

Andrew Hoxey, PhD

Geologist - Structure, Neotectonics
andrewhoxey.com

SUMMARY OF QUALIFICATIONS

Geological Research; Structure and Neotectonics

I use structural geology, field mapping, and geochronology to investigate the timing, development, and rates of strain in actively deforming regions. My work focuses on the effects of deformation on topography and role of intra-plate strike-slip faults in partitioning strain driven by velocity gradients across plate boundaries.

Field-based Research

- Planned and executed domestic and international field seasons to produce original geologic maps and collect geochronology samples, documenting kinematics of transform fault systems

Data Processing and Geographic Information Systems

- Compiled geologic maps and performed topographic analysis with ArcMap, QGIS, AdobeCC, Google Earth Engine, and MATLAB (MATLAB, Python, JavaScript proficient)

Higher Education

- Instructor and teaching assistant for multiple lab and field courses in various geologic settings including Utah, Colorado, Oregon, and Idaho

EDUCATION

Doctorate of Philosophy - Geology , University of Kansas	2024
• Erasmus Haworth Graduate Honors in Geology	
Master of Science - Geological Sciences , Central Washington University	2018
• Distinguished Thesis Award	
Bachelor of Science - General Geology , University of Kansas	2016
• Research Experience Certificate	
Bachelor of Science - Journalism, Geology Minor , University of Kansas	2009

PROFESSIONAL APPOINTMENTS

Field Geologist , New Mexico Bureau of Geology and Mineral Resources	2024-Present
Visiting Assistant Professor , New Mexico State University	2023-2024
Graduate Research/Teaching Assistant , University of Kansas	2018-2023
Graduate Research/Teaching Assistant , Central Washington University	2016-2018

RESEARCH EXPERIENCE

Ph.D. Dissertation, University of Kansas; 2024

- Dissertation: “Orogen-parallel shear along the Western Nepal Fault System; challenging 2D models for convergence and informing earthquake hazard preparedness”
- Supervisor: Dr. Michael Taylor
- Acted as excursion leader for multiple field seasons comprised of researchers from international collaborating universities
- Sampled and analyzed material for Terrestrial Cosmogenic Nuclide (TCN - ^{10}Be), Optically Stimulated Luminescence (OSL, IRSL), and Low-Temperature Thermochronology
- Used iOS-based geologic data collection software
- Mentored diverse levels of students during international field seasons
- Produced and compiled geologic maps using ArcMap, QGIS, Adobe CC, Google Earth Pro
- Processed raster elevation data with ArcMap, QGIS, Google Earth Engine, and MATLAB hydrology toolkits to characterize surface topography
- Developed globally accessible GIS cloud computing platforms for remote reconnaissance mapping and use in introductory geology courses

M.S. Thesis, Central Washington University; 2018

- Thesis: “Spatial and temporal characterization of the Petrified Spring fault, Central Walker Lane, Nevada: Documenting Miocene-Pliocene dextral slip”
- Supervisor: Dr. Jeffrey Lee
- EdMap-funded geologic mapping compiled using ArcMap and Adobe CC for Nevada Bureau of Mines and Geology publication
- Produced hand-sample and thin-section descriptions of sedimentary and igneous units
- Sampled and analyzed material for Ar/Ar geochronology

Senior Thesis, University of Kansas; 2016

- Thesis: “Geospatial representation of regional-scale channel slope variation along the Himalayan Range”
- Supervisor: Dr. Michael Taylor

Field Assistant, University of Kansas; 01/2015, 03/2016, 07/2021

- Assisted graduate students with geologic and geomorphic mapping in Mesquite, NV, Torrey, UT, and Bend, OR

TEACHING EXPERIENCE

Visiting Assistant Professor, New Mexico State University; 2023 – 2024

- Prepare and present lecture material for undergraduate and graduate courses
- Prepare field guide materials for undergraduate and graduate courses
- Supervise Graduate Teaching Assistants
- Courses:
 - Physical Geology (F23, S24)
 - Physical Geology - online (F23)
 - GIS for Geologists (F23)
 - Tectonics of North America (S24)
 - Graduate Advanced Mapping (S24)

