

Curriculum Vitae

Kelly Hong Liu, Professor

Department of Earth Sciences and Engineering

Missouri University of Science and Technology (Missouri S&T), Rolla, MO 65409, USA

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EDUCATION

Ph.D., 1998. Geophysics and Space Physics. Department of Earth and Space Sciences, University of California, Los Angeles (UCLA). Dissertation: Path and site effects on localized damage caused by the 1994 Northridge earthquake. Committee members: Paul Davis (Chair), William Kaula, Leon Knopoff, and John Vidale

MS, 1993. Geophysics and Space Physics. Department of Earth and Space Sciences, UCLA. Advisor: Paul Davis

BS, 1984. Exploration Geophysics. China University of Petroleum, P.R. China

WORK EXPERIENCE

09/2023-present, Head, Geology & Geophysics Program

09/2022-8/31/2023, Associate Chair for Research, ESE

09/2022-8/31/2023, Interim Head, Geology & Geophysics Program

09/2010-present, Professor, Geology and Geophysics Program, S&T

08/2006-08/2010, Associate Professor (tenured), Geology and Geophysics Program, S&T

2016-6/2025: Senior investigator, Rock Mechanics and Explosives Research Center

07/2005-08/2006, Associate Professor (tenured), Department of Geology, Kansas State University (K-State)

08/2000-06/2005, Assistant Professor, Department of Geology, K-State

08/1999-08/2000, Research Assistant Professor, Department of Geology, K-State

05/1998-08/1999, Post-doctoral Associate, Department of Terrestrial Magnetism, Carnegie Institution of Washington (CIW). Advisor: Paul Silver

02/1997-05/1998, Pre-doctoral Fellow, Department of Terrestrial Magnetism, CIW. Advisor: Paul Silver

09/1992-05/1998, Graduate Research Assistant, UCLA

11/1990-08/1992, Visiting Scholar, UCLA

07/1984-10/1990, Faculty of Exploration Geophysics, China University of Petroleum

HONORS AND AWARDS

- S&T Faculty Service Award (one of 3), 2022
- Outstanding Educator Award, Society of Exploration Geophysicists, 2021. Established in 1930, SEG is an international organization with over 14,000 members from 114 countries. Every year, SEG only selects 1 or 2 Outstanding Educator recipients.
- S&T College of Engineering and Computing Dean's Educator (one of 3), 2020

- S&T Faculty Teaching Award (one of 7), 2020
- Elected Fellow, Geological Society of America (GSA), 2017. Established in 1888, GSA is an international organization with over 22,000 members from 115 countries. Citation: "... has been a leader in using seismic data to determine crust and mantle structure. Especially using shear wave splitting and seismic anisotropy to determine the nature of tectonic environments."
- One of the five S&T Faculty Excellence award recipients, 2016
- S&T Outstanding Teaching Award, 2007-2008, 2015-2016; 2017-2018; 2018-2019
- S&T Mines and Metallurgy Academy Senior Faculty Award, 2016

EDITORIAL ROLES

- Editor-in-Chief, Invited as an Editor-in-Chief for the Journal of Applied Geophysics from 1/2023-present.
- Associate editor for the Frontier in Earth Science, 8/2023-present.
- Associate editor for the Journal of Geophysical Research-Solid Earth, 1/2017-12/2021.

RESEARCH ACTIVITIES

My research includes two major areas:

The primary research of my research is to image the internal structure of the Earth, aiming to understand its dynamic processes and the mechanisms behind geohazards such as earthquakes and volcanoes. My specific interests lie in several key subdomains of solid-earth geophysics, including the seismic anisotropy of the Earth's crust and mantle, as well as the stratified composition of the Earth's interior. Together with other researchers in geophysics at S&T, we have established the first uniform shear wave splitting parameter database for North America.

The second research area is utilizing seismic data to image subsurface structure to understand depositional environment and hydrocarbon potential. Seismic attributes associated with time, amplitude, frequency, and attenuation are extracted and integrated with petrophysical information for oil and gas reservoir characterization and property mapping.

REFEREED JOURNAL PUBLICATIONS

- Present or former graduate students/postdocs advised or co-advised are underlined.

127. Wang, T., Chen, L., Gao, S.S., & **Liu, K.H.** (2025). Deciphering a quantitative relationship between rifting and crustal melt fraction: insights from the incipient Okavango Rift Zone, Geophysical Research Letters, 52, e2024GL111814. <https://doi.org/10.1029/2024GL111814>

126. Wolf, J., Becker, T.W., Garnero, E., **Liu, K.H.**, & West, J.D. (2025). Comprehensive global dataset of uniformly processed shear-wave splitting measurements. *Geophysical Journal International*, **241**(2), 863-875. <https://doi.org/10.1093/gji/ggaf076>
125. Wang, T., Wang, X., Chen, L., Yu, Z., Hu, S., Gao, S.S., & **Liu, K.H.** (2024). 3D shear wave velocity and radial anisotropy structure of the African Okavango Rift and adjacent regions. *Chinese Journal of Geophysics*, **67**(10), 3796-3813. <http://www.geophy.cn/en/article/doi/10.6038/cjg2024S0363>
124. Miao, Z., Gao, S.S., Sun, M., & **Liu, K.H.** (2024). Topography of the 410 and 660 km Discontinuities Beneath the Tibetan Plateau and Adjacent Areas. *Earth and Planetary Science Letters*, **644**. <https://doi.org/10.1016/j.epsl.2024.118947>
123. Shen, C., Gao, S.S., Kong, F.S., & **Liu, K.H.** (2024). Tectonic implications of seismic anisotropy layering beneath the southern Tibetan Plateau revealed by integrated shear wave splitting and receiver function analyses. *Journal of Geophysical Research: Solid Earth*, **129**, e2024JB029268. <https://doi.org/10.1029/2024JB029268>
122. Jia, Y., Gao, S.S., & **Liu, K.H.** (2024). Spatial and temporal variations of seismic azimuthal anisotropy following the 2019 Ridgecrest earthquake sequence in southern California. *Earth and Planetary Science Letters*, **644**. <https://doi.org/10.1016/j.epsl.2024.118920>
121. Wang, T., Gao, S.S., **Liu, K.H.**, K. Mickus, & Chen, L. (2024). Lithospheric evolution of the South-Central United States constrained by joint inversion of receiver functions and surface wave dispersion. *Journal of Geophysical Research: Solid Earth*, **129**, e2023JB026874. <https://doi.org/10.1029/2023JB026874>
120. Wang, D., Gao, S.S., Liao, Y., & **Liu, K.H.** (2024). A tilted broad plume underneath the Greenland cratonic keels. *Geophysical Research Letters*, **51**, e2023GL107360. <https://doi.org/10.1029/2023GL107360>
119. Li, S., Kong, F., **Liu, K.H.**, & Gao, S.S. (2024). Layered mantle flow field associated with plate kinematics and slab modulation underneath the horseshoe-shaped Banda arc-islands. *Journal of Geophysical Research: Solid Earth*, **129**, e2023JB027694. <https://doi.org/10.1029/2023JB027694>
118. Zheng, T., Gao, S.S., Ding, Z., **Liu, K.H.**, Chang, L., Fan, X., Kong, F., & Yu, Y. (2024). Crustal deformation associated with the Tan-Lu Fault Zone in East China revealed by receiver function analysis. *Tectonophysics*, **816**, 229014. <https://doi.org/10.1016/j.tecto.2021.229014>
117. Fan, E., Ai, Y., Gao, S.S., He, Y., **Liu, K.H.**, Jing, M., Hou, G., Yang, S., Mon, C.T., Thant, M., & Sein, K. (2024). Mantle flow and olivine fabric transition in the Myanmar continental subduction zone. *Geology*, <https://doi.org/10.1130/G51698.1>
116. Yu, Y., Tilmann, F., Gao, S.S., **Liu, K.H.**, & Xi, J. (2023). Insights into initial continental breakup of marginal seas from seismic evidence for slab relics in the mid-mantle of the Woodlark rift, southwestern Pacific. *Geology*, **51**(12), 1117-1121. <https://doi.org/10.1130/G51528.1>

