Sarah E. Johnson, Ph.D.

University of Kentucky
Department of Earth and Environmental Sciences
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## EDUCATION

**Ph.D.**, Geology, University of Kentucky, 2023

**M.S.**, Geology, Purdue University

**B.S.**, *summa cum laude,* Geology, City College of New York

## ACADEMIC EXPERIENCE

**Visiting Assistant Professor & Senior Lecturer,** Earth and Environmental Sciences, University of Kentucky. August 2023 – present

* Teach graduate and undergraduate courses Landforms, Fundamentals of Geology II, Earthquakes and Volcanoes, Environmental Geology
* Developed field trip and projects on the geomorphology of Red River Gorge with student poster presentations for the community.
* Co-developed a course for incoming exploratory students for the College of Arts & Sciences, which measurably improved retention of first year students.
* Collaborating on NSF-funded landslide research and the development of new proposals.
* Served on curriculum committee and helped develop new courses in engineering geology and geologic hazards, as well as a new climate change major.

**Senior Lecturer in Geology**, Northern Kentucky University, Department of Physics, Geology and Engineering Technology. 2002 – 2023

* Taught undergraduate geoscience courses including Geoscience Applications of GIS, Geomorphology, Geologic Field Methods, Ecology and Geology of Coral Reefs, Economic Geology, Structural Geology, and Careers in Geoscience.
* Conducted research with undergraduate students.
* Advised and mentored geology students.
* Planned and led field trips in Kentucky, Ohio, Pennsylvania, Virginia, Colorado, and Belize.
* Served on department search committees, seminar committee, university budget committee, and recruitment and retention committees.
* Collaborated on research with faculty in geology, biology, and computer science.

**Geology Program Director**, Northern Kentucky University, Department of Physics, Geology and Engineering Technology. 2018 – 2020

* Represented the geology program in interactions with students, faculty, staff, and the public.
* Recruited new geology majors and minors.
* Connected geology students with internship, research and employment opportunities.
* Interviewed, hired, prepared and mentored adjunct faculty.
* Scheduled courses and the faculty to teach them.
* Managed course fees and the program budget.

## PROFESSIONAL EXPERIENCE

**Engineering Geologist**, H.C. Nutting (now Terracon), Cincinnati, 2000 – 2002

* Worked in the geotechnical engineering group on landslide remediation, stream bank stabilization, tunnel feasibility, subsurface characterization, rock cut slope and retaining wall design.
* Performed proposal writing, permitting, field work, soil and rock classification, slope stability and hydrologic modeling, writing final reports, and performing inspections during construction.

**Marine Geophysicist**, Schlumberger, Houston, TX, 1998 – 2000

* Worked on seismic vessels to process 2D and 3D seismic data for clients.
* Assisted with seismic equipment maintenance, deployment and recovery of seismic equipment, work boat operations, safety drills and training.

REFEREED PAPERS PUBLISHED

Johnson, S.E., Haneberg, W. C, 2024, Machine Learning for Surficial Geologic Mapping, Earth Surface Processes and Landforms, *Earth Surface Processes and Landforms,* December, esp.6032 <https://doi.org/10.1002/esp.6032>.

Dilworth, J.R., M.M. McGlue, R.J. Thigpen, S.J. Brown, K.M. Yeager, E.W. Woolery, **S.E. Johnson**, S.J. Whitehead, C.J. Cortese, and C. Matocha, 2024, “Holocene Paleoenvironmental History of Jackson Lake (Grand Teton National Park, USA) Deduced from CHIRP Seismic Reflection and Radiocarbon-Dated Sediment Cores.” *Quaternary Science Reviews* 336: 108748. <https://doi.org/10.1016/j.quascirev.2024.108748>.

**Johnson, Sarah**, 2023, “Applications of Digital Terrain Modeling to Address Problems in Geomorphology and Engineering Geology.” *University of Kentucky Libraries*. <https://doi.org/10.13023/ETD.2023.167>.

Johnson, S.E., Haneberg, W. C, Crawford, M., Bryson, S., 2023, Measuring ground surface elevation changes in a slow-moving colluvial landslide using combinations of regional airborne lidar, UAV lidar, and UAV photogrammetric surveys. *Quarterly Journal of Engineering Geology and Hydrogeology.* <https://doi.org/10.1144/qjegh2022-078>.

