Curriculum Vitae

Xiaowei Chen

The University of Oklahoma

School of Geosciences

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Education

PhD, University of California, San Diego, 2013.

Major: Geophysics

Dissertation Title: Aspects of earthquake triggering and seismicity clustering

MS, University of California, San Diego, 2010.

Major: Geophysics

BS, University of Science and Technology of China, 2007.

Major: Geophysics

Professional Positions

Professional

Associate Professor, Texas A&M (August 1st, 2022 -)

Visiting Professor, University of Calgary (June 2022 – July 2022)

Visiting Associate, Caltech (Jan 2022 – May 2022)

Lissa & Cy Wagner Associate Professor, University of Oklahoma (August 2020 - July 2022)

Stubbeman-Drace Presidential Professor, University of Oklahoma (May 2020 – August 2022)

Assistant Professor, University of Oklahoma. (January 2015 – May 2020).

Postdoc researcher, Woods Hole Oceanographic Institution. (August 2013 - December 2014).

Postdoc researcher, University of Tokyo. (March 31, 2013 - August 1, 2013).

Professional Memberships

Seismological Society of America. Southern California Earthquake Center.

American Geophysical Union. Society of Explorational Geophysics

Development Activities Attended

Workshop, "AGU Heads & Chairs workshop" (participate as AGU Bridge program point of contact), New Orleans, LA, December 2021

Workshop, "Speaking Up to Bias" (AGU), New Orleans, LA, December 2021

Workshop, "IGEN x AGU Partners" Holistic Admissions Workshop: Strategies, March 2021

Workshop, "Unlearning series in racism, sexism, ableism", OU, 2020

Workshop, "Hiring and Recruitment of Faculty", OU, November 2020

Workshop, "Seeking Cultural Consciousness and Competence in Hiring", OU, November 2020

Workshop, "Leadership Academy," OU, Norman. (August 2017 - December 2017).

Workshop, "New faculty seminar series," University of Oklahoma, Norman, OK, USA. (September 2015 - November 2015).

Workshop, "Workshop for early career geoscience faculty," NAGT, Williamsburg, VA, USA. (July 2015).

Summer school: "Earthquakes: nucleation, triggering and relationship with aseismic processes", Cargese, Corsica, 3-10 November 2014.

TEACHING

Teaching Experience

The University of Oklahoma (underline denotes regular 3-credit courses)

GPHY 1103, Adventures in Geophysics, 3 courses.

GPHY 3440, Mentored Research Experience, 4 courses.

GPHY 4133, Colorado Field Geophysics, 1 course.

GPHY 4413/5413, Global Geophysics, 6 courses.

GPHY 4953, Senior Thesis in Geophysics, 2 courses.

GPHY 4970, Intro to Seismology, 2 courses.

GPHY 4970, Induced/Triggered Seismicity, 2 courses.

GPHY 4990, Independent Study, 2 courses.

GPHY 5970, Frontiers of Geophysical Research, 22 courses.

GPHY 5980, Research for Master's Thesis, 4 courses.

GPHY 5990, Practicum: Los Alamos Lab, 3 courses.

GPHY 6950, Research, 8 courses.

GPHY 6960, Directed Readings, 2 courses.

GPHY 6970, Observational Seismology, 4 courses.

GPHY 6980, Research Doctoral Dissertation, 10 courses.

Directed Student Learning

Doctoral Committee Chair:

1. Deepankar Dangwal (October 2020 – present)
2. Zhuobo Zhang (October 2020 – present)
3. Raymond Ng (January 2019 – present)
4. Jiewen Zhang (August 2016 – July 2021), dissertation title: "Multiscale Analyses of Seismic Event Source Parameter Resolution and Characterization."
5. Colin Pennington (August 2017 – July 2020), dissertation title: "Earthquake Source and Rupture Characterization from Microearthquakes to Megathrust Earthquakes."
6. Yan Qin (August 2017 – October 2020), dissertation title: "Roles of Fluid Injection, Stress State, Geological Structure, and Earthquake Interaction on Oklahoma Earthquakes."

Master's Committee Chair:

1. Angie Ortega "Aspects of Seismicity Clustering, Subsurface Structures, and Stress Orientations." (May 2020).
2. Zach Rosson (co-chair with Jake Walter) "Aftershock decay in space and time of induced seismicity in Oklahoma." (May 2019).
3. Colin Pennington, "Investigation of Faulting Processes of Two M5 Earthquake Sequences in Oklahoma." (May 2017).
4. Yan Qin "Study of Stress Field in Seismogenic Processes in Oklahoma." (May 2017).
5. Jackson Haffener "Multiscale Spatiotemporal Analyses of Seismicity and Wastewater Injection in Oklahoma." (May 2017).
6. Yifang Cheng "Seismicity and Source Spectra Analysis in Salton Sea Geothermal Field." (June 2016).

Doctoral Committee Member:

1. Pranshu Ratre "Investigating the regional and local structure of Oklahoma's crust using induced earthquakes" (December 2021)
2. Will Kibikas "Characterizing Rock Mechanical Properties and their Impact on the

Mechanical Behavior of Crystalline Basement and Caprocks" (May 2021)

3. Folarin Kolawole "The Role of Structural Inheritance in Regions of Induced Seismicity and Active Tectonics." (May 2020)
4. Swetal Patel "Geophysical Characterization of Resource Plays." (October 2020)
5. Xuan Qi "SEISMIC ATTRIBUTES ASSISTED QUANTITATIVE UNCONVENTIONAL RESERVOIRS CHATACTERIZATION." (May 2018).
6. Fangyu Li "SEISMIC DATA MULTI-SPECTRAL ANALYSIS, ATTENUATION ESTIMATION AND SEISMIC SEQUENCE STRATIGRAPHY ENHANCEMENT APPLIED TO CONVENTIONAL AND UNCONVENTIONAL RESERVOIRS." (2013 - 2017).
7. Jie Qi "ATTRIBUTE ASSISTED SEISMIC FACIES, FAULTS, KARST, AND ANISOTROPY ANALYSIS." (May 2017).
8. Tao Zhao "MACHINE ASSISTED QUANTITATIVE SEISMIC INTERPRETATION." (May 2017).
9. Sumit Verma "SEISMIC DATA CONDITIONING FOR QUANTITATIVE INTERPRETATION OF UNCONVENTIONAL RESERVOIRS." (2011 - 2015).

Master's Committee Member:

1. Max Firkins "SEISMIC CHARACTERIZATION OF INTRA-BASEMENT DEFORMATION AND ITS INFLUENCE ON THE OVERLYING SEDIMENTARY STRATA: IMPLICATIONS FOR TECTONIC EVOLUTION AND INDUCED SEISMICITY IN NORTHERN OKLAHOMA" (June 2021)
2. Peiyao Li "Towards the Usage of Quarry Blasts as Active Seismic Source." (December 2018).
3. Stephen Marsh "DEVELOPMENT OF A STATE-WIDE VELOCITY PROFILE IN OKLAHOMA USING AMBIENT NOISE SEISMIC TOMOGRAPHY." (August 2018).
4. Jianhang Yin "Applications of Geometric-mean Reverse-time Migration in Diffraction Imaging and Microseismic Imaging in Hydraulic Fracturing Monitoring." (December 2017).
5. Kara Rohan "Comparison of Surface and Downhole Microseismic Acquisition." (May 2017).
6. Oluwatobi Olorunsola "SEISMIC DATA REPROCESSING AND FACIES ANALYSIS OF A GRANITE WASH SURVEY, BUFFALO WALLOW FIELD, ANADARKO BASIN, TEXAS." (May 2017).
7. Joshua Hardisty "INTERFEROMETRIC ANALYSIS OF PASSIVE SEISMIC DATA IN NORTH TEXAS." (December 2015).

Post Doctoral Research Supervision:

1. Pranshu Ratre (Jan 2022 – Present)
2. Qimin Wu (August 2017 – February 2020)

Undergraduate Research.

3. John McKnight (September 2021 – present)
4. Tony Bell (May 2019 – May 2020)
5. Gary Davison (May 2019 – August 2019)
6. Sarah Sundberg (August 2017 – May 2019).
7. Alex Allen (June 2017 - August 2017) IRIS internship

Visiting student

1. Lipeng He (October 2018 - May 2019).
2. Yuqiang Li (June 2017 - August 2017).

SCHOLARSHIP, RESEARCH AND CREATIVE ACTIVITIES

Published Intellectual Contributions

Peer-reviewed Conference Proceedings (underline denotes students or postdoc).

1. **Chen, X**., Pennington, C., Ng, R., Nakata, N., Zhang, J., (2019), "Source parameter analysis of micro seismicity during hydraulic fracture - pinning stress distributions within fracture zone.", *SEG expanded abstracts*.

