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Currently affiliated with Maxima Geophysics LLC

Currently Professor Emeritus, Geological Engineering, Missouri S&T
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Research Scientist (November 1989 - December 1993)
Kansas Geological Survey, Lawrence, Kansas

Visiting Assistant Professor (May 1988 - November 1989)
Ohio University, Athens, Ohio

Exploration Consultant (April 1986 - May 1988)
Associated with Petrel Consultants
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District Geophysicist (April 1984 - March 1986)
Canadian Roxy Petroleum Ltd., Calgary, Alberta

Explorationist (May 1978 - March 1984)
Canadian Occidental Petroleum Ltd., Calgary, Alberta
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EDUCATION:

Ph.D., Geophysics, 1986, University of Calgary

M.Sc., Geophysics, 1979, University of Manitoba

B.Sc., Geological Engineering, 1976, University of Manitoba

PUBLICATIONS AND TEXTBOOKS:

Externally Reviewed Publications Only:

Green, A.G., Anderson, N.L., and Stevenson, O.G., 1979, An expanding spread seismic reflection survey across the Snake Bay-Kakagi Lake Greenstone Belt, northwestern Ontario: *Canadian Journal of Earth Science* 16, 1599-1612.

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Anderson, N.L., and Franseen, E.K., 1991, Differential compaction of a Winnipegosis reef: A seismic perspective: *Geophysics* 56, 142-147.

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Newton, T, Anderson, N.L., and Hatheway, A, 1998, Application of innovative geophysical methods for subgrade investigations in karst terrain: Missouri Department of Transportation special publication RDT-004, 29p.

Oppert, S.K., Anderson, N.L., Shoemaker, M.L., and Shaw, 1998, A ground-penetrating radar study of Quaternary faulting in the Benton Hills Area, southeast Missouri, *in* Anderson, N.L., Cardimona, S., and Newton, T., Editors, Highway Applications of Engineering Geophysics with an Emphasis on Previously Mined Ground: Missouri Department of Transportation Special Publication, 281-288.

Shaw, A.E., Anderson, N.L., Shoemaker, M.L., Adams, G.L., Oppert, S.K., Webb, D.J., and Cardimona, S., 1998, Shallow reflection seismic study of recent faulting in the Benton Hills, southeastern Missouri, *in* Anderson, N.L., Cardimona, S., and Newton, T., Editors, Highway Applications of Engineering Geophysics with an Emphasis on Previously Mined Ground: Missouri Department of Transportation Special Publication, 272-280.

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Ground-Penetrating Radar Investigation of SubFloor Conditions, Kirksville Site, MO	KRAFT FOODS, INC.	Fall 1999	3,000.00
Geophysical Pilot Study	EAGLE PICHER	Spring 2000	2,320.00
Application of Ground - Penetrating Radar to Highway Related Problems	US DEPARTMENT OF TRANSPORTATION	Summer 1999	8,000.00
Route Characterization and Geophysical Survey Feasibility Study of Previously Mined Ground Along Alternate "E", Proposed Highway 71, Joplin, MO.	US DEPARTMENT OF TRANSPORTATION	Summer 2000	15,000.00
Non-Destructive Imaging of Shallow Sandstone in Support of Hydrologic Study of Lithologic Unit	EXXONMOBIL UPSTREAM RESEARCH COMPANY	Fall 2000	36,000.00
Phase II Assessment and Mitigation of Earthquake Hazards Along Designated Priority Emergency Vehicle Access Routes, S.E., Missouri	US DEPARTMENT OF TRANSPORTATION	Fall 2001	7,400.00
Non-Invasive Geophysical Investigation of Landfill Site: Grandview Triangle Area	US DEPARTMENT OF TRANSPORTATION	Fall 2001	4,400.00
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Ground-Penetrating Radar/Seismic Study - Branson/Springfield MO Airport Extension	RAYTHEON COMPANY	Fall 2000	32,000.00
Development and Instruction of Graduate Level Courses Focused on the Non-Destructive Imaging of Engineered Structures and NonInvasive Geotechnical Site Characterization	US DEPARTMENT OF TRANSPORTATION	Summer 2001	13,272.00
Ground-Penetrating Radar/Seismic Study Branson/Springfield MO	RAYTHEON COMPANY	Fall 2001	3,200.00
Earthquake Hazard Mitigation Research Program for Highway systems	US DEPARTMENT OF TRANSPORTATION	Spring 2004	800,000.00
University Transportation Center - Advanced Materials and Non-Destructive Testing Technologies	US DEPARTMENT OF TRANSPORTATION	Fall 2005	916,300.00
Use of Geophysical Methods to Locate Buried Objects in Landfills, Kansas City, Missouri	MISSOURI metallic DEPARTMENT OF TRANSPORTATION	Summer 2001	12,000.00

