/Researchers at SMU

- Carson Garret, Engaged Learning, Fall 2023-present
- Lili Binneti, Engaged Learning, Fall 2021-2023
- Tanyon Hejny, Maar Scholar (ISEM), Fall 2019-2021
- Harrison Schumann, Maar Scholar (ISEM), Fall 2018-2019
- Ethan Pittson, Fall 2018
- Mary Elizabeth Layton, Maar Scholar (ISEM), Fall 2015-Spring 2017
- Monique Scales, Maar Scholar (ISEM), Spring 2015
- Austen Klauser, Maar Scholar (ISEM), Spring 2014
- Brett Mattingly, SMU, Summer 2013

IRIS Summer Internship Program (an NSF-funded program) hosted at SMU

- Chris Justiniano-Velez, University of Puerto Rico, 2022
- Julia Rosenblit, Portland State University, 2018
- Theresa Sawi, Univ. of California at Berkeley, 2017
- Louis Quinones, Texas A&M University, 2015
- Mason Phillips, University of Texas-Austin, 2014
- Sarah Wiley, Whitman College, 2009 [while at Univ. of Memphis]

High School Interns/Researchers at SMU

- Omaha Tabor, Highland Park High School, Fall 2023-Spring 2024
- Kaylee Kaigler, Lake Highlands High School, Advanced Academic Studies Professional Internship Program, Spring 2014.

TEACHING HISTORY

*Development or redevelopment semester

I. Southern Methodist University*In regular rotation:*

Earthquakes & Volcanoes (GEOL 1313) [2014(S*), 2015(S), 2016(S), 2017(S), 2018(S), 2019(S*),2020(S-Covid),2021(S-Hybrid), 2022(S)]

Earth: Plate Tectonics and the Interior (GEOL 2308) [2020(S*), 2024(S)]

Computer Methods in Earth Science (GEOL 3359) [2014(S*), 2016(S), 2018(S), 2019(F), 2021(F*), 2023(F)]

Introduction to Seismology (GEOL 5392) [2013(F*), 2015(F), 2017(F), 2022(F)]

Geophysical Inverse Theory (GEOL 6380) [2012(F), 2015(F), 2019(S),2021(S-Hybrid), 2023(S)]

⇒ *GEOL 6210 Independent Study, Topic: Inverse, Fall 2016*

Department Seminars (GEOL 3107/6107) [2018(S), 2019(F,S),2020(S),2021(S)]

Introduction to Geophysics (GEOL 3380) [2014(F*), 2016(F), 2018(F)]

Independent Study (GEOL 6310/6210/6110)

⇒ *Topic: Nepal Seismicity (3 credits), Fall 2023*⇒ *Topic: Waveform Propagation (3 credits), Spring 2023*⇒ *Topic: Advanced Earthquake Location (3 credits), Fall 2015*⇒ *Topic: GIS in Earth Sciences, supervising instructor (1 credit), Fall 2015*

Dynamic Earth I (GEOL 5320) [2013(S*)]

II. University of Memphis

Inverse Methods in Geophysics (ESCI 7603) [2009(F*), 2011(F)]

Data Analysis in Geophysics (ESCI 7205) [2008(F*), 2010(F)]

Seminar in Seismology, *The Seismogenic Zone of Subduction Thrust Faults* (ESCI 7702) [2008(S)]

Independent Study (ESCI 7621, 1-3 credits) [2008(F,S), 2009(S), 2010(S), 2011(F,S)]

Topics included seismic tomography, waveform correlation, identifying the lithosphere-asthenosphere boundary, seismogenic zone structure, Antelope software, etc.

INVITED PRESENTATIONS, PANELS and SEMINARS

- 2023 Department of Earth Sciences seminar, Southern Methodist University, Nov. 3
- 2023 Trihubvan University, Tri-Chandran campus Society of Exploration Geophysicists student chapter, Kathmandu, Nepal, Oct. 9
- 2023 Nepal Geological Society, Kathmandu, Nepal, Oct. 3
- 2023 Dallas Geological Society seminar, Irving, TX, Sept. 13
- 2023 Department of Geosciences seminar, University of Texas Dallas, March 23.
- 2022 PIVOT2022 All Hands on Deck (Geothermal Online Workshop), panel moderator, July 25-29.
- 2022 SPE/SEG Injection Induced Seismicity Workshop: A Decade of Learnings, panel member, breakout leader, Austin, TX, June 7-9.
- 2022 Water in Energy Conference, University of Texas Permian Basin, invited presentation, Midland, TX, Feb. 22-24.
- 2021 UC Berkeley Seismo Lab, seminar, Nov. 23.
- 2021 Department of Earth and Atmospheric Sciences, seminar, University of Houston, Feb. 26.
- 2021 Society of Independent Professional Earth Scientists, Petroleum Club of Fort Worth, Jan. 6.