115. Xue, T., Peng, D., **Liu, K.H.**, Obrist-Farner, J., Locmelis, M., Gao, S.S., & Liu, L.J. (2023). Ongoing fragmentation of the subducting Cocos slab, Central America. *Geology*, **51**(12), 1101-1105. <https://doi.org/10.1130/G51403.1>
114. Kong, F., Gao, R., Gao, S.S., **Liu, K.H.**, Ding, W., Niu, X., Ruan, A., Tan, P., Fan, J., Lu, S., Tong, Z., Gong, W., Zhao, Y., & Li, J. (2023). Mantle flow underneath the South China Sea revealed by seismic anisotropy. *National Science Review*, **10**. <https://doi.org/10.1093/nsr/nwad176>
113. Ba, K., Gao, S.S., Song, J., & **Liu, K.H.** (2023). Seismic azimuthal anisotropy beneath a fast moving ancient continent: Constraints from shear wave splitting analysis in Australia. *Journal of Geophysical Research: Solid Earth*, **128**, e2022JB025866. <https://doi.org/10.1029/2022JB025866>
112. Song, J., Gao, S.S., **Liu, K.H.**, Sun, M., Yu, Y., Kong, F., & Mickus, K. (2022). Crustal structure and subsidence mechanism of the intracratonic Williston Basin: New constraints from receiver function imaging. *Earth and Planetary Science Letters*, **593**, 117686. <https://doi.org/10.1016/j.epsl.2022.117686>
111. Liu, L., Gao, S.S., **Liu, K.H.**, Griffin, W.L., Li, S.-Z., Tong, S.-Y., & Ning, J. (2022). Mantle dynamics of the North China Craton: new insights from mantle transition zone imaging constrained by P-to-S receiver functions. *Geophysical Journal International*, **231**, 629-637. <https://doi.org/10.1093/gji/ggac210>
110. Liu, L., Gao, S.S., **Liu, K.H.**, Xue, T., Jia, Y., & Li, S. (2022). A database of teleseismic shear-wave splitting measurements for the Ordos Block and adjacent areas. *Seismological Research Letters*, **93**(5), 2731-2739. <https://doi.org/10.1785/0220210310>
109. Kong, F., Gao, S.S., **Liu, K.H.**, & Li, J. (2022). Potassic volcanism induced by mantle upwelling through a slab window: Evidence from shear wave splitting analyses in central Java. *Journal of Geophysical Research: Solid Earth*, **127**, e2021JB023719. <https://doi.org/10.1029/2021JB023719>
108. Wang, T., Gao, S.S., Yang, Q., Chen, L., & **Liu, K.H.** (2022). Lithospheric structure underneath the Archean Tanzania Craton and Adjacent Regions from a joint inversion of receiver functions and Rayleigh-wave Phase velocity dispersion. *Seismological Research Letters*, **93**(3), 1753-1767. <https://doi.org/10.1785/0220210296>
107. Yu, Y., Tilmann, F., Zhao, D., Gao, S.S., & **Liu, K.H.** (2022). Continental break-up under a convergent setting: Insights from P wave radial anisotropy tomography of the Woodlark Rift in Papua New Guinea, *Geophysical Research Letters*, **49**, e2022GL098086. <https://doi.org/10.1029/2022GL098086>
106. Kong, F., Gao, S.S., **Liu, K.H.**, Fang, Y., Zhu, H., Stern, R.J., & Li, J. (2022). Metastable olivine within oceanic lithosphere in the uppermost lower mantle, *Geology*, **50**(7), 776-780. <https://doi.org/10.1130/G49879.1>
105. Sun, M., Yu, Y., Gao, S.S., & **Liu, K.H.** (2022). Slab stagnation and tearing of the subducting Northwest Pacific plate, *Geology*, **50**(6), 676-680. <https://doi.org/10.1130/G49862.1>