Teaching Assistant, University of Kansas; 2018 – 2023

- Guide students using geologic data collection and processing software - StraboSpot, Stereonet, Kingdom Suite
- Familiar with geology of Utah and Colorado
- Courses:
 - Optical Mineralogy (F18, F19, F20)
 - Petroleum & Subsurface Lab (F19),
 - Intro to Earth History (F20)
 - Field Camp (Su19, Su21, Su22, Su23)

Teaching Assistant, Central Washington University; 2016 – 2018

- Prepare and present lecture material in classroom and field setting
- Manage logistics for lab exercises and field excursions for large groups of students
- Familiar with geology of Washington, Oregon, and Idaho
- Courses:
 - Introductory Lab (F16)
 - Historical Geology (W17)
 - Structural Geology (S17)
 - Field Camp (Su17)

SERVICE/SOCIETAL MEMBERSHIP

KU Geology Department - PhD Student Representative; 2020 – 2021

- Diversity, Equality, and Inclusion Committee Member; 2020 – 2021

American Geophysical Union - Member

Geological Society of America - Member

Association for Women Geoscientists - Secretary; 2018 – 2019

GRANTS AND FELLOWSHIPS

Dean McGee Scholarship - KU Department of Geology; 2021

Patterson Fellowship - KU Department of Geology; 2020 – 2022

Chevron Summer Scholarship - KU Department of Geology; 2020

Research Excellence Initiative Grant - KU College of Liberal Arts and Sciences; 2020

NSF Travel Stipend - 34th Himalaya-Karakoram-Tibet Workshop; 2019

Graduate Student Research Grant - Geological Society of America; 2017

EdMap Student Research Grant - US Geological Survey; 2017

H.A. & Elsie Ireland Scholarship - KU Field Camp; Academic Year; 2015 – 2016

AWARDS

Erasmus Haworth Award - KU Department of Geology; 2024

Graduate Student Award for Distinguished Service Nominee - KU Office Graduate Studies; 2022

Alice Mitchell Jackson Service Award - KU Department of Geology; 2021

Distinguished Master's Thesis Award - CWU Department of Geology; 2019

Outstanding Poster Presentation - KU Department of Geology GHawk Symposium; 2018, 2022

Outstanding Graduate Teaching Assistant Award - CWU Department of Geology; 2018

Honor Roll - University of Kansas; 2014 – 2016

CONFERENCE CONVENING

AGU Fall Meeting 2023, "Filling in the Margins: 3D Architecture of Convergent Margins and the Transferability from Subduction to Collision." Conveners: **Andrew K.R. Hoxey**, Elizabeth R. Curtiss, Suoya Fan, Clay F. Campbell

RELEVANT COURSEWORK

Structure and Tectonics

- Strike-Slip Fault Systems, Basin Analysis, Structural Geology, Advanced Geologic Mapping, Stress in the Lithosphere, Subduction Zones, Field Tectonics-Death Valley, Neotectonics, Seismology

Core Geology Courses

- Igneous and Metamorphic Petrology, Stratigraphy, Sedimentology, Mineralogy, Optical Mineralogy, Paleontology, Geomorphology, Geophysics, Volcanology, Petroleum Geology, Terrigenous Depositional Systems, Deepwater Systems, Sedimentary Basins of Spain, Petrography and Petrogenesis, Geology of the Pacific Northwest, Geology of the Grand Canyon, Field Camp

Data Processing

- Intermediate GIS, Remote Sensing, Drone Mapping, Seismic Interpretation, Error Analysis

Additional Training

- Imperial Barrel Award - KU Geology Team Member; 2nd place regionally, 2020
- Introduction to Petroleum Structural Geology - GSA Annual Meeting, 2019

PUBLICATIONS

Hoxey, Andrew K.R., Michael H. Taylor, Michael Murphy, Sean Bemis, Richard Styron, Elizabeth Curtiss, Michael Daniel, Suoya Fan, Deepak Chamlagain, Manoj Kafle, Basanta R. Adhikari, John Gosse, Tammy Rittenour. "Active faulting and the development of slip partitioning in West Nepal." *In Prep for GSA Bulletin*.