- 2020 International Forum on Pohang Earthquake, South Korea, virtual, invited talk, Nov. 10-13.
- 2020 American Rock Mechanics Association, invited webinar, Nov. 6. *Available on YouTube.*
- 2020 Regional Induced Seismicity Collaborative, invited webinar, June 18.
- 2019 AGU Fall Meeting, Induced Seismicity in the United States and Canada, invited presentation, San Francisco, CA, December 9-13.
- 2019 SPE/SEG Workshop: Injection Induced Seismicity–The Next Chapter, invited presentation, Dallas, TX, November 12-14.
- 2019 Department of Geosciences seminar, University of Texas Dallas, Oct. 25.
- 2019 Rapid Response to Geohazards virtual workshop and mini-workshop, host and summary presentations, online September 26 and Portland, OR, October 8.
- 2019 AAPG Southwest Section 2019 Annual Convention and Exhibition, invited presentation, Irving, TX, April 6-9.
- 2018 National Academy of Sciences, invited panel presentation, Induced Seismicity and Short-term Hazard, Committee of Seismology and Geodesy, Washington, D.C., November 14.
- 2018 Seismology of the Americas, invited presentation, SSA-LACSC, Miami, FL, 14-17 May.
- 2018 Workshop on Drilling Investigation of Seismogenic Crust in Oklahoma (DISCO), invited presentation, Norman, OK, 2 May.
- 2017 Johnson Family Lecture Series at Park University, Parkville, MO, March 28.
- 2016 IRIS Workshop, invited presentation, Vancouver, WA, June 8.
- 2016 Institute for Geophysics seminar, University of Texas, Apr. 15.

2015-2016 Earthscope Speaker Series

“Death of a Fault: A Comparison of Seismicity in the New Madrid Seismic Zone and North Texas”

- Oregon State, Oct. 8, 2015
- Boston College, Oct. 30, 2015
- Auburn University, Feb. 4, 2016
- Indiana University, Feb. 8, 2016
- Kent State University, Feb. 19, 2016

- 2015 National Regulatory Agency Paleoliquefaction Training, Blytheville, AR, Nov. 10.
- 2015 Energy Law Lecture Series, Texas Tech University, Oct. 19.
- 2015 USGS Scientific Earthquake Studies Advisory Committee & National Earthquake Prediction Evaluation Council, Fall 2015 meetings held at SMU, Sept. 2 & 3.
- 2015 Department of Earth and Environmental Science seminar, University of Texas Arlington, Feb. 5.
- 2014 Workshop on Hazard from Induced Seismicity, USGS and OK Geological Survey, Midwest City, OK, Nov. 18.

2012-2014 GeoPRISMS Distinguished Lecturer

“Using seismic tomography to image subduction systems: Applications to Costa Rica-Nicaragua and Sumatra,”

- University of Alabama, Jan. 30, 2013
- Georgia Southwestern State University, Jan 27, 2013. Available on YouTube.
- University of Central Washington, Mar. 8, 2013
- University of Washington, Mar. 14, 2013
- New Mexico Tech, Sept. 19, 2013

“Great earthquakes and new insights into subduction seismogenesis,”

- Georgia Southwestern University, Jan 27, 2013. Available on YouTube.
- Trinity University, Oct. 10, 2013
- Midwestern State University, Nov. 7, 2013

- Humbolt State University, April 14, 2014
- 2014 IRIS Webinar, March 27. *Available on YouTube.*
- 2014 CEUS Earthquake Hazards Research Review and Planning Workshop, Memphis, TN, Feb. 26.
- 2013 Department of Geosciences seminar, Baylor University, Nov. 1.
- 2013 Department of Earth Sciences seminar, Southern Methodist University, Jan. 25.
- 2012 Department of Geosciences seminar, University of Texas Dallas, Oct. 5.
- 2012 IRIS Webinar, October 3. *Available on YouTube.*
- 2012 SFB574 Final Symposium, Lubeck, Germany, May.
- 2011 NSF GeoPRISMS Implementation Planning Meeting, Jan. 6.
- 2011 Ruby Cook Lecture, St. Jude Children's Research Hospital, March 8,.
- 2008 Christian Albrechts University, Kiel, Germany, May.
- 2008 Center for Earthquake Research and Information, University of Memphis, seminar, Nov.
- 2007 Department of Earth Sciences seminar, Southern Methodist University, Dallas, TX, March 9, 2007.
- 2005 Department of Geosciences seminar, University of Alaska, Fairbanks, AL, June 4, 2005.
- 2005 USGS Alaska Volcano Observatory, seminar, Anchorage, AL, May 31, 2005.

FUNDING HISTORY

I. Current Sponsored Projects

National Science Foundation grant (Archeology), Explaining the Destruction of Monumental Architecture, PI: M. McCoy (SMU, now USF), co-PI: M. Nicos, H.R. DeShon (SMU).

Texas Bureau of Economic Geology @ the Univ. of Texas cooperative agreement, Earthquake Source Characterization in the Fort Worth Basin, TexNet: Seismic network and earthquake research funding through the state of Texas, Understanding near-and-far-field triggering of earthquakes in the Fort Worth and Delaware Basins, PI: H.R. DeShon, Co-PIs in 2023-2024, M.B. Magnani, Z. Lu; Start date: 1/1/2016, Duration: 8 years, Award \$1,086,922.00 (SMU cost share of overhead).

