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Academic Achievement

EDUCATION

1990 ***Doctor of Philosophy*** in Geology. Institute for the Study of Mineral Deposits, South Dakota School of Mines and Technology, Rapid City. Directed by Dr. J.A. Redden and Dr. E.F. Duke.
Ph.D. Dissertation: "Mineralogy and Petrology of the Homestake Iron Formation and Adjacent Pelitic Rocks, Lead, South Dakota: Conditions and Assemblages of Metamorphism, Pressure-Temperature Paths, Fluid Evolution, and Gold Mineralization."
Course/Field Emphasis: Advanced structural and field geology; physical chemistry; crystal chemistry; ore petrology; electron microprobe techniques; computer applications in geology and geological engineering; and shear zone hosted, Proterozoic gold deposits.

1986 ***Master of Science*** in Geology. University of Tennessee, Knoxville, Tennessee. Directed by Dr. T.C. Labotka.
M.S. Thesis: "Mineralogy and Petrology of the Contact Metamorphic Rocks beneath the Stillwater Complex, Montana: Conditions and Assemblages of Metamorphism."
Course/Field Emphasis: Structural juxtaposition of metamorphic terranes, physical geochemistry, thermodynamic applications to metamorphic petrology, and metamorphic fluid dynamics.

1984 ***Bachelor of Science*** in Geology. West Georgia College, Carrollton, Georgia.
Course/Field Emphasis: Structural geology, economic geology, mineralogy, field mapping, estimation of coal resources in NW Georgia, and thin section preparation.

CONTINUING EDUCATION/CONFERENCES

- Geological Society of America, Annual Meeting, Anaheim, California 2024
- Geological Society of America, Southeast Section, Asheville, North Carolina 2024
- Geological Society of America, Annual Meeting, Pittsburgh, Pennsylvania 2023
- Geological Society of America, Southeast Section, Reston, Virginia 2023
- Geological Society of America, Annual Meeting, Denver, Colorado 2022
- Geological Society of America, Southeast Section, Auburn, Alabama, 2021
- Geological Society of America, Southeast Section, Charleston, South Carolina, 2019.
- Geological Society of America, Southeast Section, Knoxville, Tennessee, 2018.
- Geological Society of America, Southeast Section, Richmond, Virginia, 2017.
- Geological Society of America, Southeast Section, Columbia, South Carolina, 2016.
- Geological Society of America, Annual Meeting, Denver, Colorado, 2016.
- Geological Society of America, Southeast Section, Chattanooga, Tennessee, 2015.
- Geological Society of America, Annual Meeting, Baltimore, Maryland, 2015.
- Geological Society of America, Southeast Section, Blacksburg, Virginia, 2014.
- Optima ICP Hardware/Software Training, 2013
- Geological Society of America, Southeast Section, Asheville, North Carolina, 2012.
- Geological Society of America, Southeast Section, Wilmington, North Carolina, 2011.
- Geological Society of America, Southeast Section, Baltimore, Maryland, 2010.
- Geological Society of America, Southeast Section, St. Petersburg, Florida, 2009.

- Geological Society of America, Southeast Section, Charlotte, North Carolina, 2008.
- Geological Society of America, Southeast Section, Savannah, Georgia, 2007.
- Geological Society of America, Southeast Section, Knoxville, Tennessee, 2006.
- Geological Society of America, Southeast Section, Biloxi, Mississippi, 2005.
- Autodesk Training Course, Autocad Map Version 6.0, May 2003
- Geological Society of America, Southeast Section, Memphis, Tennessee, 2003.
- Geological Society of America, Southeast Section, Lexington, Kentucky, 2002.
- Geological Society of America, Southeast Section, Boston, MA, 2001.
- Drought 2000, National Groundwater Association, Des Moines, Iowa, October 2000
- Geological Society of America, National Meeting, Denver, Colorado, October 1999.
- Geological Society of America, Southeast Section, Athens, Georgia, May 1999.
- Georgia Geological Society Fieldtrip, Geology of the Georgia Piedmont in the vicinity of Eastern Metropolitan Atlanta Area, October 1997.
- Georgia Geological Society Fieldtrip, The Cartersville Fault Problem, November 1996.
- Geological Society of America, Southeast Section, Jackson, Mississippi, April 1996.
- 5th Multidisciplinary Conference on the Engineering and Environmental Impacts of Karst, Gatlinburg, Tennessee, April 1995.
- Geological Society of America, Southeast Section, Knoxville, Tennessee, April 1995.
- Geological Society of America, Rocky Mountain Section, Ogden, Utah, 1992.
- Soil Mechanics Short Course, Clemson University, South Carolina, 1991.

Professional Experience

ACADEMIC

2005 to date — ***Professor of Geology***, The University of West Georgia, Center for Water Resources, Department of Geology, Department of Geosciences and Geology Program, Carrollton, Georgia.
Responsibilities include: teaching Field Geology and Geologic Mapping, Engineering Geology, Structural Geology, Economic Geology (capstone course), Physical Geology, and Historical Geology. Additionally, I direct student research projects relating to all aspects of geology, hydrogeology, environmental geology, and engineering geology.

2000 to 2005 — ***Associate Professor of Geology***, The University of West Georgia, Center for Water Resources, Department of Geosciences, Carrollton, Georgia.
Responsibilities include: teaching Field Geology and Geologic Mapping, Engineering Geology, Structural Geology, Physical Geology, and Historical Geology. Additionally, I direct student research projects relating to all aspects of geology, hydrogeology, environmental geology, and engineering geology.

2004 to Date — ***Director, Center for Water Resources***, The State University of West Georgia, Center for Water Resources, Department of Geosciences, Carrollton, Georgia.

2001-2004 — ***Assistant Director, Center for Water Resources***, University of West Georgia, Center for Water Resources, Department of Geosciences, Carrollton, Georgia.
As an integral part of the Center for Water Resources, I am directly involved in water-related projects which include watershed assessment and management plans, quantifying alternative sources of water (groundwater and surface water), reservoir siting studies, hydrogeologic monitoring, Geographic Information Systems (GIS), and providing geologic and hydrogeologic applications for water system managers (i.e., Hydrology and Geotechnical Unit Santa Clara Valley Water District, 5750 Almaden Expressway, San Jose, California, CA 9511). Additional responsibilities include providing technical guidance and support for other water-related projects within the Center, and exploring for and developing groundwater in the Southeastern Piedmont/Blue Ridge province.

1994-2000 ***Assistant Professor of Geology***, The State University of West Georgia, Department of Geology, Carrollton, Georgia.
Responsibilities include: teaching Geologic Mapping and Field Geology (Geol 3003), Structural Geology (Geol 3034), Engineering Geology (Geol 4044), Economic Geology (GEOL 4064), MS Excel for Scientists (Geol 4501), Physical Geology (Geol 1121 and 1121L), and Historical Geology (Geol 1122 and 1122L). Additionally, I direct student research projects relating to all aspects of geology, hydrogeology, environmental geology, and engineering geology. Also, I provide external review for consulting projects related to stratigraphic and structural mapping; petrologic, hydrogeologic, and geomorphic analysis of remotely sensed imagery; and evaluation of existing information and structural data for site geotechnical issues related to highway design, tunneling, dams, and foundation design.

1987-1990 ***Research Assistant***, Institute for the Study of Mineral Deposits, South Dakota School of Mines and Technology, Rapid City, South Dakota.
Prepared research grant applications to the National Science Foundation; Governor's Office of Economic Development, South Dakota; Geological Society of America; South Dakota School of Mines and Technology's Foundation Fund; and private mining industry. As a result of these applications grants were awarded by the Governor's Office of Economic Development, South Dakota and a private mining company.
Conducted field mapping, data acquisition and interpretation related to Ph.D. dissertation.

1984-1986 ***Teaching and Research Assistant,*** Department of Geological Sciences, University of Tennessee, Knoxville, Tennessee.
Planned and taught physical and historical geology labs, metamorphic petrology labs, and electron microprobe techniques labs. Conducted field mapping, data acquisition, and interpretation related to M.S. thesis.

1983 ***Student Assistant***, West Georgia College, Carrollton, Georgia.
Assisted in teaching introductory geology labs and mineralogy/crystallography labs.

INDUSTRY

2001-2003 ***Faculty Appointment,*** US Geological Survey, Doraville, Georgia- Water Resources Division
As a faculty appointment with the USGS, I provided geologic and hydrogeologic expertise on water-resources projects in the Metro-Atlanta region. These projects involved detailed geologic mapping and selection of water well sites for exploration drilling.