2. Goebel, T., Aminzadeh, F., Haffener, J., **Chen, X.** (2016). "Statistical seismicity analysis methods for the detection of fault activation during fluid injection.", *SEG expanded abstracts*.

3. Cheng, Yifang, **Chen, X.** (2015). "Effect of geothermal operations on seismic characteristics in the Salton Sea geothermal field.", *Society of Exploration Geophysicists*, 5063–5068.

Refereed Journal Articles (underline denotes graduate students, * denotes postdoc).

1. Qin, Y., Chen, T., Ma, X., & **Chen, X.,** (2022). Forecasting Induced Seismicity in Oklahoma using Machine Learning Methods. Scientific Reports. (accepted)

2. Zhang, J., **Chen, X.,** & Abercrombie, R. E., (2022). Spatiotemporal variability of earthquake source parameters at Parkfield, California, and their relationship with the 2004 M6 earthquake, Journal of Geophysical Research: Solid Earth. (accepted)

3. Pennington, C. N., Uchide, T., & **Chen, X.** (2022). Slip characteristics of induced earthquakes: Insights from the 2015 Mw 4.0 Guthrie, Oklahoma earthquake. Journal of Geophysical Research: Solid Earth, 127, e2021JB023564. https://doi.org/10.1029/2021JB023564

4. He, L, Wu, Q.*, **Chen, X**., Sun, X., Guo, Z. & Chen, Y.J. (2021). Detailed 3D seismic velocity structure of the Prague, Oklahoma fault zone and the implications for induced seismicity. Geophysical Research Letters, 48, e2021GL096137. https://doi.org/10.1029/2021GL096137

5. Abercrombie, R. E., Trugman, D. T., Shearer, P. M, **Chen, X**., Zhang, J., Pennington, C., Hardebeck, J. L., Goebel, T., Ruhl, C. J. (2021) Does Earthquake Stress Drop Increase with Depth in the Crust?, JGR, 126, e2021JB022314. https://doi.org/10.1029/2021JB022314

6. Ortega, A., Walter, J. I., **Chen, X** & Carpenter, B. (2021) Spatially Distinct Tectonic Zones Across Oklahoma Inferred from Shear Wave Splitting, *Seismological Research Letters,* 92 (4): 2551–2561, https://doi.org/10.1785/0220200237 .

7. Ortega, A., & **Chen, X**. (2021) Spatiotemporal Clustering of Seismicity during the 2018 Kilauea Volcanic Eruption, *Geophy. Res. Letters*, https://doi.org/10.1029/2020GL090859

8. Pennington, C., **Chen, X.,** Abercrombie, R., Wu, Q.* (2021) "Cross Validation of Stress Drop Estimates and Interpretations for the 2011 Prague, OK, Earthquake Sequence Using Multiple Methods." *J. Geophy. Res.*, DOI: https://doi.org/10.1029/2020JB020888

9. Patel, S., Kolawole, F., Walter, J., **Chen, X**, and Marfurt, K. J. (2021), "Seismic illumination of small-offset seismogenic faults, Anadarko Basin, Oklahoma." *Interpretation*, DOI: https://doi.org/10.1190/int-2020-0135.1

10. Abecrombie, R., **Chen, X.,** Zhang, J. (2020). "Repeating Earthquakes with Remarkably Repeatable Ruptures on the San Andreas Fault at Parkfield." *Geophysical Research Letters*, DOI: https://doi.org/10.1029/2020GL089820

11. Deng, K., Liu, Y., **Chen, X.** (2020). "Correlation Between Poroelastic Stress Perturbation and Multi-disposal Wells Induced Earthquake Sequence in Cushing, Oklahoma." *Geophysical Research Letters*, DOI: https://doi.org/10.1029/2020GL089366

12. **Chen, X.,** Abercrombie, R. E. (2020). "Improved approach for stress drop estimation and its application to an induced earthquake sequence in Oklahoma." *Geophysical Journal International*, DOI: https://doi.org/10.1093/gji/ggaa316

13. Qin, Y., **Chen, X.,** Walter, J., Haffener, J., Trugman, D., Carpenter, B. M., Weingarten, M., Kolawole, F. (2019). "Deciphering the stress state of seismogenic faults in Oklahoma and southern Kansas based on an improved stress map." *Journal of Geophysical Research – Solid Earth*, DOI: 10.1029/2019JB018377

14. Rosson, Z., Walter, J. I., Goebel, T., **Chen, X.** (2019). "Narrow Spatial Aftershock Zones for Induced Earthquake Sequences in Oklahoma." *Geophysical Research Letters*, DOI: https://doi.org/10.1029/2019GL083562

15. Zhai, G., Shirzaei, M., Manga, M., **Chen, X.** (2019). "Pore-pressure diffusion, enhanced by poroelastic stresses, controls induced seismicity in Oklahoma." *PNAS*, Vol. 116, No. 33, 16228-16233, DOI: https://doi.org/10.1073/pnas.1819225116

16. Wu, Q.*, **Chen, X.,** Abercrombie, R. E. (2019). "Source Complexity of the 2015 Mw 4.0 Guthrie, Oklahoma Earthquake." *Geophy. Res. Letters*, Vol. 46, DOI: 2019GL082690. https://doi.org/10.1029/2019GL082690

17. Sweet, J. R., Anderson, K. R., Bilek, S., Brudzinski, M., **Chen, X.,** Deshon, H., Hayward, C., Karplus, M., Keranen, K., Langston, C., Lin, F.-C., Magnani, B., Woodward, R. L. (2018). "A community experiment to record the full seismic wavefield in Oklahoma." *Seismological Research Letters*, DOI: https://doi.org/10.1785/0220180079

18. Cheng, Y., **Chen, X**. (2018). "Characteristics of seismicity inside and outside the Salton Sea Geothermal Field." *Bulletin of the Seismological Society of America*, DOI: https://doi.org/10.1785/0120170311

19. Haffener, J., **Chen, X**., Murray, K. E. (2018). "Multi-scale analysis of spatiotemporal relationship between injection and seismicity in Oklahoma." *Journal of Geophysical Research - Solid Earth*, DOI: https://doi.org/10.1029/2018JB015512

20. Pei, S., Peng, Z., **Chen, X.** (2018). "Locations of injection-induced earthquakes in Oklahoma controlled by crustal structures." *Journal of Geophysical Research - Solid Earth*, DOI: https://doi.org/10.1002/2017JB014983

21. Wu, Q.*, Chapman, M., **Chen, X.** (2018). "Stress Drop Variations of Induced Earthquakes in Oklahoma." *Bulletin of the Seismological Society of America*, DOI: https://doi.org/10.1785/0120170335

22. **Chen, X.,** Haffener, J., Goebel, T. W., Meng, X., Peng, Z., Chang, J. (2018). "Temporal correlation between seismic moment and injection volume for an induced earthquake sequence in central Oklahoma." *Journal of Geophysical Research - Solid Earth*, DOI: https://doi.org/10.1002/2017JB014694

23. Qin, Y., **Chen, X.,** Carpenter, B. M., Kolawole, F. (2018). "Coulomb Stress Transfer Influences Fault Reactivation in Areas of Wastewater Injection." *Geophysical Research Letters*, DOI: https://doi.org/10.1029/2018GL079713

24. Savage, H. M., Kirkpatrick, J. D., Mori, J. J., Brodsky, E. E., Ellsworth, W. L., Carpenter, B. M., **Chen, X.,** Cappa, F., Kano, Y. (2017). "Scientific Exploration of Induced SeisMicity and Stress (SEISMS)." *Scientific Drilling*, Vol. 23, DOI: https://doi.org/10.5194/sd-23-57-2017

25. Goebel, T., Weingarten, M., **Chen, X.,** Haffener, J., Brodsky, E. (2017). "The 2016 Mw5.1 Fairview, Oklahoma earthquakes: evidence for long-range poroelastic triggering at >40 km from fluid disposal wells." *Earth and Planetary Science Letters*, Vol. 472, 50-61, DOI: https://doi.org/10.1016/j.epsl.2017.05.011

26. **Chen, X**., Nakata, N., Pennington, C. N., Haffener, J., Chang, J. C., He, X., Zhan, Z., Ni, S., Walter, J. I. (2017). "The Pawnee earthquake as a result of the interplay among injection, faults, and foreshocks." *scientific report*, Vol. 7, No. 4945, DOI: 10.1038/s41598-017-04992-z. https://www.nature.com/articles/s41598-017-04992-z

27. **Chen, X**., Nakata, N. (2017). "Preface to the Focus Section on the 3 September 2016 Pawnee, Oklahoma, Earthquake." *Seismological Research Letters*, Vol. 88, No. 4, 953-