Hoxey, Andrew K.R., Michael H. Taylor, Michael Murphy, Sean Bemis, Richard Styron, Elizabeth Curtiss, Michael Daniel, Suoya Fan, Deepak Chamlagain, Manoj Kafle, Basanta R. Adhikari, John Gosse, Tammy Rittenour. "Evidence for dextral slip in the northwest segment of the Western Nepal Fault System, Dolpo Nepal." *In Prep for GSA Bulletin*.

Hoxey, Andrew K.R., Michael H. Taylor, J. Douglas Walker, Diane L. Kamola. "Google Earth Engine cloud computing Web Apps for investigating and teaching fundamental geologic and geomorphic concepts." *GSA Today*; 2024.

Fan, Suoya, Michael A. Murphy, David M. Whipp, Joel E. Saylor, Peter Copeland, **Andrew K.R. Hoxey**, Michael H. Taylor, and Daniel F. Stockli. "Megathrust Heterogeneity, Crustal Accretion, and a Topographic Embayment in the Western Nepal Himalaya: Insights From the Inversion of Thermochronological Data." *Tectonics*; 2022

Hoxey, Andrew, Jeffrey Lee, and Andrew Calvert, Geologic map of the Petrified Springs Fault, Gabbs Valley Range, Mineral County, NV: Nevada Bureau of Mines and Geology Map, scale 1:24,000; 2020

Lee, Jeffrey, **Andrew Hoxey**, Andrew Calvert, Peter Dubyoski. "Plate boundary trench retreat and dextral shear drive intracontinental fault slip histories: Neogene dextral faulting across the Gabbs Valley and Gillis Ranges, Central Walker Lane, Nevada." *Geosphere*; 2020

PRESENTATIONS

Hoxey, Andrew K.R., Michael H. Taylor, Michael Murphy, Sean Bemis, Richard Styron, Elizabeth Curtiss, Michael Daniel, Suoya Fan, Deepak Chamlagain, Manoj Kafle, Basanta R. Adhikari, John Gosse, Tammy Rittenour. "Active Faulting and the Development Lateral Ramps in the Main Himalayan Thrust of West Nepal." In *AGU Fall Meeting Abstracts*; 2023

Elizabeth Curtiss, Sean Bemis, **Hoxey, Andrew K.R.**, Michael H. Taylor, Michael Murphy, Richard Styron, Michael Daniel, Suoya Fan, Deepak Chamlagain, Manoj Kafle. "Potential Evidence of a Synchronous Rupture on a Major Splay Fault and the Main Himalayan Thrust." In *AGU Fall Meeting Abstracts*; 2023

Daniel Mongovin, Michael H Taylor, Adam M Forte, Michael A Murphy, Devon A Orme, Basant Bhandari, **Andrew KR Hoxey**, and Vivian Grom. "Stranded Gravels, Fluvial Geomorphology, and Neotectonics of the Kali Gandaki River, Himalayas, Central Nepal." In *AGU Fall Meeting Abstracts*; 2023

Hoxey, Andrew K.R., Michael H. Taylor, Michael Murphy, Sean Bemis, Richard Styron, Elizabeth Curtiss, Michael Daniel, Suoya Fan, Deepak Chamlagain, Manoj Kafle, Basanta R. Adhikari, John Gosse, Tammy Rittenour. "Quaternary History and Evolution of the Western Nepal Fault System; Splay Fault Maturity in an Active Fold and Thrust Belt." In *AGU Fall Meeting Abstracts*; 2022