1996-Present ***Vice President and Senior Geologist***, Petrologic Solutions, Inc., Douglasville, Georgia
As the Vice President and senior geologist with Petrologic Solutions, I provide geologic and hydrogeologic expertise on projects related to tunneling, dewatering, bridge foundations, and other geotechnical projects.
Responsibilities: project management and staff training, field explorations, data analysis, construction monitoring, technical specifications, and report writing.
Areas of specialization: structural and stratigraphic mapping for rock slope design, soil slope design, tunnel design, and dam foundations; geochemical, geotechnical, and hydrogeologic investigations for site characterization of solid and hazardous waste management facilities, geophysics (ground penetrating radar (GPR), and quantitative x-ray diffraction analysis. Developed computer software for analyzing ground-water chemistry, hydrographs, and slug test data.
Project management experience: oversight and completion of geologic and geotechnical site characterization in addition to technical review, proposals, and cost estimates.

1994-1995 ***Geological Specialist***, **Golder** Associates Inc., Atlanta, Georgia

1991-1994 ***Project Geologist***, **Golder** Associates Inc., Atlanta, Georgia

1990-1991 ***Staff Geologist***, **Golder** Associates Inc., Atlanta, Georgia
As a geological specialist with Golder Associates, I have provided expertise on stratigraphic and structural mapping; petrologic, hydrogeologic, and geomorphic analyses of remotely sensed imagery; and evaluation of existing information and structural data for site geotechnical issues related to highway design, tunneling, dams, and foundation design.
Responsibilities: project management and staff training, field explorations, data analysis, construction monitoring, technical specifications, and report writing.
Areas of specialization: structural and stratigraphic mapping for rock slope design, soil slope design, tunnel design, and dam foundations; geochemical, geotechnical, and hydrogeologic investigations for site characterization of solid and hazardous waste management facilities, geophysics (ground penetrating radar (GPR) and electromagnetic imagery (VLF)), and groundwater chemistry. Developed computer software for analyzing ground-water chemistry, hydrographs, and slug test data. Also developed computer software for interfacing 12-button digitizers with PC's for imputing geologic and topographic data into a digital elevation model (DEM).
Project management experience: oversight and completion of geologic and geotechnical site characterization in addition to technical review, proposals, and cost estimates.
Other project experience: evaluation of landslides and other geologic hazards for highway projects in Tennessee and Virginia; evaluation of volcanic and seisomtectonic geologic hazards for siting a nuclear facility in Idaho; geological characterization investigations for waste management facilities in Georgia, Tennessee, Virginia, and Alabama; and delineation of mine spoil geometry and determination of mine spoil acid production using mineralogic geochemistry.

1990-1990 ***Exploration Geologist***, Goldstake Explorations (SD) Inc., Spearfish, South Dakota.
Participated in gold exploration programs in the northern and central Black Hills, South Dakota, using the metamorphic models created for the Homestake and Keystone Mining Districts.
Responsibilities: District scale geologic mapping and structural interpretation related to gold exploration including detailed geologic mapping (200 scale), structural interpretation, and statistical evaluation of geochemical soil surveys.

1987-1990 ***Consulting Geologist***, Homestake Mining Co., Lead, South Dakota.
Created and implemented a metamorphic/structural model which supports and advances the understanding of gold mineralization at the Homestake Mine. Worked closely with Homestake personnel to develop the current exploration model used in the northern Black Hills. Created new computer software and advised exploration staff on computer applications to exploration techniques.

1989 Summer ***Project Geologist***, Beau Val Mines, Nevada, and ***Consulting Geologist***, Avatar Resources, Vancouver, BC.
Participated in a successful gold exploration program in the Keystone Mining District, Black Hills, South Dakota.
Responsibilities: Project scale geologic and structural interpretation of gold-related properties. Interpreted resistivity and I.P. geophysical anomaly maps. Refined genetic and exploration models of gold mineralization pertaining to the stratigraphic, structural, and metamorphic evolution of the district.

1988 Summer ***Consulting Geologist***, Beau Val Mines, Nevada.
Responsibilities: Directed Beau Val geologists in district scale geologic mapping and structural interpretation, including detailed geologic mapping and structural interpretation of surface target areas and historic underground workings in the Keystone Mining District.

1982 Summer ***Field Assistant***, United States Geological Survey, Coal Branch. Directed by Thomas J. Crawford.

Responsibilities: Detailed stratigraphic and structural mapping and interpretation of upper Mississippian and Pennsylvanian coal-bearing units in northwestern Georgia, northeastern Alabama, and southern Tennessee.

Professional Development

PROFESSIONAL AFFILIATIONS

- Professional Geologist, Georgia, GA 1020
- Professional Geologist, Tennessee, TN 2488
- Professional Geologist, North Carolina, NC 2537
- Georgia Geological Society
  - President, Georgia Geological Society 2003
  - Database Manager (2004- present)
  - Digital Guidebook Series Editor (2004-present)
  - Secretary (2004- present)
- Alabama Geological Society
- Carolina Geological Society
- US Geological Survey Faculty Appointment 2001-2003
- Geological Society of America
- National Association of State Boards of Geology (ASBOG®)
  - Subject Matter Expert, Council of Examiners (2008-present)
  - Executive Cmte Mbr (Secretary 2012, Treasurer 2013, President Elect 2014, President 2015)
  - Academic Assessment Committee, Chair (2013-2018)
  - Academic Assessment Coordinator (2019-present)
- American Institute for Professional Geologists (AIPG)

RELEVANT TECHNICAL ABILITIES

- Experienced in structural and stratigraphic mapping and interpretation in complexly deformed terranes: e.g., Black Hills, South Dakota; Beartooth Range, Montana; Piedmont of Georgia; Valley and Ridge of Tennessee, Georgia, and Alabama.
- Computer literate: computer programming, AutoCAD Civil 3D 2015, AutoCAD 2015 Map 3-D, Excel, Word, CorelDRAW 15.0, VBA for applications, Surfer 12, etc.
- Analytical techniques include: electron microprobe (MAC 400S and Cameca SX 50), atomic absorption spectrometer/ICP, X-Ray fluorescence, X-Ray diffraction (qualitative and quantitative), optical petrology, and fluid inclusion microthermometry.

PROFESSIONAL PUBLICATIONS

PAPERS/GEOLOGIC MAPS:

NATIONAL/INTERNATIONAL-

Williams, L.J., Burton W.C. and **Kath, R.L.**, 2007, Hydrogeologic map and description of water-bearing units for Rockdale County and adjacent areas, Georgia: U.S. Geological Survey Open-File Report 2007

Williams, L.J, **Kath, R.L.**, Crawford, T.J., and Chapman, M. J., 2005, Influence of Geologic Setting on Ground-Water Availability in the Lawrenceville Area, Gwinnett County, Georgia: U.S. Geological Survey Scientific Investigations Report 2005-5136.

Crawford, T.J., and **Kath, R.L.**, 2004, Groundwater Exploration and Development Part I: Paleozoic Rocks of the Valley and Ridge Province: American Institute of Hydrology Bulletin.

Crawford, T.J., and **Kath, R.L.**, 2004, Groundwater Exploration and Development Part II: Igneous and Metamorphic Rocks of the Southern Piedmont/Blue Ridge: American Institute of Hydrology Bulletin.

Kath, R.L., Ross, K.T., and Sneyd, D.S., 2003, Digital Mapping Assistant and Logger: Two Palm Applications for Collection of Geologic Data Using a PDA and a GPS Receiver and a Geotechnical Borehole Logging Application: Department of Transportation Highway Geology Symposium, 54th annual meeting, vol. 1, pp.

Labotka, T.C., and **Kath, R.L.**, 2001, Petrogenesis of the Contact Metamorphic Rocks beneath the Stillwater Complex, Montana: Geological Society of America Bulletin, vol. 113, no. 10, pp. 1312-1323.

Kath, **R.L.**, Spilde, M.N., Davis, B.L., and Smith, D., 1990, Reference Intensity Ratio Determinations on Naturally Occurring Biotites using the Leroux Pure Phase Method: Implications for Quantitative X-ray Diffraction Techniques: Powder Diffraction, vol. 6, No. 4, pp. 183-186.

Davis, B.L., **Kath**, **R.L.**, and Spilde, M.N., 1990, The Reference Intensity Ratio: Its Measurement and Significance: Powder Diffraction, vol. 5, No. 2, pp. 76-78.

Kath, **R.L.**, and Redden, J.A., 1990, Petrogenesis of the Homestake Iron Formation, Lead, South Dakota: Assemblages of Metamorphism. in Paterson, C.J., and Lisenbee, A.L. (eds.), Metallogeny of Gold in the Black Hills, South Dakota: Society of Economic Geologists Guidebook Series, vol. 7, pp. 112-118.

REGIONAL-

Crawford, T.J., and **Kath, R.L.**, 2016, Geology of the Indian Mountain, Rock Run, and Borden Springs area; Georgia and Alabama: A New Paradigm: Alabama Geological Society Guidebook , vol. 53, no. 1, pp. 1-18.

Tefend, K.S., and **Kath, R.L.**, 2016, Mineralogy and Geochemistry of slate, phyllite, and shale from the Oak Level, Borden Springs, and Indian Mountain 7.5-minnute quadrangles, Alabama-Georgia: A comparison with the Rockmart Slate and Athens Shale in Georgia: Alabama Geological Society Guidebook, vol. 53, no. 1, pp. 19-30.