104. Yang, Q., Liu, K.H., Wang, T., Song, J., & Gao, S.S. (2021). Crustal and upper mantle structure beneath the southeastern United States from joint inversion of receiver functions and Rayleigh wave dispersion. *Journal of Geophysical Research: Solid Earth*, **126**, e2021JB021846. <https://doi.org/10.1029/2021JB021846>
103. Fan, E., He, Y., Ai, Y., Gao, S.S., Liu, K.H., Jiang, M., Hou, G., Mon, C.T., Thant, M., & Sein, K. (2021). Seismic anisotropy and mantle flow constrained by shear wave splitting in central Myanmar. *Journal of Geophysical Research: Solid Earth*, **126**, e2021JB022144. <https://doi.org/10.1029/2021JB022144>
102. Yang, Y., Gao, S.S., Liu, K.H., Kong, F., & Fu, X. (2021). Mantle flow in the vicinity of the eastern edge of the Pacific-Yakutat Slab: Constraints from shear wave splitting analyses. *Journal of Geophysical Research: Solid Earth*, **126**, e2021JB022354. <https://doi.org/10.1029/2021JB022354>
101. Zheng, T., Gao, S.S., Ding, Z., Liu, K.H., Chang, L., Fan, X., Kong, F., & Yu, Y. (2021). Crustal azimuthal anisotropy and deformation beneath the northeastern Tibetan Plateau and adjacent areas: Insights from receiver function analysis. *Tectonophysics*, **816**, 229014. <https://doi.org/10.1016/j.tecto.2021.229014>
100. Yu, Y., Xu, Z., Gao, S.S., Liu, K.H., & Gao, J. (2021). Layered mantle heterogeneities associated with post-subducted slab segments. *Earth and Planetary Science Letters*, **571**, 117115. <https://doi.org/10.1016/j.epsl.2021.117115>
99. Jia, Y., Liu, K.H., Kong, F., Liu, L., & Gao, S.S. (2021). A systematic investigation of piercing point dependent seismic azimuthal anisotropy. *Geophysical Journal International*, **227(3)**, 1496-1511. <https://doi.org/10.1093/gji/ggab285>
98. Qu, J., Gao, S.S., Wang, C., Liu, K.H., Zhou, S., Yang, Y., Sui, Y., & Zhang, Z. (2021). Crustal P-wave velocity structure and earthquake distribution in the Jiaodong Peninsula, China *Tectonophysics*, **814**, 228973. <https://doi.org/10.1016/j.tecto.2021.228973>
97. Shrivastava, A., Liu, K.H., & Gao, S.S. (2021). Teleseismic P-wave Attenuation Beneath the Southeastern United States, *Geochemistry, Geophysics, Geosystems*, **22**, e2021GC009715. <https://doi.org/10.1029/2021GC009715>
96. Wang, T., Gao, S.S., Yang, Q., & Liu, K.H. (2021). Crustal structure beneath the Ethiopian Plateau and adjacent areas from receiver functions: Implications for partial melting and magmatic underplating. *Tectonophysics*, **809**, 228857. <https://doi.org/10.1016/j.tecto.2021.228857>
95. Jiang, E., Liu, K.H., Gao, Y., Fu, X., & Gao, S.S. (2021). Spatial variations of upper crustal anisotropy along the San Jacinto fault zone in southern California: Constraints from shear wave splitting analysis. *Journal of Geophysical Research: Solid Earth*, **126**, e2020JB020876. <https://doi.org/10.1029/2020JB020876>
94. Song, W., Yu, Y., Gao, S.S., Liu, K.H., & Fu, Y. (2021). Seismic anisotropy and mantle deformation beneath the central Sunda plate. *Journal of Geophysical Research: Solid Earth*, **126**, e2020JB021259. <https://doi.org/10.1029/2020JB021259>

93. Lin, Y., Zhang, T. & Liu, K.H. (2021). Turbidite lobe deposits in a canyon-fill system, *Interpretation*, 9, C17-C21. <http://dx.doi.org/10.1190/INT-2020-0111.1>
92. Sun, M., Gao, S.S., Liu, K.H., Mickus, K., Fu, X., & Yu, Y. (2021). Receiver function investigation of crustal structure in the Malawi and Luangwa Rift Zones and adjacent areas. *Gondwana Research*, 89, 168-176. <https://doi.org/10.1016/j.gr.2020.08.015>
91. Kong, F., Gao, S.S., Liu, K.H., Ding, W.W., & Li, J. (2020). Slab Dehydration and Mantle Upwelling in the Vicinity of the Sumatra Subduction Zone: Evidence from Receiver Function Imaging of Mantle Transition Zone Discontinuities. *Journal Geophysical Research-Solid Earth*, 125, e2020JB019381. <https://doi.org/10.1029/2020JB019381>
90. Yu, Y., Gao, S.S., & Liu, K.H. (2020). Topography of the 410 and 660 km discontinuities beneath the Cenozoic Okavango rift zone and adjacent Precambrian provinces. *Journal Geophysical Research-Solid Earth*, 125, e2019jb019290. <https://doi.org/10.1029/2019JB019290>
89. Zhang, T., Lin, Y., Liu, K.H., & Gao, S.S. (2020). Pre-stack simultaneous inversion for delineation of the Lower Wilcox erosional remnant sandstone beneath the Texas Gulf Coastal Plain: A case study. *Interpretation*, 8(4). <https://doi.org/10.1190/int-2019-0178.1>
88. Zeng, C., Deng, W., Fan, J. & Liu, K.H. (2020). Reply to “Investigation of the resonance of nonwetting droplets in constricted capillary tubes”, *Geophysics*. <https://doi.org/10.1190/geogeo-2020-0561.1>
87. Gao, J., Yu, Y., Song, W., Gao, S.S., & Liu, K.H. (2020). Crustal modifications beneath the central Sunda plate associated with the Indo-Australian subduction and the evolution of the South China Sea. *Physics of the Earth and Planetary Interiors*, 306. <https://www.sciencedirect.com/science/article/pii/S0031920120301242>
86. Kong, F., Gao, S.S., Liu, K.H., Zhang, J., & Li, J. (2020). Seismic anisotropy and mantle flow in the Sumatra subduction zone constrained by shear wave splitting and receiver function analyses. *Geochemistry Geophysics Geosystems*, 21, e2019GC008766. <https://doi.org/10.1029/2019GC008766>
85. Yu, Y., Gao, S.S., Zhao, D., & Liu, K.H. (2020). Mantle structure and flow beneath an early-stage continental rift: Constraints from P-wave anisotropic tomography, *Tectonics*, 39. <https://doi.org/10.1029/2019TC005590>
84. Sun, M., Gao, S.S., Liu, K.H., & Fu, X. (2020). Upper mantle and mantle transition zone thermal and water content anomalies beneath NE Asia: Constraints from receiver function imaging of the 410 and 660 km discontinuities, *Earth and Planetary Science Letters*, 532, <https://doi.org/10.1016/j.epsl.2019.116040>
83. Ba, K., Gao, S.S., Liu, K.H., Kong, F., & Song, J. (2020). Receiver function imaging of the 410 and 660 km discontinuities beneath the Australian continent, *Geophysical Journal International*, 220, 1481-1490. <https://doi.org/10.1093/gji/ggz525>
82. Yu, Y., Gao, S.S., Liu, K.H., & Zhao, D. (2020). Foundered lithospheric segments dropped into the mantle transition zone beneath southern California, *Geology*, 48(2), 200-204. <https://doi.org/10.1130/G46889.1>