Utilities investigation: Meramec State Park	MISSOURI DEPARTMENT OF NATURAL RESOURCES (MDNR)	Fall 2001	2,000.00
Geophysical Characterization of Top-of-Rock and Bedrock Void Delineation	SELECTTECH SERVICES CORPORATION	Spring 2000	1,800.00
Determination of shear-wave velocity profiles from surface (Rayleigh) seismic waves: Wahite Ditch and St. Francis River bridge sites, southeast Missouri	MISSOURI DEPARTMENT OF TRANSPORTATION	Spring 2003	23,000.00
Post-Earthquake damage Evaluation of Bridge Structures	MISSOURI DEPARTMENT OF TRANSPORTATION	Summer 2004	58,723.00
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GPR Study of Imbedded Dowel Bars, Van Buren, Missouri	MISSOURI DEPARTMENT OF TRANSPORTATION	Spring 2003	19,500.00
Determination of Shear-wave velocity profiles from surface seismic waves: Wahite Ditch and St. Francis River Bridge sites, Southeast Missouri	US DEPARTMENT OF TRANSPORTATION	Spring 2003	5,750.00
GROUND-PENETRATING RADAR STUDY OF NEAR-SURFACE STRATA	UNIVERSITY OF KANSAS	Summer 1995	1,500.00
GROUND PENETRATING RADAR/SEISMIC STUDY IN BENTON HILLS AREA, S.E. MISSOURI	MISSOURI DEPARTMENT OF NATURAL RESOURCES (MDNR)	Fall 1995	1,000.00
SEISMIC SURVEY AT ALTON MINE, ALTON, IL	BLUFF CITY MINERALS, INCORPORATED	Fall 1995	9,600.00
SEISMIC STUDY OF COAL MINE	GEOTECHNOLOGY, INCORPORATED	Fall 1995	9,100.00
Ground-Penetrating Radar Study at Exxon's Green River Site (Utah)	EXXONMOBIL CHEMICAL COMPANY	Fall 1996	13,500.00
Seismic Study of Cave in Carthage, MO	CITY OF CARTHAGE GEOTECHNOLOGY, INCORPORATED	Spring 1996	5,500.00
SEISMIC STUDY OF COAL MINE	INCORPORATED	Fall 1996	4,600.00