II. Completed Sponsored Projects

United States Geological Survey grant, Leveraging machine-learning detection and detailed event relocation to probe New Madrid seismogenesis: Collaborative Research with Southern Methodist University, and University of Oklahoma. PI: H.R. DeShon, Start date: 8/1/2022, Duration: 12 months with extension to 12/31/2023, Award \$50,572.

United States Geological Survey cooperative agreement, Imaging faults in induced earthquake zones using earthquakes and controlled source data – North Texas and Northern Oklahoma, PI: H.R. DeShon and M.B. Magnani, Start date: 7/1/2016, Duration: 6 months, Award \$60,479.

United States Geological Survey cooperative agreement, North Texas Earthquake Study and Network Operations – Irving & Azle, PI: H.R. DeShon and M.B. Magnani, Start date: 5/18/2015, Duration: 1 year, Award \$122,337.

National Science Foundation grant, Collaborative Research: Examining the variation in earthquake parameters along the Nicaragua and Costa Rica subduction zone using onshore and offshore seismic data, PI: H.R. DeShon. Start date: 9/15/2012, Duration: 12 months, extended to 9/14/2014, SMU Award \$51,027.

United States Geological Survey grant, Integrating USArray and Cooperative New Madrid Seismic Network Data to Establish Central US Catalog Location and Magnitude Sensitivities, NEHERP, PI: H.R. DeShon [University of Memphis/SMU], Start date: 1/1/2012, Duration: 12 months, University of Memphis Award \$21,920. Transfer to SMU: \$13,648.

United States Geological Survey grant, Improving Regional Ground Motion Attenuation Boundaries and Models Using EarthScope USArray Data for Use in the National Seismic Hazards Mapping Project, NEHRP, PI: C.H. Cramer; Co-PI H.R. DeShon, Start Date: 1/1/2012; Duration: 24 months, University of Memphis Award \$135,670.

National Science Foundation grant, Collaborative Research: Northern Embayment Lithosphere Experiment (NELE), EAR-Earthscope, PI: C.A. Langston; Co-PIs H.R. DeShon, S. Horton, and C.A. Powell [University of Memphis], C. Ammon [Penn St.], B. Hermann [SLU], Start date: 06/01/2011, Duration: 4 years, No Cost Extension to 05/31/2016, University of Memphis Award \$854,273. Subcontract to SMU: \$87,107.

United States Geological Survey grant, Continuation of Detection and Location of Non-Volcanic Tremor in the New Madrid Seismic Zone, NEHRP, PI: H.R. DeShon; Co-PIs: C. Langston & S. Horton [University of Memphis]. Start date: 12/01/2010, Duration: 12 months, University of Memphis Award \$76,815.

United States Geological Survey grant, Imaging Body Wave Attenuation Heterogeneity within the New Madrid Seismic Zone using Local Earthquakes, NEHRP, PI: H.R. DeShon [University of Memphis]. Start date: 01/01/2010, Duration: 12 months, University of Memphis Award \$64,341.

United States Geological Survey grant, Detection and Location of Non-Volcanic Tremor in the New Madrid Seismic Zone, NEHRP, PI: C. Langston; Co-PIs: H.R. DeShon, S. Horton, M. Withers [University of Memphis]. Start date: 09/01/09, Duration: 12 months, University of Memphis Award \$53,000.

National Science Foundation grant, Collaborative Research: Defining locations and patch sizes for slow earthquake ruptures in subduction zones, Marine Geology and Geophysics, PIs: H.R. DeShon [University of Memphis], S.L. Bilek [New Mexico Tech], E.R. Engdahl [U. Colorado], Start date: 02/01/09, Duration: 24 months, University of Memphis Award \$83,573.

National Science Foundation grant, Imaging 3D Seismic Velocity and Attenuation Heterogeneity Along the Seismogenic Zone of Costa Rica and Nicaragua, MARGINS Program, PIs: H.R. DeShon [University of Memphis]. Start date: 02/01/09, Duration: 24 months, University of Memphis Award \$132,513.

National Science Foundation grant, Collaborative Research: High-precision teleseismic relocation and tomography for the M 9 and M 8.7 Sumatra great earthquake sequences, EAR-Geophysics, PI H.R. DeShon [Univ. Wisconsin], Co-PIs C. Thurber and H. Zhang (Univ. of Wisconsin), PI E.R. Engdahl [Univ. of Colorado], PI M. Brudzinski [Univ. of Miami-Ohio], and PI F. Waldhauser [Columbia Univ.], Start date: 07/01/2007, Duration: 24 months, Univ. Wisconsin Award \$135,920. *Moved to Univ. Memphis on 7/1/2007* Start date: 07/01/2007, Duration: 12 months, extended through 06/31/2011. University of Memphis Award: \$45,056.

III. University Funding

SMU Lyle Engineering Research Seed Funding, Assessing the Urban Seismic Risk in the US from a Magnitude, Mw=7.8 Earthquake, PI: Nicos Makris, collaborators: H.R. DeShon, H. Uster. Start date: 8/1/2023. Duration: 1 academic year. Award: \$30,000 graduate stipend plus tuition.

SMU Dedman College Research Council grant, Preliminary Research: Constraining the seismic potential along the main Himalayan thrust front system in eastern Nepal, PI: H.R. DeShon, with P. Neupane, Start date: 5/1/2023. Duration: 1 year, Award \$29,505.

SMU Dedman College Departmental Funds: Accelerating the Understanding of Urban Environments: Multidisciplinary Research at SMU to Benefit the DFW Metroplex, PIs: H.R. DeShon [as chair], collaborators: S. Arrowsmith, M.B. Magnani, M. Hornbach (Earth Sciences), M. Adler, K. Hollenbeck, M. McCoy (Anthropology), B. Story, K. Smits (Civil Env. Engineering), Start date: 4/1/2023. Duration: 1 year, Award: \$175,000 for instrumentation purchases.

SMU University Research Council grant, Understanding recent North Texas Seismicity: A scientific investigation of the Azle and Mineral Wells earthquake sequences, PI: H.R. DeShon, collaborators:

C. Hayward, M. Hornbach, M.B. Magnani, B. Stump, Z. Lu, Start date: 1/22/2014, Duration: 1 year, extended to 5/2016, Award \$10,000.

FIELD EXPERIENCE

- 2013-present PI, North Texas temporary seismic network and rapid response, Azle: maintain ~13 stations; Irving: deploy and run between 11-22 stations at any one time; Venus: deploy and maintain between 10-15 stations; with team from Southern Methodist University (Stump, Hornbach, Magnani, Hayward)
- 2016 Science Concept Contributor and Field Team Member, IRIS Community Wavefield Experiment in Oklahoma, 18 broadbands, 6 infrasound, and 300+ 3component nodal-type sensors placed to maximize recording of the full wavefield and test array design concepts, north-central Oklahoma (east-northeast of Enid); with team members: K. Anderson, J. Sweet, B. Woodward (IRIS); S. Bilek (NMT); M. Brudzinski (Miami-Ohio); M.B. Magnani, C. Hayward, B. Stump (SMU); X. Chen (Oklahoma) S. Karplus (UTEP), C. Langston (CERI-Memphis); F-C Lin (Utah), June-Nov. 2016.
- 2012-2016 Co-PI, Northern Mississippi Embayment Lithosphere Experiment (NELE), 83 PASSCAL/Earthscope Flexible Array seismic experiment
- 2009-2011 PI (2010-2011) & Co-PI (2009-2010), NVT Array in New Madrid Seismic Zone, 19 PASSCAL seismic stations in array configuration near Ridgely, TN, with team from U. of Memphis
- 2004 Team Member, Rapid Response to the 2004 Parkfield earthquake, deployed PASSCAL seismic stations near Parkfield, CA, with team from U. Wisconsin, Sept. 2004.
- 2002 Team Member, TICOFLEX II cruise R/V Melville, Shipboard seismic reflection data processing (2 GI guns, 4 channel, 200 m streamer) offshore the Nicoya Peninsula, Costa Rica with a team from UCSC, Oct-Sept 2002.
- 1999 Team Member, CRSEIZE, Deployed 20 PASSCAL seismic stations on the Nicoya Peninsula, Costa Rica with team from UCSC, Nov-Dec 1999.
- 1999 Team Member, CRSEIZE, PAGANINI cruise SO14-1a, Deployed 14 Ocean Bottom Seismometers offshore the Osa Peninsula, Costa Rica with team from UCSD, Sept. 1999.

PROFESSIONAL SERVICE

- 2023-present President-Elect, President, Past-President, Seismological Society of America, elected by Board of Directors 16 April 2023. 3-year cycle.
- 2019-present Member of the Board of Directors, Seismological Society of America, elected, January 2019, 2 consecutive 3-year terms.
- Honors Committee, chair, 2022-2024 (2 cycles)
 - Diversity, Equity and Inclusion Committee, *ex officio*, 2022-forward
 - Government Relations Committee, 2020-forward
 - Publications Committee, 2021-forward
 - Nominations Committee, select candidates for Board of Directors, 2019, 2022, chair 2020
 - BSSA Editor-in-Chief Nominations Committee, late 2020-2021
 - Global Travel Grants 2019, select student awardees
- 2017-present Representative science expert on the Central and Eastern US, National Seismic Hazard Model Steering Committee, a subcommittee of the Scientific Earthquake Studies Advisory Committee (SESAC), United States Geological Survey, appointed January

- 2017, serving 3 consecutive 3-year terms.
- 2020 Guest Co-Editor, Bulletin of the Seismological Society of America (BSSA), Special Section on Induced Earthquakes. Published October 2020.
- 2019-2020 Secretary of the Seismology section, American Geophysical Union, elected, January 2019, 2-year term.
- Co-coordinator for the Outstanding Student Presentations Awards, section level, Fall meetings, 2-year term.
 - Nominations Committee, 2020
 - Reviewer for Student Travel Grants 2019
 - Co-oversee AGU100 Initiative: 100 papers in Seismology for 100 years of AGU
 - Seismology Fellows Committee, seismology section subcommittee to review & select section Fellows nominees, 2-year term, chair in 2020.
- 2018 Gutenberg Lecture selection committee, American Geophysical Union seismology section subcommittee, 1-year term.
- 2014-2019 OBSIP Oversight Committee Member, US Ocean Bottom Seismometer Instrument Pool, managed by IRIS.
- 2009-2014 Associate Editor, Bulletin of the Seismological Society of America [BSSA].

Panel Member, NSF EAR Geophysics (2x), NSF OCE Marine Geology and Geophysics (2x), NSF Earthscope (1x), NSF GeoPRISMS (1x); NSF CoPe (1x); USGS NEHRP Program (1x)

Reviewer, National Science Foundation; Natural Environment Research Council, UK; Bulletin of the Seismological Society of America; Earth and Planetary Science Letters; Encyclopedia of Complexity and Systems Science; Eos Transactions of the American Geophysical Union; Geochemistry, Geophysics, Geosystems; Geology; Geophysical Journal International; Geophysical Research Letters; GSA (Geological Society of America) Today; International Journal of Earth Sciences; International Journal of Environmental Research and Public Health; Interpretation; Journal of Geodynamics; Journal of Geophysical Research; Nature; New Zealand Journal of Geology and Geophysics; Physics of the Earth and Planetary Interiors; Science; Science Advances; Seismological Research Letters; Solid Earth; Tectonics; Tectonophysics; The Leading Edge.

Professional Meeting/Workshop/Session & Short-courses Organizer or Instructor

- 2023 AGU Fall 2023: De-Risking Induced and Triggered Earthquakes: Advances in Theory, Monitoring, and Forecast Modeling, San Francisco, CA, 11-15 December 2023.
- 2023 Eastern Section of the Seismological of America Annual Meeting, Southern Methodist University, Dallas, TX, 22-24 October 2023.
- Lead Convenor. Co-convenors Stephen Arrowsmith and Nicos Makris
 - Lead Field Trip organizer. Co-leaders Rita Economos and Robert Gregory – Meers Fault, Oklahoma, ~30 attendees
 - Over 80 attendees at the primary oral and poster sessions; held at Francis Moody Hall
 - Primary writer of the meeting report.
- 2023 SSA Annual Meeting 2023, Advances in Characterizing Seismic Hazard and Forecasting Risk in Hydrocarbon Systems, San Juan, Puerto Rico, 17-20 April 2023.
- 2021 SSA Annual Meeting 2021, Mechanisms of Induced Seismicity: Pressure Diffusion, Elastic Stressing and Aseismic Slip, Virtual Meeting, 19-23 April 2021.
- 2020 SSA Annual Meeting 2020, Mechanisms of Induced Seismicity: Pressure Diffusion, Elastic Stressing and Aseismic Slip, Albuquerque, New Mexico, 27–30 April 2020. [cancelled due to Covid-19]
- 2020 South-central Section of the Geological Society of America: Anthropogenic Earthquakes in the Central US, Fort Worth, Texas, 9-10 March 2020.
- 2019 AGU Fall 2019: Centennial Session-One Hundred Years of Seismology, San Francisco, CA, Dec.

- 9-13, 2019.
- 2019 Rapid Response to GeoHazards – Induced Seismicity, mini-workshop & virtual workshop host, IRIS.
- 2018 Workshop on Drilling Investigation of Seismogenic Crust in Oklahoma (DISCO), Norman, OK, May 3-5, 2018.
- 2017 Ocean Bottom Seismometer Symposium, Portland, ME, September 18-19, 2017.
- 2017 IRIS USArray Processing and Analysis Short-Course, Focus on the Wavefield Experiment, Indiana University, instructor and organizer, Aug. 7-11, 2017.
- 2016 IRIS USArray Processing and Analysis Short-Course, Beginners: Processing and Analysis Short Course, Antelope Databases and Processing using Antelope/Matlab/Python, Northwestern University, Aug. 3-5, 2016.
- 2015 Ocean Bottom Seismometer Symposium, Vancouver, WA, Oct 6-8, 2015.
- 2014 IRIS Workshop 2014: Unexpected Science: New Approaches to Using Array Data, June 2014.
- 2013 Antelope: An overview and short tutorial from a user’s perspective, University of California Santa Cruz, June 2013.
- 2011 AGU Fall 2011: Progress in Understanding Intraplate Faulting, December 2011.
- 2011 New Madrid Seismic Zone Field Trip Organizer, Seismological Society of America Spring 2011 Meeting, Memphis, TN, April 2011.
- 2011 SSA Spring 2011: Integrating Geodynamic, Structure and Deformation Studies of the Seismogenic and Transition Zones in Subduction Zones and Other Margins, April 2011.
- 2011 NSF GeoPRISMS Subduction Cycles and Deformation Implementation Workshop, Austin, TX, January 5-7 2011.
- 2008 AGU Fall 2008: Crustal Structure of the Central and Eastern US, December 2008.
- 2007 AGU Fall 2007: Earthquakes and Tsunami of the Eastern Indian Ocean, December 2008.
- 2005 Antelope: An overview and short tutorial from a user’s perspective, Volcanological and Seismological Observatory of Costa Rica, Universidad Nacional, 2005.

UNIVERSITY SERVICE

I. Southern Methodist University

Student Scholarship and Activities

- 2018-present Mortar Board Faculty Advisor
- 2018-present GeoClub Faculty Advisor
- 2016-2019 AARO, Faculty Panel, Transfer and/or First Year Students, 1-2 panels per summer
- 2014-2018 President’s Scholar Program, reading committee and alumni/faculty mentor
- 2012-2015 Hyer Society Selection Committee
- 2012-present Phi Beta Kappa [Spring participation is fairly consistent]

University

- 2019 Provost Search Committee
- 2018-2021 President’s Commission on the Status of Women
- 2016-2019 Faculty Senate Subcommittee, All-University Finance Committee
- 2016-2018 Council on General Education, Dedman College Division III Representative
- 2014-2016 University Curriculum Ways of Knowing Vetting Committee
- 2016 Graduate Student Orientation, Faculty Panel, “How to be a great graduate student”
- 2016 Emerging Leaders Program, Office of the Provost, Spring
- 2015 University Curriculum Working Group, chair P. Moore, Summer
- 1998-1999 Board of Trustees Student Affairs Standing Committee, Student Representative

Dedman College of Arts and Sciences

2020-present Division III, Promotion and Tenure Committee
 2018-2021 Dean's Research Counsel, grant application review
 2016-2017 Dean's Research Advisory Committee, member, 1-year term

Huffington Department of Earth Sciences

2021-present Chair, Department of Earth Sciences
 2023-present Member, C.W. Matthews Endowed Chair, Search Committee
 2019-2021 Director of Undergraduate Studies [aka: Undergraduate Advisor], appointed Spring 2019
 2018-2022 Department Assessment Coordinator, appointed Fall 2018
 2018-2019 Undergraduate Earth Sciences Curriculum Revision, primary writer, Spring 2018-2019.
 Revisions approved for implementation in Fall 2019.
 2017-2018 Search Committee member, Hamilton Endowed Chair
 2012-2013 Search Committee member, Foscue-Scholar Endowed Chair
 2011-2013 Search Committee member, Structural Geology/Tectonics

II. University of Memphis

2009-2012 CERI Working Group on Data Conversion, chair 2011-2012
 2009-2011 Dept. of Earth Sciences Graduate Program Committee
 2007-2012 CERI Rapid Response Committee
 2007-2012 CERI Graduate Curriculum and Graduate Recruitment Committees

SCIENCE COMMUNICATION ACTIVITIES

I. North Texas Seismicity

Dallas-Irving Working Group on Earthquake Incidents, monthly or as necessary meetings with Dallas county emergency managers, city managers and press officers, USGS, SMU (DeShon, Stump, Hayward), FEMA; Jan. 2015 – 2017

Perot Museum of Nature and Science, Science Flash Exhibit, late 2015 – summer 2017.

City and State Presentations

- Irving City Council (DeShon, Hennings), March 22, 2017.
- Texas Railroad Commission, public hearing on Azle earthquakes, convened by Commissioner Sitton, (Hornbach, DeShon – lead speakers, Stump, Magnani, Hayward, Frohlich, Ellsworth), June 5, 2015.
- Texas House Committee on Energy Resources (Hornbach, Stump – speaking; DeShon, Hayward, Magnani document preparation), May 4, 2015.
- Irving City Council (Stump, DeShon), Jan. 15, 2015.
- Texas House Committee on Energy Resources, Subcommittee on Seismic Activity (Stump, DeShon), May 7, 2014.

Community Presentations & Long-form Media Interviews

- "The UnXplained with William Shatner," History Channel, filmed in St. Louis, MO, May 4, 2022.
- Dallas Morning News, Curious Texas column, [Could fracking be causing earthquakes](#), Dec. 12, 2019.
- KERA, National Public Radio, studio interview for multiple replay, first aired Nov. 13, 2017.
- KCUR Up to Date, National Public Radio Kansas City, live studio interview, Mar. 28, 2017.
- Association of Petroleum Landmen, Dallas Chapter, Feb. 21, 2016.
- Texas Association of Assessing Officers, North Texas, Oct. 24, 2016.

- Houston Geological Society, Apr. 13, 2016.
- Petroleum Engineers Club of Dallas, Jan. 29, 2016.
- KERA THINK Program, National Public Radio Dallas, live studio interview with DeShon and Stump, Jan. 13, 2015.
- TX Association of Professional Geoscientists, Conference on Hydraulic Fracturing and Environmental Implications, Nov. 12, 2014.
- Association of Environmental and Engineering Geologists, TX Chapter, Fall 2014 regional meeting, Oct. 10, 2014.
- Environmental Education Lecture Series, C.C. Young Senior Living, Sept. 10, 2014.
- KERA and ImpactTexas, National Public Radio, panel discussion on North Texas Earthquakes, Azle High School, June 18, 2014.
- Turtle Creek Breakfast Club, Dallas Country Club, Apr. 2, 2014.

Response to media requests – local, national and international coverage

Al Jazeera America – TechKnow Science Program: Discussed North Texas earthquakes for a 10-15-minute long program on induced or potentially induced seismicity. Aired Nov 2014.

K-12+ Outreach Activities

- Medlin Middle School, STEM day, May 23, 2022.
- Mansfield STEM Academy, 2019.
- Cistercian Abbey School, facilitated and designed materials on North Texas earthquake location; Quinones, Kwong (SMU), Young (TexNet) and McCartney (Pioneer Resources) presented, October 10, 2018.
- Irving ISD Travis Middle School, pre-AP Mathematics classes, Where's it Rockin': Irving-Dallas earthquake epicenter location exercise, Jan. 7, 2016. SMU campus day-long visit Feb. 26, 2016.
- Azle Public Library, Science Activity Afternoon, June 19, 2014.

SMU Summer Research Intensive, brownbag presentation, July 13, 2022.

II. New Madrid Seismic Zone

IRIS Active Earth Display module on the New Madrid Seismic Zone, developed paleoseismology section and serve as contact person with IRIS developers. The display went live in late 2011.

K-12+ Outreach Activities

- Filmed textbook supplement for Untamed Science. Topic was the New Madrid Seismic Zone. March 11, 2009.
- Workshop leader for the Expanding Your Horizons/GEMS (Girls Empowered by Math and Science) program, Where's it Rockin': New Madrid epicenter location exercise, with Beatrice Magnani. American Association of University Women, AAUW - Memphis Branch & University of Memphis, Herff College of Engineering, Oct. 18, 2008.

III. K-12+ Outreach Activities, miscellaneous

- Talk to a Scientist, Mt. Laurel Elementary School, New Jersey, 4th grade, Dec. 16, 2020.
- Dallas County Community Colleges STEM Summit, Guest Presentation on Opportunities in Geophysics, April 21, 2017.
- Richardson ISD Merriman Park Elementary School,
 - o Career Day, 4th-6th grades, May 28, 2019
 - o Career Day, K-3rd grade, May 27, 2016
 - o Panther Pals Math Tutor, Kindergarten, Spring 2015
- Science Fair Judge, 5th grade, Crosswinds Elementary School, Collierville, TN, January 28, 2010.

- Special Programs Teacher, Earthquakes module in the COSMOS program (California high school student summer program for Science and Mathematics), Summer 2000.

ABSTRACTS (last 5 years)

- Aziz Zanjani, A., H.R. DeShon, L. Binetti, A. Savvaidis, and F. Aziz Zanjani (2023), Insights into spatiotemporal evolution of induced seismicity in the Delaware Basin near Pecos, Texas, S51C-0225, 2023 American Geophysical Union, San Francisco, CA, Dec. 11-15.
- DeShon, H.R., M.B. Magnani, J.I. Walter and P. Neupane (2023) Where Are the Faults? Using Earthquakes and Imaging to Map Faults in the New Madrid Seismic Zone and Surrounding Region, Central United States, T14B-08, 2023 American Geophysical Union, San Francisco, CA, Dec. 11-15.
- Neupane, P., H.R. DeShon, J.I. Walter and R. Ng, (2023) Focal Mechanisms of Earthquakes from 2012 to 2021 in New Madrid Seismic Zone, T11D-0194, 2023 American Geophysical Union, San Francisco, CA, Dec. 11-15.
- Rosenblit, J., H.R. DeShon, and A. Savvaidis, Investigating Induced Seismicity in the Midland Basin, Texas, Using Converted Phases, S51C-0226, 2023 American Geophysical Union, San Francisco, CA, Dec. 11-15.
- Sharma, J., S. Arrowsmith, C. Hayward, H.R. DeShon, and A Chavarria (2023), Measuring Earthquakes with Distributed Acoustic Sensing using Dark Fiber in Urban Environments: Application to the Dallas Fort-Worth Area, S41E-0360, 2023 American Geophysical Union, San Francisco, CA, Dec. 11-15.
- Aziz Zanjani, A., H.R. DeShon, L. Binetti (2023), Bridging the Data Gap and Relocation Errors for Improved Spatiotemporal Evaluation of Induced Seismicity in the Delaware Basin. 2023 Spring Meeting, Seismological Society of America, San Juan, Puerto Rico, 17-21 Apr.
- DeShon, H.R., Walter, J., Neupane, P., Ng, R. (2023), Machine-Learning Detection and Waveform Correlation to Probe New Madrid Seismogenesis, 2023 Spring Meeting, Seismological Society of America, San Juan, Puerto Rico, 17-21 Apr.
- Rosenblit, J.M., H. DeShon, A. Savvaidis (2023), Investigating Complex Triggering in the Midland Basin, Texas, Using Converted Phases, 2023 Spring Meeting, Seismological Society of America, San Juan, Puerto Rico, 17-21 Apr.
- Aziz Zanjani, A., L. Binetti, H.R. DeShon (2022), Calibrated locations for induced earthquakes in the Delaware Basin, Texas, spanning 2009-2017, 2022 American Geophysical Union, Chicago, IL, Dec. 12-16.
- DeShon, H.R., A. Aziz Zanjani, K. Sabunis, J. Rosenblit and C.M. Justiniano Velez (2022), Exploring machine learning based detectors for induced earthquakes and complex network geometries in the oil and gas fields of Texas and Oklahoma, 2022 American Geophysical Union, Chicago, IL, Dec. 12-16.
- Justiniano Velez, C.M., A. Aziz Zanjani, H.R. DeShon (2022), A Deep Learning Approach for Induced Seismicity in Azle-Reno, north Texas, 2022 American Geophysical Union, Chicago, IL, Dec. 12-16.
- Quinones, L. and H.R. DeShon (2022), The Potential Causes and Evolution of the Dallas-Irving, Texas Earthquake Sequence, SPE/SEG Injection Induced Seismicity Workshop: A Decade of Learnings, panel member, breakout leader, Austin, TX, June 7-9.
- DeShon, H.R., L. Quinones, J. Rosenblit (2021), An Expanded Template-based Earthquake Catalog and Coupled Geomechanical Model for the Fort Worth Basin, Texas, 2021 American Geophysical Union Meeting.
- Jeong, S., B. Stump, H. DeShon (2021), Comparison of Site Amplifications Estimated Using Three Techniques in the Fort Worth Basin, Texas, 2021 Spring Meeting, Seismological Society of America, Virtual, 19-23 Apr.
- Quinones, L. and H. DeShon (2021), Modeling Injection Induced Stress Changes in the Fort Worth Basin, 2021 Spring Meeting, Seismological Society of America, Virtual, 19-23 Apr.

- Jeong, S., B.W. Stump, H.R. DeShon (2020), Stress Drop Changes with Distance from Disposal Wells in the Fort Worth Basin, Texas, S058-04, 2020 Fall Meeting, American Geophysical Union, Virtual, Dec. 1-17.
- Newman, A. M. Protti, S. Schwartz, T Dixon and 12 others (2020), Two Decades of Geodetic and Seismological Insight into the Seismogenic Zone: A View from Nicoya, Costa Rica, T006-03, 2020 Fall Meeting, American Geophysical Union, Virtual, Dec. 1-17.
- Quinones, L., H.R. DeShon, and J. Park (2020), Shear Wave Splitting and Pore Fluid Pressure in Northern Oklahoma Using the Community Wavefields Experiment Array, S011-0010, 2020 Fall Meeting, American Geophysical Union, Virtual, Dec. 1-17.
- DeShon, H.R. and C. Hayward (2020), Toward a Regional 3D Velocity Model for the Fort Worth Basin Using Local and Regional Arrival Times and Converted Waves, [abstract and ideas within published online in *Seismological Research Letters*], 2020 Spring Meeting, Seismological Society of America, COVID-related cancellation.
- DeShon, H.R., L. Quinones, S. Jeong, and B.W. Stump (2019), Lessons from Fort Worth Basin Induced Earthquake Sequences, S11B-01, 2019 Fall Meeting, American Geophysical Union, San Francisco, CA, Dec. 9-13.
- Jeong, S., B.W. Stump, H.R. DeShon (2019), Spectral Characteristics of Ground Motion from Induced Earthquakes in the Fort Worth Basin, Texas Using the Generalized Inversion Technique, S13E-0491, 2019 Fall Meeting, American Geophysical Union, San Francisco, CA, Dec. 9-13.
- Martone, P., H.R. DeShon, A. Savvaidis (2019), Analysis of the Same Data Set Using Different Approaches to Characterize Seismicity in Dallas-Fort Worth, Texas, S41H-0628, 2019 Fall Meeting, American Geophysical Union, San Francisco, CA, Dec. 9-13.
- Moore-Driskell, M.M., H.R. DeShon and R. Harris (2019), Seismogenic Zone Characteristics Along the Nicaragua/Costa Rica Subduction Zone, T51F-0342, 2019 Fall Meeting, American Geophysical Union, San Francisco, CA, Dec. 9-13.
- Quinones, L.A., H.R. DeShon, P. Hennings, E. Horne, and R. Gao (2019), Modeling Injection Induced Stress Changes in the Fort Worth Basin, S12A-06, 2019 Fall Meeting, American Geophysical Union, San Francisco, CA, Dec. 9-13.
- DeShon, H.R. (2019), A summary of induced earthquake studies in the Fort Worth Basin (invited), SPE/SEG Workshop: Injection Induced Seismicity–The Next Chapter, Dallas, TX, November 12-14.
- DeShon, H.R., L. Quinones and O. Surfri (2019), Lessons from Fort Worth Basin Induced Earthquake Sequences (invited), AAPG Southwest Section 2019 Annual Convention and Exhibition, Irving, TX, April 6-9.
- Sufri, O., H.R. DeShon, L. Quinones (2019), Imaging the faults using Double Difference Relocation in Azle-Reno, TX, AAPG Southwest Section 2019 Annual Convention and Exhibition, Irving, TX, April 6-9.
- Morris, A.P., P. Hennings, H. DeShon, A.M. Price (2019), Quantifying fault stability in the Fort Worth Basin, Texas, AAPG 2019 Annual Convention and Exhibition, San Antonio, TX, 2019.
- DeShon, H. R., Quinones, L., Sufri, O., Arrowsmith, S., Savvaidis, A., Hayward, C. (2019), Exploring Hypocenter Uncertainty in the Fort Worth Basin, North Texas. 2019 Spring Meeting, Seismological Society of America, Seattle, WA, 23-26 April.

LEAVE HISTORY: Research Leave Aug.-Dec. 2020 (Fall term); Maternity Leave 9 March 2015 (8 weeks); Maternity Leave 6 April 2009 (6 weeks, U Memphis)