81. Zeng, C., W. Deng, J. Fan, & **Liu, K.H.** (2019). Investigation of the resonance of nonwetting droplets in constricted capillary tubes, *Geophysics*, **85**, <https://doi.org/10.1190/geo2019-0228.1>
80. Shi, Y., Y. Gao, X. Shen, & **Liu, K.H.** (2019). Multiscale spatial distribution of crustal seismic anisotropy beneath the northeastern margin of the Tibetan plateau and tectonic implications of the Haiyuan fault, *Tectonophysics*, 774, <https://doi.org/10.1016/j.tecto.2019.228274>
79. Liu, L., Gao, S.S., **Liu, K.H.**, Li, S., Tong, S., & Kong, F. (2019). Toroidal mantle flow induced by slab subduction and rollback beneath the eastern Himalayan syntaxis and adjacent areas, *Geophysical Research Letters*, **46**, 11080-11090. <https://doi.org/10.1029/2019GL084961>
78. Wang, T., Gao, S. S., Dai, Y., Yang, Q., & **Liu, K. H.** (2019). Lithospheric structure and evolution of southern Africa: Constraints from joint inversion of Rayleigh wave dispersion and receiver functions. *Geochemistry Geophysics Geosystems*, **20**, 3311-3327. <https://doi.org/10.1029/2019GC008259>
77. Zheng, T., Ding, Z., Ning, J., **Liu, K.H.**, Gao, S.S., Chang, L., Kong, F., & Fan, X. (2019). Crustal azimuthal anisotropy beneath the central North China Craton revealed by receiver functions. *Geochemistry Geophysics Geosystems*, **20**, 2235-2251. <https://doi.org/10.1029/2019GC008181>
76. Wang, T., Feng, J., **Liu, K.H.**, & Gao, S.S. (2019). Crustal structure beneath the Malawi and Luangwa Rift Zones and adjacent areas from ambient noise tomography. *Gondwana Research*, **67**, 187-198. <https://doi.org/10.1016/j.gr.2018.10.018>
75. Abdelnabi, A.A., Abushalah, Y., **Liu, K.H.**, & Gao, S.S. (2019). Integrated geological, geophysical, and petrophysical data to construct full field geological model of Cambrian-Ordovician and Upper Cretaceous Reservoir formations, Central Western Sirte Basin, Libya. *Interpretation*, **7**, T21-T37. <https://library.seg.org/doi/10.1190/int-2017-0236.1>
74. Kong, F., Gao, S.S., **Liu, K.H.**, Song, J., Ding, W., Fang, Y., Ruan, A., & Li, J. (2018). Receiver function investigations of seismic anisotropy layering beneath Southern California. *Journal of Geophysical Research: Solid Earth*, **123**. <https://doi.org/10.1029/2018JB015830>
73. Yu, Y., Gao, S.S., **Liu, K.H.**, Yang, T., Xue, M., Le, K.P., & Gao, J. (2018). Characteristics of the mantle flow system beneath the Indochina Peninsula revealed by teleseismic shear wave splitting analysis. *Geochemistry Geophysics Geosystems*, **19**, 1519-1532. <https://doi.org/10.1029/2018GC007474>
72. Zheng, T., Ding, Z., Ning, J., Chang, L., Wang, X., Kong, F., **Liu, K.H.**, & Gao, S.S. (2018). Crustal azimuthal anisotropy beneath the southeastern Tibetan Plateau and its geodynamic implications. *Journal of Geophysical Research: Solid Earth*, **123**, 9733-9749. <https://doi.org/10.1029/2018JB015995>
71. Kong, F., Wu, J., Liu, L., **Liu, K.H.**, Song, J., Li, J., & Gao, S.S. (2018). Azimuthal anisotropy and mantle flow underneath the southeastern Tibetan Plateau and northern

- Indochina Peninsula revealed by shear wave splitting analyses. *Tectonophysics*, **747**, 68-78.
<https://doi.org/10.1016/j.tecto.2018.09.013>
70. Qaysi, S., Liu, K.H., & Gao, S.S. (2018). A database of shear wave splitting measurements for the Arabian Plate. *Seismological Research Letters*, **89**, 2294-2298.
<https://doi.org/10.1785/0220180144>
 69. Sun, M., Fu, X., Liu, K.H., & Gao, S.S. (2018). Absence of thermal influence from the African Superswell and cratonic keels on the mantle transition zone beneath southern Africa: Evidence from receiver function imaging. *Earth and Planetary Science Letters*, **503**, 108-117. <https://doi.org/10.1016/j.epsl.2018.09.012>
 68. Sun, M., Liu, K. H., Fu, X., & Gao, S. S. (2017). Receiver function imaging of mantle transition zone discontinuities beneath the Tanzania Craton and adjacent segments of the East African Rift System. *Geophysical Research Letters*, **44**.
<https://doi.org/10.1002/2017GL075485>
 67. Lemnifi, A. A., Elshaafi, A., Browning, J., Aouad, N. S., El Ebaidi, S. K., Liu, K. H., & Gudmundsson, A. (2017). Crustal thickness beneath Libya and the origin of partial melt beneath AS Sawda Volcanic Province from receiver function constraints. *Journal of Geophysical Research: Solid Earth*, **122**. <https://doi.org/10.1002/2017JB014291>
 66. Dahm, H. H., Gao, S. S., Kong, F., & Liu, K. H. (2017). Topography of the mantle transition zone discontinuities beneath Alaska and its geodynamic implications: Constraints from receiver function stacking. *Journal of Geophysical Research: Solid Earth*, **122**.
<https://doi.org/10.1002/2017JB014604>
 65. Reed, C.A., K.H. Liu, Y. Yu, and S.S. Gao (2017), Seismic anisotropy and mantle dynamics beneath the Malawi Rift Zone, East Africa, *Tectonics*, **36**, 1-14,
<https://doi.org/10.1002/2017TC004519>
 64. Yu, Y., S.S. Gao, K.H. Liu, T. Yang, M. Xue, and K.P. Le (2017), Mantle transition zone discontinuities beneath the Indochina Peninsula: Implications for slab subduction and mantle upwelling, *Geophysical Research Letters*, **45**, <https://doi.org/10.1002/2017GL073528>
 63. Yu, Y., T.D. Hung, T. Yang, M. Xue, K.H. Liu, and S.S. Gao, (2017), Lateral variations of crustal structure beneath the Indochina Peninsula, *Tectonophysics*, **712-713**, 193-199,
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 62. Liu, L., S.S. Gao, K.H. Liu, and K. Mickus (2017), Receiver function and gravity constraints on crustal structure and vertical movements of the Upper Mississippi Embayment and Ozark Uplift, *Journal of Geophysical Research*, **122**, doi: 10.1002/2017JB014201.
 61. Yang, B.B., Y. Liu, H. Dahm, K.H. Liu, and S.S. Gao (2017), Seismic azimuthal anisotropy beneath the eastern United States and its geodynamic implications, *Geophysical Research Letters*, **44**, 2670-2678, doi: 10.1002/2016GL071227.
 60. Yu, Y., K.H. Liu, Z. Huang, D. Zhao, C.A. Reed, M. Moidaki, J. Lei, and S.S. Gao (2017), Mantle structure beneath the incipient Okavango Rift Zone in southern Africa, *Geosphere*, **13**, 102-111, doi: 10.1130/GES0131.1.