McGlue, M. M., Dilworth, J. R., Johnson, H. L., Whitehead, S. J., Thigpen, R., Yeager, K. M., Woolery, E. W., Brown, S. J., **Johnson, S. E.**, Cearley, C. S., Clark, G., Dixon, T. S., Goldsby, R., Helfrich, A. L., Hodelka, B. N., Lo, E. L., Domingos Luz, L., Powell, N. E., Rasbold, G. G., Swanger, W. R., 2023, Dam emplacement and water level changes affect sublacustrine geomorphology and recent sedimentation in Jackson Lake, Grand Teton National Park (Wyoming, USA), *Earth Systems Science and Society*, <https://doi.org/10.3389/esss.2023.10066>.

**Johnson, S. E**., Swallom, M. L., Thigpen, J. R., McGlue, M. M., Dortch, J. M., Gallen, S., Woolery, E. W., Yeager, K., 2022, The influence of glacial topography on fluvial efficiency in the Teton Range, Wyoming (USA). *Earth and Planetary Science Letters* 592 (117643), <https://doi.org/10.1016/j.epsl.2022.117643>.

Haneberg, W.C., **Johnson, S.E**., Gurung, N., 2021, Response of the Laprak, Nepal, landslide to the 2015 Mw 7.8 Gorkha earthquake. *Natural Hazards* 111*,* 567-584, <https://doi.org/10.1007/s11069-021-05067-z>.

**Johnson, S.E.**, 1997, 1996 Tumalt Creek debris flows and debris avalanches in the Columbia River Gorge east of Portland, Oregon, in Chen, Cheng-lung, editor, *First International Conference on Debris-flow Hazards Mitigation; Mechanics, Prediction and Assessment*. American Society of Civil Engineers, New York, NY, 395-404.

REFEREED PAPERS SUBMITTED OR IN PROGRESS

Swallom, M., Goldsby, R., Thigpen, R., **Johnson, S**. **E.**, Dortch, J., Brown, S., Woolery, E., McGlue, M., Yeager, K., Linking the crustal-scale Teton and East Gallatin faults across the Yellowstone hotspot track and implications for “erasing” mountain topography. *Submitted*.

Johnson, S.E., Zhu, Y., Haneberg, W. C, Kinematic analysis of rotational and translational landslides in northern Kentucky. *In prep*.

## PROPSALS AND FUNDING

2024 NASA,submitted $879,634 *Quantitative Landslide Risk Assessment and Risk-Informed Decision Support for Eastern Kentucky using NASA Earth Observations (Co-I)*

2024 NASA, submitted $804,833, not funded
*Community-Centric Approach for Landslide Risk Assessment and Mitigation in the Face of Climate Stressors using NASA Earth Observations (Co-I)*

2024 NSF EPSCoR Track-1, funded $24,000,000 *Climate Resilience through Multidisciplinary Big Data Learning, Prediction & Building Response Systems (CLIMBS).*

2021 NKU University Research Council Distinguished Fellowship, not selected.
*Measuring Landslide Movement in Northern Kentucky Using Unmanned Aerial Vehicles and Structure from Motion (SfM) Photogrammetry.*

2019 Kentucky-NASA EPSCoR, $52,504, not funded

*Research capacity building in radar remote sensing for natural disaster management: A machine learning approach (Co-PI).*

2019 NKU Center for Integrated Science and Math (CINSAM), funded $12,304

*IMAGE- Integrated modeling and geophysical evaluations of floods in Kentucky (Co-PI).*

2019 NKU Center for Integrated Science and Math (CINSAM), $11,800, not funded

*Mapping landslide displacements in northern Kentucky using Structure from Motion (SfM) and image correlation from Unmanned Air Vehicles (UAVs) (PI).*

2018 NKU Center for Integrated Science and Math (CINSAM), funded $13,240

*Using sequential LiDAR to identify & catalog landslides in Kenton and Campbell counties (PI).*

2018 NKU Collaborative Faculty Student Project Award (CFSPA), funded $4,720

*Using LiDAR to identify & catalog landslides in Kenton and Campbell counties (PI).*

2015 NKU Undergraduate Research Council Award for Student Research & Creative Activity Abroad, funded $2000, *Examining the complex interaction between the geological structure and ecological health of coral reefs in Belize (Co-PI).*

## PUBLISHED CONFERENCE ABSTRACTS

Thigpen, R., Brown, S., Gallen, S., Prince, P., **Johnson, S**., McGlue, M., Dortch, J., O’Dell, M., Where hurricanes go to die: long-term denudation of southern Appalachian topography punctuated by major erosional pulses during catastrophic weather events, 2024 AGU Fall Meeting, abstract NH11D-09.