Kath, R.L., and Crawford, T.J., 2016, Origin and Mineralogy of Aluminum Deposits in the Rock Run, Oremont Station, Tecumseh Furnace, and Bluffton Mining Districts- Alabama-Georgia: Alabama Geological Society Guidebook, vol. 53, no. 1, pp. 31-40.

Kath, R.L., and Crawford, 2015, Geology of the Iron Hill Campground and walking trail at Allatoona Lake, Bartow County, Georgia: Stratigraphic and Kinematic Evidence for separation of the Cartersville-Great Smoky and Emerson-Talladega Faults, in Kath, R.L., and Tefend, K.S., *eds.*, Origin of Ore Deposits in the Cartersville Mining District & Stratigraphic and Kinematic Evidence for separation of the Cartersville Great Smoky and Emerson-Talladega Faults: Georgia Geological Society Guidebooks, vol. 34, No. 1, Stop 4, pp. 39-47.

Kath, R.L. and Crawford, T.J., 2016, Annual Field Trip Road Log, in Kath, R.L. and Crawford, T.J., eds, Geology of the Indian Mountain, Rock Run, and Borden Springs area: Georgia and Alabama, 53rd Alabama Geological Society Annual Fieldtrip Guidebook Series, pp. 41-60.

Kath, R.L. and Crawford, T.J., 2016, Geologic Map of the Indian Mountain, Borden Springs, Oak Level, Cedartown West, Benedict, Tallapoosa North, Felton, and Buchanon 7.5-minute quadrangles, Alabama-Georgia, eds, Geology of the Indian Mountain, Rock Run, and Borden Springs area: Georgia and Alabama, 53rd Alabama Geological Society Annual Fieldtrip Guidebook Series, Plate 1.

Rehrer, J. R., Howard, C.W., Sneyd, D.S., **Kath, R.L.**, Hatcher, R.D., 2012, Detailed Geologic Map of the Barnesville, Johnstonville, and portions of the High Falls and Orchard Hills, 7.5-Minute Quadrangles, Georgia: EDMAP for University of Tennessee, Knoxville, M.S. Thesis.

Kath, R.L., Bearden, S.L., Costello, J.O., and Crawford, T.J., 2009, Bedrock Geologic Map of the Cartersville, 7.5-Minute Quadrangle, Georgia: Georgia Department of Natural Resources Open File Report 09-1, Plate 4

Crawford, T.J., **Kath, R.L.**, and Costello, J.O., 2009, Bedrock Geologic Map of the Burnt Hickory Ridge, 7.5-Minute Quadrangle, Georgia: Georgia Department of Natural Resources Open File Report 09-1, Plate 3

Crawford, T.J., **Kath, R.L.**, and Costello, J.O., 2009, Bedrock Geologic Map of the Allatoona Dam, 7.5-Minute Quadrangle, Georgia: Georgia Department of Natural Resources Open File Report 09-1, Plate 2

Crawford, T.J., **Kath, R.L.**, and Costello, J.O., 2009, Bedrock Geologic Map of the Acworth (partial), 7.5-Minute Quadrangle, Georgia: Georgia Department of Natural Resources Open File Report 09-1, Plate 1

Crawford, T.J., and **Kath, R.L.**, 2001, Groundwater Exploration and Development in Igneous and Metamorphic Rocks: Part I- Influencing Factors and Considerations: USGS Open-File Report 01-406

Kath, R.L., and Crawford, T.J., 2001, Groundwater Exploration and Development in Igneous and Metamorphic Rocks: Part II- Case Histories from the Southeastern Piedmont/Blue Ridge Province: USGS Open-File Report 01-406

Hollabaugh, C.L., Callahan, J., Warner, S., **Kath**, **R.L.**, and Decinque, J., 1990, Anatase Pseudomorphs after Titanite from Fulton County Georgia and their Experimental Synthesis: Southeastern Geology, vol. 30, No. 2, pp. 121-135.

LOCAL-

Sneyd, D.S., and **Kath, R.L.**, 2018, General History of Metropolitan Atlanta: Hub of the South: National Association of State Boards of Geology Guidebooks, vol. 68, No. 1, pp. vi-x.

Kath, R.L., and Crawford, T.J., 2018, Mineralogy, Geothermometry and Geobarometry of the Rowland Spring Formation, Allatoona Complex, Georgia: National Association of State Boards of Geology Guidebooks, vol. 68, No. 1, pp. 17-34.

Kath, R.L., 2017, Geologic Characterization along the City of Atlanta Raw Water Tunnel alignment, Fulton County, Georgia: in Kath, R.L., and Sneyd, D.S., eds, Repurposing and Aggregate Quarry for Raw Water Storage in Metro-Atlanta and the Origin of Barite at the Emerson Mine, Cartersville Mining District, 68th annual field trip of the Highway Geology Symposium, Marietta, Georgia, pp. 1-16.

Chowns, T., and **Kath, R.L**, 2017, A Review of Ore Deposits in the Cartersville District, Bartow County, Georgia; including related deposits in Polk and Floyd Counties: Highway Geology Symposium Guidebooks, vol. 68, No. 1, pp. 37-46.

Sneyd, D.S., **Kath, R.L.**, and Freese, T., 2013, Geology and Structural Characteristics of the Carmeuse Lime and Stone Mine, Luttrell, Tennessee, in **Kath, R.L**., ed, Geology and Paleontology of the Gray Fossil Site, Gray, Tennessee and Geology and Structural Geology of the Carmeuse Mine, Luttrell, Tennessee: ASBOG Annual Fieldtrip Guidebook Series, pp. 17-26.

Kath, R.L., Crawford, T.J., Chowns, T.M., and Sneyd, D.S., 2008, Structures Revealed in Carbonate Rock Quarries in the Vicinity of Rockmart, Georgia: Implications for Timing of Deformation and the Nature of the sub-Rockmart Contact: Georgia Geological Society Guidebook, vol. 28, no. 1, pp. 29-42.

Kath, R.L., and Crawford, T.J., 2008, The Simpson Creek Window, Metal Fabrication Plant, Springdale Church Fault, and Vulcan Quarry Fieldtrip stop descriptions: Georgia Geological Society Guidebook, vol. 28, no. 1, pp. 64-80.

Chowns, T.M, **Kath, R.L.**, and Groshong, R.H., 2004, Are the Wills Valley, Lookout Valley and McLemore Cove Anticlines Part of a Duplex?, in *Chowns, T.M., and **Kath, R.L.**, eds.*, 2004, Paleozoics, Northwest Georgia: Structure, Seismicity, Geomorphology, Hydrology, and Economic Geology: Georgia Geological Society Guidebooks, vol. 24, No. 1, pp. 13-24.

Kath, R.L., 2003, Site Assessment Report for the Allied Universal Corporation Plant, Ranger Georgia: Reviewed and accepted by Georgia Environmental Protection Division, Hazardous Waste Branch.

Crawford, T.J. and **Kath, R.L.**, 2003, Groundwater Exploration and Development in Igneous and Metamorphic Rocks of the southern Piedmont/Blue Ridge, in: *Williams, L.J, (ed)*, 2003, Methods Used to Assess the Occurrence and Availability of Ground Water in Fractured Crystalline Bedrock: An Excursion into areas of Lithonia Gneiss in Eastern Metropolitan Atlanta, Georgia: Georgia Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey Guidebook 23.

Kath, R.L., Hollabaugh, C.L., and Waters, J.A., 2001, Reconnaissance Geology, Cultural Resources, and Water Quality for the Little Taylor Creek, Pink Creek, and Lumpkin Creek Reservoir Sites, Heard County, Georgia: Center for Water Resources, pp.16.

Kath, R.L., Waters, Johnny, Hollabaugh, Curtis L., and Tabit, Chris, 2001, Alternative Site Selection for 11 Reservoir Sites in Heard County, Georgia: Center For Water Resources, State University of West Georgia Department of Geosciences.

Kath, R.L., and Crawford, T.J., 2001, Detailed Geologic Mapping along the Chattahoochee Tunnel, Cobb County, Georgia: in ***Kath, R.L.****, and Crawford, T.J., eds.*, Across the Brevard Zone: The Geology of the Chattahoochee Interceptor Tunnel, Cobb County, Georgia: Georgia Geological Society Guidebooks, vol. 22, No. 1, pp. 25-38.

Crawford, T.J., and **Kath, R.L.,** 2001, The Brevard Zone: A Literature Review: *in* ***Kath, R.L.****, and Crawford, T.J., eds.*, Across the Brevard Zone: The Geology of the Chattahoochee Interceptor Tunnel, Cobb County, Georgia: Georgia Geological Society Guidebooks, vol. 22, No. 1, pp. 1-18.