SEISMIC STUDY OF COAL MINE	GEOTECHNOLOGY, INCORPORATED	Fall 1996	4,600.00
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Shallow Seismic Investigations at Colonsay Mine	CENTRAL CANADA POTASH, INCORPORATED	Fall 1996	8,500.00
Shallow Seismic Investigations at Colonsay Mine, Saskatchewan, Canada with Assistance of the Borehole Geophone	CENTRAL CANADA POTASH, INCORPORATED	Fall 1996	2,500.00
GEOPHYSICAL SITE INVESTIGATION	NAVI, INCORPORATED	Spring 1997	980.00
Subsurface Structure of the Commerce, English Hill, and Related Faults in the Benton Hills of Southeastern Missouri	US DEPARTMENT OF THE INTERIOR: GEOLOGICAL SURVEY (USDI) (USGS)	Spring 1998	39,218.00
Route Characterization and Geophysical Survey Feasibility Study of Previously Mined Ground along Alternate "E" Proposed Hwy 71, Joplin, MO	MISSOURI DEPARTMENT OF TRANSPORTATION	Spring 1997	129,081.00
Ground Penetrating Radar/Archeological Site Investigations in Florida	DENNIS PEEBLES	Fall 1997	3,000.00
Seismic Investigation of Landfill Site	GENESIS ENVIRONMENTAL CONSULTING, INCORPORATED	Fall 1997	4,500.00
Seismic Reflection Study at Bluff City Minerals Mine	BLUFF CITY MINERALS, INCORPORATED	Fall 1997	1,500.00
Interpretation of High-Resolution Seismic Data	CENTRAL CANADA POTASH, INCORPORATED	Fall 1997	1,250.00
Integrated Reflection Seismic/Corehole Study of Shallow Subsurface at Alton Mine	BLUFF CITY MINERALS, INCORPORATED	Fall 1997	3,000.00
Geophysical/Geotechnical Study and Monitoring Of I-44/Highway 266 Karst Failure, Springfield, Missouri	MISSOURI DEPARTMENT OF TRANSPORTATION	Summer 2000	22,000.00
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Along Alternate "E", Proposed Highway 71, Joplin, MO	TRANSPORTATION		
Characterization of Top-of-Rock as Indicative of Main Limestone Dissolution Channel, Republic, Missouri	CHATMAN & ASSOCIATES, INCORPORATED	Fall 1998	13,250.00
Cave Location Using Combined Geophysical Investigation Techniques	CITY OF NEOSHO	Fall 1998	1,100.00
Applications of Ground-Penetrating Radar to Highway-Related Problems	MISSOURI DEPARTMENT OF TRANSPORTATION	Spring 2000	170,500.00
Reflection Seismic Study for Illinois State Geological Survey	ILLINOIS STATE WATER SURVEY	Fall 1998	24,500.00
Pavement Study in St. Louis, Missouri	GEOTECHNOLOGY, INCORPORATED	Summer 1998	6,000.00
Reflection Seismic Study of Coal Mine Property	GEOTECHNOLOGY, INCORPORATED	Fall 1998	10,675.00
Fractured Bedrock Study for Hocker Oil Company	HOCKER OIL COMPANY	Fall 1998	4,500.00
Geophysical Characterization of Top-of-Rock in Support of Hydrogeologic Study	CHATMAN & ASSOCIATES, INCORPORATED	Fall 1999	3,125.00
Expert Witness-Earthquake Hazards	DENEYS REITZ ATTORNEYS	Fall 1999	2,400.00
Ground-Penetrating Radar Study of Opera House, St. Louis, MO	GEOTECHNOLOGY, INCORPORATED	Spring 2000	6,400.00
Assessment and Mitigation of Earthquake Hazards Along Designated Priority Emergency Vehicle Access Routes, S.E. Missouri	MISSOURI DEPARTMENT OF TRANSPORTATION	Fall 2001	142,500.00
Seismic Characterization of Suspected Sinkhole Near Monett, MO	GEOTECHNOLOGY, INCORPORATED	Fall 1999	7,075.00
GPR Investigation of Concrete Integrity	MO DEPT OF CONS	Fall 2003	12,500.00
Determination Of Shear-Wave Velocity	MO DEPT OF TRANS	Spring 2004	30,344.00
UTC/Roaring River Trout Hatchery	DEPT OF TRANSPORTATION	Summer 2005	833.00
UTC/Imbedded Dowel Bars, Van Buren, Mo	DEPT OF TRANSPORTATION	Summer 2004	4,875.00
Comprehensive Shear-Wave Velocity Study in the Poplar Bluff Area	MO DEPT OF TRANS	Spring 2005	101,008.00

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UTC/Determination of Shear Wave Velocity Along A Segment	DEPT OF TRANSPORTATION	Summer 2004	8,880.00
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GPR And Resistivity to Determine Depth To Bedrock At The	MO DEPT OF CONS	Summer 2004	2,500.00
Acquisition Of an Engineering Seismograph	DEPT OF TRANSPORTATION	Summer 2004	2,000.00