Thigpen, R., McGlue, M., Cortese, C., Woolery, E., Dilworth, J., Rasbold, G., Yeager, K., Whitehead, S., Brown, S., **Johnson, S.**, Teton fault paleoseismology: new seismic reflection and long-core evidence for late Quaternary earthquakes from Jackson Lake, Wyoming, USA, 2024 AGU Fall Meeting, abstract NH51F-2472.

**Johnsons, S. E**., Haneberg, W. C., 2023, Machine learning for mapping surficial geology in Kentucky, *AEG News* Vol. 66 No.4 (Annual Meeting Program with Abstracts), p. 87.

McGlue, M., Thigpen, J. R., Yeager, K., Rasbold, G. G., Dilworth, J. R., J**ohnson, S**., Schweitzer, S., Woolery, E. W., Brown, S. J., Woller, K., Cortese, C., Whitehead, S.J., The case for a long scientific borehole in Jackson Lake, Grand Teton National Park (Wyoming, USA), 2023, *Geological Society of America Abstracts with Programs*, 55(6), https://doi.org/ 10.1130/abs/2023AM-391896

Dilworth, J. R., McGlue, M., Thigpen, J. R., Yeager, K., Woolery, E. W., J**ohnson, S**., Woolery, E. W., Whitehead, S.J., Cortese, C., 2023, Paleoenvironmental dynamics of Grand Teton National Park (Wyoming) deduced from CHIRP seismic reflection and sediment cores from Jacks Lake, *Geological* *Society of America Abstracts with Programs*, 55(6), https://doi.org/10.1130/abs/2023AM-394668

Goldsby, R., Swallom, M., Thigpen, R., **Johnson, S. E**., Dortch, J., Brown, S., Woolery, E., McGlue, M., Yeager, K., 2022, Linking Teton and East Gallatin fault motion across the Yellowstone hotspot track, Wyoming USA: Implications for ongoing extension beneath Yellowstone and the northern continuation of the active Teton fault. *Geological Society of America Abstracts with Programs* (54)5, [https://doi.org/10.1130/abs/2022AM-381527](https://doi.org/10.1130/abs/2022AM-381527%29)

Haneberg, W.C., **Johnson, S. E**., Gurung, N., 2022, Laprak revisited: Understanding the response of a large Himalayan landslide to the 2015 Gorkha earthquake. *AEG News* 65(4), 74.

**Johnson, S. E**., Haneberg, W.C., 2021, Elevation change detection thresholds in a slow-moving colluvium landslide in the Cincinnati area using combinations of regional LiDAR, structure from motion photogrammetry, and UAV-LiDAR. 2021 AGU Fall Meeting, abstract NH33A-09.

**Johnson, S**., Swallom, M. L., Thigpen, J. R., McGlue, M. M., Woolery, E. W., Dortch, J., Gallen, S., Yeager, K. 2021, Post-glacial fluvial inefficiency. *Geological Society of America Abstracts with Programs* 53(6), <https://doi.org/10.1130/abs/2021AM-371378>

McGlue, M., Dilworth, J. R., Johnson, H., Yeager, K., Thigpen, J. R., Woolery, E. W., Brown, S. J., Cearley, C. S., Clark, G., Dixon, T. S., Goldsby, R., Helfrich, A. L., Hodelka, B. N., J**ohnson, S**., Domingos Luz, L., Powell, N. E., Rasbold, G. G., Swanger, W., Whitehead, S. J., 2021, Sublacustrine geomorphology and deepwater chemostratigraphy reveal effects of dam installation at Jackson Lake (Wyoming, USA). *Geological Society of America Abstracts with Programs* 53(6), <https://doi.org/10.1130/abs/2021AM-365379>

**Johnson, S.**, and Haneberg, W.C., 2020, Documenting decadal scale landslide movement using sequential LiDAR and structure from motion digital elevation models in the Cincinnati and Northern Kentucky metropolitan area. 2020 AGU Fall Meeting, abstract NH009-0004

**Johnson, S.**, Swallom, M., Thigpen, J. R., McGlue, M. M., and Woolery, E. W., 2020. A comparison of post-glacial sediment volumes from source to sink in Moran and Snowshoe Canyons, Teton Range, Wyoming. *Geological Society of America Abstracts with Programs* 52(6), <https://doi.org/10.1130/abs/2020AM-356159>