955, DOI: https://doi.org/10.1785/0220170078

28. Pennington, C., **Chen, X**. (2017). "Coulomb Stress Interactions during the Mw 5.8 Pawnee Sequence." *Seismological Research Letters*, Vol. 88, No. 4, 1024-1031, DOI: https://doi.org/10.1785/0220170011

29. Zhang, Q., Lin, G., Zhan, Z., **Chen, X.,** Qin, Y., Wdowinski, S. (2017). "Absence of remote earthquake triggering within the Coso and Salton Sea geothermal production fields." *Geophysical Research Letters*, Vol. 44, No. 2, 726–733, DOI: https://doi.org/10.1002/2016GL071964

30. **Chen, X.,** McGuire, J. J. (2016). "Measuring earthquake source parameters in the Mendocino triple junction region using a dense OBS array: Implications for fault strength variations." *Earth and Planetary Science Letters*, Vol. 453, 276-287, DOI: https://doi.org/10.1016/j.epsl.2016.08.022

31. **Chen, X.,** Shearer, P. M. (2016). "Analysis of Foreshock Sequences in California and Implications for Earthquake Triggering." *Pure and Applied Geophysics*, 173 (2016), 133–152, DOI 10.1007/s00024-015-1103-0.

32. Toomey, D.R., R.M. Allen, A.H. Barclay, S.W. Bell, P.D. Bromirski, R.L. Carlson, **X. Chen,** J.A. Collins, R.P. Dziak, B. Evers, D.W. Forsyth, P. Gerstoft, E.E.E. Hooft, D. Livelybrooks, J.A. Lodewyk, D.S. Luther, J.J. McGuire, S.Y. Schwartz, M. Tolstoy, A.M. Tréhu, M. Weirathmueller, and W.S.D. Wilcock. (2014). The Cascadia Initiative: A sea change in seismological studies of subduction zones. *Oceanography* 27(2):138–150

33. **Chen, X.,** Shearer, P. M. (2013). "California foreshock sequences suggest aseismic triggering process." *Geophysical Research Letters*, VOL. 40, 2602–2607, doi:10.1002/grl.50444.

34. Hauksson, E., Stock, J., Bilham, R., Boese, M., **Chen, X.,** Fielding, E. J., Galetzka, J., Hudnut, K. W., Hutton, K., Jones, L. M., Kanamori, H., Shearer, P. M., Steidl, J., Treiman, J., Wei, S., Yang, W. (2013). "Report on the August 2012 Brawley Earthquake Swarm in Imperial Valley, Southern California." *Seismological Research Letters*, Vol. 84, No. 2, 177–189.

35. **Chen, X.,** Shearer, P., Abercrombie, R. (2012). "Spatial migration of earthquakes within seismic clusters in Southern California: Evidence for fluid diffusion." *Journal of Geophysical Research: Solid Earth (1978–2012)*, Vol. 117, No. B4.

36. **Chen, X.,** Shearer, P. (2011). "Comprehensive analysis of earthquake source spectra and swarms in the Salton Trough, California." *Journal of Geophysical Research*, Vol. 116, No. B9, B09309.

37. **Chen, X.,** Shearer, P., Walter, F., Fricker, H. (2011). "Seventeen Antarctic seismic events detected by global surface waves and a possible link to calving events from satellite images." *Journal of Geophysical Research: Solid Earth (1978–2012)*, Vol. 116, No. B6.

Manuscripts under review / to be submitted in 2022:

38. Waveform-based magnitude calibration reveals different seismogenic potentials for different fractures during hydraulic fracturing experiment (Ng, R., Chen, X., Nakata, N.) under revision with BSSA

39. Distinguishing Unique Earthquakes with Overlapping Signals in Oklahoma (Ogwari, P., Walter, J. I., Chen, X., Thiel, A., Ferrer, F., Woelfel, I.) under review with SRL

40. New Insights on Moho Depths and Regional Crustal Structure of Central Oklahoma Based on Receiver Function Analysis from Dense Seismic Networks (Wang, Z., Behm, M., Persaud, P., Chen, X.), under review with Tectonophysics

41. Influence of fault architecture on induced earthquake sequence evolution revealed by high-resolution focal mechanism solutions (Qin, Y., Chen, X., Chen, T., Abercrombie, R. E.) to be submitted to JGR

42. Quantifying Rupture Characteristics of Microearthquakes in the Parkfield Area Using a High-Resolution Borehole Network (<u>Pennington, C. N.,</u> Wu, Q.*, Chen, X., Abercrombie, R. E., <u>Zhang, J.</u>) to be submitted to JGR

Seminar and workshops

1. Chen, X, "Probing earthquake triggering and source processes through multiscale analyses of induced seismicity", IPACES (March 2021).
2. Chen, X, "Probing earthquake triggering and source processes through multiscale analyses of induced seismicity", Caltech Seismo Lab (February 2022).
3. Chen, X., "Multi-scale analyses reveals diverse triggering processes during induced earthquake sequences", UT Austin (October 2021)
4. Chen, X., "Induced seismicity in Oklahoma," ULL. (November 2020).
5. Chen, X., "Wastewater induced seismicity in Oklahoma," the Chinese University of Hong Kong. (November 2020).
6. Chen, X. "Comprehensive overview of injection induced earthquakes in Oklahoma", UT Dallas (October 2019).
7. Chen, X., "Earthquakes in our backyard," University of Tulsa, Tulsa, OK. (October 2018).
8. Chen, X., "Induced seismicity in Oklahoma," USTC, Hefei, China. (May 2018).
9. Chen, X., "Roles of Stress Heterogeneity and Long-Range Stress Perturbation in the Fairview Earthquake Sequence," DISCO workshop, Norman, OK. (May 2018).
10. Chen, X., McGuire, J., "Measuring earthquake source parameters in the Mendocino triple junction region using dense OBS array", OBS Symposium, Portland, Maine. (Sep 2017).
11. Chen, X., "Measuring earthquake source parameters in the Mendocino Triple Junction region using a dense OBS array: Implications for fault strength variations," Sun Yat-Sen University, Guangzhou, China. (June 2017).
12. Chen, X., "Measuring earthquake source parameters in the Mendocino Triple Junction region using a dense OBS array: Implications for fault strength variations," South China Sea Institute of Oceanology, Guangzhou, China. (June 2017).
13. Chen, X., "Triggering processes of wastewater injection induced earthquakes," Sichuan Earthquake Bureau, Chengdu, China. (June 2017).
14. Chen, X., "Triggering processes of wastewater injection induced earthquakes," China University of Geosciences, Wuhan Campus, Wuhan, China. (June 2017).
15. Chen, X., "Revealing full spectrum of triggering processes in induced seismicity," OU, Norman. (April 13, 2017).
16. Chen, X., "Revealing full spectrum of triggering processes in induced seismicity," Oklahoma State University, Stillwater. (April 7, 2017).
17. Chen, X., 9th ACES workshop, "Understanding the role of foreshocks – with observations in California and catalog simulations," Chengdu, China. (August 2015).
18. Chen, X., "Aspects of earthquake triggering and seismicity clustering", Earthquake Research Institute at the University of Tokyo, Geological Survey of Japan, Tohoku University, 2013
19. Chen, X., "Triggering process of seismicity clustering in Southern California", Seismo-tectonics seminar at IGPP, UCLA, 2012

Presentations Given (Conference)

1. 2022 Liu, Y., Verdecchia, A., Deng, K., Harrington, R., Chen, X., "Coupling poroelastic stress change and rate-state fault model to simulate fluid injection induced seismicity and aseismic slip", 2022 GAC-MAC Halifax meeting, 15-18 May
2. 2022 Chen, X., Qin, Y., Pennington, C., Deng, K., Liu, Y., "Multi-scale analyses of induced seismicity and implications for seismicity mitigation and earthquake hazards", 2022 induced seismicity workshop in Canada, 25 Apr
3. 2022 Abercrombie, R. E., Chen, X., Qin, Y., "Characterization of Earthquake Swarms and Ruptures to Reveal Driving Mechanisms", 2022 Annual Meeting, SSA, Bellevue, WA, 19-23 Apr (4/21/2022)

