

Hongyu Xiao

Ph.D. | The University of Oklahoma | Email: Hongyu.Xiao-1@ou.edu

Education

Ph.D. in Geophysics/Geology, University of Illinois Urbana-Champaign, 2023 Advisor: Dr. Xiaodong Song

M.S in Geophysics/Physics, University of Chicago, 2016 Advisor: Dr. Douglas MacAyeal

B.E.S in Geological Engineering, China University of Petroleum, Beijing, 2014, **Honor Program**, Top Graduates

Professional Experience

Research Associate, University of Oklahoma **Apr. 2024-now**

Research Assistant, University of Illinois Urbana-Champaign, Department of Geology **Aug. 2017-Dec. 2023**

Graduate Student Intern, the Illinois Geological Survey **May 2022- Aug. 2022/ Aug. 2023-Dec. 2023**

Projects

Department of Energy - Oklahoma Geological Survey Coordination Of Mid-Continent Carbon Management

Lead PI: Dr. Nicholas Hayman, The University of Oklahoma **2024- 2026**

Publications

- Xiao, Hongyu, et al. "Crustal Thickness Variations in the Central Midcontinent, USA, and Their Tectonic Implications: New Constraints Obtained Using the H- κ -c Method." *Geophysical Research Letters* 49.17 (2022): e2022GL099257.
- (In review at *EPSL*) Xiao, Hongyu, et al. "Moho Depth (Crustal Thickness) Variations Under The Northeastern Midcontinent Of North America, Based On H-K-C Receiver-Function Analysis"
- (In prep) Xiao, Hongyu, et al. " Joint Inversion of Surface Wave Dispersions and Receiver Functions in The Central Midcontinent of The United States: Implications for the Central Midcontinent of the USA "
- (In prep) Xiao, Hongyu, et al. " Crustal Thickness Variations Across North American Cratonic Basins: New Constraints from the Williston, Illinois, and Michigan Basins Using Receiver-Function Analysis. "
- (In prep) Xiao, Hongyu et al., "Benchmarking Transfer Learning for Enhanced Detection and Monitoring of Induced Earthquakes from Regional and Microseismic Arrays"
- (In prep) Xiao, Hongyu et al., Boosting Microseismic Detection: Hyperparameter Optimization in Transfer Learning for Induced Earthquake Monitoring"
- (In prep) Balakian, Riley & Xiao, Hongyu " Horizontal to Vertical Spectral Ratio (HVSr) Analysis with SPRITE: An Open-Source Python-Based Software for Accurate Bedrock Interpretation "

Conference Presentations

- (**Invited Talk**) Topic: Continental-Interior Deformation Deeper Down: Hints of Crustal Buckling and Trans-Crustal Shear Zones in the Cratonic Platform, Midcontinent USA
Stephen Marshak, **Hongyu Xiao**, Benjamin Murphy, Michael DeLucia, Xiaodong Song
GSA Annual Meeting in Pittsburgh, Pennsylvania, USA – 2023
- Topic: SPRIT HVSR: An Open-Source Software Package in Python for Processing, Analyzing, and Visualizing Ambient Seismic Vibrations
Riley Balikian, **Hongyu Xiao**, Alexandra Sanchez
GSA Annual Meeting in Pittsburgh, Pennsylvania, USA - 2023
- Topic: The Varying Crustal Thickness Underneath the Cratonic Basins in the Midcontinent of USA and its Implications: New Insights Using the H- κ -c Method
H Xiao, MS DeLucia, X Song, S Marshak
AGU Fall Meeting 2022
- Topic: Surface Wave Tomography from Ambient Noise in Central U.S. and its Implications for Illinois Basin and New Madrid Seismic Zone
H Xiao, X Song, S Marshak
GSA Annual Meeting in Indianapolis, Indiana, USA - 2018

Teaching Experience

Teaching Assistant, University of Illinois Urbana-Champaign, Geology Department **2017- 2023**

Lab teaching instructor for multiple undergraduate level courses:

- Planet Earth / Physical Geology / Mineralogy and Mineral Optics / Structural Geology and Tectonic

Program instructor, University of Chicago **2016- 2017**

- Design and deliver STEM courses with Argonne National Laboratory incorporating cutting-edge research and hands-on learning experiences to under-privileged students.
- Developed and maintained strong partnerships with key stakeholders in the community, including schools, government agencies, and industry leaders, to ensure that our programs remained relevant and impactful.

Professional Service

Student Representative, UIUC Department of Geology Climate Working Group, 2021-2022

Vice President, UIUC Department of Geology Graduate Student Council, 2020-2021

Honors and Awards

Teachers Ranked as Excellent by Their Students, 2022

Teachers Ranked as Excellent by Their Students, 2021

Jackson Graduate Research Awards, 2020

Teachers Ranked as Excellent by Their Students, 2019