GPR Investigation of Bridge Deck, Willow Springs, Mo.		Summer 2004	1,500.00
GPR Investigation of Bridge Deck, Willow Springs, Mo.	WEST PLAINS BRIDGE AND GRADING	Summer 2004	4,000.00
Determination Of MASW Shear-Wave Velocities	DEPT OF TRANSPORTATION	Summer 2004	2,006.00
Determination Of MASW Shear Wave Velocities at Various Sites	CENTRAL US EARTHQUAKE CONSORT	Summer 2004	6,250.00
SASW Study of Greater St. Louis And Surrounding Region	CENTRAL US EARTHQUAKE CONSORT	Summer 2004	12,500.00
Utc/Sasw Study of Greater St. Louis And Surrounding Regi	DEPT OF TRANSPORTATION	Fall 2004	4,166.00
Geophysics Conference Technology Transfer	BARRY BERKOVITS	Fall 2006	19,110.63
Geophysics Conference Technology Transfer	DEPT OF TRANSPORTATION	Fall 2006	9,555.00
Duck Creek	DEPT OF TRANSPORTATION	Fall 2005	2,500.00
Duck Creek	MO DEPT OF CONS	Fall 2005	9,500.00
Geotechnical Site Characterization of Construction Site	GEOTECHNICS	Spring 2006	10,000.00
Geophysical Investigation of Proposed Intersection Of Rt	MO TRANSPORTATION	Fall 2006	18,000.00
Professional Services for Ground Penetrating Radar Investigation	INST DE GIBBS	Fall 2006	6,800.00
Proposal To Conduct Geophysical Investigation of a Known Sinkhole	CONTRACTING MO TRANSPORTATION	Fall 2006	10,000.00
Seismic Retrofit Study of Bridge A-1700	INST FULLER, MOSSBARGER, SCOTT AND MAY	Spring 2006	15,150.24
Geophysical Investigation: Louisville Tunnel Site	FULLER, MOSSBARGER, SCOTT AND MAY	Summer 2006	45,000.00
Mapping Of Underground Voids at Construction Site	KNIGHT HAWK COAL LLC	Fall 2007	20,000.00
UTC/Mapping of Underground Voids at Construction Site	DEPT OF TRANSPORTATION	Fall 2007	10,000.00

Detection of Subsurface Zone of Seepage Beneath UTC/Detection of Subsurface Zone of Seepage Beneath Earth-fill dam	LAKE SHERWOOD ESTATES	Fall 2007	6,500.00
		Summer 2007	1,750.00
Sub-bottom profiling, Monroe City bridge site	FULLER, MOSSBARGER, SCOTT AND MAY	Fall 2007	11,789.38
Investigation of karst features within pipeline/roadway	SCI ENGINEERING, INC	Fall 2007	16,000.00
UTC/Geophysical Characterization of Soil and Bedrock, Mon	DEPT OF TRANSPORTATION	Fall 2007	5,984.00
UTC/Detection of Subsurface Zone of Seepage Beneath	DEPT OF TRANSPORTATION	Fall 2007	1,500.00
UTC/Investigation of karst features within pipeline	DEPT OF TRANSPORTATION	Fall 2007	8,000.00
Investigation of karst features within MoDOT ROW	SCI ENGINEERING, INC	Spring 2008	24,500.00
Louisville Southern Indiana Ohio River Bridges Project,	FULLER, MOSSBARGER, SCOTT AND MAY	Summer 2009	230,000.00
UTC/Investigation of Karst Features within MoDOT ROW	DEPT OF TRANSPORTATION	Spring 2008	12,250.00
NUTC/Louisville Southern Indiana Ohio River Bridges Project	DEPT OF TRANSPORTATION	Summer 2009	115,000.00
DEMONSTRATION MOBILE SEISMIC UNIT FOR DETECTING SUBTERRA	LEONARD WOOD INSTITUTE	Fall 2008	362,607.00
Workshop Entitled "Preparing for a Significant Central U	DEPT OF TRANSPORTATION	Fall 2008	10,000.00
Investigation of subsidence along segment of MO Rte 65, St. Louis Shear Wave Testing	SCI ENGINEERING, INC USGS	Spring 2009 Spring 2007	23,431.20 20,000.00
Mapping Coal Mine	UTC	Spring 2006	9,000.00
Earth-fill Dam Investigation	UTC	Spring 2006	3,400.00
Karst Site in St. Louis	UTC	Spring 2006	5,000.00
Demonstration Mobile Seismic Unit oor Subterranean Passageways	LEONARD WOOD Detecting INSTITUTE	Summer 2009	362,607.00