4. 2022 Qin, Y., Chen, X., Chen, T., Abercrombie, R. E., "Diverse Fault Architectures and Stress States Evolutions of Induced Earthquake Sequences Revealed by High-resolution Focal Mechanism Solutions" 2022 Annual Meeting, SSA, Bellevue, WA, 19-23 Apr (4/20/2022)
5. 2022 Chen, X., McKnight, J., Hu, Y., Hu, M., Li, Z., Ng, R., Ratre, P., Zhan, Z., Dangwal, D., Wang, Z., "Local Earthquake Detectability Using Long-haul Fiber Cables With DAS Technology", 2022 Annual Meeting, SSA, Bellevue, WA, 19-23 Apr (4/21/2022)
6. 2022 Walter, J., Ogwari, P. O., Chen, X., "Nodal Deployments and Their Role in Regional Seismic Monitoring", 2022 Annual Meeting, SSA, Bellevue, WA, 19-23 Apr (4/22/2022)
7. 2022 Ratre, P., Chen, X., "Similar Event Clusters and Microseismic Event Relocation at the Utah Forge Site", 2022 Annual Meeting, SSA, Bellevue, WA, 19-23 Apr (4/20/2022)
8. 2021 Ng, R., Nakata, N., Chen, X., "Influence from wind and wind turbine on seismic noise observations in Oklahoma." Abstract S55A-0124, 2021 Fall meeting, AGU, New Orleans, LA, 13-17 Dec
9. 2021 Ng, R., Chen, X., Nakata, N., "New analyses to legacy datasets reveal new insights on microseismicity source processes during hydraulic fracturing." Abstract S42A-04, 2021 Fall meeting, AGU, New Orleans, LA, 13-17 Dec
10. 2021 Wang, Z., Behm, M., Chen, X., "Oklahoma crustal deep-to-shallow structure from multiscale P-wave receiver function analysis." Abstract S15D-0277, 2021 Fall meeting, AGU, New Orleans, LA, 13-17 Dec
11. 2021 Martin, E. R., Chen, X., Tinney, E., Owusu, A., "OU Unlearning Racism in Geoscience (URGE): Collaboration Across Departments, Colleges, Centers, and Federal Scientists." Abstract U35A-2245, 2021 Fall meeting, AGU, New Orleans, LA, 13-17 Dec
12. 2021 Ogwari, P., Chen, X., Walter, J., Ng, R., Dangwal, D., Woelfel, I. E., Thiel, A., Ferrer, F., "Seismogenic Fault Characterization in East Oklahoma Using Multi-Sensor Seismic Array." Abstract S41A-07, 2021 Fall meeting, AGU, New Orleans, LA, 13-17 Dec
13. 2021 Chen, X., Wu, Q., "Stress drop validation and triggering process of foreshocks in Southern California." Abstract S45A-0283, 2021 Fall meeting, AGU, New Orleans, LA, 13-17 Dec
14. 2021 Wu, Q., Chen, X., "Source complexity of small and moderate earthquakes in the 2019 Ridgecrest earthquake sequence." Poster 242, 2021 Annual meeting, SCEC, 12-17 Sep
15. 2021 Chen, X., Abercrombie, R., "Roles of aseismic slip and earthquake interactions in the evolution of induced earthquake sequences," Oral presentation, 2021 Annual meeting, SSA, 19-23 Apr
16. 2021 Wu, Q., Chen, X. "Rupture Complexity of Small and Moderate Earthquakes in the 2019 Ridgecrest Earthquake Sequence and the Effects on Stress Drop Estimation and Ground Motions", Oral presentation, 2021 Annual meeting, SSA, 19-23 Apr
17. 2021 Ogwari, P., Walter, J., Thiel, A., Ferrer, F., Woelfel, I., Chen, X., Lin, G., "Improving Regional Earthquake Focal Depth Location in Oklahoma Using 3D Velocity Model", Poster, 2021 Annual meeting, SSA, 19-23 Apr
18. 2020 Zhang, J., Chen, X., Abercrombie, R. E., "A global-optimization-based spectral decomposition method and its application to resolving source parameters of small earthquakes at Parkfield." Abstract S054-0008, 2020 Fall meeting, AGU, online, 1-17 Dec
19. 2020 Ng, R., Nakata, N., Chen, X., "Classification and noise correlation of local anthropogenic noise sources in Oklahoma," Abstract S019-0006, 2020 Fall meeting, AGU, online, 1-17 Dec
20. 2020 Abercrombie, R. E., Trugman, D., Shearer, P. M., Chen, X., Zhang, J., Pennington, C., Hardebeck, J., Ruhl, C., Goebel, "Does Earthquake Stress Drop Increase With Depth?" S054-0007, 2020 Fall meeting, AGU, online, 1-17 Dec
21. 2020 Ogwari, P., Walter, J. I., Chen, X., Thiel, A., Ferrer, F. V., Woelfel, I. E., "Extended Ground Motion Duration from Unique Earthquakes in Oklahoma." Abstract S010-0015, 2020 Fall meeting, AGU, online, 1-17 Dec
22. 2020 Pennington, C., Chen, X., Wu, Q., Zhang, J., Abercrombie, R., "Quantifying Rupture Characteristics of Microearthquakes in the Parkfield Region Using the Borehole High Resolution Seismic Network," Abstract S058-08, 2020 Fall meeting, AGU, online, 1-17 Dec
23. 2020 Chen, X., Pennington, C., Abercrombie, R. E., Zhang, J., Wu, Q., "Stress drop

estimation from source spectra: Resolution limits and consistency between different studies," S054-0006, 2020 Fall meeting, AGU, online, 1-17 Dec

24. 2020 Qin, Y., Chen, X., Chen, T., "Diverse stress state evolutions of induced earthquake sequences in Oklahoma revealed through high resolution focal mechanism solutions," Poster 139, 2020 annual meeting, SCEC, 14-17 Sep

25. 2020 Chen, X., Zhai, G., Shirzaei, M., Qin, Y., "A decade of Oklahoma earthquakes: past, present and future," (invited) EGU2020-10955, 2020 annual meeting, EGU, 3-8 May, online

26. 2020 Chen, X., Abercrombie, R., Wu, Q., "Earthquake stress drop: what can we resolve from observations, and what can we infer about earthquake triggering processes," EGU2020-10935, 2020 annual meeting, EGU, 3-8 May, online

27. 2020 Behm, M., Chen, X., Ng, R., Wang, Z., "A Dense Nodal 3C Deployment in the Cushing Fault Area, North Oklahoma," 2020 annual meeting, SSA (Cancelled due to COVID-19)

28. 2020 Ng, R., Nakata, N., Chen, X., "Classification and Noise Correlation of Local Wind Turbine Signals in Grant County Oklahoma," 2020 annual meeting, SSA (Cancelled due to COVID-19)

29. 2020 Pennington, C. N., Chen, X., Wu, Q., Zhang, J.,"Quantifying Rupture Characteristics of Microearthquakes in the Parkfield Region Using a High-Resolution Borehole Network," 2020 annual meeting, SSA (Cancelled due to COVID-19)

30. 2019 Shelly, D. R., Whidden, K. M., Pankow, K. L., Walter, J. I., Chen, X., Mayeda, K., Walter, W. R., "Addressing "the magnitude problem" for small earthquakes: exploring the coda envelope technique for moment magnitude estimation in Oklahoma." Abstract S53C-0512, 2019 Fall meeting, AGU, San Francisco, CA, 9-13 Dec

31. 2019 Wu, Q., Chen, X., Abercrombie, R, "Characterizing Earthquake Source Complexity in the San Jacinto Fault Zone: Implications for Calculation of Source Parameters." S51E-0445, 2019 Fall meeting, AGU, San Francisco, CA, 9-13 Dec

32. 2019 Pennington, C., Chen, X., "Control Factors of Earthquake Rupture Complexity from a Global Perspective." S41E-0439, 2019 Fall meeting, AGU, San Francisco, CA, 9-13 Dec

33. 2019, Qin, Y., Chen, X., Weingarten, M., AGU 2019, "Fault Structures and Stress State Analysis of Induced Earthquake Sequences in Oklahoma." Abstract S21B-04, 2019 Fall meeting, AGU, San Francisco, CA, 9-13 Dec

34. 2019 Ortega Romo, A., Chen, X., Ratre, P., Walter, J. I., "High Resolution Earthquake Depth Determination Using Crustal Reverberations: Implications for Earthquake Triggering and Spatial Variations of Shear Wave Splitting." S13E-0482, 2019 Fall meeting, AGU, San Francisco, CA, 9-13 Dec

35. 2019 He, L., Wu, Q., Chen, X., "High-resolution Fault Zone Structure of the 2011 Mw 5.7 Prague, Oklahoma Earthquake Sequence." Abstract S13E-0483, 2019 Fall meeting, AGU, San Francisco, CA, 9-13 Dec

36. 2019, Chen, X., Wu, Q., Pennington, C., "Implications of source complexity on earthquake rupture and interactions within Mendocino Triple Junction." Abstract S21F-0579, 2019 Fall meeting, AGU, San Francisco, CA, 9-13 Dec