Kath, R.L., and Crawford, T.J., 1996, Mineralogy, Geothermometry, and Geobarometry of the Rowland Spring Formation, Allatoona Complex, Georgia: in ***Kath, R.L.****, ed.*, 1996, The Cartersville Fault Problem: Revisited, Georgia Geological Society Guidebook, vol. 16, No. 1, pp. 63-79.

Higgins, M.H., Crawford, R.F., Crawford, T.J., Costello, J.O., Offield, T.W., and **Kath, R.L**., 1996, Geology of the Cartersville district and the Cartersville Fault Problem-A Progress Report: in ***Kath, R.L.****, ed.*, 1996, The Cartersville Fault Problem: Revisited, Georgia Geological Society Guidebook, vol. 16, No. 1, pp. 9-61.

Kath, **R.L.**, McClean, A.T., and Beriswill, J.A., 1994, Environmental Impact Studies, Geology, Hydrogeology and Foundation Grouting of the Haig Mill Dam, Dalton, Georgia: Georgia Geological Society, Annual Field Trip Guidebook, vol. 14, No. 1, pp. 159.

ABSTRACTS AND PRESENTATIONS:

NATIONAL/INTERNATIONAL-

Kath, R.L., and Sneyd, D.S., 2024, The Changing Topography of the Undergraduate Curriculum: Are ongoing program changes eroding or uplifting the education foundation of today's Geology Graduates: Geological Society of America Abstracts with Programs, Vol. 56, No. 5.

Kath, R.L., 2024, Changes in the Geologic Curricula Landscape: Is your University program a licensure qualifying program?: Association of American State Geologists Annual Meeting, Park City, UT

Williams, J.W., and **Kath, R.L.**, 2018, Need for Academic Professional Ethics Training to Prepare Candidates to take the National Association of State Boards of Geology National Licensing Examinations: American Geophysical Union Annual Meeting, vol. , No., p.

Kath, R.L., Crawford, T.J., 2013, Geologic Map illustrating the Tectonostratigraphy and Structural Geology of a part of the Brevard Zone in Georgia: Results from detailed geologic mapping in the Chattahoochee River National Recreation Area, Sandy Springs, 7.5-Minute Quadrangle: Geological Society of America, Abstracts with Programs, vol. 45, No. 7, p. 379.

Kath, R.L., Spruill, R.K., and Warner, J.L., 2014, Curriculum Performance Assessment Tool (CPAT): A new application to assess Geology/Geoscience Curricula using a National Standard: Geological Society of America, Abstracts with Programs, vol. 46, No. 6, p. 596.

Harden, H. M., **Kath, R.L.**, Crawford, T.J., 2013, Geologic Map illustrating the Tectonostratigraphy and Structural Geology of a part of the Brevard Zone in Georgia: Results from detailed geologic mapping in the Chattahoochee River National Recreation Area, Sandy Springs, 7.5-Minute Quadrangle: Geological Society of America, Abstracts with Programs, vol. 45, No. 7, p. 379.

Spruill, R.K., **Kath, R.L.**, 2013, The ASBOG Fundamentals of Geology Examination: New developments in data analysis and presentation, and implications for Geoscience Program Assessment, Accreditation, and Curriculum Development: Geological Society of America, Abstracts with Programs, vol. 45, No. 7, p. 734.

Crawford, T.J., and **Kath, R.L.**, 2001, Groundwater Exploration and Development in Igneous and Metamorphic Rocks: Part I- Influencing Factors and Considerations: National Groundwater Association, Focus Conference, Atlanta, Georgia, pp. 42.

Kath, R.L., and Crawford, T.J., 2001, Groundwater Exploration and Development in Igneous and Metamorphic Rocks: Part II- Case Histories from the Piedmont/Blue Ridge Province: National Groundwater Association, Focus Conference, Atlanta, Georgia, pp. 44.

Crawford, T.J., and **Kath R.L.**, 2000, Groundwater Exploration and Development in Igneous and Metamorphic Rocks: Part I Influencing Factors and Considerations: Drought 2000: Policy, Impacts, and Technology: vol. 1, pp. 77.

Kath R.L., and Crawford, T.J., 2000, Groundwater Exploration and Development in Igneous and Metamorphic Rocks: Part II Case Histories from the Southeastern Piedmont/Blue Ridge Province: Drought 2000: Policy, Impacts, and Technology: vol. 1, pp. 79.

REGIONAL-

Kath, R.L., and Bolding, R.W., 2024, Structural and Stratigraphic Characteristics of the Coosa Shear Zone as Exposed in the Rome South, Livingston, and Indian Mountain Quadrangles from Rome, Georgia to Rock Run, Alabama: Geological Society of America Abstracts with Programs, Vol. 56, No. 2.

Kath, R.L., and Crawford, T.J, 2023, Geologic Map of the Indian Mountain, Borden Springs, Oak Level, Cedartown West, Benedict, Tallapoosa North, Felton and Buchanon 7.5-minute quadrangles, Alabama and Georgia: Geological Society of America, Abstracts with Programs, vol. 55, No. 2, p. 35.

Crawford, T.J, and **Kath, R.L.,** 2023, Palmetto Granite-Brevard Zone-Katy Creek Fault Relationships as illustrated on the Palmetto, Campbellton, Rico, and Winston 7.5-minute quadrangles: Geological Society of America, Abstracts with Programs, vol. 55, No. 2, p. 35.

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- Coffee Break (10:00-10:15)
- Artesian Wells in Igneous and Metamorphic Rocks of Georgia: Are Artesian Conditions the Rule or the Exception? (10:15-10:45)
- Pumping Test Methodologies for estimating Maximum Sustainable Yield from Igneous and Metamorphic Aquifer/Well Systems (10:45-11:15)
- Radionuclide in Groundwater from Igneous and Metamorphic Rock Aquifers: A review of EPD's Database; and Can Long-Term Pumping and/or Permanent Well Construction Reduce Radionuclide Concentrations? (11:15-11:45)
- Open Discussion (11:45-12:15)

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Kath, R.L., 2016, Results of Slug Testing for the Atlanta Plane Train Tunnel extension, Clayton County, Georgia: Petrologic Solutions Inc.

Kath, R.L., 2016, Establishment of maximum sustainable pumping rate and pumping water level for the lake Lanier Islands No. 1 production well, Hall County Georgia: Petrologic Solutions, Inc.

Kath, R.L. and Crawford, T.J., 2015, Detailed Geologic Mapping along the proposed City of Atlanta Raw Water Tunnel alignment, Fulton County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2003, X-Ray Diffraction Testing and Analysis of Kaolinite and Halloysite for Owen's Samples, Guilford County, North Carolina, North Caroling DOT Project 8.U492302, ID No. I-2402D, Petrologic Solutions, Inc.

Kath, R.L., 2003, Groundwater Statistics (April 2003) for Austell Box Board Corporation Facility, Permit #033-032D(L), Cobb County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2003, Groundwater Statistics (October 2003) for Austell Box Board Corporation Facility, Permit #033-032D(L), Cobb County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2003, Site Assessment Report: Allied Universal Corporation Chemical Plant in Gordon County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2003, Groundwater Potential-Hydrogeologic Evaluation for the Veterans Memorial Cemetery, Cherokee County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2003, Maximum Sustainable Pumping Rate and Pumping Water level for the Veterans Memorial Cemetery Production Well No. 1, Cherokee County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2003, Groundwater Potential-Hydrogeologic Evaluation for Irrigation Wells at Parkside at Stone Mountain, Dekalb County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., and Boothe, A.T., 2003, Quantitative X-Ray Diffraction Testing and Analysis for Select Samples from the City of Atlanta CSO Tunnel Project: Petrologic Solutions, Inc.

Kath, R.L., and Boothe, A.T., 2003, Geologic and Hydrogeologic Evaluation, Ashland Chemical Plant, Gwinnett County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2003, Groundwater Potential-Hydrogeologic Evaluation for Water-Supply Wells at the Humphrey Estate, Forsyth County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2003, Groundwater Potential-Hydrogeologic Evaluation for Water-Supply Irrigation Wells at the Laurel Canyon Development, Cherokee County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2003, Establishment of Maximum Sustainable Pumping Rate and Pumping Water level for the City of Suwanee's Production Well, Gwinnett County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2002, Letter Report on the Evaluation of Regional and Site Geologic Conditions at the Allied Universal Corporation Chemical Plant in Gordon County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2002, Groundwater Statistics (April 2002) for Austell Box Board Corporation Facility, Permit #033-032D(L), Cobb County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2002, Letter Report on Drawdown and Water Level Monitoring to Evaluated Well Capacity for the City of Suwanee's Production Well, Gwinnett, County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., and Crawford, T.J., 2002, Groundwater potential-Hydrogeologic Evaluation for the City of Hampton, Henry County, Georgia: Petrologic Solutions, Inc.

Crawford, T.J., and Kath, R.L., 2002, Report on Groundwater Potential-Hydrogeologic Evaluation for Northeastern Pike County, Georgia: Crawford Consulting.

Kath, R.L., 2002, Groundwater Potential-Hydrogeologic Evaluation for John Whieland Homes and Neighborhoods, Fayette County, Georgia: Petrologic Solutions, Inc.

Kath, R. L., 2001, Lithologic and Discontinuity Data Collections along the Gwinnett County Tunnel, Gwinnett County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2001, Groundwater Potential-Hydrogeologic Evaluation, University of Georgia Agricultural Experiment Station (Dempsey Farm), Spalding County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2001, Groundwater Statistics (June 2001) for Austell Box Board Corporation Facility, Permit #033-032D(L), Cobb County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2001, Groundwater Statistics (November 2001) for Austell Box Board Corporation Facility, Permit #033-032D(L), Cobb County, Georgia: Petrologic Solutions, Inc.

Kath, R. L., 2001, Letter Report for X-ray Diffraction Testing and Analysis, Gwinnett County Tunnel, Gwinnett County, Georgia: Petrologic Solutions, Inc.

Kath, R. L., 2001, Evaluation of the Potential Relationship of Sedimentation in a Pond to Clear-Cutting Practices on an Adjacent Property by Temple-Inland Forest, Haralson County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2000, Groundwater Potential-Hydrogeologic Evaluation, Kimberly-Clark Property, Fulton County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 2000, Groundwater Potential-Hydrogeologic Evaluation, University of Georgia Agricultural Experiment Station, Spalding County, Georgia: Petrologic Solutions, Inc.

Crawford, T.J., and Kath, R.L., 1999, Faults and Ground Water- Relationships in the Piedmont/Blue Ridge Geologic Province; with particular reference to the Brevard Fault Zone and Vicinity: Petrologic Solutions, Inc., pp. 25.

Kath, R.L., and Crawford, T.J., 1999, Detailed Geologic Mapping along the proposed Chattahoochee Interceptor Tunnel, Cobb County, Georgia: Petrologic Solutions, Inc., pp. 31.

Kath, R.L., 1999, Geologic Logging of Chip Samples from Air Rotary Boreholes along the proposed Chattahoochee Interceptor Tunnel, Cobb County, Georgia: Petrologic Solutions, Inc., pp. 10.

Kath, R.L., 1999, Quantitative and Qualitative X-Ray Diffraction Testing and Analysis for selected samples along the proposed Chattahoochee Interceptor Tunnel, Cobb County, Georgia: Petrologic Solutions, Inc., pp. 126.

Kath, R.L., 1999, Step Discharge Testing of Select Boreholes along the proposed Chattahoochee Interceptor Tunnel, Cobb County, Georgia: Petrologic Solutions, Inc., pp. 126.

Kath, R.L., 1998, Results of Step Discharge Pumping Tests and Variable Head Tests for a proposed Sewer Relief Tunnel, R.M. Clayton WWTP, Fulton County, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 1998, Reconnaissance Geologic Mapping and Fracture-Discontinuity Characterization of the proposed Campo Sur Sanitary Landfill and Composting Facility, Salinas, Puerto Rico: Petrologic Solutions, Inc., P. 19.

Kath, R.L., 1997, Letter Report for Hydrogeologic Testing (Variable Head) for the Peachtree Creek Interceptor Relief Sewer, City of Atlanta, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 1997, Geotechnical Subsurface investigation for the proposed Clarifiers and Aeration Basin, Dalton Utilities Land Application Facility, Dalton, Georgia: Petrologic Solutions, Inc.

Kath, R.L., 1996, Phase I Discontinuity Study, Anderton-Cain Farms and Adjacent Areas, Knox County, Tennessee: Petrologic Solutions, Inc.

Kath, R.L., 1996, Hydrogeologic Testing for the Orne Street Sewer (Olympic Village), Phase 3, Atlanta, Georgia: Petrologic Solutions, Inc.

Kath, R.L., Khalil, M., and Sullivan, W.R., 1995, Ground Penetrating Radar Results from the MARTA Decatur Transit Station: Golder Associates Inc.

Kath, R.L., and Paul, J.C., 1994, Annual Effectiveness Evaluation, Groundwater Remedial System, Former Ford Facility, Sheffield County, Alabama: Golder Associates Inc.

Kath, R.L., Humphries, R.W., and McClean, A.T., 1994, Construction Completion Report, Foundation Treatment of the Haig Mill Dam, Whitfield County, Georgia: Georgia: Golder Associates Inc.

Kath, R.L., Beriswill, J.A., and McClean, A.T., 1994, Site Information for Bidders for the Foundation Treatment of the Haig Mill Dam, Whitfield County, Georgia: Golder Associates Inc.

Kath, R.L., Beriswill, J.A., and McClean, A.T., 1994, Site Information for Bidders, Construction of the Embankment and Hydraulic Structures, Haig Mill Dam, Whitfield County, Georgia: Golder Associates Inc.

Khalil, M., Kath, R.L., and Sullivan, W.R., 1994, Geophysical (GPR) Investigation, Rockfill Embankment at Mountain Way, Georgia 400 Corridor: Golder Associates Inc.

Kath, R.L., and Pearson, R., 1993, Reference Guide to Groundwater Statistical Evaluation Spreadsheets for Control Charts and Tolerance Interval Charts: Golder Associates Inc.

Kath, R.L., Li, B., and Humphries, R.W., 1993, Ground Penetrating Radar Results at the Cumberland Gap Twin Tunnels, Tennessee and Kentucky: Golder Associates Inc.

Kath, R.L., Brackett, D.A., and Baker, J.E., 1992, Groundwater Chemistry Evaluation of Well SM-18, Emelle Facility, Emelle, Alabama: Golder Associates Inc.

Kath, R.L., Pearson, R., and Clerici, J.F., 1992, Statistical Evaluation of Groundwater Chemistry, Charles City County Landfill, Charles City County, Virginia: Golder Associates Inc.

Kath, R.L., Sneyd, D.S., and Humphries, R.W., 1992, Geotechnical Feasibility Study (structural and stratigraphic mapping and slope stability), U.S. 58 Alternative Alignments, Lee County, Virginia: Golder Associates Inc.

Kath, R.L., Brackett, D.A., and Clerici, J.F., 1992, Phase I Discontinuity Study, Shuqualak Mountain Facility, Noxubee County, Mississippi: Golder Associates Inc.

Kath, R.L., and Clerici, J.F., 1992, Geology, Fault and Well Information, Mississippi Department of Environmental Quality Siting Criteria Responses, Shuqualak Mountain Facility, Noxubee County, Mississippi: Golder Associates Inc.

Kath, R.L., Rippere, K.H., and Pearson, R., 1992, A Preliminary Geologic, Geotechnical, and Rock Blasting Evaluation, Proposed Johnson City Landfill, Washington County, Tennessee: Golder Associates Inc.

Kath, R.L., and Akins, K.P., 1991, Methane Gas Probe Installation and Evaluation, Bolton Road Sanitary Landfill, Fulton County, Georgia: Golder Associates Inc.

Kath, R.L., and Pearson, R., 1991, Results of Structural and Stratigraphic Mapping, Noxubee County, Mississippi: Golder Associates Inc.

7.5-MINUTE GEOLOGIC MAPS

Completed-

Rome South, Georgia (2021)

Geologic Map of Berry College	(2021)
Bowden West, Georgia-Alabama	(2020)
Ben Hill, Georgia	(2019)
Palmetto, Georgia	(2019)
Winston, Georgia	(2019)
East Juliette, Georgia	(2020)
Draketown, Georgia	(2020)
Temple, Georgia	(2019)
Carrollton, Georgia	(2018)
Summerville, Georgia	(2018, Revised 2021)
Tallapoosa South, Georgia	(2017)
Breman, Georgia	(2017)
Cedartown West, Georgia	(2016)
Borden Springs, Alabama-Georgia	(2016)
Oak Level, Alabama-Georgia	(2016)
Indian Mountain, Alabama	(2016)
Tallapoosa North, Georgia	(2016)
Bowden East, Georgia	(2015, Revised 2019)
Roopville, Georgia	(2015, Revised 2017)
Napoleon, Alabama-Georgia	(2015 Revised 2017)
Lowell, Georgia	(2015)
Austell, Georgia	(2015)
Franklin, Georgia	(2015)
Frolona, Georgia	(2015)
Graham, Alabama-Georgia	(2015)
Glenn, Alabama-Georgia	(2015)
Milltown, Alabama	(2015)
Napoleon, Alabama-Georgia	(2015, Revised 2019)
Roanoke East, Alabama	(2015, Revised 2019)
Roanoke West, Alabama	(2015, Revised 2019)
Rico, Georgia	(2015, Revised 2019)
Wadley North, Alabama	(2015)
Wadley South, Alabama	(2015)
Kingston, Georgia	(2013)
Buchanon, Georgia	(2013, Revised 2017)
Sandy Springs, Georgia	(2013)
Northwest Atlanta, Georgia	(2013)
Barnesville, Georgia	(2011)
Rock Mountain, Georgia	(2018, Revised 2021)
Rome North, Georgia	(2011. Revised 2021)
Rockmart North, Georgia	(2010)
Benedict, Georgia	(2010)
Cartersville, Georgia	(2009, Revised 2010, 2013, 2011)
Burnt Hickory Ridge, Georgia	(2009)
Felton, Georgia	(2009)
Taylorsville, Georgia	(2009)
Yorkville, Georgia	(2009)
Rockmart South, Georgia	(2008)
Fairburn, Georgia	(2007)

In Progress-

Ross Mountain, Alabama
Hightower, Alabama
Micaville, Alabama
Newell, Alabama
Livingston, Georgia
Mableton, Georgia
Shannon, Georgia
Plainville, Georgia
Villa Rica, Georgia
Whitesburg, Georgia

REGIONAL GEOLOGIC MAPS

Yorkville Fault	(2020)
Rome Area Geologic Map	(2018)
New Georgia and the Mulberry Rock Structure	(2017)
Indian Mountain Tract, Alabama and Georgia	(2016)
Brevard Zone form Atlanta, GA to Abanda, AL	(2015, Revised 2020)
Cartersville Mining District, Georgia	(2015, Revised 2017)
Emerson Front, Georgia and Alabama	(2011)

Teaching

TEACHING EXPERIENCE/POSITIONS HELD

2005-present *Professor of Geology,* University of West Georgia
2000-2005 *Associate Professor*, Geosciences, State University of West Georgia
1994-2000 *Assistant Professor,* Geosciences, State University of West Georgia
1987-1990 *Research Assistant,* South Dakota Schools of Mines and Technology
1984-1986 *Teaching and Research Assistant,* Geological Sciences, University of Tennessee, Knoxville

COURSES TAUGHT AT UWG

GEOL1121 Physical Geology
GEOL1121L Physical Geology Lab
GEOL1122 Historical Geology
GEOL1122L Historical Geology Lab
GEOL3004 Field Geology and Geologic Mapping
GEOL3034 Structural Geology
GEOL4044 Engineering Geology
GEOL4501 Geology Seminar
GEOL403 Economic Geology
GEOL4074 Regional Applications of Field Geology
GEOL4083 Selected Topics in Geology

RESEARCH PROJECTS SUPERVISED

GRADUATE STUDENTS-

Auburn, Josh Poole, (M.S. 2013-2014). Geology of the Jackson's Gap 7.5-Minute Quadrangle, Alabama.
University of Tennessee, David Settles (M.S., 1999-2002). Defining the Hayesville-Soque River and Allatoona Faults and an Ordovician Arc Assemblage within the central Blue Ridge northwest of Dahlonega, Georgia
University of Georgia, Josh Lawson, (M.S., 2000-2003). Geology and Hydrogeology of the Lawrenceville Area, Gwinnett County, Georgia.

UNDERGRADUATE STUDENTS-

McCue, John, 2020, Structural Geology, Mineralogy, and Geochemistry of a granitic gneiss within the Brevard Zone and its similarity to the Long Island Creek Gneiss, Faculty Directed Undergraduate Research.
Reid, Robert, 2019, Geochemistry of the Long Island Creek Gneiss, Faculty Directed Undergraduate Research.
Mikilitus, Connor, 2019, Petrology and Mineralogy of the Long Island Creek Gneiss, Faculty Directed Undergraduate Research.
Hansen, Katie, 2019, Strain Analysis of Long Island Creek Gneiss, Faculty Directed Undergraduate Research.
Hailey Bailey (2013) Geologic Mapping of the Chattahoochee National Forest, Fulton and Cobb County, Georgia; for National Park Service, GEOCORPS Program.
Josh Poole (2011-2012) Geologic Mapping and Kinematic analysis of the northern end of the Pine Mountain Window, Bartlett's Ferry Dam Quadrangle, Georgia and Alabama.
Ryan Collins (2011-2012) Geologic Mapping and Structural analysis of the northern one-third of the Oak Level Quadrangle, Alabama.
Daniel Kruger (2011) Detailed Geologic mapping and structural analysis of Lavender Mountain on the Rock Mountain, GA, Quadrangle.
Craig Cato (2011) Structural analysis of Lavender Mountain on the Rock Mountain, GA, Quadrangle.

Hope Aysh (2011) Detailed Geologic mapping and structural analysis of western end of Lavender Mountain on the Rock Mountain, GA, Quadrangle.

Georgia Lofquist (2010, proposed EDMAP) Detailed Geologic mapping of the Rome North, Georgia, 7.5-minute quadrangle with a special emphasis on Aquifer Storage Recovery (ASR) in the Cambrian, Ordovician, and Mississippian Systems.

Georgia Lofquist (2009) Detailed Geologic mapping and structural analysis of the western half of the Benedict, GA, Quadrangle

Michael Boatman (2009) Detailed Geologic mapping and structural analysis of the eastern half of the Benedict, GA, Quadrangle

Lee Albright (2009) Detailed Geologic mapping and structural analysis of the eastern half of the Benedict, GA, Quadrangle

Michael Boatman (2009) Quantitative X-Ray Diffraction- DeKalb County Tunnel

Lacy Adamson (2008-2009) Cleavage Development in the Newala Formation below the sub-Rockmart contact: the Marquette Road Quarry, Polk County, Georgia

Michael Boatman (2008) Quantitative X-Ray Diffraction- City of Atlanta South River Tunnel

James Palmer (2006-2007) Detailed Geologic Mapping of part of the Felton, Georgia, Quadrangle

Jay Winston (2006-2007) Detailed Geologic Mapping of part of the Felton, Georgia, Quadrangle

Andrew Boothe (2004) Quantitative X-Ray Diffraction- City of Atlanta Tunnels

Lori-Dee Dukes (2003) Weathering Characteristic of rocks in the West Georgia Piedmont

Andrew Boothe (2003-2004) Radionuclides in Groundwater

Ted Martin (2003) Aquifer Testing

Jennifer Kelly (2003) Pumping test Design and Analysis

Josh Lawson (2000) Groundwater Inventory for Carroll and Haralson Counties, Georgia

Tyler Boyles (1999) Bay Springs Hydrogeologic Research Station

Karen King (1999) X-Ray Diffraction of the Red Top Mountain Formation

David Settles (1998) Geology of the State University of West Georgia Hydrogeologic Research Station

Karen King (1998) X-Ray Diffraction of the Rowland Spring Formation

Kelley Patten (1998)Quantitative X-Ray Diffraction Study of Samples from a Flowing Artesian Well, the State University of West Georgia Hydrogeologic Research Station

David Settles and Kelly Patten (1997) Hydrogeologic Evaluation, Lawrenceville, Georgia

Adrian Teal (1997) Geochemistry of the Rowland Spring Formation, Bartow County, Georgia

John Collins (1997-1998) X-Ray Diffraction study of mafics and ultramafics from Corundum Knob, North Carolina

James O'Quinn and Pinar Tug (1996-1997) Water-Level Variations in Rock-Saprolite-Alluvial System, Piedmont Physiographic Province, Carroll County, Georgia

Service

PROFESSIONAL-

- Moderator, Kath, R.L., and Tefend, K. S, 2022, Geologic Maps, Geophysical Maps, 3-D Geological Models, Digital Mapping Techniques, Map Derivatives, and Digital Map Preparation, Geological Society of American, combined Southeastern and North Central Meeting, Cincinnati, Ohio
- Moderator, Kath, R.L., and Crawford, T.J., 2021, Geologic Maps, Geophysical Maps, 3-D Geological Models, Digital Mapping Techniques, Map Derivatives, and Digital Map Preparation, Geological Society of American, Southeastern Meeting, Auburn, Alabama
- Moderator, Kath, R.L., and Crawford, T.J., 2020, Geologic Maps, Geophysical Maps, 3-D Geological Models, Digital Mapping Techniques, Map Derivatives, and Digital Map Preparation, Geological Society of American, Southeastern Meeting, Reston, Virginia
- Panel Member, Demonstrating the Value of Geologic Work, American Association of State Geologists (2019), Butte, Montana
- Mentor, Roy J. Shlemon Mentoring Program in Applied Geosciences, Geological Society of America (2017, 2019, 2020)
- Mentor, Roy J. Shlemon Mentoring Program in Applied Geosciences, Geological Society of America (2020)
- Presenter, John Mann Mentors in Applied Hydrogeology Program Geological Society of America GeoCareers Center (2019)
- Georgia Board of Registration for Professional Geologists, Member (2010-2021)
    - Vice-Chair (2014-2021)
- Governor's Water Contingency Task Force, Groundwater and Aquifer Storage Recovery Technical Advisory Panel (2009-2012)
- Association of State Boards of Geology (ASBOG®), Council of Examiners (2008-present)
- ASBOG®, Academic Assessment Coordinator (2019-present)
- ASBOG®, Executive Committee Secretary (2012)
- ASBOG®, Executive Committee Treasurer (2013)
- ASBOG®, Executive Committee President Elect (2014)
- ASBOG®, Executive Committee President (2015)
- National Cooperative Geologic Mapping Program, STATEMAP Advisory Panel, Georgia Department of Natural Resources (2005-present)
- Atlanta Geological Society
- Alabama Geological Society, Digital Guidebook Editor (2016, 2018)
- Georgia Geological Society, Secretary (1996-present)
- Georgia Geological Society, Digital Guidebook Editor (2004-present)
- Georgia Geological Society Fieldtrip Committee (1996, 2001, 2004, 2008, 2009, 2012)
- President, Georgia Geological Society (2002-2003)
- American Institute of Professional Geologists- Advisory Board to Executive Committee (2021)

CAMPUS SERVICE-

Departmental

- Chair of Pre-tenue Review Committee, Dr. Ryan Currier (2020)
- Member of the Promotion and Tenure Committee, Dr. Marian Buzon (2020)
- Chair of Promotion and Tenure Guideline Committee (2018-2019)
- Member Department Search Committee for new Igneous/Metamorphic Petrologist (2019)
- Member Department Search Committee for new Sedimentologist (2017)

- Member Department Search Committee for new General Geologist (2009-2010)
- Department Chair Review Committee (Chair)- (2007)
- Promotion and Tenure Departmental Committee (2006-2009)
- Chair Department Search Committee for new Petrologist (2004-2005)
- Chair Department Technology Committee (2003-present)
- Chair Department Program Review Committee (2002)
- Geosciences SACS Review Committee (2002)
- Departmental Search Committees (2000-present)
- Student Advising (1996-present)
- Visitation day (1996-present)
- Graduation (1996-present)
- Open House (2000-2004)

University/College

- Member College of Arts, Culture and Scientific Inquiry Promotion and Tenure Committee (2021-2022)
- Member College of Science and Mathematics Promotion and Tenure Committee (2017-2019)
- Member of the Campus Planning and Advisory Committee (2017-2020)
- Geological Society of America, Campus Representative (2007-present)
- Engineering Studies Committee (1999-2003)
- Graduate Student Committee (1999-2002)
- Arts and Sciences Promotion and Tenure Committee (2003)
- VPAA's Ad hoc committee to review Personnel Policy and Promotion Guidelines (2002)
- Executive Committee, Arts and Sciences (1998-2000)
- Faculty and Administrative Staff Personnel Committee (1998)

Grants and Contracts

- Long-Term Monitoring
  - » Carroll County (funded, 2006).....$271,900.00
  - » City of Bowdon (funded, 2006).....$47,400.00
  - » Carroll County Water Authority (contract extension, funded 2006).....$182,100.00
  - » City of Villa Rica contract extension, funded 2006).....$138,450.00
  - » City of Carrollton (not funded, 2006) $167,750.00
  - » City of Temple (funded, 2009).....$48,400.00
  - » City of Villa Rica (contract extension to signed contract, 2009).....$
- USGS EDMAP
  - » Geologic Mapping of the Rome North, Georgia Quadrangle (pending, 2010) $9,369.00

COMMUNITY SERVICE-

Groundwater Exploration and Development

- Hutchenson Horticulture, Morgan County
- Georgia World Congress Center/Georgia Dome, Fulton County
- City of Duluth, Gwinnett County
- City of Hampton, Henry County
- City of Suwanee, Gwinnett County
- City of Lawrenceville, Gwinnett County
- Gwinnett County Public Schools
- Blue Springs Subdivision, Morgan County
- City of Villa Rica, Carroll County (through CWR)

General

- West Georgia Watershed Assessment Project (2000-2012)
- Holly Springs Elementary Schools PTSO Web Site (2004-2007)
- Heard County Reservoir Project-Heard County Water Authority
- Cochran Mill Nature Camp- Geologic Presentations (2003-present)
- Bay Springs Hydrogeologic Research Station (2000-2005)
- UWG Hydrogeologic Research Station (1996-present)

Watershed Assessment- Long Term Monitoring-

- Prepared and Submitted a long-term monitoring plan for Carroll County Water Authority, City of Carrollton, City of Villa Rica, City of Temple, City of Bowdon, City of Temple, and Carroll County to the Georgia Environmental Protection Division (November 2006).
- Long Term Monitoring Plan accepted by GA EPD (January 2007)
- Database development and Management using SQL Server for 2006-2011 contract
- Semi-annual and Annual reports (2004, 2005, 2007, 2008, 2009)
- Contract negotiations for Long-Term Monitoring in Carroll County

Geologic Mapping and conceptual Groundwater Model for Southern Company Services (SCS)-

- *Plant Wansley, Georgia (Piedmont), 2016*
- *Plant Yates, Georgia (Piedmont), 2016*
- *Plant McDonough, Georgia (Piedmont), 2016*
- *Plant Kraft, Georgia (Coastal Plain), 2016*
- *Plant McManus, Georgia (Coastal Plain), 2016*
- *Plant Hammond, Georgia (Valley and Ridge), 2017*
- *Plant Bowen, Georgia (Valley and Ridge), 2015-2016*
- *Plant Gorgas, Alabama (Plateau), 2015*
- *Plant Miller, Alabama (Plateau), 2015*

Geochemistry and Mineralogy for Southern Company Services (SCS)

- *Same sites as listed above. This phase of the project brought in $4500.00 into the Center for Microscopy and actively engaged Dr. Berg. (2016)*

FULL-TIME EMPLOYMENT-

Connor Mikilitus	EGSci and Golder Associates
Jackson Henderson	EGSci
Leo Ouellette	Wood Environmental and Infrastructure Solutions
Cody Fauth	Stantec
Claire Lynch	Stantec
Jahn Stapler	United Consulting Group Ltd.
Brandy Bennett	Material, Managers and Engineers (M2Next)
Chris Gargan	Golder Associates Inc., Geotechnical Lab, Atlanta, Georgia
Michael Boatman	Golder Associates Inc.
Lee Albright	Atlantic Coast Consulting, Inc.
James Palmer	MC^2 Engineering, Inc.
Turner Sanders	ENGEO, Norcross, Georgia
Andrew Boothe	Golder Associates Inc., Atlanta, Georgia
Marcus Proctor	Florida Rock Industries, Inc., Jacksonville, Florida
David Settles	Florida Rock Industries, Inc., Jacksonville, Florida
James O'Quinn	R&D Testing and Engineering, Atlanta, Georgia
Chris Klamke	Golder Associates Inc., Atlanta, Georgia & URS/Woodward Clyde Inc., Atlanta, Georgia, Jordan Jones and Goulding (current)

Katie Tyrrell	Golder Associates Inc., Atlanta, Georgia
Todd Tharpe	US Geological Survey, Doraville, Georgia; Jordan Jones and Goulding (current)
Teddy Martin	United Consulting, Inc.; SEI Environmental, Atlanta, Georgia
Josh Lawson	Golder Associates Inc., Atlanta, Georgia

PART-TIME EMPLOYMENT-

Chris Klamke[1]	Hydrogeologic Testing
David Settles[2]	Geologic Mapping and Lineament Analysis
Katie Tyrrell[2]	Hydrogeologic Testing
Kelly Patten	Geologic Mapping and Lineament Analysis
Mike Swafford	Quantitative X-ray diffraction, Cobb County Tunnel Step Discharge Pumping Tests, Cobb County, Georgia
Joshua Lawson	Quantitative X-ray diffraction, Cobb County Tunnel
Adam Motes	Quantitative X-ray diffraction, Cobb County Tunnel
Michael Boatman	Geophysical Surveys for cell tower foundations, ENGEO, Inc.
Connor Mikilitus	EnGEO- geotechnical surveys and lab analysis

NATIONAL ASSOCIATION OF STATE BOARDS OF GEOLOGY (ASBOG®) RESPONSIBILITIES-

- *Web Site Support*
  - Web site maintenance and updates https://www.asbog.org/
  - Development of new web pages
  - Web site server backup
  - Web site/ISP renewal of annual contact and coordination
  - Creation of database-driven Web Forms for SME management system (Developed in collaboration with Chris Rolka in Computer Science)
  - Developed and maintain the ASBOG Disciplinary Online Database. (Developed in collaboration with Chris Rolka in Computer Science)
- *Information Technology (IT) Support*
  - Support for ASBOG® meetings, recording, projection, teleconferencing-Go To Meeting
  - Creation and maintenance of ASBOG® MS Access and MySQL databases
  - Support for ASBOG® computer, printer and email
  - Support for QuickBooks Pro
  - Maintenance and support for DropBox
- *Curriculum Performance Assessment Tool (CPAT)* https://www.asbog.org/cpat_universities.html
  - Academic Assessment Coordinator
  - Development and Maintenance of MS Access version of CPAT
  - Fulfillment of School/University requests for CPAT evaluation data (currently 35 universities using CPAT including UWG)
  - Support and coordination for web migration of CPAT
  - Interface with Psychometrician for CPAT data format and database maintenance
- Graphic Standardization and Examination Support
  - Conversion of raster-based Fundamentals of Geology (FG) and Practice of Geology (PG) examination figures to vector-based figures
  - Colorization of examination geologic maps
  - Standardization graphical format of examination figures
  - Interface with Psychometrician for examination figure revision prioritization
  - Revision support for Administrative Guidelines document
  - Revision support for Candidates Handbook document https://asbog.org/documents/Candidate%20Handbook%202019.pdf

[1] Contacts made during part-time employment led to full-time positions

- Final reviewer of the national examinations for the Fundamentals of Geology (FG) and Practice of Geology (PG) for the spring and fall administrations

- Financial Data
  - Support for creation of ASBOG® quarterly and annual financial reports
  - Support and interface with Accountant for ASBOG® 990 Financials
  - Support for scanning/archiving previous year financial records
- Professional Meetings
  - Support for ASBOG® booth at Professional Meetings (GSA, AEG, AIPG)
  - Maintenance of PowerPoint templates and updating related presentation material
  - Computer and A/V support for the Annual Meeting and Administrators Workshop
- Other
  - Transportation of ASBOG® Materials
  - Digital editor and development of e-book version of Annual Meeting book
  - Bi-annual support for scanning of examination bubble sheets, comment forms and compliance forms
  - Other duties as assigned by the Executive Committee
  - Subject Matter Expert since 2007
  - Author and coauthor of several AGI Currents publications. Currently two new currents in peer review
  - Digital Editor and author of "A Cross Sectional View" https://www.asbog.org/crosssection/crosssection.html Recently completed the February 2020 edition

PROJECTS- ***GEOTECHNICAL/GEOLOGICAL/HYDROGEOLOGICAL***

Remote Landfill **Oliver Springs, Tennessee**
Task leader for the geologic investigation of a proposed sanitary landfill within an old coal strip mine. The site investigation included geologic mapping of mine cuts for stratigraphic and structural correlations, large-scale density and strength testing, cross-hole seismic tests, construction of a test fill to assess settlement, and installation of piezometers and monitoring wells to evaluate the site hydrogeology. Prepared a detailed geotechnical report as part of a permit application. Also prepared bid documents for the construction of both the Phase 1 portion of the landfill and the entrance road to the proposed facility.

S.R. 27 **South Pittsburg, Tennessee**
Golder Associates' field director for geotechnical and geologic investigations along a three-mile by-pass road around South Pittsburg, Tennessee. The geotechnical investigation involved over 200 auger and SPT borings along the proposed alignment to determine the soil characteristics. Additionally, diamond drill boreholes were drilled in large cut areas to assess the rock characteristics for rock slope design. Geologic mapping was also conducted in the rock cut areas to determine the dominant fracture patterns for rock slope stability wedge analyses. Also prepared a detailed geologic/geotechnical report with design recommendations for a local design firm and the Tennessee Department of Transportation.

U.S. 58 **Lee County, Virginia**
Golder Associates' project geologist/manager for a geotechnical feasibility study for alternative alignments for U.S. 58. The feasibility study assessed two alignments for the improvement of U.S. 58 from the Tennessee/Virginia State Line to the Cumberland Gap National Historic Park boundary. The study included a literature review, aerial photographic review, detailed geologic mapping, recommendations for sinkhole treatment, recommendations for cut and fill slopes, and a station-by-station discussion of each alignment.

Pine Mountain **Pine Mountain, Kentucky**
Golder Associates' project geologist for identifying and evaluating the feasibility of alternate open cut and tunnel crossings through Pine Mountain in southeastern Kentucky.

Soo Line Tunnel **Tunnel City, Wisconsin**
Golder Associates' project geologist for geotechnical design recommendations for the open cut option of an unlined tunnel. The investigation included geologic mapping, fracture mapping, stratigraphic correlation, cut design recommendations, and construction considerations.

Browning-Ferris Industries (BFI) **Ponce, Puerto Rico**
Conducted geologic mapping and a geotechnical field investigation for determining the feasibility of constructing a second industrial waste landfill cell. The investigation included test pitting, sampling, and rock slope analysis.

U.S.P.C.I. **Shuqualak, Mississippi**

Designed and performed a discontinuity study of Cretaceous chalks and marls to determine potential for enhanced permeability along fractures at depth. Study was completed to comply with the requirements for application of a Part B permit of a new hazardous waste landfill in Mississippi. Conducted lineament analyses on high and low altitude aerial photographs and various scale topographic maps to identify linear features potentially related to deeply weathered zones. Conducted geologic mapping and fracture classification. Correlated geophysical (V.L.F.) anomalies with significant discontinuities and managed trench mapping of select linear features to characterize depth of weathering and to determine significance of these features. Identified natural weathered fractures in drill core and targeted select zones to determine hydraulic conductivity of fractured and unfractured rock below the deeply weathered zones observed in the trenches.

CHATTAHOOCHEE INTERCEPTOR TUNNEL **Cobb County, Georgia**

Mr. Thomas Crawford and I were retained by JJG to perform an evaluation of the geologic conditions that may impact construction of the Chattahoochee Interceptor Tunnel (CIT) in Cobb County, Georgia. The CIT is proposed to be constructed as a 16-foot diameter tunnel excavated below ground surface. The alignment of the CIT crosses numerous surface drainages, is locally close to the Chattahoochee River, and crosses the Brevard Fault Zone. Technical considerations related to the proposed tunnel, such as distribution of lithologic units, geologic structures, depth of weathering, and the potential for ground-water movement were evaluated and presented.

BREVARD FAULT ZONE **Cobb County, Georgia**

The Brevard Fault Zone Report was prepared for Jordan, Jones and Goulding, Inc. to address the geotechnical and hydrogeologic characteristics of faults within the Brevard Fault Zone based on published literature and detailed geologic mapping of the tunnel corridor by Randy L. Kath and Thomas J. Crawford.

CAMPO SUR **Salinas, Puerto Rico**

Designed and performed a detailed geologic mapping and discontinuity study of Cenozoic sedimentary and volcanic rocks to determine potential for enhanced permeability along fractures at depth. Study was completed to comply with the requirements for application of a Subtitle D permit of a sanitary landfill and composting facility near Salinas, Puerto Rico. Conducted detailed geologic mapping and fracture classification of the volcanic rocks, and conducted lineament analyses on high and low altitude aerial photographs and various scale topographic maps to identify linear features potentially related to deeply weathered zones.

PROJECTS- ***DAMS***

Haig Mill Dam **Dalton, Georgia**
Golder Associates' field manager for structural, stratigraphic, and geotechnical investigations for the foundation assessment; resident engineer for the foundation treatment, installation of a triple-line agent curtain, and placement of the core material; resident engineer for the embankment and hydraulic structures construction.

River Road Reservoir **Dalton, Georgia**
Golder Associates' project geologist for assessing the fracture patterns in the underlying bedrock. Also conducted aquifer testing to estimate the horizontal hydraulic conductivity in the underlying alluvial and bedrock aquifers.

Soil Conservation Service Dam # 9 **Dalton, Georgia**
Golder Associates' project geologist for the investigations along the existing embankment for determining the type and depth of compacted earth fill along the emergency spillway and dam crest.

Heard County Regional Reservoir **Heard County, Georgia**
Phase I- Alternative analysis report and selection of three potential reservoir sites.
Phase II- Detailed geologic, hydrogeologic, and water chemistry of the three sites and selection of a single reservoir site for the Heard County Water Authority.

PROJECTS- ***MINING***

The following list describes the practical experience, which was achieved while working as an exploration geologist. Much of this working experience was gained during exploration for shear zone-hosted gold deposits in the Pre-Cambrian core of the Black Hills, South Dakota. However, many submittals outside the Black Hills, particularly in Wyoming and Colorado, were evaluated for potential mineralization.

- Mapped and interpreted structure, lithology, and alteration patterns to assess the mineral potential of various prospects.

- Mapped subsurface in the Homestake, Big Thunder, Bullion, Nethanal Pope, and Holy Terror mines to determine three-dimensional metamorphic, stratigraphic, and structural framework for gold mineralization to be used as an exploration tool outside the mine areas.

- Logged diamond drill core and sampled zones of potential mineralization.

- Created three-dimensional geologic models used for exploration of blind targets.

- Planned and managed conventional and directional core drilling.

- Interpreted assay results and compared these to geochemical and geophysical trends.

- Managed excavation and trench mapping and sampling to determine in-situ ore reserves in an alluvial tailings deposit.

- Interpreted resistivity and I.P. anomaly maps for other shear zone-hosted deposits in the southern Black Hills, South Dakota.

- Refined genetic and exploration models of gold mineralization pertaining to the structural and metamorphic evaluation of the Keystone District.

- Created and implemented a metamorphic/structural model which advances the understanding of gold mineralization in the Homestake mine.