NUTC/ Workshop Entitled Preparing for a Significant Central U.S. Earthquake: Science Needs of the Emergency Response Community Investigation of subsidence along segment of MO Rte 65, Springfield, Missouri	DEPT OF TRANSPORTATION	Spring 2009	10,000.00
NUTC/Investigation of Subsidence Along Segment of MO Rte 65, Springfield, Missouri	SCI ENGINEERING, INC	Spring 2010	23,431.20
Geophysical Investigation of Seepage Associated with the Lake Sherwood Earth Fill Dam	LAKE SHERWOOD ESTATES	Fall 2011	4,500.00
NUTC/Geophysical Investigation of Seepage Associated with the Lake Sherwood Earth Fill Dam	DEPT OF TRANSPORTATION	Fall 2011	2,250.00
Ground Penetrating Radar (GPR) for Pavement Evaluation	UNIV OF AR	Spring 2012	40,011.00
Mapping of Previously Mined Ground for Infrastructure Citing Purposes	KNIGHT HAWK COAL LLC	Fall 2011	7,000.00
Carbon sequestration Project: Reflection Seismic Data Interpretation Phase	GEOENGINEERS, INC.	Fall 2011	3,000.00
NUTC/Mapping of Previously Mined Ground for Infrastructure Citing Purposes	DEPT OF TRANSPORTATION	Fall 2011	3,500.00
Geophysical Surveys Along the New Route 50 Alignment	MO DEPT OF TRANS	Spring 2011	10,000.00
Mapping Subsurface in Proximity To Newly Developed Sinkhole Along Roadway	GEOENGINEERS, INC.	Fall 2011	4,800.00
NUTC/Ground Penetrating Radar (GPR) for Pavement Evaluation	DEPT OF TRANSPORTATION	Fall 2012	20,005.00
NUTC/Mapping Subsurface in Proximity to Newly Developed Sinkhole Along Roadway	DEPT OF TRANSPORTATION	Fall 2012	2,400.00
Ground Penetrating Investigation of Missouri Veterans Home Cemetery Site	MO DEPT OF PUBLIC SAFETY	Fall 2011	2,995.00
Two-day Geophysical Pilot Project	NESTLE PURINA PETCARE CO	Spring 2012	7,800.00
Determination of Soil Modulus for Foundation Design Purposes.	ASSOCIATED ENGINEERS INC	Summer 2013	2,000.00

Imaging of Voids Beneath Bridge Bent Using Electrical Resistivity Tomography	GEOENGINEERS, INC.	Spring 2014	3,333.33
Ground Penetrating Radar (GPR) Data Within the Geoengineers' Pipeline Right Of Way (ROW) In Louisiana	GEOENGINEERS, INC.	Spring 2012	4,500.00
NUTC/Imaging of Voids Beneath Bridge Bent Using Electrical Resistivity Tomography	DEPT OF TRANSPORTATION	Spring 2014	1,667.00
SE Minnesota Karst Assessment	GEOENGINEERS, INC.	Fall 2012	11,000.00
NUTC/Ground Penetrating Radar (GPR) for Pavement Evaluation (Supplement)	DEPT OF TRANSPORTATION	Fall 2012	2,171.00
Ground Penetrating Radar (GPR) for Pavement Evaluation - Year 3	UNIV OF AR	Fall 2012	5,000.00
NUTC/Determination of Optimum Multi-Channel Surface Wave Method Field Parameters		Fall 2012	8,353.00
NUTC/Testing and Assessment of Portable Seismic Property Analyzer	DEPT OF TRANSPORTATION	Spring 2014	13,921.00
MoDOT Pavements Thrust Research Program	MO DEPT OF TRANS	Fall 2015	583,668.00
NUTC/MoDOT Pavements Thrust Research Program	DEPT OF TRANSPORTATION	Spring 2015	500,000.00
Nondestructive Evaluation of MoDOT Bridge Decks - Pilot Study	MO DEPT OF TRANS	Spring 2014	48,089.00
NUTC/Nondestructive Evaluation of MoDOT Bridge Decks	DEPT OF TRANSPORTATION	Summer 2014	48,089.00
Mapping bedrock beneath slope failure	GEOENGINEERS, INC.	Spring 2013	5,000.00
NUTC/Non-invasive Imaging and Assessment of Pavements	DEPT OF TRANSPORTATION	Fall 2014	23,178.00
Determination of Soil Modulus for Foundation Design Purposes	GEOTECHNICS	Summer 2014	9,500.00
NUTC/Site Assessment using Echo Sounding, Side Scan Sonar and Sub-bottom Profiling	DEPT OF TRANSPORTATION	Spring 2014	11,099.00
Non-Invasive Imaging and Assessment of Active Karst Features in Proximity to Paved Roadways	GEOENGINEERS, INC.	Fall 2013	9,450.00
NUTC/Non-Invasive Imaging and Assessment of Active Karst Features in Proximity to Paved Roadways	DEPT OF TRANSPORTATION	Spring 2014	9,450.00
Assessment of Active Karst Features in Proximity to Paved Roadways	GEOENGINEERS, INC.	Spring 2014	3,000.00