37. 2019 Zhang, J., Chen, X., Abercrombie, R., "Resolving the spatiotemporal variability of small earthquake source parameters at Parkfield and their relationship with 2004M6 Parkfield earthquake." Abstract S52C-05, 2019 Fall meeting, AGU, San Francisco, CA, 9-13 Dec

38. 2019 Carpenter, B. M., Shadoan, T., Chen, X., Chen, X., Reches, Z., "Seismic Radiation of Laboratory Earthquakes Along Bimaterial Faults." Abstract MR14A-02, 2019 Fall meeting, AGU, San Francisco, CA, 9-13 Dec

39. 2019 Wu, Q., Chen, X., Abercrombie, R., "Characterizing earthquake source complexity in the trifurcation area of the San Jacinto fault zone." Poster 086, 2019 Annual meeting, SCEC, Palm Springs, CA, 8-11 Sep

40. 2019 Abercrombie, R., Chen, X., Zhang, J., "Just how similar are individual earthquakes within repeating sequences at Parkfield?" Poster 182, 2019 Annual meeting, SCEC, Palm Springs, CA, 8-11 Sep

41. 2019 Zhang, J., Chen, X., Abercrombie, R., "Resolving the spatiotemporal variability of small

earthquake source parameters at Parkfield and their relationship with 2004M6 Parkfield earthquake." Poster 088, 2019 Annual meeting, SCEC, Palm Springs, CA, 8-11 Sep

42. 2019 Chen, X., Wu, Q., Yao, D., Peng, Z., "Source characteristics of the foreshock sequence of the 2010 M7.2 El Mayor-Cucapah earthquake: implication for the triggering process." Poster 183, 2019 Annual meeting, SCEC, Palm Springs, CA, 8-11 Sep

43. 2019 Chen, X., Pennington, C., Ng, R., Nakata, N., Zhang, J., "Source parameter analysis of micro seismicity during hydraulic fracture - pinning stress distributions within fracture zone." 2019 SEG Technical Meeting, San Antonio, TX, 15-20 Sep

44. 2019 Chen, X., Wu, Q., Pennington, C., Abercrombie, R., "Earthquake source complexity of small-to-moderate earthquakes," IUGG19-4846, 2019 annual meeting, IUGG, Montreal, Canada, 2019-07-15.

45. 2019 Chen, X., Qin, Y., Wu, Q., Kolawole, F., Dangwal, D., "Roles of structural complexity and earthquake interaction on induced earthquake sequences," IUGG19-4849, 2019 annual meeting, IUGG, Montreal, Canada, 2019-07-17.

46. 2019 Rosson, Z., Walter, J., Goebel, T. H. W., Chen, X., "Aftershock Decay in Space and Time in Regions with Induced Seismicity in Oklahoma," Oral presentation, 2019 Annual meeting, SSA, Seattle, WA, 23-26 Apr

47. 2019 Chen, X., Qin, Y., Wu, Q., Kolawole, F., Dangwal, D., "Controls of Structural Complexity and Earthquake Rupture Process on Spatiotemporal Evolution of Induced Earthquake Sequences," (invited) Oral presentation, 2019 Annual meeting, SSA, Seattle, WA, 23-26 Apr

48. 2019 Pennington, C., Uchide, T., Chen, X., "Fault Failure in Oklahoma Is Anything but Simple," Poster, 2019 Annual meeting, SSA, Seattle, WA, 23-26 Apr

49. 2019 Zhang, J., Abercrombie, R. E., Chen, X., "Resolving Stress Drop Variation Along San Andreas Fault at Parkfield and Its Implication," Oral presentation, 2019 Annual meeting, SSA, Seattle, WA, 23-26 Apr

50. 2018 Sundberg, S., Chen, X., Walter, J., Qin, Y., "A Quantitative Analysis of Hydraulic Fracturing Induced Seismicity in Oklahoma," Abstract S23A-0504, 2018 Fall meeting, AGU, Washington D.C., 10-14 Dec

51. 2018 Rosson, Z., Walter, J., Goebel, T., Chen, X., "Aftershock density decay in space and time: Observations for Oklahoma and implications," Abstract S23A-0493, 2018 Fall meeting, AGU, Washington D.C., 10-14 Dec

52. 2018 Chen, X., Abercrombie, R., "Applying improved spectral analysis to an induced earthquake sequence in Oklahoma and implications on earthquake triggering," Abstract S11B-03, 2018 Fall meeting, AGU, Washington D.C., 10-14 Dec

53. 2018 Liu, Y., Deng, K., Chen, X., Harrington, R., "Poroelastic stress change and fault slip modeling of fluid injection induced seismicity," Abstract S33C-0602, 2018 Fall meeting, AGU, Washington D.C., 10-14 Dec

54. 2018 Zhang, J., Chen, X., Abercrombie, R., "Robust Analysis of Stress Drop Variation along San Andreas Fault at Parkfield Using Multiple Local Networks," Abstract S21C-0451, 2018 Fall meeting, AGU, Washington D.C., 10-14 Dec

55. 2018 Wu, Q., Chen, X., Abercrombie, R., "Source Complexity of the 2015 Mw 4.0 Guthrie, Oklahoma Earthquake," S21C-0436, 2018 Fall meeting, AGU, Washington D.C., 10-14 Dec

56. 2018 Chen, X., Abercrombie, R., "Applying improved spectral analysis to an induced earthquake sequence in Oklahoma and implications on earthquake triggering," Poster 081, 2018 annual meeting, SCEC, Palm Springs, CA, 9-12 Sep

57. 2018 Wu, Q., Chen, X., "Characteristics of earthquake source complexity in the San Jacinto Fault Zone." Poster 077, 2018 annual meeting, SCEC, Palm Springs, CA, 9-12 Sep

58. 2018 Zhang, J., Chen, X., Abercrombie, R., "Spatial variation of stress drops by high-resolution network along San Andreas Fault near Parkfield, CA." IRIS annual workshop, Albuquerque, NM, 11-14 Jun

59. 2018 Pennington, C., Chen, X., "Coulomb Stress Interactions During the M5.8 Pawnee Sequence," DISCO workshop, Norman, OK, May.

60. 2018 Qin, Y., Chen, X., "Deciphering Stress State of Seismogenic Faults in Oklahoma and

Kansas," DISCO workshop, Norman, OK, May.

61. 2018 Rosson, Z., Walter, J., Goebel, T., Chen, X., "Empirical Analysis of Seismicity Clusters in Oklahoma." DISCO workshop, Norman, OK, May.

62. 2018 Chen, X., Haffener, J., Goebel, T., Meng, X., Peng, Z., Sundberg, S., Walter, J., Qin, Y., "Understanding far-field and near-field effects of injection activities on induced seismicity in Oklahoma," 4th ICCE meeting, Chengdu, China, May.

63. 2018 Chen, X., Haffener, J., Goebel, T., Meng, X., Peng, Z., Sundberg, S., Walter, J., Qin, Y., "Understanding far-field and near-field effects of injection activities on induced seismicity in Oklahoma," (invited) 2018 Annual meeting, JPGU, Chiba, Japan, 20-24 May

64. 2017 Qin, Y., Chen, X., Haffener, J., Trugman, D., Carpenter, B. M., Reches, Z., "Deciphering Stress State of Seismogenic Faults in Oklahoma and Kansas Based on High-resolution Stress Maps." Abstract S53B-2342, 2017 Fall meeting, AGU, New Orleans, LA, 11-15 Dec

65. 2017 Abercrombie, R., Chen, X., Pennington, C., "High-Resolution Source Parameter and Site Characteristics Using Near-Field Recordings – Decoding the Trade-off Problems Between Site and Source." Abstract S33E-06, 2017 Fall meeting, AGU, New Orleans, LA, 11-15 Dec

66. 2017 Pei, S., Peng, Z., Chen, X., "Locations of injection-induced earthquakes in Oklahoma controlled by crustal structures," Abstract S23C-2317, 2017 Fall meeting, AGU, New Orleans, LA, 11-15 Dec

67. 2017 Allen, A. A., Chen, X., Wu, Q., "Source Parameters and Rupture Directivities of Earthquakes Within the Mendocino Triple Junction." Abstract S31C-1041, 2017 Fall meeting, AGU, New Orleans, LA, 11-15 Dec

68. 2017 Wu, Q., Chapman, M., Chen, X., "Stress Drop Variations of Induced Earthquakes in Oklahoma." Abstract S31C-1043, 2017 Fall meeting, AGU, New Orleans, LA, 11-15 Dec