Helfrich, A. L., Swallom, M., **Johnson, S.**, Thigpen, J. R., McGlue, M. M., Woolery, E. W., Brown, S. J., McQuarrie, N., 2019, Utilizing apatite (U-Th)/He analysis, landscape and kinematic modeling to examine the relative efficacy of climatic and tectonic forcing in an active tectonic system, Teton Range, WY. *Geological Society of America Abstracts with Programs* 51(5), https://doi.org/[10.1130/abs/2019AM-338520](http://dx.doi.org/10.1130/abs/2019AM-338520)

**Johnson, S.**, Thigpen, J. R., McGlue, M. M., Woolery, E.W., 2019. Preliminary quantification of sediment storage in Moran and Avalanche Canyons in Grand Teton National Park, Wyoming, USA. *Geological Society of America Abstracts with Programs* 51(3), https://doi.org/10.1130/abs/2019SE-327584

**Johnson, S**., Edwards, T.\*, Johnson, M.\*, Brown, C.\*, Peterson, C.\*, 2018, Landslide inventory of Northern Kentucky using differential elevation maps derived from sequential LiDAR surveys. *Geological Society of America Abstracts with Programs* 50(6), https://doi.org/10.1130/abs/2018AM-323773

Roenker, B.\*, Olson R.\*, Faller, T.\*, Ivey, Z.\*, **Johnson, S**., Wang, H., 2018, Using sequential LiDAR data to identify and landslides in Kenton and Campbell counties in Northern Kentucky, *Geological Society of America Abstracts with Programs* 50(3), https://doi.org/10.1130/abs/2018SE-312623

Haneberg, W. C., **Johnson, S**., 2017, Double gaussian filtering to suppress noise and improve identification of new landslides on DEM difference maps. *Geological Society of America Abstracts with Programs* 49(6), <https://doi.org/10.1130/abs/2017AM-305313>

**Johnson, S.,** Olson R.\*, Roenker, B.\*, 2017, Using sequential LiDAR to monitor and catalog recently active landslides in Kenton and Campbell counties in Northern Kentucky. *Geological Society of America Abstracts with Programs* 49(6), https://doi.org/10.1130/abs/2017AM-306512

**Johnson, S**., Amundsen, J.\*, 2011, Identification and delineation of previously unreported landslides in Cincinnati and Northern Kentucky using LiDAR-derived maps. *AEG News* 54 (Annual Meeting Program with Abstracts), p. 88.

Brackman, T., **Johnson, S.,** Rouse, K.\*, Pullammanappallil, S., 2011, Using LiDAR and ReMi for location and delineation of landslides in northern Kentucky. *AEG News* 54 (Annual Meeting Program with Abstracts), p. 68.

Amundsen, J.\*, **Johnson, S.,** 2009, Improving approximations of the Mohr-Coulomb failure envelope. *Geological Society of America Abstracts with Programs* 41(7), p. 673.

Engel N.\*, Johnson S., 2005, The Quaternary geology and geomorphology of Big Bone Lick State Park, Kentucky”, poster presented at the Geological Society of America National Meeting, Salt Lake City, UT. *Geological Society of America*Abstracts with Programs 37(7), p. 427.

**Johnson, S.**, Andrews, W.M., 2005, Inter-disciplinary cooperative investigations at Big Bone Lick State Park, northern Kentucky. *Geological Society of America Abstracts with Programs* 37(5), p.14.

\* undergraduate research student

## OTHER PRESENTATIONS

**Johnson, S.**, and Haneberg, W.C., 2021. Documenting decadal scale landslide movement using sequential LiDAR and structure from motion digital elevation models in the Cincinnati and Northern Kentucky Metropolitan Area, poster presented at the Kentucky Geological Survey Annual Seminar, May 20, 2021.

Dortch, Jason M., Hammond, M., **Johnson, S.**, and Koch, H., 2021. LASTiff, what is it and why do I need it?, Kentucky Geological Survey Seminar Series, January 15, 2021.

**Johnson, S.** 2019. Using LiDAR, unmanned aerial vehicles and structure from motion to detect and monitor landslides in Kentucky. Presented at the Geoscience Alumni Research Symposium, University of Kentucky, October 3, 2019.