NUTC/Assessment of Active Karst Features in Proximity to Paved Roadways	DEPT OF TRANSPORTATION	Summer 2014	3,000.00
Air-Launched GPR Evaluation for Rapid Assessment of MoDOT Bridge Decks	MO DEPT OF TRANS	Summer 2015	22,547.00
NUTC/Air-Launched GPR Evaluation for Rapid Assessment of MoDOT Bridge Decks	DEPT OF TRANSPORTATION	Fall 2014	3,958.00
City Utilities Utility Waste Landfill Detailed Site Investigation: Proposed Missouri S&T Geophysical Work Plan	GEOENGINEERS, INC.	Summer 2014	1,761,269.00
City Utilities Utility Waste Landfill Detailed Site Investigation: Proposed Missouri S&T Geophysical Work Plan	GEOENGINEERS, INC.	Summer 2014	138,731.00
Saudi Geological Survey Training Program	SAUDI GEOLOGICAL SURVEY (SGS)	Fall 2015	34,000.00
Investigation of recent karst collapse feature, Top of the Rock, Branson, MO, using ERT	GEOENGINEERS, INC.	Fall 2016	18,100.00
Geophysical Imaging of Fly Ash Storage Sites	GEOENGINEERS, INC.	Spring 2019	620,975.00
Geophysical Imaging of Fly Ash Storage Sites	GEOENGINEERS, INC.	Spring 2019	109,025.00
Geophysical imaging of leaking earth fill dam	GEOENGINEERS, INC.	Spring 2017	3,000.00
City of Seymour- Geological Imaging of Active Karst Feature	GEOENGINEERS, INC.	Spring 2017	6,000.00
Ravenwood Site- Geophysical Imaging of Active Karst Feature	GEOENGINEERS, INC.	Spring 2017	3,000.00
Geophysical Imaging of Karst Site in Northern Tennessee	SEQUOIA ENGR & ENV, INC	Spring 2016	38,062.00
Geophysical Imaging of Karst Site in Northern Tennessee	SEQUOIA ENGR & ENV, INC	Summer 2016	11,438.00
GeoEngineers Resistivity and Bathymetric Assessment- Leaking Earth Dam - Springfield, MO	GEOENGINEERS, INC.	Summer 2017	1,522.00
GeoEngineers Resistivity and Bathymetric Assessment- Leaking Earth Dam - Springfield, MO	GEOENGINEERS, INC.	Summer 2017	3,478.00
Geophysical Imaging Northern Tennessee Karst Site (2)	GATEWAY GEOTECHNICAL LLC	Summer 2017	53,460.00

Geophysical Imaging Northern Tennessee Karst Site (2)	GATEWAY GEOTECHNICAL LLC	Summer 2017	11,040.00
ERT and Bathymetric Control Meramec River: MSD LMT Phase II Final Design	SHANNON & WILSON INC	Fall 2017	14,558.00
ERT and Bathymetric Control Meramec River: MSD LMT Phase II Final Design	SHANNON & WILSON INC	Fall 2017	3,942.00
Lake Chesterfield Home-Owners Association (LCHOA)	UNLISTED SPONSOR HIGH LEVEL BUDGET	Spring 2018	3,000.00
Geophysical Imaging of a sinkhole in Springfield MO	GEOENGINEERS, INC.	Spring 2019	2,500.00
Determining Morphology and Dynamics of Slow-Moving Landslides using Temporal LIDAR Scanning, Drone Photogrammetry, and Electrical Resistivity Tomography Geophysical imaging of the subsurface for site characterization in Joplin, Missouri Geophysical imaging of a sinkhole in Springfield Missouri: Phase II Geophysical imaging of the subsurface for site characterization in Joplin, MO Geophysical imaging of the subsurface for sinkhole evaluation in Harrison, Arkansas	NSF DIRC GEOSCI GEOENGINEERS, INC. GEOENGINEERS, INC. GEOENGINEERS, INC. GEOENGINEERS, INC.	Fall 2018 Spring 2019 Spring 2019 Summer 2019 Summer 2019	689,139.00 14,000.00 2,500.00 14,000.00 5,500.00