69. 2017 Zhang, J., Chen, X., Abercrombie, R., "Understanding Uncertainties of Stress Drop Estimation at Parkfield." Abstract S44B-06, 2017 Fall meeting, AGU, New Orleans, LA, 11-15 Dec

70. 2017 Pennington, C., Chen, X., Abercrombie, R., "Analysis of Seismogenic Fault Structure and Stress Drop Estimation of the 2011 5.7 Mw Prague, Oklahoma Earthquake Sequence." 89th Annual Meeting of the Eastern Section of the Seismological Society of America, Norman, OK, 08-10 Oct

71. 2017 Qin, Y., Chen, X., Haffener, J., Trugman, D., Carpenter, B. M., Reches, Z., "Deciphering Stress State of Seismogenic Faults in Oklahoma and Kansas Based on High-Resolution Stress Maps." 89th Annual Meeting of the Eastern Section of the Seismological Society of America, Norman, OK, 08-10 Oct

72. 2017 Chen, X., Abercrombie, R., "High-Resolution Source Parameter and Site Characteristics Using Near-Field Recordings – Decoding the Trade-off Problems Between Site and Source." 89th Annual Meeting of the Eastern Section of the Seismological Society of America, Norman, OK, 08-10 Oct

73. 2017 Wu, Q., Chapman, M., Chen, X., "Stress Drop Variations of Induced Earthquakes in Oklahoma." 89th Annual Meeting of the Eastern Section of the Seismological Society of America, Norman, OK, 08-10 Oct

74. 2017 Zhang, J., Chen, X., Abercrombie, R., "Understanding Uncertainties of Stress Drop Estimation at Parkfield." 89th Annual Meeting of the Eastern Section of the Seismological Society of America, Norman, OK, 08-10 Oct

75. 2017 Chen, X., Abercrombie, R., Pennington, C., "Spatial variations of stress drop within individual sequences: implications for earthquake triggering," 2017 JPGU-AGU joint assembly, Japan, May.

76. 2017 Zhang, J., Chen, X., Abercrombie, R., "Stress drops and uncertainty resolution of repeating earthquakes at Parkfield," Japan. 2017 JPGU-AGU joint assembly, Japan, May.

77. 2017 Abercrombie, R., POLI, P., BANNISTER, S. C., RUHL, C. J., Chen, X., "Directivity and rupture velocity of small earthquakes" (invited), Oral presentation, 2017 Annual meeting, SSA, Denver, CO, 18-20 Apr

78. 2017 Qin, Y., Chen, X., Peng, Z., Aiken, C., "Enhanced dynamic triggering in waste-water injection sites near Woodward, Oklahoma", Poster, 2017 Annual meeting, SSA, Denver, CO, 18-20 Apr

79. 2017 Nakata, N., Chen, X., Chang, J. C., "Local Effort for Global Contribution: Seismic Observations of Recent Oklahoma Moderate Earthquake Sequences and for Future" (invited), Oral presentation, 2017 Annual meeting, SSA, Denver, CO, 18-20 Apr

80. 2017 Chen, X., Abercrombie, R., "Source Parameter Validations Using Multiple-Scale Approaches for Earthquake Sequences in Oklahoma: Implications for Earthquake Triggering Processes.", Poster, 2017 Annual meeting, SSA, Denver, CO, 18-20 Apr

81. 2017 Zhang, J., Chen, X., Abercrombie, R., " Understanding Resolution and Uncertainties of Stress Drops of Repeating Earthquakes at Parkfield." Poster, 2017 Annual meeting, SSA, Denver, CO, 18-20 Apr

82. 2017 Pennington, C., Chen, X., Abercrombie, R., Haffener, J., McMahon, N. D., "Understanding the Roles of Fluid and Faulting in Earthquake Sequences Using Data from Central Oklahoma." Poster, 2017 Annual meeting, SSA, Denver, CO, 18-20 Apr

83. 2016 Haffener, J., Chen, X., Murray, K. E., Goebel, T., "A robust, statistical identification and analysis of fluid disposal wells that cause earthquakes in central Oklahoma." Abstract S31B-2750, 2016 Fall meeting, AGU, San Francisco, CA, 12-16 Dec

84. 2016 Chen, X., Yao, D., Peng, Z., Haffener, J., Meng, X., Nakata, N., Chang, J. C., "Detailed analysis of precursory activities before the M5.8 Pawnee earthquake: propagating foreshocks leading to mainshock." Abstract S44C-07, 2016 Fall meeting, AGU, San Francisco, CA, 12-16 Dec

85. 2016 Qin, Y., Chen, X., Peng, Z., Aiken, C., "Dynamic earthquake triggering on seismogenic faults in Oklahoma." Abstract S53A-2808, 2016 Fall meeting, AGU, San Francisco, CA, 12-16 Dec

86. 2016 Li, F., Chen, X., Marfurt, K. J., "Fourier-Bessel based rapid earthquake magnitude estimation in central Oklahoma." Abstract S42B-08, 2016 Fall meeting, AGU, San Francisco, CA, 12-16 Dec

87. 2016 Anderson, K., Woodward, R., Sweet, J., Bilek, S. L., Brudzinski, M., Chen, X., DeShon, H. R., Karplus, M., Keranen, K. M., Langston, C. A., Lin, F., Magnani, M. B., Stump, B. W., "Full wavefield recordings of Oklahoma seismicity from an IRIS-led community experiment." Abstract S11D-2493, 2016 Fall meeting, AGU, San Francisco, CA, 12-16 Dec

88. 2016 Peng, Z., Chen, X., Li, Z., Yao, D., Zhang, C., Liu, X., Pennington, C., Qin, Y., "Monitoring seismic activities at Fairview and Woodward area in Oklahoma." Abstract S43C-2867, 2016 Fall meeting, AGU, San Francisco, CA, 12-16 Dec

89. 2016 Pennington, C. N., Chen, X., Nakata, N., Chang, J. C., "Observations of static Coulomb stress triggering during the Mw5.7 Pawnee earthquake sequence." Abstract S51E-3177, 2016 Fall meeting, AGU, San Francisco, CA, 12-16 Dec

90. 2016 Cheng, Y., Chen, X., "Seismicity and source spectra analysis in Salton Sea Geothermal Field." Abstract S31B-2740, 2016 Fall meeting, AGU, San Francisco, CA, 12-16 Dec

91. 2016 Pennington, C. N., Chen, X., Abercrombie, R. E., McMahon, N. D., Aster, R. C., "Seismological analysis of induced earthquakes in central Oklahoma, comparing a large seismogenic fault with M5 earthquakes and small faults lacking M4 events." Abstract S43C-2868, 2016 Fall meeting, AGU, San Francisco, CA, 12-16 Dec

92. 2016 Chen, X., Abercrombie, R. E., Pennington, C. N., Meng, X., Peng, Z., "Source parameter validations using multiple-scale approaches for earthquake sequences in Oklahoma: implications for earthquake triggering processes." Abstract S13A-2515, 2016 Fall meeting, AGU, San Francisco, CA, 12-16 Dec

93. 2016 Weingarten, M., Goebel, T., Chen, X., Haffener, J., Brodsky, E. E., "The 2016 Mw5.1 Fairview, Oklahoma earthquake sequences: evidence for long-range triggering of earthquakes by coupled fluid pressure and poroelastic stress changes." (invited) Abstract T54B-01, 2016 Fall meeting, AGU, San Francisco, CA, 12-16 Dec

94. 2016 Goebel, T., Aminzadeh, F., Chen, X., Haffener, J., "Statistical seismicity analysis

methods for the detection of fault activation during fluid injection." 2016 Annual meeting, SEG, Dallas, TX, 16-21 Oct

95. 2016 Yao, D., Peng, Z., Meng, X., Chen, X., Castro, R., Deng, S., "Comprehensive detection and relocation of the 2010 Mw7.2 El Mayor-Cucapah foreshock sequence." Poster 216, 2016 Annual meeting, SCEC, Palm Springs, 11-14 Sep

96. 2016 Abercrombie, R., Chen, X., "Earthquake source parameter validation using multiple-scale approaches for induced seismicity in Oklahoma." Poster 063, 2016 Annual meeting, SCEC, Palm Springs, 11-14 Sep

97. 2016 Cheng, Y., Chen, X., "Seismicity and spectral analysis in Salton Sea Geothermal Field." Poster 184, 2016 Annual meeting, SCEC, Palm Springs, 11-14 Sep

98. 2016 Carpenter, B., Zu, X., Chen, X., Reches, Z., "Slip and seismic radiation along Bi-material faults: an experimental analysis." Poster 027, 2016 Annual meeting, SCEC, Palm Springs, 11-14 Sep

99. 2016 Goebel, T., Weingarten, M., Chen, X., Haffener, J., Brodsky, E. E., "The 2016 Mw5.1 Fairview, Oklahoma earthquakes: evidence for long-range poroelastic triggering at ≥ 30 km from disposal wells." Poster 202, 2016 Annual meeting, SCEC, Palm Springs, 11-14 Sep

100. 2016 Chen, X., Peng, Z., Meng, X., Chen, C., Haffener, J., Chang, J., "Detailed Analysis of an Earthquake Cluster Potentially Driven by Fluid Flow in Central Oklahoma," 2016 Annual meeting, SSA, Reno, NV, 20-22 Apr.