59. Reed, C.A., **K.H. Liu**, P. Chindandali, B. Massingue, H. Mdala, D. Mutamina, Y. Yu, and S.S. Gao (2017), Passive rifting of thick lithosphere in the southern East African Rift: Evidence from mantle transition zone discontinuity topography, ***Journal of Geophysical Research***, **121**, 8068-8079, doi: 10.1002/2016JB013131.
58. Cherie, S.G., S.S. Gao, **K.H. Liu**, A.A. Elsheikh, F.S. Kong, C.A. Reed, and B.B. Yang (2016), Shear wave splitting analyses in Tian Shan: Geodynamic implications of complex seismic anisotropy, ***Geochemistry Geophysics Geosystems***, **17**, 1975-1989, doi:10.1002/2016GC006269.
57. Reed, C.A., S.S. Gao, **K.H. Liu**, and Y. Yu (2016), The mantle transition zone beneath the Afar Depression and adjacent regions: Implications for mantle plumes and hydration, ***Geophysical Journal International***, doi:10.1093/gji/ggw116.
56. Kong, F.S., J. Wu, **K.H. Liu**, and S.S. Gao (2016), Crustal anisotropy and ductile flow beneath the eastern Tibetan Plateau and adjacent areas, ***Earth and Planetary Science Letters***, **442**, 72-79. doi: 10.1016/j.epsl.2016.03.003.
55. Yang, B.B., **K.H. Liu**, H.H. Dahm, and S.S. Gao (2016), A uniform database of teleseismic shear wave splitting measurements for the western and central United States: December 2014 update, ***Seismological Research Letters***, **87**, No. 2A, doi: 10.1785/0220150213.
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FUNDED RESEARCH GRANTS

At Missouri S&T

Towards the Establishment of an Institute for Catastrophic Event Prediction (iCEP), **Missouri S&T The Ignition Grant Initiative (IGI)**, \$32,000. 1/1/2023-6/30/2023. **PI**. Share: 100%.

A numerical modeling study of the thermal evolution of young continental rifts, **American Chemical Society Petroleum Research Fund**, \$110,000. 8/1/2022-8/31/2024. **PI**. Share: 100%. More than \$90,000 budget are for graduate students.

Nature of a low velocity anomaly in the mantle transition zone beneath the western Great Plains, **National Science Foundation-Geophysics**, \$189,117. 1/1/2022-12/31/2024. **PI**. Share: 100%

Investigating the pervasiveness of complex seismic anisotropy and its geodynamic significance beneath continents, **National Science Foundation-Geophysics**, \$211,946. 8/1/2018-7/31/2020. **PI**. Share: 50%.

Investigating the pervasiveness of complex seismic anisotropy and its geodynamic significance beneath continents, supplements, **National Science Foundation-Research Experiences for Undergraduates**, \$16,500. 6/1/2019-7/31/2021. **PI**. Share: 50%.

Passive seismic investigations for the formation mechanisms of intracratonic basins, **American Chemical Society Petroleum Research Fund**, \$110,000. 8/1/2015-8/31/2018. **PI**. Share: 100%. More than \$90,000 budget are for graduate students and a postdoc.

Collaborative Research: Shear-wave splitting and mantle dynamics of the North American Plate, **National Science Foundation-EarthScope**, \$191,512. 7/15/2015-2/28/2018. **PI**. Share: 50%.

Collaborative Research: Desert Eyes: Origin and evolution of enigmatic domes and basins in the stable platform of Egypt, **National Science Foundation-International Research Experiences for Students (IRES)**, \$86,670, 4/1/2011-6/30/2016. **co-PI**. Share: 50%.

Upgrade of geophysics computing facilities at Missouri University of Science and Technology, **National Science Foundation-IF**, \$74,209. 1/1/2014-12/31/2014. **co-PI**. Share: 33%.

A joint study of geology and subsurface structure beneath Libya, **Benghazi University**, \$99,434. 10/1/2012-9/30/2014. **PI**. Share: 75%.

A uniform and comprehensive shear-wave splitting data set for North America: Western and Central United States, **Incorporated Research Institutions for Seismology**, \$25,000. 7/15/2013-6/30/2014. **PI**. Share: 50%.

Comprehensive analyses of broadband seismic data recorded in the Afar Depression, Ethiopia, **Statoil**, \$451,684. 10/1/2012-3/30/2015. **co-PI**. Share: 50%.

Collaborative research: Integrated studies of early stages of continental extension: From incipient (Okavango) to young (Malawi) rifts, **National Science Foundation-CD**, \$1,024,210. 5/1/2011-4/30/2015. **co-PI**. Share: 25%.

Detection of hidden impact craters using receiver functions, *University of Missouri Research Board*, \$24,000. 6/1/2011-5/31/2012. **co-PI**. Share: 50%.

Four-dimensional anatomy of continental rifts transitioning into sea floor spreading, *Statoil*, \$309,312. 2/1/2011-12/31/2013. **co-PI**. Share: 25%.

Kingdom suite seismic interpretation system site licenses, *Seismic Micro-Tech*, \$4,681,425. 1/1/2011-12/31/2013. **PI**. Share: 75% (Note: in-kind software donations, no reported expenditures).

Mantle anisotropic structure and dynamics beneath the western United States: Constraints from shear-wave splitting analysis, *National Science Foundation-EarthScope*, \$185,885. 4/1/2010-3/31/2013. **PI**. Share: 60%.

Mapping of previously mined ground for infrastructure citing purposes, *Knight Hawk Coal LLC*, \$7000, 7/1/2009-6/30/2011. Plus \$3500 match fund from the Center for Transportation Infrastructure and Safety. Role: **co-PI**. Share: 50%.

Carbon sequestration project: Reflection seismic data in Springfield, MO, *GeoEngineers, Inc.*, \$3000, 8/1/2009-7/31/2010. Role: **co-PI**. Share: 50%.

Significant and complex seismic anisotropy beneath the Himalayas and the southern Tibetan Plateau, *National Science Foundation-Geophysics*, \$124,341. 7/15/2009-7/14/2011. **PI**. Share: 60%.

Reconstructing the geological history of the Egyptian Nile, *National Science Foundation-International Research Experiences for Students (IRES)*, \$149,817. 4/1/2008-3/31/2011. **co-PI**. Share: 25%.

Four-dimensional anatomy of continental rifts transitioning into sea floor spreading, *StatioHydro ASA*, \$430,775. 4/1/2008-3/31/2011. **co-PI**. Share: 25%.

Kingdom suite seismic interpretation system site licenses, *Seismic Micro-Tech*, \$1,909,200.00. 3/15/2008-5/14/2011. **PI**. Share: 75% (Note: in-kind software donations, no reported expenditures).