**Johnson, S**., 2014 Coral Reefs: Exercises integrating geomorphology and sedimentary geology, invited presentation at the National Association of Geoscience Teachers conference “Innovative Approaches to Teaching Sedimentary Geology, Geomorphology, and Paleontology”, June 16-20, 2014, St. Paul, MN.

**Johnson, S**., 2011, Landslide detection using LiDAR, presentation for the AEG Ohio River Valley section meeting.

**Johnson, S**., 2010, Tumalt Creek, Oregon debris flows revisited, invited speaker, University of Cincinnati Geology Colloquium Series, February, 2010.

## SELECTED UNDERGRADUTE STUDENT PRESENTATIONS SUPERVISED

Nelson, M., 2021, “Modeling Carter Caves: Structure-from-Motion Photogrammetry”, NKU CINSAM Celebration of Student Research and Creativity.

Peterson, C., Kim K., Correa, E., 2020, “Modeling methods of X-Cave system using stereo depth sensor data”, NKU CINSAM Celebration of Student Research and Creativity.

Owens, J., Peterson, C., 2019, “Integrated modeling and geophysical evaluations of floods in Kentucky”; NKU CINSAM Celebration of Student Research and Creativity.

Peterson, C., 2019, “Creation of digital elevation models using scanning airborne laser altimetry (LiDAR)”, Kentucky Academy of Science, Berea, KY, Poster won 3rd place in student competition.

Olivan, L., Martin D., Groeschen, J., 2018, “Mapping X-Cave in the Carter Caves system”, 2018 NKU CINSAM Celebration of Student Research and Creativity.

Iles, D., 2017, “Using LiDAR to gage stream restoration over time” 2017 NKU CINSAM Celebration of Student Research and Creativity.

Ollier, K., 2015, “Coral and algae distribution along the Belize Barrier Reef” 2015 NKU Heather Bullen Celebration of Student Research and Creativity. Co-supervised with Dr. Denice Robertson.

Cole, H., 2015 “Comparison of living coral and algal growth in the Belize Barrier Reef system”, 2015 NKU Heather Bullen Celebration of Student Research and Creativity. Co-supervised with Dr. Denice Robertson.

Vogelpohl, B., 2015, “Identification of landslide failure planes through varying geophysical methods” 2015 NKU CINSAM Celebration of Student Research and Creativity.

Rouse, K., 2011, “Landslide detection using LiDAR data, Kenton and Campbell County, Kentucky”, 2011 NKU CINSAM Celebration of Student Research and Creativity.

Williams, L., 2010, “Surface and groundwater connections in heavily mined communities derived from chemical analysis of water samples”, KAS 2010 annual meeting, poster won best geology poster in student competition.

Glassmeyer, M., 2009, “Depositional environment of the Split Rock Conglomerate”, KAS 2009 annual meeting.

Webster, J.; Robertson, D.; Johnson, S., 2009, “The ecology and geology of coral reefs: changes since the 1970s”, KAS annual meeting. Co-supervised with Dr. Denice Robertson.

O’Brian, Alice, Johnson, S., 2009, “Soil and landslide hazard map for Split Rock Conservation Park”, NKU CINSAM Celebration of Student Research and Creativity.

## LICENCES AND CERTIFICATIONS

Licensed Professional Geologist in Kentucky (#260854)
FAA Part 107 Remote Pilot Certificate (#4320067)

## SELECTED CONSULTING PROJECTS

**Johnson, S**., Rome, B., 2002-2003, “Biostabilization of Twin Creek channel at North Warren County Wellfield, Warren County, OH”.

**Johnson, S**., Mathis, H., 2002, “Cut slope recommendations, KY 1274 Menifee County”.

**Johnson, S**., Gilb, S., 2002, “Slope stability analysis and segmental retaining wall design”, Hillside Ave. and Anderson Ferry.

**Johnson, S**., Rome B., 2002, “Hydraulic modeling for proposed biostabilization of Little Miami Creek in Milford, OH”.

**Johnson, S**., Zhou, S., Gilb, S., 2000, “Geotechnical study of proposed mine access tunnels Liter’s Quarry, Oldham County, KY”.

**Johnson, S**., Webb, G., 2000, “Peak particle velocity (ppv) monitoring near high pressure gas mains during blasting at AA highway and Thelma Lee Drive”.