Hoxey, Andrew K.R., Michael Taylor, Michael Murphy, Sean Bemis, Richard Styron, Deepak Chamlagain, Manoj Kafle, Elizabeth Curtis, Michael Daniel, Suoya Fan, Basanta Adhikari, John Gosse, Tammy Rittenour. "Quaternary offsets and slip rates along the Western Nepal Fault System as evidence for active orogen-oblique" In *Abstract volume of the 35th Himalaya-Karakorum-Tibet Workshop*. 2022

Hoxey, Andrew K.R., Michael H. Taylor. "Google Earth Engine cloud computing Web Apps for investigating and teaching fundamental geologic and geomorphic concepts." In *GSA Annual Meeting*; 2022

Hoxey, Andrew K.R., Michael Taylor, Michael Murphy, Sean Bemis, Richard Styron, Elizabeth Curtis, Michael Daniel et al. "Active Faulting in the High Himalaya of West Nepal: Quaternary Slip Rates Along the Western Nepal Fault System." In *AGU Fall Meeting Abstracts*; 2021

Mongovin, Daniel, Michael Taylor, Sean Bemis, **Andrew Hoxey**, and Clay Campbell. "Strike-Slip Faulting in the Cascadia Backarc: Documentation of Dextral Activity on the Tumalo Fault, Sisters Fault Zone, Central Oregon, USA." In *AGU Fall Meeting Abstracts*; 2021

Hoxey, Andrew K.R., Michael H. Taylor, Michael A. Murphy, Sean P. Bemis, Richard H. Styron, Suoya Fan, Basanta R. Adhikari, and Deepak Chamlagain. "Topographic Express of Transform Faulting in the High Himalaya of West Nepal." In *GSA Annual Meeting*; 2020

Hoxey, Andrew K.R., Michael H. Taylor, Michael A. Murphy, Sean P. Bemis, Richard H. Styron, Suoya Fan, Basanta Raj Adhikari, and Deepak Chamlagain. "Active Deformation and its Topographic Expression in the High Himalaya of West Nepal." In *AGU Fall Meeting Abstracts*; 2020

Michael A. Murphy, Michael H. Taylor, Sean P. Bemis, Richard H. Styron, Elaina Sutley, **Andrew K.R. Hoxey**. "Using Convergence Research to Connect the 3D architecture of the Himalayan thrust wedge to the seismic hazard and risk in Western Nepal." In *Episode 8 of Geoscience for Sustainable Development, Institute of Himalayan Risk Reduction*; 2020

Hoxey, Andrew K.R., Michael H. Taylor, Richard H. Styron, Michael Andrew Murphy, Sean P. Bemis, Basanta Raj Adhikari, and Deepak Chamlagain. "Evidence for recent dextral slip along the Western Nepal Fault System in northwest Nepal." In *GSA Annual Meeting*; 2019

Hoxey, Andrew K.R., Michael H. Taylor, Richard H. Styron, Michael Andrew Murphy, Sean P. Bemis, Basanta Raj Adhikari, and Deepak Chamlagain. "Evidence for Recent Dextral Slip along the Western Nepal Fault System in northwest Nepal." In *AGU Fall Meeting Abstracts*; 2019

Hoxey, Andrew K.R., Michael H. Taylor, Richard Styron, Michael Murphy, Sean Bemis. "Evidence for Recent Dextral Slip along the Western Nepal Fault System in northwest Nepal." In *Abstract volume of the 34th Himalaya-Karakorum-Tibet Workshop*; 2019

Hoxey, Andrew, Jeffrey Lee, and Andrew Calvert. "Spatial and temporal characterization of volcanic-filled paleovalleys dextrally offset across the Petrified Springs Fault in the Central Walker Lane, Nevada" *GSA Rocky Mt/Cordilleran Joint Sections Meeting*; 2018

Hoxey, Andrew, Taylor, M.H., and Campbell, C. "Geospatial representation of regional-scale channel-slope variation along the Himalayan Range;" In *GSA Annual Meeting*; 2016