Continental crustal composition and evolution, *National Science Foundation-Geophysics*, \$17,232.00, 8/24/2006-12/31/2007. **co-PI**. Share: 50%.

Testing the hypothesis of pervasive two-layer azimuthal anisotropy beneath North America, *National Science Foundation-Geophysics*, \$122,728, 1/1/2008-12/31/2009, **PI**. 100%.

A systematic shear-wave splitting measurement procedure, *University of Missouri Research Board*, \$21,000.00, 1/1/2007-12/31/2007, **PI**. Share: 60%.

At Kansas State University

Establishing a geophysical test site, *National Science Foundation-Curriculum, and Laboratory Improvement (CCLI)*, \$74,996.00, 9/15/2005-8/15/2006. **PI**. Share: 50%.

Geophysical test site on the K-State campus, *Kansas National Science Foundation EPSCoR*, \$16,896.00, 6/1/2005-3/31/2006, **PI**. Share: 60%.

An interactive computer tutorial to investigate the link between mineral preferred orientation and seismic anisotropy, **Kansas National Science Foundation EPSCoR**, \$96,799.00, 6/1/2005-3/31/2006, **Co-PI**. Share: 20%.

Establishing a geophysical test site, **National Science Foundation-Course, Curriculum, and Laboratory Improvement (CCLI)**, \$74,996.00, 9/15/2005-8/15/2006, **PI**. Share: 50%.

Geophysical test site on the K-State campus, **Kansas National Science Foundation EPSCoR**, \$16,896.00, 6/1/2005-3/31/2006, **PI**. Share: 60%.

An interactive computer tutorial to investigate the link between mineral preferred orientation and seismic anisotropy, **National Science Foundation Kansas EPSCoR**, \$96,799.00, 6/1/2005-3/31/2006, **Co-PI**. Share: 20%.

Acquisition of geophysical computing equipment, **National Science Foundation-IF**, (this award was combined with the next two proposals in the NSF system), \$41,355.00, 2/1/2005-1/31/2006, **PI**. Share: 60%.

Supplement to continental crustal composition and evolution: Constraints from receiver function analysis, **National Science Foundation -Geophysics**, \$53,441.00, 1/15/2005-12/31/2005, **Co-PI**. Share: 40%.

Continental crustal composition and evolution: Constraints from receiver function analysis, **National Science Foundation-Geophysics**, \$97,892.00, 1/1/2005-12/31/2007, **Co-PI**. Share: 40%.

Searching for seismic discontinuities in the lower mantle using broadband seismic data, **National Science Foundation-Geophysics**, \$186,108.00, 6/1/2002-5/30/2005, **PI**. Share: 60%.

USArray and the Great Plains: A Pre EARTHSCOPE workshop proposal, **National Science Foundation-Earthscope**, \$33,622.00, 5/1/2002-4/30/2003, **Co-PI**. Share: 15%.

Equipment for undergraduate field geophysics courses, **NSF-CCLI**, \$27,250.00, 12/1/2001-11/30/2002, **Co-PI**. Plus \$27,250.00 match fund from the university. Share: 40%.

Seismic study of continental Orogenic zones: The Rocky Mountains and the Midcontinent Rift, **NSF-Geophysics**, \$150,110.00, 5/1/2001-4/30/2003, **Co-PI**. Share: 40%.

High resolution imaging of mantle discontinuities across South America at 20 degree South, **NSF-Geophysics**, \$63,415.00, 6/1/2000-5/31/2002, **PI**. Share: 60%.

TEACHING

Courses Taught at Missouri S&T

- Geological Engineering 1150/Geology 1110: Physical and Environmental Geology
- Geophysics 3210: Introduction to Geophysics
- Geophysics 3211/286: Introduction to Geophysical Data Analysis
- Geophysics 4231/377: Seismic Interpretation (Proposed and developed by me)
- Geophysics 5096: Global Tectonics (co-listed with Geology 6331)
- Geophysics 5202/385: Exploration and Development Seismology
- Geophysics 5211/380: Seismic Stratigraphy
- Geophysics 5231/389: Seismic Data Processing

- Geophysics/Geological Engineering 5736: Geophysical Field Method
- Geophysics 6211/488: Advanced Seismic Interpretation
- Geophysics 6221: Advanced Geophysical Data Analysis (Proposed and developed by me)
- Geophysics 6231: Advanced Seismic Data Processing
- Geophysics 6241: Theory of Elastic Waves
- Geophysics 6251: Geophysical Inverse Theory
- Geophysics 6001: Advanced Seismology (Proposed and developed by me)
- Geology 6001: Applied Petroleum System and Analysis
- Geology 6331: Geotectonics (co-listed with Geophysics 5096)

Graduate Student Advising at Missouri S&T

Graduated 15 Ph.D. students as the major advisor (A. Atef, 2011: Head of Geophysics

Department at King Abdulaziz University, Saudi Arabia; H. Refayee, 2012: dGB Earth Sciences, USA; B. Yang, 2016: Forland Geophysical Services LLC, USA; A. Lemnifi, 2016: Mining Industry, USA; A. Abdalnabi, 2017: Petroleum Industry, Canada; A. Alhakeem, 2018: Petroleum Industry, Saudi Arabia; Y. Peng, 2018: Gbti Solutions, Inc., USA; S. Qaysi, 2018: Chair of Geology and Geophysics at King Saud University, Saudi Arabia; T. Zhang, 2019: Faculty at Chengdu University of Technology, China; Y. Lin, 2019: Faculty at Chengdu University of Technology, China; T. Wang, 2020: Post-doc at Chinese Academy of Sciences; E. Jiang, 2021: China National Oil and Gas Exploration and Development Company Ltd; A. Shrivastava, 2021: Missouri S&T; Y. Jia, 2022: Post-doc at Second Institute of Oceanography, Hangzhou, China. Cong Shen, 2024, Nanjing, China

Graduated 19 Ph.D. students as a co-advisor (L. Bashir, 2011; B. Wang, 2011; A. Elsheikh, 2014; U. Purevuren, 2014; Y. Yu, 2015; S. Cherie, 2015; F. Kong, 2016; C. Reed, 2017; L. Liu, 2018; H. Dahm, 2017; M. Sun, 2019; D. Wang, 2020; Y. Yang, 2021; Q. Yang, 2021; K. Ba, 2021; T. Xue, 2022; Y. Zhang, 2022; Zexin Miao, 2024; Yangyang Liao, 2024).