## ADDITIONAL CONFERENCES AND COURSES

2017, Kentucky Geological Survey “Kentucky Landslides”, Somerset, KY

2015, KY-AIPG Professional Development Conference "Geophysical Techniques and Applications - Non-Invasive Methods for Subsurface Characterization and Interpretation", Lexington, KY

2014, National Association of Geoscience Teachers Cutting Edge Workshop “Innovative Approaches to Teaching Sedimentary Geology, Geomorphology, and Paleontology” in St. Paul, MN

2004, Chautauqua Course “Contrasting Volcanism at Mount Shasta and the Medicine Lake Volcano”, College of the Siskiyous, Weed, CA

## SOFTWARE

Geographic Information Systems: ESRI ArcGIS, GRASS, ENVI
Coding: MATLAB, Python, Mathematica
UAV lidar processing: Yellowscan CloudStation, Applanix POSPac
Photogrammetry & Structure from Motion: Agisoft Metshape, Cosi-CORR
UAV Operations: UgCS, DroneDeploy, DJIGo, AirMap
Landscape Modeling: Landlab, GeoPAT
Synthetic Aperture Radar: SNAP
Publishing: Adobe Illustrator, Adobe Lightroom, Adobe After Effects

## ACADEMIC SCHOLARSHIPS & HONORS

2019-2021, University of Kentucky, KGS-EES Commonwealth Research Assistantship in Earth and Environmental Sciences

2020-2021 University of Kentucky, Earth & Environmental Sciences Department, Ferm grant in support of graduate research

2019-2021 University of Kentucky, Earth & Environmental Sciences Department Brown McFarland grant in support of graduate travel to professional meetings

1996 Michael C. Gardener Memorial Award, in support of graduate research

1996 Cedric J. Newby Scholarship, in support of graduate research

1996 Linda Horn Memorial Fund Scholarship, in support of graduate research

1993 Award for Best Calculus Final at City College of New York

1993 Undergraduate Teaching Assistantship, City College of New York

Phi Beta Kappa

## TEACHING EXPERIENCE

Graduate

Geomorphology – 2024

Upper Level

Fundamentals of Geology II - 2024

Careers in Geoscience, 2020 - 2022

Earth Science Applications of GIS, 2015 - 2022

Geomorphology, 2004 - present

Ecology and Geology of Coral Reefs, taught in Belize, 2007 - present

Geologic Field Methods, taught in Colorado, 2011 - 2017

Structural Geology, 2004 - 2018

Economic Geology, 2011- 2022

Introductory Level

Earthquakes and Volcanoes - 2024

Environmental Geology, online and in-person - 2024

This Dangerous Earth, online and in-person, 2007 - 2020

Earth Science with lab, 2002 – 2016, 2022

Rainforests to Reefs: Ecology and Geology of Australia, 2024-25

## FIELD TRIPS LED

Introduction to geologic field methods in Colorado, 2 weeks, co-leader

Ecology and geology of coral reefs in Belize, 9 days, co-leader

Structural geology, Virginia and Pennsylvania, 3-4 days, co-leader

Karst geology of Carter Caves, Kentucky 1-2 day

Glacial and coastal geology of northern Ohio and Kelly’s Island, 2 days

Landslides in northern Kentucky, 1 day

Glacial geomorphology of southern Ohio and northern Kentucky, 1 day

Geology of Red River Gorge, 1 day

Kentucky River Fault, 1 day

MVT sulfide deposits, Kentucky, 1 day

## MEMBERSHIPS

AGU – American Geophysical Union

GSA – Geological Society of America

AWG – Association for Women Geoscientists

## ACADEMIC SERVICE

7 departmental search committees (4 tenure-track, 2 non-tenure track renewable, 1 staff)

Chair of department seminar committee (2020-2021)

College budget committee (2021)

NKU STEM recruitment and retention committee

Department of Physics, Geology and Engineering Technology scholarship committee (2020, 2022)

NKU Faculty Student Collaborative Grant reviewer (2018)

Student Publication and Presentation Award reviewer (2019-2021)

Editor of the department newsletter (2010-2016)

Designed and maintained department web pages (2004-2018)

## OUTREACH ACTIVITIES

2024 Rocktoberfest, Red River Gorge, led guided field trip to Natural Bridge State Park

2024 Powell County, student projects on the geomorphology of Red River Gorge

2019 NKU Mayerson Student Philanthropy Project (Ecology and Geology of Coral Reefs)

2016 and 2014 NKU summer STEM Camp

2009-2012 Co-organized Science Night at Parker Woods Montessori, a Cincinnati Public School

2002-2010 Faculty Coordinator for the Northern Kentucky Earth Space Science Alliance