101. 2015 Cheng, Y., Chen, X., "Analysis of earthquake clustering and source spectra in the Salton Sea Geothermal Field," Abstract T43D-3043, 2015 Fall meeting, AGU, San Francisco, CA, 14-18 Dec

102. 2015 Zu, X., Reches, Z., Chen, X., Chang, J. C., Carpenter, B. M., "Fault rupture as a series of nano-seismic events during high-velocity shear experiments," Abstract MR33C-2691, 2015 Fall meeting, AGU, San Francisco, CA, 14-18 Dec

103. 2015 Chen, X., Cheng, Y., "Multi-scale comparison of source parameter estimation using empirical Green's function approach," Abstract S43E-02, 2015 Fall meeting, AGU, San Francisco, CA, 14-18 Dec

104. 2015 Meng, X., Daniels, C., Smith, E., Peng, Z., Chen, X., Wagner, L., Fischer, K., Hawman, R., "Statistical discrimination of induced and tectonic earthquake sequences in Central and Eastern US based on waveform detected catalogs," Abstract S13B-2851, 2015 Fall meeting, AGU, San Francisco, CA, 14-18 Dec

105. 2015 Cheng, Y., Chen, X., SEG annual meeting, "Effect of geothermal operations on seismic characteristics in the Salton Sea Geothermal field," Oral presentation, 2015 Annual meeting, SEG, New Orleans, LA. October

106. 2015, Chen, X., McGuire, J., "Possible Effects of Geothermal Operations on Earthquake Triggering Processes in the Salton Sea Geothermal Field," 2015 Annual meeting, SSA, Pasadena, CA, April

107. 2014, Chen, X., Shearer, P., "Analysis of foreshock sequences in California – implications of foreshock triggering process," 2014 Fall meeting, AGU, San Francisco, CA, December.

108. 2014 Chen, X., McGuire, J., "Pinning fault zone strength using small earthquakes in the Mendocino triple junction region recorded by a dense OBS array," 2014 Fall meeting, AGU, San Francisco, CA, December.

109. 2014 Chen, X., "Streamflow modulation of seismicity in central Oklahoma", 1st earthquake nucleation school, Cargese, Corsica, 3-10 Nov

110. 2014 Chen, X., McGuire, J, "Analysis of microearthquakes in the Mendocino triple junction area using the Cascadia Initiative focused array," ., IRIS Amphibious Array workshop, Snowbird, UT, October 2014.

111. 2014 Chen, X., McGuire, J., "Influence of fluid pressure variations in earthquake swarms in the Salton Sea geothermal field?," 2014 annual meeting, SCEC, Palm Springs, CA, Sep

112. 2014 Chen, X., McGuire, J., "Understanding fault strength distributions in the Cascadia subduction system using Cascadia Initiative data," IRIS annual workshop, Sunriver, OR.

(June 2014).

113. 2013 Chen, X., Kato, A., "Triggering processes of earthquake bursts in Japan: evidence from statistical modeling," 2013 fall meeting, AGU, San Francisco, CA. (December 2013).
114. 2013 Chen, X., Kato, A., "Characteristics of seismicity clustering in Japan," Statseis8, Beijing, China. (August 2013).
115. 2013 Chen, X, "Characteristics of seismicity within proximity to active geothermal and volcanic areas,", IAVCEI, Kagoshima, Japan. (July 2013).
116. 2012 Chen, X., Shearer, P., "California foreshock sequences suggest underlying aseismic process," 2012 fall meeting, AGU, San Francisco, CA. (December 2012).
117. 2012 Chen, X., Shearer, P., "Microseismicity in the Salton Trough - what can we learn about the geothermal reservoir?," AAPG-SEG west coast student expo, Northridge, CA. (October 2012).
118. 2012 Chen, X., Shearer, P, "California foreshock sequences suggest underlying aseismic process," 2012 annual meeting, SCEC, Palm Springs, CA. (September 2012).
119. 2012 Chen, X., Shearer, P., Hauksson, E., "Systematic Analysis of Foreshock Sequences in Southern California," 2012 annual meeting, SSA, San Diego, CA. (April 2012).
120. 2011 Chen, X., Shearer, P., "Systematic Analysis of Foreshock Sequences in Southern California," 2011 fall meeting, AGU, San Francisco, CA. (December 2011).
121. 2011 Chen, X., Shearer, P., Abercrombie, R., "Statistical analysis of 71 bursts in southern California," 2011 annual meeting, SCEC, Palm Springs, CA. (September 2011).
122. 2010 Chen, X., Shearer, P., "Earthquake source parameters and swarm migration behavior in the Salton Trough," 2010 fall meeting, AGU, San Francisco, CA. (December 2010).
123. 2010 Chen, X., Shearer, P., "Study of Earthquake Source Parameters and Swarm Behavior in Salton Trough," 2010 annual meeting, SCEC, Palm Springs, CA. (September 2010).
124. 2009 Chen, X., Shearer, P., "Analysis of Earthquake Source Spectra in Salton Trough," 2009 fall meeting, AGU, San Francisco, CA. (December 2009).
125. 2008 Chen, X., Shearer, P., Fricker, H., Walter, F., AGU annual meeting, "Global Seismic Event Detection Using Surface Waves: 15 Possible Antarctic Glacial Sliding Events," 2008 fall meeting, AGU, San Francisco, CA. (December 2008).

Media Contributions

Internet

OU daily (February 2019). Live science (August 3, 2017). Norman transcript (July 16, 2017). Eurekalert (July 12, 2017). OGS press release. (June 2017).

Newspaper

Nature journalist. (April 10, 2015).

TV

KOCO Channel 5. (July 2017). NBC. (March 22, 2016).

Documentary film expert for BriteSpark "Engineering Catastrophes" Series (December, 2020)

Contracts, Grants and Sponsored Research (awarded)

Current award:

Chen, X. (Principal Investigator), Carpenter, B. C. (Co-Principal Investigator), "Collaborative Research: Roles of rupture complexity, geological structure, stress interaction on earthquake sequences" (with Dr. Abercrombie at BU), NSF-Geophysics $399,437 (08/01/2021-07/31/2024).

Chen, X. (Principal Investigator), Gallagher Fellowship at the University of Calgary (2021-2022), $22,100 (CAD) visit Prof. David Eaton

Chen, X. (Principal Investigator), Roles of foreshocks in triggering large earthquakes and stress

drop validation, SCEC, $22,000. (02/01/2021- 01/31/2022)

Chen, X. (Principal Investigator), Rupture Complexity of Small and Moderate Earthquakes in the 2019 Ridgecrest Earthquake Sequence: Implications for Variabilities in Stress Drop Estimates and Ground Motions (with Dr. Qimin Wu), SCEC, $9,300. (02/01/2021-01/31/2022)

Ghassemi, A. (Principal Investigator), Chen, X. (Co-Principal Investigator), Application of Advanced Techniques for Determination of Reservoir-Scale Stress State at FORGE, Department of Energy, ~$230,000 to Xiaowei Chen. (08/01/2021-07/31/2024)

Chen, X. (Principal Investigator), "RII Track 4: Illuminating the Dark Subsurface using Fiber Optic Distributed Acoustic Sensing (DAS) Array", Sponsored by National Science Foundation, Federal, $227,876. (2/1/2021-1/31/2023)

Chen, X., (Principal Investigator), "Subsurface Illumination with Ultra-Dense DAS array", OU Faculty Investment Program (FIP), $15,000 (2020-2022)

Neeman, H. J. (Principal Investigator), Xue, M. (Co-Principal Investigator), Brewster, K. A. (Co-Principal Investigator), Cruz, J. (Co-Principal Investigator), Dresback, K. (Co-Principal Investigator), Kolar, R. (Co-Principal Investigator), Todd, R. M. (Co-Principal Investigator), Baron, E. A. (Co-Principal Investigator), Bartley, L. E. (Co-Principal Investigator), Biggerstaff, M. I. (Co-Principal Investigator), Bumm, L. A. (Co-Principal Investigator), Cavallo, S. (Co-Principal Investigator), Chen, X. (Co-Principal Investigator), Creager, G. J. (Co-Principal Investigator), Crowell, S. M. (Co-Principal Investigator), Friedman, J. R. (Co-Principal Investigator), Huang, L. (. (Co-Principal Investigator), Jensen, M. (Co-Principal Investigator), Calhoun, K. M. (Co-Principal Investigator), Mc Pherson, R. A. (Co-Principal Investigator), McGovern, A. (Co-Principal Investigator), Nakata, N. (Co-Principal Investigator), Stevenson, B. S. (Co-Principal Investigator), Straka, J. M. (Co-Principal Investigator), Wang, X. (Co-Principal Investigator), Wang, B. (Co-Principal Investigator), Wenger, M. J. (Co-Principal Investigator), Xiao, X. (Co-Principal Investigator), Yu, T.-Y. (Co-Principal Investigator), Laufersweiler, M. (Co-Principal Investigator), Severini, H. (Co-Principal Investigator), "Acquisition of a Regional Resource for Long-term Archiving of Large Scale Research Data Collections," Sponsored by National Science Foundation, Federal, $967,755.00. (September 1, 2018 - August 31, 2021, no cost extension to 2022).