Graduated MS students with theses as the major advisor (H. Refayee, 2008; U. Aboaja, 2010; A. Abdalnabi, 2011; A. Alhakeem, 2013; A. Ibrahim, 2013; Z. Karabulut, 2013; O. Tac, 2013; M. Gepek, 2014; D. Mert, 2014; M. Ray, 2014; W. Alotaby, 2015; M. Alotaibi, 2015; E. Ersay, 2015; N. Gocer, 2015; P. Lin, 2015; T. Alzaki, 2016; J. Baldwin, 2016; G. Yagci, 2016; F. Yagci, 2016; E. Unkaracalar, 2017; Y. Demir, 2018; O. Akturk, 2018; H. Grabeel, 2018; O. Surek, 2018; B. Algarni, 2019; M. Sarikaya, 2019).

Advised/hosted post-doc and visiting researchers (Y. Gao, 2010-2011; Y. Shi, 2010-2011; D. Shi, 2011-2012; A. Mohamed, 2013; B. Belgasem, 2014; S.A. Elebaidi, 2014; S.M. Elshari, 2014; A.M. Haman, 2014; J. Wu, 2014; F. Yang, 2014, 2018; F. Kong 2016-2017).

Ph.D. student committee member for non-advisees (D. Bridges, 2011; S. Almadani, 2011; A. Dera, 2012; A. Khamzin, 2015; P. Hajiani, 2016; A. Alsaaidh, 2017; G. Alsulaimani,

2017; R. Kassim, 2017; E. Siami-Irdemoosa, 2017; N. Bashir, 2018; S. Kidanu, 2018; D. Alfuqara, 2019; M. Ba-Geri, 2019; H. Alzahrani, 2020; M. Alkhamis, 2021; X. Yuan, 2021; M. Abdalla, present; M. Abdulfarraj, present; M. Al-EBayat, present; A. Alhaj, present; A. Aljabbab, present; G. Biheri, 2024; M. Elturki, present; Y. Guan, 2023; J. Li, 2023; W. Zhang, 2024; Y. Lee, present).

MS student committee member for non-advisees (K. Abdalkadeer, 2007; G. Rodriguez, 2010; L. Lansbery, 2011; S. Shaniba, 2012; S. Cheng, 2014; S. Wu, 2014; B. Goetze, 2016; J. Clinton, 2020).

Advised 11 non-thesis MS students (I. Woo, 2008; A. Dera, 2012; A. Mohammed, 2012; D. Leach, 2012; E. Elbileikia, 2014; H. Kutuk, 2014; C. Atmaca, 2015; M. Sun, 2014; S. Dong, 2019; Y. Liu, 2019; A. BaSaloom, 2020; A. Aljabri, 2022; A. Albrrik, 2023).

Advising 4 Ph.D. students presently (N. Albrrik; A. Aljabri; R. He; Y. Liu).

Co-advising 2 Ph.D. students presently (C. Karapong; Q. Zhao).

Advising one MS student presently (G. Ali)

Note: The graduate students that I advised or co-advised were from 13 different countries (Canada, China, Ethiopia, India, Iraq, Libya, Mongolia, Pakistan, Saudi Arabia, Sudan, USA, Thailand, Turkey, Yemen).

SERVICE

SELECTED DEPARTMENT AND UNIVERSITY SERVICE

Campus Discipline Specific Curricula Committees (Engineering DSCC), Chair, 2024-present
Campus Curriculum Committee, 2024-present.

Campus Department representative to the Faculty Senate, 2021-2022; 2022-2023; 2023-2024; 2024-present.

Campus Administrative Review Committee, 2017-2018; 2018-2019; 2019-2020 (Chair); 2020-2021; 2021-2022 (Chair); 2022-2023; 2023-2024; 2024-present.

Campus CET Effective Teaching Committee, 2021-2022; 2022-2023; 2023-2024.

Campus Budgetary Affairs Committee, 2021-2023.

Campus departmental ADVANCE advocate, 2023-present.

Campus Rules, Procedures, and Agenda Committee, 2022-2022.

Campus Outstanding Teaching Awards Committee, 2021-2022.

Campus Kummer Institute Center for Advanced and Resilient Infrastructure Director Search Committee, 2021-2022.

Campus Rules, Procedures, and Agenda Committee, 2019-2020.

Campus Discipline Specific Curricula Committees (DSCC). Review course and degree proposals, 2010-2019.

Campus Promotion and Tenure Review Committee, 2017-2018.

Campus Midtenure Review Committee for a junior faculty in Physics, 2018.

Campus, Member for High Performance Computing Research Center, 2018-present.

Campus, Senior investigator for Rock Mechanics & Explosives Research Center, 2016-present.

Campus, Senior Research Investigator for Center for Research in Energy and Environment, 2011-present.

Campus, Hosted a delegate from Northeast China Petroleum University, 2018.

Campus, The initiator and faculty sponsor for the “2+2 program” with China University of Petroleum, Beijing. 2012-present.

Campus, One of the two initiators and faculty sponsors for the “2+2 program” with China University of Petroleum, Huadong. 2009-present.

Campus & College Promotion and Tenure Review Committee, 2017-2018; 2022-present.

College Promotion and Tenure Review Committee, 2022-2023; 2023-present.

College Midtenure Review Committee for one junior faculty member in CEC, 2023.

College CEC Nuclear Engineering Chair Search Committee, 2021-2022, 2022-2022.

College CEC Woodard Endowment Selection Committee, Fall 2021; Summer 2023.

College CEC Dean's Ph.D. Scholar Award Committee, Spring 2020; 2021; 2022; 2023; 2024.

College CEC Dean's Ph.D. Graduate Educator Award Committee, Spring 2020; 2021; 2022; 2023; 2024.

College Midtenure Review Committee for two junior faculty members in CEC, 2018.

College CEC Research Committee, 2018-2020.

Chair, Robert H. Quenon Chair in Mining Engineering Selection Committee, 12/2023-1/2024.

Department Promotion and Tenure Committee for one faculty, Chair, 2023.

Department Promotion and Tenure Committee for two junior faculty, 2021.

Department Promotion Review Committee, 2018.

Participated in activities for a delegate from Ocean University of China, 2018.

Faculty advisor for the Society of Exploration Geophysicists (SEG) S&T student chapter, 2008-present.

Advisor for more than 15 students in the Opportunities for Undergraduate Research Experiences (OURE) project.

Advisor, 14 completed Ph.D. students in Geology & Geophysics.

Co-Advisor, 16 completed Ph.D. students in Geology & Geophysics.

Advisor/co-Advisor, 7 Ph.D. and two MS students currently.

Advisor, 26 completed thesis-based MS students in Geology & Geophysics.

Advisor, 54 undergraduate students for undergraduate research.

Faculty advisor, Geology & Geophysics freshmen students, 2008-2016, 2019-present.

One of the two initiators and faculty sponsors for the “2+2 program” with China University of Petroleum, Huadong. 2009-present.

Faculty advisor for the S&T student Schlumberger’s Ocean Academic Competition (co-advisor: Runar Nygaard). The team placed the first in North America with a \$15,000 cash prize <http://news.mst.edu/2015/03/missouri-st-software-design-team-wins-competition/>. Members: Fansheng Kong; Yurong Li; Youqiang Yu; Jarret Baldwin.

Faculty co-advisor (advisor: Jonathan Obrist-Farner) for the S&T AAPG-IBA student competition in 2017. Team members: William Chandonia; Avikant Dayma; Yani Lin; Avery Welker; Tianze Zhang.

Faculty advisor (co-advisor: Wan Yang) for the S&T AAPG-IBA student competition in 2014. The team received an honorable mention at the Mid-continent section. Team members: Abdaila Abdelnabi; Mohamed Dushaishi; Pin Lin; Bin Sun; Youqiang Yu.

Faculty advisor (co-advisor: Wan Yang) for the S&T AAPG-IBA student competition in 2012. The team received an honorable mention at the Mid-continent section. Team members: Brock Alldredge; Zhixin Li; Jonathan Obrist-Farner; Matt Paradeis; Bin Yang.

Faculty advisor for the S&T AAPG-IBA student competition in 2010. The team received an honorable mention at the Mid-continent section. Team members: Guillermo Rodriguez-Forero; Uranbaigal Purevsure; Melissa Ray; Evgeniy Torgashov; Farag Muhammed.

Faculty advisor for the first S&T AAPG-IBA student competition in 2009. The team received an honorable mention at the Mid-continent section. Team members: Hesham Refayee; Uchenna Aboaja; Lamuail Bashir; Ali Atef; Rajesh Challa.

Judge, S&T Graduate Research Conference, 2009, 2010, 2011, 2018.

Judge, S&T Undergraduate Research Conference, 2007, 2008, 2009, 2010, 2011, 2022.

Campus, Participated in the opening week for new students each year, 2008-2015.

Advisor for Preview, Registration and Orientation (PRO). Advised incoming undergraduate students in Geology & Geophysics, usually on Saturdays, 2007-2017, 2019-present.

GGPE Faculty promotion committees, 2011, 2013, 2014, 2015.

GGPE Faculty search committee, 2011, 2014.

Geology and Geophysics weekly seminar series coordinator, 2008-2009, Fall, 2016.

Conducted a workshop, It's a girl thing, 2017.

Conducted a workshop, Jackling Introduction to Engineering, 2009, 2013, 2022.

Conducted a workshop, Minority Intro To Engineering (MITE), 2009, 2010, 2011, 2015.

Conducted a workshop, Expanding your Horizons, 2009, 2013, 2022.

Conducted a workshop for the STEM day, 2022.

Conducted a workshop for the Subsurface Engineering Camp, 2022.

Speaker on STEM, Mark Twain element school, 2007, 2008.

Speaker on STEM, Boy Scott Troop, Rolla, 2008, 2009.

SELECTED PROFESSIONAL SERVICE

Produced about 30,000 shear wave splitting parameters in different areas on Earth and established the first uniform shear wave splitting database for North America, 2009-present. (<https://ds.iris.edu/ds/products/sws-db-mst/>).

Panelist, A National Science Foundation Proposal Review Spring Panel, 2022

Co-Editor-in-Chief, Invited as an Editor-in-Chief for the Journal of Applied Geophysics from 1/2023-12/2025.

Associate editor for the Frontier in Earth Science, 8/2023-present.

Associate editor for the Journal of Geophysical Research-Solid Earth, 1/2017-12/2021.

Judge, Best Student Paper, American Geophysical Union Fall Meeting, 2016, 2017, 2018, 2020, 2021.

Judge, Student Travel Grant, American Geophysical Union Fall Meeting, 2021.

Convener and chair a special section at the Joint NC/SC Geological Society of America Meeting, 2021.

Judge, Best student presentations at Joint NC/SC Geological Society of America Meeting, 2021.

Convener a special section at the Asia Oceania Geosciences Society 2020 Annual Meeting.

Chair of a technical session at the annual meeting, American Geophysical Union, 2019.

Convener of a special technical session at the Geological Society of America annual meeting held in Indianapolis, Indiana, 2018.

Reviewed proposals for the National Science Foundation, and American Chemical Society.

Reviewed manuscripts for the Bulletin of the Seismological Society of America; Data in Brief; Earth and Planetary Science Letters; Earth-Science Reviews; Frontiers in Earth Science; Geology; Geochemistry, Geophysics, Geosystems; Geophysical Journal International; Geophysical Research Letters; Interpretation; Journal of Geophysical Research; Journal of Applied Geophysics; Journal of Asian Earth Sciences; Data in Brief; Physics of the Earth and Planetary Interiors; Pure and Applied Geophysics; Scientific Reports; Tectonophysics.

Co-chair of a technical session at the Geological Society of America annual meeting, 2018.

Dissertation review for Ahmed Diab at Alexandria University, Egypt, 2018.

Hosted a summer intern from Texas A&M University through the Incorporated Research Institutions for Seismology, 2017.

Hosted two summer interns from Brown University and University of Houston through the Incorporated Research Institutions for Seismology, 2019.

Convener of a Geological Society of America North-Central/South-Central joint session meeting on continental rifts held in Branson, MO, 2010.

Convener of a special session at the Western Pacific Geophysics Meeting on seismic anisotropy held in Taipei, Taiwan, 2010.

Judge, Best Student Paper Selection Committee, Earthscope National Meeting, 2007.

Co-member of Board of Directors/institution representative, Incorporated Research Institutions for Seismology (IRIS, over 100 member institutions in the US), 2006-present.

Organizer, special session on seismic anisotropy beneath East Asia at the Western Pacific Geophysical Meeting, 2006.

MEDIA COVERAGE at Missouri S&T

- [Missouri S&T gets \\$1.9 million grant for geophysics software](#), 2008
- [Chinese university joins S&T in transfer program](#), 2009
- [Scientists make discoveries about the ways oceans form](#), 2012

- [Missouri S&T reaches finals of software design competition](#), 2015
- [Missouri S&T software design team wins competition](#), 2015
- [Missouri S&T scientists study volcanoes, earthquakes](#), 2015
- [Analyzing past earthquakes may be key to predicting future activity](#), 2019
- [Predicting earthquakes by analyzing the past](#), 2019
- [Geophysicist named outstanding educator](#), 2021

SOCIETY MEMBERSHIPS

- American Geophysical Union (AGU) (1992-present)
- Seismological Society of America (SSA) (1993-2023)
- Society of Exploration Geophysics (SEG), *Active member* (2000-present)
- Geological Society of America (GSA) (2012-present)
- K-State Chapter of Sigma Xi (2002-2003)
- Geophysics Society of Kansas (GSK), *Charter member* (2005-2008)