Completed award:

Chen, X. (Principal Investigator), "Improving fracture monitoring of hydraulic fracturing to enhance production," Sponsored by McCoy research funds, State, $100,000. (December 12, 2018 - August 31, 2019).

Chen, X. (Principal Investigator), "Collaborative Research: Multi-scale validation of earthquake source parameters to resolve any spatial, temporal or magnitude-dependent variability at Parkfield, CA," Sponsored by National Science Foundation, Federal, $224,262. (March 15, 2016 - February 28, 2019, no cost extension to February 28, 2021).

Chen, X. (Principal Investigator), "Understanding the triggering process of the foreshock sequence of the 2010 M7.2 El-Mayor-Cucapah earthquake", Sponsored by University of California-Southern California Earthquake Center, University, $25,000. (February 1, 2019 - January 31, 2020).

Chen, X. (Principal Investigator), "Probing the characteristics of earthquake source complexity in areas of structural complexity," Sponsored by University of California-Southern California Earthquake Center, University, $15,000. (February 1, 2018 - January 31, 2019).

Chen, X. (Principal Investigator), Walter, J. (Co-Principal Investigator), "Roles of stress heterogeneity and stress interaction in induced seismicity: example from the Fairview/Woodward area in Oklahoma," Sponsored by U.S. Department of the Interior, U.S. Geological Survey, Federal, $52,705. (December 31, 2017 - December 30, 2018).

Nakata, N. (Principal Investigator), Chang, J. C. (Co-Principal Investigator), Chen, X. (Co-Principal Investigator), "NSF RAPID: Monitoring aftershocks for the Mw5.8 Pawnee

earthquake," Sponsored by National Science Foundation, Federal, $23,001. (October 1, 2016 - October 31, 2017).

Chen, X. (Principal Investigator), Murray, K. (Co-Principal Investigator), "Modeling fault slip induced by fluid disposal on pre-existing faults," Sponsored by Oklahoma Geological Survey, State, $45,000. (May 31, 2016 - February 1, 2018).

Chen, X. (Principal Investigator), "Seismogenic fault mapping using focal mechanisms and geographic distribution of seismicity," Sponsored by Oklahoma Geological Survey, State, $25,848. (May 30, 2016 - June 1, 2016).

Chen, X. (Principal Investigator), "NSF-RAPID: Rapid Response for the M5.1 Fairview Earthquake - Detailed Understanding of the Fault Systems in Western Oklahoma," Sponsored by National Science Foundation, Federal, $14,500. (March 15, 2016 - February 28, 2017).

Chen, X. (Principal Investigator), "Effect of geothermal operations on earthquake source processes in the Salton Sea geothermal field," Sponsored by University of Southern California, University, $59,680. (February 1, 2015 - January 31, 2017).

Awards and Honors

Stubbeman-Drace Presidential Professor, University of Oklahoma (May 2020).

Outstanding student presentation award, AAPG-Expo. (October 2012).

Chinese government award for outstanding self-financed student abroad, Chinese government. (May 2011).

Outstanding student paper award, AGU. (December 2010).

Outstanding project in the undergraduate student research program, University of Science and Technology of China. (September 2006).

Cyrus Tang Scholarship, University of Science and Technology of China. (2004-2007)

Freshman Scholarship, University of Science and Technology of China. (2003)

Student awards:

Colin Pennington:
> USGS Mendenhall Postdoc Fellowship, 2020
> 1st place presentation at the AAPG student Expo, 2017

Zach Rosson:
> SSA best student paper, 2019

Sarah Sundberg:
> 2nd place presentation at the AAPG student Expo, 2018 and 2019

Jackson Haffener:
> DeGoyler Award from the School of Geology and Geophysics, 2017

Yifang Cheng:
> 1st place presentation at AAPG student Expo, 2016

SERVICE

Department Service

Committee lead:

Committee A (elected to assist department chair) (August 2020 – 2021)

Search committee chair for environmental geophysics assistant professor (2020-2021)

Lead AGU Bridge proposal submission (approved for five years) to improve diversity, equity, and inclusion in geoscience, also serve as point of contact for bridge program (October 2019, 2020 – present).

Committee Member:

Graduate expectation committee (2019 – 2021).

Website/communication committee. (2018 - 2021).

Graduate student admission committee. (January 2015 - 2021).

Outstanding senior committee. (November 2015 - 2016).

Undergraduate student research funding committee. (2016)

Bylaw committee (2018-2021).

Search committee member for geophysics research scientist (2019, 2020)

Search committee member for Computational Geophysics Professor (August 2019 – May 2020)

Search committee member for Exploration Geophysics Professor (August 2017 – May 2018)

Search committee member for Applied Geophysics and Solid Earth Geophysics professor positions (August 2015 – May 2016)

Search committee member for Solid Earth and Exploration Geophysics professor positions (Jan 2015 – May 2015)

College Service

Committee Member, Diversity, Equity, and Inclusion committee. (August 2020 – December 2021).

Participant of reading club on DEI related topics (fall 2020)

Nomination committee (2018, 2019)

Committee Member, Search Committee for State Seismologist at OGS. (August 2015 - 2016).

University Service

Member of DISC (Data Institute for Societal Challenges), OU, July 2021 - present

Leader of URGE Pod group discussion jointly with College of Atmospheric and Geographic Sciences (CAGS), spring 2021

Representative for IRIS and UNAVCO at OU since 2015.

Professional Service

Editorial Board and Special Issues:

Editor, Earth Planets and Space (2022-2025)

Guest Editor, Frontiers in Earth Science, Special issue on: Advances and Applications of Distributed Optical Fiber Sensing (DOFS) in Multi-scales Geoscience Problems (2022)

Guest Editor, EPP: Special issue on: Induced Seismicity (2020 – 2021)

Guest Editor, SRL: Special issue on: the Pawnee Earthquake. (November 2016 - May 2017).

Reviewer:

Reviewer, Journal Article, BSSA, GJI, SRL, Tectonophysics, GRL, JGR, Science China Earth Sciences, Geothermics, Hydrogeophysics, Scientific Reports, Nature Communications

Reviewer, Grant Proposal, NSF adhoc, NSF panel, USGS panel

Workshop and Session Chair:

Co-Organizer, Seismological Society of America - Eastern Section, Norman, OK. (October 2017).

Co-Organizer, SEISMS: Scientific Exploration of Induced SeisMicity and Stress, New York City, New York. (March 2017).

Co-Organizer, Seismicity in Oklahoma, Norman, OK. (July 2016 - September 2016).

Session Chair, AGU fall 2017, New Orleans, LA. (May 2017 - December 2017).

Session Chair, SSA 2017. (April 2017).

Session Chair AGU 2016, late-breaking session #2: 3 September 2016 M5.8 Pawnee earthquake, Oklahoma. (October 2016 - December 2016).

Session Chair AGU 2016, session S13A, S21E: Macroscopic earthquake source parameter studies: from basic to application, I and II, CA. (October 2016 - December 2016).

Session Chair, AGU fall 2015, session S004: Earthquake source studies, San Francisco, CA. (October 2015 - December 2015).

Session Chair, AGU fall 2013 session S22A: Seismicity, San Francisco, CA. (December 2013).

Community Mentor Service

SSA mentor service for early career members, July 2021

AAPIiG Mentor Program, 2022 (mentor to junior members in the AAPI community)

Awards and Honors

Service, Professional

Editor's citation for excellence in refereeing for JGR-Solid Earth, AGU. (March 29, 2018).

Statement:

This CV submitted is most current and correct as of the date of this signature.

Signature:

Date: