

CURRICULUM VITAE**Susan M. Rimmer****PERSONAL DATA:**

Current Position: Research Professor and Professor Emerita
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Place of Birth: Newcastle-upon-Tyne, England
 Citizenship: U.S.

EDUCATION

Ph.D.	Geology	1985	The Pennsylvania State University, University Park, PA
M.S.	Geology	1978	University of Illinois, Urbana, IL
B.S.	Geology	1975	Southern Illinois University, Carbondale, IL
A.A.	Liberal Arts	1973	Southwest College (now Richard J. Daley College), Chicago, IL

PROFESSIONAL EXPERIENCE**Academic/Research:**

2020 to present Research Professor and Professor Emerita, School of Earth Systems and Sustainability, Southern Illinois University Carbondale (SIUC)
 2019 Professor, School of Earth Systems and Sustainability, SIUC (retired 12/31/2019)
 2009 - 2019 Professor, Geology, Southern Illinois University Carbondale
 2009 to present Professor Emerita, Earth and Environmental Sciences, University of Kentucky (UK)
 2008 - 2009 Professor, Earth and Environmental Sciences, University of Kentucky
 1990 - 1991 Faculty Associate, Center for Applied Energy Research, University of Kentucky
 1989 - 2008 Associate Professor, Earth and Environmental Sciences, University of Kentucky
 1985 - 1989 Assistant Professor, Geological Sciences, University of Kentucky
 1984 - 1985 Instructor, Geology, University of Kentucky
 1983 Research Fellow, Coal Research Section, Penn State
 1983 Adjunct Instructor, Juniata College, PA.
 1982 Technical Editor, DOE Program, Coal Research Section, Penn State
 1979 - 1983 Graduate Research Assistant, Coal Research Section, Penn State
 1975 - 1979 Research Assistant, Research Associate, Coal Section, Illinois State Geol. Survey

Administrative:

2011-2013 Associate Vice Chancellor for Research, SIUC
 2010-2012 Graduate Program Coordinator, Department of Geology, SIUC
 2006-2008 Director of Graduate Studies, Department of Earth and Environmental Sciences, UK
 1993-2000 Associate Dean for Advanced Studies, College of Arts and Sciences, UK
 1992-1993 Director of Graduate Studies, Department of Geological Sciences, UK
 1990-1992 Director of Undergraduate Studies, Department of Geological Sciences, UK

AWARDS AND HONORS

2023	John Castaño Honorary Membership Award, The Society for Organic Petrology (TSOP)
2022	Gilbert H. Cady Award, Geological Society of America (GSA) Energy Geology Division
2019	Dal Swaine Award, (Best Refereed Paper in Coal and Hydrocarbon Source Rock Geochemistry), The Society for Organic Petrology (TSOP)
2007	Outstanding Educator Award, Association of Women Geoscientists (AWG)
2002	Certificate of Appreciation (for Service) (TSOP)
1983	Phillips Petroleum Research Fellow, Coal Research Section, Penn State University
1978	Sigma Xi, Department of Geology, University of Illinois
1975	Outstanding Senior Award, Geology Department, Southern Illinois University
1974	National Association of Geology Teachers (NAGT) Summer Field Camp Scholarship
1973	Alpha Mu Gamma (National Collegiate Language Honor Society)

RESEARCH INTERESTS

My research currently focuses on five main areas: 1) biogeochemical cycles in organic-rich sediments; 2) controls on stable isotope composition of organic matter (OM) and interpretation of C and N isotope records in organic-rich sediments and coals; 3) linkages between OM and past atmospheric composition; 4) coal maturation and the role of heating rate (contact metamorphism vs. burial maturation); and 5) maceral separation and geochemistry.

1) Biogeochemical cycles in organic-rich sediments.

My students and I have been examining controls on organic carbon accumulation in Devonian-Mississippian and Ordovician black shales in the Appalachian and Illinois basins, USA. We have been evaluating redox conditions, productivity, and productivity-anoxia feedback mechanisms using trace-metal geochemistry (redox and productivity indicators) and C/P ratios, the role of clay minerals in the accumulation of OM in marine basins, C and N contents and stable isotope compositions, organic geochemistry, Rock-Eval pyrolysis data, and organic petrology. The inclusion of organic petrology in these studies adds an important, yet generally overlooked, dimension and allows us to evaluate the relative importance of different types of marine OM and, in Devonian and younger sediments, the significance of input of terrestrial OM.

2) Stable isotopic composition of OM and interpretation of C, N isotopic records.

Most published stable carbon and nitrogen isotope studies have focused on interpreting either bulk isotopic composition or compound-specific (CSIA) results. Unlike the solvent extractable organic fractions that can be studied using CSIA, most of the OM in fine-grained rocks is composed of dispersed macromolecular components that are insoluble in solvents (kerogen) and represent the major reservoir of organic carbon. Our lab has been developing a novel approach to isotopic analysis: the maceral-specific approach. By separating individual maceral components from a kerogen using density-gradient centrifugation (DGC), we are able to determine the isotopic composition of relatively pure (>95%) end-members.

3) Linkages between OM and past atmospheric compositions.

The evolution of marine and terrestrial organisms has had significant impact on atmospheric composition throughout Earth history. One of my interests focuses on using the presence and properties of inertinite (mostly fossil charcoal) that provides critical data to ground-truth O₂ models. Following the earliest, scant occurrence of fossil charcoal (late Silurian) there is a general paucity of inertinite in the rock record until the Late Devonian by which time the first forests had evolved, along with what were likely the first true peats, and the first evidence of relatively widespread charcoal occurs, both in the terrestrial and marine record. Recent work in my lab has been focusing on both the terrestrial and marine record of these Late Devonian charcoals.

A second thrust of work relating organic petrology and atmospheric composition considers the role of intrusion of coals and organic-rich sediments. Intruded coals from the Karoo Basin (South Africa), Illinois Basin (USA), Raton Basin (USA), Piceance Basin (USA), and Antarctica are being examined using isotopic, petrographic, and geochemical analyses to evaluate the role of such intrusions in a) the generation of coal-bed methane, and b) the possible introduction of large quantities of depleted volatiles into the atmosphere that may have altered atmospheric $\delta^{13}\text{C}$.

4) Coal maturation and the role of heating rate: Contact metamorphism vs. burial maturation.

Our work on intruded coals also allows us to examine the role of rapid heating (contact metamorphism) on the maturation pathways of coal and to compare this with the effects of more gradual heating associated with burial metamorphism. Our results suggest that rapid heating associated with intrusions may force coal to follow a different maturation pathway than is seen under normal coalification conditions.

5) Maceral separation and geochemistry.

As coal and source rocks consist of many different organic components (macerals) and inorganic components (minerals), it is important to understand the contribution of each to bulk composition. This is important in both basic and applied research. Here at SIUC, we have the only density-gradient centrifugation lab in the country dedicated to separating out individual macerals from coals and source rocks. These density separates are then used to better understand maceral geochemistry (including isotopic composition), as well as how organic materials respond to various processes (e.g., gasification, oxidative hydrothermal dissolution, or OHD).

SUCCESSFUL GRANTS (\$1,850,135)

University of Illinois/US Department of Energy: Illinois Basin (IB) Carbon Ore, Rare Earth, and Critical Elements (CORE-CM) Initiative. PI: L. Lefticariu, Co-PI: S. Rimmer, 2021-2023, \$175,000.

Illinois Clean Coal Institute (ICCI): *In-situ* Investigation of Maceral Response to OHD. PI: S. Rimmer (SIUC), Co-PI: K. Anderson (SIUC), 2014-2015, \$119,998.

Illinois Clean Coal Institute (ICCI): The Effect of Maceral and Mineral Composition on OHD Processing of Illinois Coal. PI: S. Rimmer (SIUC), Co-PIs: K. Anderson (SIUC), J. Crelling (SIUC), 2012-2014, \$149,991.

Illinois Clean Coal Institute (ICCI): The Effect of Mineral Content and Maceral Composition on Illinois Coal Gasification. PI: T. Wiltowski (SIUC); Co-PIs: S. Rimmer (SIUC), M. Mohanty (SIUC), 2011-2012, \$141,004.

Illinois Clean Coal Institute (ICCI): Characterization of Product Streams from the OHD Coal Conversion Process. PI: K. Anderson (SIUC); Co-PIs: J. Crelling (SIUC); S. Rimmer (SIUC), 2009-2011, \$310,586.

National Science Foundation (NSF, ANT-0636771, ANT-1039365): Collaborative Research: The Permian-Triassic Transition in Antarctica: Evaluating the Rates and Variability of Carbon Isotope Fluctuations in Terrestrial Organic Matter. PI: S. Rimmer, in collaboration with M. Saltzman, D. Elliot (Ohio State), 2007-2012, (OSU share: \$291,634; UK share: \$104,638; \$41,015 transferred to SIUC).

- National Science Foundation (NSF, EAR-0521405): Acquisition of an X-Ray Diffractometer for a Shared-Use Facility Serving the University and the Region, PI: H. Rowe (UK); Co-PIs: M. Arthur (UK), T. Li (UK), S. Rankin (UK), S. Rimmer (UK), 2005-2006, \$289,487.
- KY NSF EPSCoR: Organic Carbon Accumulation in Paleozoic Black Shales: An Opportunity for Mentoring Teams in Biogeochemical Systems Research. PI: S. Rimmer (UK); Co-PI: H. Rowe (UK), Summer Research Program, 2005, \$2405.
- National Science Foundation (NSF, EAR-0450898): Acquisition of a DGC Maceral Separation Laboratory: The Key to Maceral-specific Isotopic and Geochemical Analysis. PI: S. Rimmer (UK); Co-PIs: A. Carmo (UK), H. Rowe (UK), 2005-2007, \$82,661.
- KY NSF EPSCoR: Collaborative Research in Biogeochemical Systems: Creating Research Mentorship Teams, PI: S. Rimmer (UK); Co-PIs: A. Carmo (UK), J. Bartog (NKU), Summer Research Program, 2004, \$11,800.
- National Science Foundation (NSF, EAR-0310072): Terrestrial Carbon Sequestration in Devonian-Mississippian Anoxic Basins: Determining the Relative Importance of Higher Plants to Organic Accumulation in Black Shales, PI: S. Rimmer (UK); Co-PIs: A. Carmo (UK), H. Rowe (UK), T. Algeo (U. Cincinnati), 2003-2007, \$169,979.
- KY NSF EPSCoR: Building Research Mentorship Ladders: Linking Female Undergraduates, Graduates and Faculty in the Geological Sciences, PI: S. Rimmer (UK), Undergraduate Summer Research Proposal, 2003, \$4800.
- American Chemical Society - Petroleum Research Fund (ACS-PRF): Mushwad (Ductile Duplexes) in Thrust Belts: Thermal and Structural Constraints, PI: W. Thomas (UK); Co-PIs: S. Rimmer (UK), K. O'Hara (UK), 2003-2007, \$80,000.
- KY NSF EPSCoR: Pyrite Framboid Size: A Paleoredox Indicator in Devonian-Mississippian Black Shales. PI: S. Rimmer (UK), Undergraduate Summer Research Proposal, 2002, \$2,000.
- KY NSF EPSCoR: Undergraduate Research Opportunities in the Geological Sciences: A Focus on Future Women Geoscientists, PI: S. Rimmer (UK), Undergraduate Summer Research Proposal, 2001-2002, \$11,307.
- University of Kentucky: Evaluation of Vitrinite Suppression in Devonian-Mississippian Shales; Application of Electron-microprobe Methods, PI: S. Rimmer (UK), Research Committee Grant, 2001-2003, \$4898.
- National Science Foundation (NSF, EAR-0074840): $\delta^{13}\text{C}$ Heterogeneity in Devonian-Mississippian Marine Shales: Integration of Density-Gradient Centrifugation (DGC) and Organic Petrography into Isotopic Studies (NSF-POWRE), PI: S. Rimmer (UK), 2000-2003, \$74,678.
- KY DOE EPSCoR: Activated Carbons from Coal, PI: S. Rimmer (UK), Clean Uses of Fossil Fuels Traineeship, 1993-1994, \$25,000.
- KY DOE EPSCoR: Activated Carbons from Coal, PI: S. Rimmer (UK), Clean Uses of Fossil Fuels Traineeship, 1992-1993, \$25,000.
- Amoco Production Company: Organic Maturation Studies, PI: S. Rimmer (UK), 1992, \$13,743.

Potomac Mining Co: Clay Mineralogy of Underclays, PI: S. Rimmer (UK), 1991, \$2,500.

Shell Development Company: Effects of Overpressure on Organic Maturation Parameters, PI: S. Rimmer (UK), 1991, \$5,000.

University of Windsor: Clay Mineral Analysis of Bottom Sediments, Gulf of St. Lawrence, PI: S. Rimmer (UK), 1990-1991, \$1,500.

U.S. Bureau of Mines: Modes of Occurrence of Trace Elements in Macerals and Minerals from the Blue Gem Coal Bed: Application of Density Gradient Centrifugation and Electron Microprobe Techniques, PI: S. Rimmer (UK), 1989-1990, \$10,000.

U.S. Bureau of Mines: Ash-Fusion Characteristics of Kentucky Coals, PI: S. Rimmer (UK), 1989, \$8,160 (includes contributions from IMMR and Kentucky Geological Survey).

U.S. Bureau of Mines: Ash-Fusion Characteristics of Kentucky Coals, PI: S. Rimmer (UK), 1987-1988, \$10,000.

U.S. Bureau of Mines: The Occurrence and Distribution of Marcasite and Pyrite in Selected Kentucky Coals, PI: S. Rimmer (UK), 1984, \$10,000.

IMMR (Institute for Mining and Minerals Research): Pyrite in Selected Kentucky Coals, PI: S. Rimmer (UK), Development Grant, 1984, \$4,000.

PUBLICATIONS

(* peer reviewed; † current or former student)

80. *Lindsey, D.R.†, **Rimmer, S.M.**, and Anderson, K., 2023, Modified open-system hydrous pyrolysis. *International Journal of Coal Geology*, v. 275, 104313.
79. *Sanders, M.M.†, **Rimmer, S.M.**, and Rowe, H.D., 2023, Carbon isotopic composition and organic petrography of thermally metamorphosed Antarctic coal: Implications for evaluation of $\delta^{13}\text{C}_{\text{org}}$ excursions in paleo-atmospheric reconstruction. *International Journal of Coal Geology*, v. 267, 104182.
78. *Hower, J.C., Eble, C.F., Muciño, F., **Rimmer, S.M.**, and Mastalerz, M., 2022, Petrology of the Pittsburgh coalbed (Gzhelian (Stephanian C), Monongahela Group/Formation) in Pennsylvania, West Virginia, and Ohio. *International Journal of Coal Geology*, v. 249, 103907.
77. *Abdi, Z.†, **Rimmer, S.M.**, Rowe, H.D., and Nordeng, S., 2021, Controls on organic matter accumulation in the Bakken Formation, Williston Basin, USA. *Chemical Geology*, v. 586, 120588.
76. *Hower, J.C., **Rimmer, S.M.**, Mastalerz, M., and Wagner, N., 2021, Migmatite-like textures in anthracite: Further evidence for low-grade metamorphic melting and resolidification in high-rank coals. *Geoscience Frontiers*, v. 12, 101122.
75. *Li, K.†, Lui, Q., **Rimmer, S.M.**, Huggett, W.W., and Zhang, S., 2020, Investigation of the carbon structure of naturally graphitized coals from central Hunan, China, by density-gradient centrifugation, X-ray diffraction, and high-resolution transmission electron microscopy. *International Journal of Coal Geology*, v. 232, 103628.
74. *Sanders, M.M.†, and **Rimmer, S.M.**, 2020, Revisiting the thermally metamorphosed coals of the Transantarctic Mountains, Antarctica. *International Journal of Coal Geology*, v. 228, 103550.
73. *Li, K.†, **Rimmer, S.M.**, Presswood, S.†, and Lui, Q., 2020, Micro-Raman spectroscopy of intruded coals from the Illinois Basin: correlation with rank and establishment of a paleogeothermometer. *International Journal of Coal Geology*, v. 219, 103369.

72. **Rimmer, S.M.**, 2019, In Memoriam: Jack Crelling, June 13, 1941–September 27, 2018. *International Journal of Coal Geology*, v. 216, 103299.
71. *Li, K.[†], **Rimmer, S.M.**, Lui, Q., and Zhang, Y., 2019, Micro-Raman spectroscopy of microscopically distinguishable components of naturally graphitized coals from Central Hunan Province, China. *Energy and Fuels*, v. 33, p.1037-1048.
70. *Hower, J.C., **Rimmer, S.M.**, Mastalerz, M., and Wagner, N.J., 2019, Notes on the mechanisms of coal metamorphism in the Pennsylvania Anthracite Fields. *International Journal of Coal Geology*, v. 202, p. 161-170.
69. *Li, K.[†], **Rimmer, S.M.**, and Lui, Q., 2018, Geochemical and petrographic analysis of graphitized coals from central Hunan, China. *International Journal of Coal Geology*, v. 195, p. 267-279.
68. *Hower, J.C., Berti, D., Hochella, M.F., **Rimmer, S.M.**, and Taulbee, D.N., 2018, Submicron-scale mineralogy of lithotypes and the implications for trace element associations: Blue Gem coal, Knox County, Kentucky. *International Journal of Coal Geology*, v. 192, p. 73-82.
67. *Ocubalidet, S.G.[†], **Rimmer, S.M.**, and Conder, J., 2018, Redox conditions associated with organic carbon accumulation in the Late Devonian New Albany Shale, west-central Kentucky, Illinois Basin. *International Journal of Coal Geology*, v. 190, p. 42-55.
66. *Rahman, M.W.[†], **Rimmer, S.M.**, and Rowe, H.D., 2018, The impact of rapid heating by intrusion on the geochemistry and petrography of coals and organic-rich shales in the Illinois Basin. *International Journal of Coal Geology*, v. 187, p. 45-53.
65. *Wei, Q.[†], **Rimmer, S.M.**, and Dai, S., 2017, Distribution of trace elements in fractions after micronization and density-gradient centrifugation of high-Ge coals from the Wulantuga and Lincang Ge ore deposits, China. *Energy and Fuels*, v. 31, No. 11, p. 11818-11837.
64. *Wei, Q.[†], and **Rimmer, S.M.**, 2017, Acid solubility and affinities of trace elements in the high-Ge coals from Wulantuga (Inner Mongolia) and Lincang (Yunnan Province), China. *International Journal of Coal Geology*, v. 178, p. 39-55.
63. *Rahman, M.W.[†], **Rimmer, S.M.**, Rowe, H.D., and Huggett, W.W., 2017, Carbon isotope analysis of whole-coal samples and vitrinite fractions from intruded coals from the Illinois Basin: no isotopic evidence for thermogenic methane generation. *Chemical Geology*, v. 453, p. 1-11.
62. *Presswood, S.[†], **Rimmer, S.M.**, Anderson, K.B., and Filiberto, J., 2016, Geochemical and petrographic alteration of rapidly heated coals from the Herrin (No. 6) Coal seam, Illinois Basin. *International Journal of Coal Geology*, v. 165, p. 243-256.
61. *Yoksoulilian, L.E.[†], **Rimmer, S.M.**, and Rowe, H.D., 2016, Anatomy of an Intruded Coal, II: Effect of contact metamorphism on $\delta^{13}\text{C}$ and implications for the release of thermogenic methane, Springfield (No. 5) Coal, Illinois Basin. *International Journal of Coal Geology*, v. 158. p. 129-136.
60. ***Rimmer, S.M.**, Hawkins, S.J.[†], Scott, A.C., and Cressler, W.L., III, 2015, The rise of fire: Fossil charcoal in Late Devonian marine shales as an indicator of expanding terrestrial ecosystems, fire, and atmospheric change. *American Journal of Science*, v. 315, p. 713-733.
59. *Hudspith, V.A., **Rimmer, S.M.**, and Belcher, C.M., 2015, Latest Permian chars may derive from wildfires not coal combustion: Reply. *Geology*, v. 43, p. e363.
58. ***Rimmer, S.M.**, Crelling, J.C., and Yoksoulilian, L.E.[†], 2015, An occurrence of coked bitumen, Raton Formation, Purgatoire River Valley, Colorado, U.S.A. *International Journal of Coal Geology*, v. 141-142, p. 63-73.
57. *Hudspith, V.A., **Rimmer, S.M.**, and Belcher, C.M., 2014, Latest Permian chars may derive from wildfires not coal combustion. *Geology*, v. 42, p. 879-882.
56. *Rahman, M.W.[†], and **Rimmer, S.M.**, 2014, Effects of rapid thermal alteration on coal: Geochemical and petrographic signatures in the Springfield (No. 5) Coal, Illinois Basin. *International Journal of Coal Geology*, v. 131, p. 214-226.
55. Crelling, J.C., and **Rimmer, S.M.**, 2011, An occurrence of natural pitch coke, Raton Formation, Purgatoire River Valley, Colorado. *Outcrop, Rocky Mountain Association of Geologists*, v. 60, no. 6, p. 5-6, 9.

54. ***Rimmer, S.M.**, Rowe, H.D., Hawkins, S.J.[†], and Francis, H., 2010, Geochemistry of the Cleveland Member of the Ohio Shale, Appalachian Basin: Indicators of depositional environment during sediment accumulation. *Kirtlandia*, no. 57, p. 3-12.
53. *Rowe, H., Ruppel, S., **Rimmer, S.**, and Loucks, R., 2009, Core-based chemostratigraphy of the Barnett Shale, Permian Basin, Texas. *Gulf Coast Association of Geological Societies Transactions*, v. 59, p. 675-686.
52. ***Rimmer, S.M.**, Yoksoulia, L. E.[†], and Hower, J.C., 2009, Anatomy of an intruded coal, I: Effect of contact metamorphism on whole-coal geochemistry, Springfield (No. 5) (Pennsylvanian) coal, Illinois Basin. *International Journal of Coal Geology*, v. 79, p. 74-82.
51. *Gröcke, D.R., **Rimmer, S.M.**, Yoksoulia, L.E.[†], Cairncross, B., Tsikos, H., and van Hunen, J., 2009, No evidence for thermogenic methane release in coal from the Karoo-Ferrar large igneous province. *Earth and Planetary Science Letters*, v. 277, p. 204-212.
50. *Rowe, H.D., Loucks, R.G., Ruppel, S.C., and **Rimmer, S.M.**, 2008, Mississippian Barnett Formation, Fort Worth Basin, Texas: Bulk geochemical inferences and Mo-TOC constraints on the severity of hydrographic restriction. *Chemical Geology*, v. 257, p. 16-25.
49. *O'Keefe, J.M.K.[†], Shultz, M.G.[†], **Rimmer, S.M.**, Hower, J.C., and Popp, J.T., 2008, Paradise (and Herrin) lost: Marginal depositional settings of the Herrin and Paradise coals, Western Kentucky Coalfield. *International Journal of Coal Geology*, v. 75, p. 144-156.
48. *de la Rue, S.R.[†], Rowe, H.D., and **Rimmer, S.M.**, 2007, Palynological and bulk geochemical constraints on the paleoceanographic conditions across the Frasnian-Famennian boundary, New Albany Shale, Indiana. *International Journal of Coal Geology*, v. 71, p. 72-84.
47. *Cooper, J.R.[†], Crelling, J.C., **Rimmer, S.M.**, and Whittington, A.G., 2007, Coal metamorphism by igneous intrusion in the Raton Basin, CO and NM: Implications for generation of volatiles. *International Journal of Coal Geology*, v. 71, p. 15-27.
46. *Maharaj, S.[†], Barton, C.D., Karathanasis, A.D., Rowe, H.D., and **Rimmer, S.M.**, 2007, Distinguishing and Quantifying "New" Carbon from "Old" Carbon on Reclaimed Coal Mine Sites using Thermogravimetry: Part 2- Field Validation. *Soil Science*, v. 172, No. 4, p. 292-301.
45. *Maharaj, S.[†], Barton, C.D., Karathanasis, A.D., Rowe, H.D., and **Rimmer, S.M.**, 2007, Distinguishing and Quantifying "New" Carbon from "Old" Carbon on Reclaimed Coal Mine Sites using Thermogravimetry: Part 1- Method Development. *Soil Science*, v. 172, No. 4, p. 302-312.
44. **Rimmer, S.M.**, Rowe, H.D., Hawkins, S.J.[†], and Francis, H., 2006, Geochemistry of the Cleveland Member of the Ohio Shale, Appalachian Basin: Indicators of depositional environment during sediment accumulation. In: Guide to Classic Cleveland Shale Localities in the Cleveland, Ohio, Area, (Hannibal, J., Rimmer, S.M., Carr, R.K., Banks, P.O., and Dunn, D., Field Trip Leaders), Fieldguide, NC-GSA meeting, Akron OH, pp. 1-22.
43. ***Rimmer, S.M.**, Rowe, H.D., Taulbee, D.N., and Hower, J.C., 2006, Influence of maceral content on $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ in a Middle Pennsylvanian coal. *Chemical Geology*, v. 225, p. 77-90.
42. *Stewart, A.K.[†], Massey, M.[†], Padgett, P.L.[†], **Rimmer, S.M.**, and Hower, J.C., 2005, Influence of a basic intrusion on the vitrinite reflectance and chemistry of the Springfield (No. 5) Coal, Harrisburg, Illinois. *International Journal of Coal Geology*, v. 63, p. 58-67.
41. ***Rimmer, S.M.**, Thompson, J.A.[†], Goodnight, S.A.[†], and Robl, T., 2004, Multiple controls on the preservation of organic matter in Devonian-Mississippian marine black shales: Geochemical and petrographic evidence. *Palaeogeography, Palaeoclimatology, and Palaeoecology*, v. 215, p. 125-154.
40. *Schultz, R.B. and **Rimmer, S.M.**, 2004, Geochemistry of organic-rich shales: new perspectives. *Chemical Geology*, v. 206, p. 163-165.
39. ***Rimmer, S.M.**, 2004, Geochemical paleoredox indicators in Devonian-Mississippian black shales, central Appalachian Basin (U.S.A.). *Chemical Geology*, v. 206, p. 373-391.

38. ***Rimmer, S.M.**, Hower, J.C., Moore, T.A.[†], Esterle, J.S.[†], Walton, R.L.[†], and Helfrich, C.T., 2000, Petrography and palynology of the Blue Gem coal bed (Middle Pennsylvanian), Southeastern Kentucky, USA. *International Journal of Coal Geology*, v. 42, p. 159-184.
37. *Padgett, P.L.[†], **Rimmer, S.M.**, Ferm, J.C., Hower, J.C., Eble, C.F., and Mastalerz, M., 1999, Sulfur variability and petrology of the Lower Block Coal Member (Pennsylvanian) in southwest Indiana. *International Journal of Coal Geology*, v. 39, p. 97-120.
36. *Toles, C.[†], **Rimmer, S. M.**, and Hower, J.C., 1996, Production of activated carbons from a Washington lignite using phosphoric acid activation. *Carbon*, v. 34, n. 11, pp. 1419-1426.
35. *Jagtøyen, M.[†], Derbyshire, F., **Rimmer, S.M.**, and Rathbone, R., 1995, Relationship between reflectance and structure of high surface area carbons. *Fuel*, v. 74, p. 610-614.
34. *Hower, J.C., Taulbee, D.N., **Rimmer, S.M.**, and Morrell, L.G.[†], 1994, Petrographic and geochemical anatomy of lithotypes from the Blue Gem coal bed, southeastern Kentucky. *Energy and Fuels*, v. 8, p. 719-728.
33. ***Rimmer, S.M.**, Cantrell, D.J.[†], and Gooding, P.J., 1993, Rock-Eval pyrolysis and vitrinite reflectance trends in the Ohio Shale, eastern Kentucky. *Organic Geochemistry*, v. 20, n. 6, p. 735-746.
32. *Rubel, A.M., **Rimmer, S.M.**, Keogh, R., Robl, T.L., Carter, S.D., and Derbyshire, F.J., 1993, Characteristics of processed shales affecting oil yield loss to coke. *Fuel*, v. 71, p. 1427-1432.
31. *Robl, T.L., **Rimmer, S.M.**, and Barron, L.S., 1992, Organic petrography of Mississippian and Devonian shales in east-central Kentucky. *Fuel*, v. 71, p. 267-271.
30. Thompson, J.A.[†], **Rimmer, S.M.**, and Robl, T.L., 1992, Organic facies in Devonian shales of east-central Kentucky: Preliminary results. *Eastern Oil Shale Symposium Proceedings*, IMMR-University of Kentucky, Lexington, KY, p. 405-414.
29. Rubel, A.M., **Rimmer, S.M.**, Keogh, R., Robl, T.L., Carter, S.D., and Derbyshire, F.J., 1992, Characteristics of processed shales affecting oil yield loss to coke. *Eastern Oil Shale Symposium Proceedings*, IMMR-University of Kentucky, Lexington, KY, p. 293-298.
28. *Rubel, A.M., **Rimmer, S.M.**, Keogh, R., Robl, T.L., Carter, S.D., and Derbyshire, F.J., 1991, Effect of process solids on secondary reactions during oil shale retorting. *Fuel*, v. 70 (11), p. 1352-1356.
27. ***Rimmer, S.M.**, 1991, Distributions and associations of selected trace elements in the Lower Kittanning seam, western Pennsylvania, U.S.A. *International Journal of Coal Geology*, v. 17, p. 189-212.
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 75. Yoksoulian, L.E.[†], Moecher, D.M., and **Rimmer, S.M.**, 2006, From the bottom to the top: Preliminary report on the origin and conditions of kimberlite ascent and emplacement - Focus on diamond survivability (Elliot County Kimberlite, KY). 55th Annual Meeting SE Section, Geological Society of America, March 23-24, 2006, Knoxville, TN, Program with Abstracts, v. 38, no. 3, p. 73.
 74. Cooper, J.R.[†], Whittington, A.G., **Rimmer, S.M.**, and Crelling, J.C., 2005, Contrasting signatures of coal metamorphism due to dike and sill intrusion: An example from the Raton Basin, CO and NM. 2005 Annual Meeting Geological Society of America, October 16-19, 2005, Salt Lake City, Program with Abstracts, v. 37, no. 7, p. 83.
 73. **Rimmer, S.M.**, Rowe, H.D., Mastalerz, M.D., and Hower, J.C., 2005, The effects of contact metamorphism on the elemental and isotopic composition of coal: An example from the Illinois Basin. 22nd. Annual Meeting, The Society for Organic Petrology, September 11-14, 2005, Louisville, KY, Program and Abstracts, p. 93-95.
 72. Sun, T.[†], Carmo, A.M., Rowe, H.D., and **Rimmer, S.M.**, 2005, C and N excursions and burial of organic matter in the Late Devonian central Appalachian Basin. 22nd. Annual Meeting, The Society for Organic Petrology, September 11-14, 2005, Louisville, KY, Program and Abstracts, p. 105-107.
 71. Cooper, J.R.[†], Whittington, A.G., **Rimmer, S.M.**, and Crelling, J.C., 2005, Coal metamorphism as a result of igneous intrusion in the Raton Basin, CO/NM: A preliminary report based on isotopic, petrographic and vitrinite reflectance data. 22nd. Annual Meeting, The Society for Organic Petrology, September 11-14, 2005, Louisville, KY, Program and Abstracts, p. 31-33.
 70. Hawkins, S.J.[†], and **Rimmer, S.M.**, 2005, The role of charcoaled terrestrial organic matter in the accumulation of Devonian-Mississippian shales of the Appalachian Basin. 22nd. Annual Meeting, The Society for Organic Petrology, September 11-14, 2005, Louisville, KY, Program and Abstracts, p. 57-59.
 69. de la Rue, S.R.[†], **Rimmer, S.M.**, and Rowe, H.D., 2005. Quantitative assessment of particulate organic matter and geochemical changes in the Upper Devonian New Albany Shale source rock (Indiana). 22nd. Annual Meeting, The Society for Organic Petrology, September 11-14, 2005, Louisville, KY, Program and Abstracts, p. 37-38 (Best student poster award).
 68. Maharaj, S.[†], Yoksoulian, L.E.[†], Von Mann, R.A.[†], Overfield, B.L.[†], Black, B.L.[†], Floyd, J.[†], Rowe, H.D., and **Rimmer, S.M.**, 2005, Role of maceral composition on $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$: Implications for chemostratigraphic studies. 22nd. Annual Meeting, The Society for Organic Petrology, September 11-14, 2005, Louisville, KY, Program and Abstracts, p. 75-77.
 67. **Rimmer, S.M.**, Carmo, A.M., Hawkins, S.J.[†], and Rowe, H.D., 2005, Evaluating the relative contributions of marine and terrestrial organic matter to Devonian-Mississippian black shales. Earth System Processes 2, August 8-11, 2005, Calgary, Canada. GSA Specialty Meetings, Abstracts with Programs, n. 1, p. 56.
 66. Carmo, A.M., and **Rimmer, S.M.**, 2005, Molecular evidence of photic-zone euxinic conditions during deposition of Devonian black shales of the Appalachian Basin. Earth System Processes 2, August 8-11, 2005, Calgary, Canada. GSA Specialty Meetings, Abstracts with Programs, n. 1, p. 45.
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64. **Rimmer, S.M.**, 2004, Terrestrial organic matter: An under-appreciated component of Late Devonian-Early Mississippian marine black shales? 2004 Annual Meeting Geological Society of America, November 7-10, 2004, Denver, CO, Abstracts with Programs, v. 36, n. 5, p. 292.
63. Carmo, A.M., and **Rimmer, S.M.**, 2004, Molecular characterization of organic matter in Devonian-Mississippian black shales of the Appalachian Basin using pyrolysis-gas chromatography/ion trap mass spectrometry. 2004 Annual Meeting Geological Society of America, November 7-10, 2004, Denver, CO, Abstracts with Programs, v. 36, n. 5, p. 170.
62. **Rimmer, S.M.**, 2004, Geochemical paleoredox indicators: What can they tell us about Devonian-Mississippian black shales? In: Devonian Black Shales of the Eastern U.S., New Insights into Sedimentology and Stratigraphy from the Subsurface and Outcrops in the Illinois and Appalachian Basins, Schieber, J., and Lazar, R. (Eds.), 2004 Annual Field Conference, Great Lakes Section, SEPM, New Albany, IN, September 24-25, 2004, p. 79. (Invited talk).
61. Toth, K.[†], and **Rimmer, S.M.**, 2004, The role of clay mineral surface area in organic carbon accumulation in black shales. Joint NE-SE Sectional Mtg., Geological Society of America, March 25-27, 2004, Abstracts with Programs Vol. 36, No. 2.
60. Rowe, H.D., **Rimmer, S.M.**, and Carmo, A.M., 2003, Redox conditions, depositional styles, and carbon preservation in black shale sequences: A Devonian-age case from the Illinois Basin. 2003 Annual Meeting Geological Society of America, November 2-5, 2003, Seattle, WA, Program with Abstracts, v. 35, no. 6, p. 392.
59. **Rimmer, S.M.**, Goodnight, S.A.[†], Crelling, J.C., Rowe, H.D., and Carmo, A.M., 2003, Deciphering bulk $\delta^{13}\text{C}_{\text{org}}$ and $\delta^{15}\text{N}_{\text{org}}$ in Devonian-Mississippian black shales. 2003 Annual Meeting Geological Society of America, November 2-5, 2003, Seattle, WA, Program with Abstracts, v. 35, no. 6, p. 392.
58. Stewart, A.K.[†], Massey, M.[†], Padgett, P.L.[†], **Rimmer, S.M.**, and Hower, J.C., 2003, Influence of a basic intrusion on the vitrinite reflectance and chemistry of the Springfield (No. 5) Coal, Harrisburg, Illinois. 20th. Annual Meeting, The Society for Organic Petrology, September 21-24, 2003, Washington, D.C., Abstracts and Program.
57. Goodnight, S.A.[†], **Rimmer, S.M.**, Crelling, J.C., Huggett, W.W., and Atudorei, V., 2003, Using density gradient centrifugation to assess stable isotope variability in Devonian-Mississippian marine black shales. 37th Annual Meeting SC Section - 52nd Annual Meeting SE Section, Geological Society of America, March, 2003, Memphis, TN, Program with Abstracts, v. 35, no. 1, p. 19.
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55. **Rimmer, S.M.**, 2002, Stratigraphic variability in trace-element paleoredox indicators in Devonian-Mississippian marine black shales, central Kentucky. 2002 Annual Meeting Geological Society of America, October 27-30, 2002, Denver, CO, Program with Abstracts, v. 34, no. 6, p. 442.
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51. **Rimmer, S.M.**, Thompson, J.A.[†], Goodnight, S.[†], and Hawkins, S.[†], 2001, Organic matter accumulation in Devonian-Mississippian black shales, east-central Kentucky, 2001 Annual Meeting Geological Society of America, November 2001, Boston, MA, Program with Abstracts, v. 33, p. 37.
50. Hawkins, S.[†], and **Rimmer, S.M.**, 2001, Pyrite framboid size and size distribution: Indicators of anoxia during deposition of Devonian-Mississippian black shales. 18th. Annual Meeting, The Society for Organic Petrology, March 3-6, 2002, Houston, TX, Abstracts and Program, v. 18, p. 52-54.
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47. Toles, C.A.[†], and **Rimmer, S.M.**, 1996, A review of activated carbons from coal and coal macerals using phosphoric acid: 13th Annual Meeting, The Society for Organic Petrology, September 15-19, 1996, Carbondale, IL, Abstracts and Program, v. 13, p. 47.
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43. Toles, C.[†], and **Rimmer, S.M.**, 1994, Comparison between activated carbons produced from eastern Kentucky liptinite-rich coals: 11th. Annual Meeting, The Society for Organic Petrology, Sept. 25-30, 1994, Jackson, WY, Abstracts, v. 11, p. 107-110.
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39. Hower, J.C., Taulbee, D.N., **Rimmer, S.M.**, and Morrell, L.G.[†], 1994, Petrographic and geochemical anatomy of lithotypes from the Blue Gem coal bed, southeastern Kentucky: American Chemical Society, Fuel Division Preprints, v. 39.
38. **Rimmer, S.M.**, 1993, Effects of overpressuring on organic maturation and vitrinite reflectance: 10th. Annual Meeting, The Society for Organic Petrology, October 9-13, 1993, Norman, OK, Abstracts and Program, v. 10, p. 40.
37. Vogler, P.D.[†], and **Rimmer, S.M.**, 1993, Analysis of megascopic (lithotype) and microscopic (maceral) variations in the Pond Creek coal seam, eastern Kentucky: 10th. Annual Meeting, The

- Society for Organic Petrology, October 9-13, 1993, Norman, OK, Abstracts and Program, v. 10, p. 24.
36. Hutton, A.C., Graham, U.M., and **Rimmer, S.M.**, 1992, Organic petrography of retorted oil shale residues: Eastern Oil Shale Symposium, Abstracts, November 18-20, 1992, Lexington, KY.
 35. Thompson, J.A.[†], **Rimmer, S.M.**, and Robl, T.L., 1992, Organic petrographic and trace element distributions in the Cleveland and Huron Members of the Ohio Shale in east-central Kentucky: 9th. Annual Meeting, The Society for Organic Petrology, Abstracts and Program, July 24-25, 1992, State College, PA, p. 65.
 34. Tang, Y.[†], **Rimmer, S.M.**, and Ferm, J.C., 1992, Lithology, petrography, and geochemistry of the Fire Clay coal, eastern Kentucky: Implications concerning the peat-forming environment: 1992 Annual Meeting Geological Society of America, Program with Abstracts, v. 24, no. 7, p. A164.
 33. **Rimmer, S.M.**, 1991, Vitrinite reflectance as an indicator of organic maturation: An overview. (Abstract). Organic Geochemistry, v. 17, no. 2, p. 265.
 32. **Rimmer, S.M.**, Thwaites, M.W., Jagtoyen, M.[†], Stencil, J., McEnaney, B., and Derbyshire, F.J., 1991, Optical Microscopy of Coal-Derived Activated Carbons: Preliminary Results: 8th. Annual Meeting, The Society for Organic Petrology, Abstracts and Program, September 30 - October 1, 1991, Lexington, KY.
 31. Derbyshire, F.J., Jagtoyen, M.[†], McEnaney, B., **Rimmer, S.M.**, Stencil, J.M., and Thwaites, M.W., 1991, Adsorbent carbons from coals by chemical activation: Proceedings, 1991 International Conference on Coal Science, Newcastle-Upon-Tyne, England (Extended Abstract).
 30. Thompson, J.A.[†], **Rimmer, S.M.**, and Robl, T.L., 1991, Organic facies in Devonian shales of central Kentucky: Preliminary results: Eastern Oil Shale Symposium, Abstracts, November 13-15, 1991, Lexington, KY, p. 64.
 29. Rubel, A.M., **Rimmer, S.M.**, Keogh, R., Robl, T.L., Carter, S.D., and Derbyshire, F.J., 1991, Characteristics of processed shales affecting oil yield loss to coke: Eastern Oil Shale Symposium, Abstracts, November 13-15, 1991, Lexington, KY, p. 47.
 28. Derbyshire, F.J., Jagtoyen, M.[†], McEnaney, B., **Rimmer, S.M.**, Stencil, J.M., and Thwaites, M.W., 1991, Activated carbon preparation by reaction of subbituminous coal with phosphoric acid: 20th. Biennial Carbon Conference, Proceedings, 23-28 June, 1991, Santa Barbara, CA, p. 52-53 (Extended Abstract).
 27. Taulbee, D.N., Hower, J.C., **Rimmer, S.M.**, and Morrell, L.G.[†], 1991, Trace element partitioning as a function of maceral type in a sample of the low-ash Blue Gem coal bed of eastern Kentucky: American Chemical Society, Fuel Chemistry Division.
 26. Hower, J.C., Eble, C.F., Andrews, W.M., Jr.[†], and **Rimmer, S.M.**, 1991, Compositional characteristics of the Fire Clay coal bed in a portion of eastern Kentucky: American Association of Petroleum Geologists Bulletin, v. 75, p. 1384.
 25. **Rimmer, S.M.**, Robl, T., and Barron, L., 1990, Organic petrography of Mississippian-Devonian shales in east-central Kentucky: Eastern Oil Shale Symposium, Abstracts, November 6-8, 1990, Lexington, KY, p. 25.
 24. Rubel, A., **Rimmer, S.M.**, Keogh, R., Robl, T.L., Carter, S.D., and Derbyshire, F.J., 1990, Effect of process solids on secondary reactions during oil shale retorting: Eastern Oil Shale Symposium, Abstracts, November 6-8, 1990, Lexington, KY, p. 40.
 23. **Rimmer, S.M.**, Cantrell, D.C.[†], and Gooding, P.J., 1990, Rock-Eval pyrolysis and vitrinite reflectance trends in the Ohio Shale, eastern Kentucky: 7th. Annual Meeting, The Society for Organic Petrology, Abstracts and Program, September 1990, Calgary.
 22. Taulbee, D.N., Hower, J.C., and **Rimmer, S.M.**, 1990, DGC Separation of non-demineralized coals: Preliminary studies: American Chemical Society, Great Lakes Regional Meeting, May 31-June 2, 1990, Dekalb, IL.
 21. **Rimmer, S.M.**, Cantrell, D.J.[†], and Gooding, P.J., 1989, Organic geochemistry, petrography, and maturation trends of the Ohio Shales in eastern Kentucky. Eastern Oil Shale Symposium, Abstracts, November 15-17, 1989, Lexington, KY, p. 35.

20. Hatt, R.M.[†], and **Rimmer, S. M.**, 1989, Sampling and examination of deposits from coal-fired boilers: Joint Power Generation Conference, A.S.M.E., October 22-26th, 1989, Dallas, TX. (Invited Paper).
19. Hower, J.C., **Rimmer, S.M.**, Williams, D.A., and Beard, J.G., 1989, Coal rank trends in the western Kentucky coalfield and relationship to hydrocarbon occurrence: S.E.P.M., Rocky Mountain Section Meeting, AAPG-SEPM-EMD, October 1-4, 1989, Albuquerque, NM.
18. Hatt, R.M.[†], and **Rimmer, S.M.**, 1989, A classification of coal-fired boiler deposits: in "Symposium on Ash Deposition," 197th. Annual Meeting, American Chemical Society, Division of Fuel Chemistry, April 9-14, 1989, Dallas, TX. (Invited paper).
17. **Rimmer, S.M.**, and Hower, J.C., 1988, Coalification patterns in Pennsylvanian coals, eastern Kentucky coalfield and adjacent areas: 100th. Annual Meeting, Geological Society of America, Program with Abstracts, v. 20, no. 7, p. 168-169.
16. **Rimmer, S.M.**, 1988, Vitrinite reflectance as an indicator of organic maturation - An overview: in "Prediction of Hydrocarbon Reservoir Potential from Paleotemperature and Petrographic Data" The Society for Organic Petrology - American Association of Stratigraphic Palynologists (TSOP-AASP) Joint Symposium, Program and Abstracts, November 9, 1988, Houston, TX, p. 4-5. (Invited Paper).
15. Hower, J.C., Bland, A.E., and **Rimmer, S.M.**, 1988, Geochemistry of the Blue Gem coal bed, Knox County, eastern Kentucky coal field: 22nd. Meeting North-Central Section Geological Society of America, Program with Abstracts v. 20, no. 5, p. 350. (Invited Paper).
14. **Rimmer, S.M.**, and Cantrell, D.J.[†], 1988, Thermal maturation of the Ohio shale, eastern Kentucky: Kentucky Oil and Gas Association, Annual Meeting, Abstracts, p. 18.
13. **Rimmer, S.M.**, and Cantrell, D.J.[†], 1988, Organic maturation of the Cleveland Member of the Ohio shale (eastern Kentucky): Eastern Oil Shale Symposium, Abstracts, November 30-December 2, 1988, Lexington, KY, p. 24.
12. Hower, J.C., and **Rimmer, S.M.**, 1988, Coal rank trends in the eastern Kentucky coalfield and adjacent areas: 5th. Annual Meeting, The Society for Organic Petrology, Abstracts and Program, November 7-8, 1988, Houston, TX, p. 11.
11. Kruge, M.A., Crelling, J.C., and **Rimmer, S.M.**, 1988, Organic geochemical and petrographic analysis of pure macerals from the Ohio shale: Eastern Oil Shale Symposium, Abstracts, November 30-December 2, 1988, Lexington, KY, p. 25.
10. **Rimmer, S.M.**, Crelling, J.C., and Landis, C.R.[†], 1987, Fluorescence analysis of sporinite in the Lower Kittanning seam: Influence of rank and depositional environment: 4th. Annual Meeting, The Society for Organic Petrology, September 30 - October 3, 1987, San Francisco, CA, p. 43.
9. Moore, T.A.[†], Flores, R.M., Ferm, J.C., and **Rimmer, S.M.**, 1986, Effects of paleoflooding on Tertiary peat swamp, Powder River Basin, Montana: Rocky Mountain Section, Geological Society of America, Program with Abstracts, v. 18, no. 5, p. 397.
8. **Rimmer, S.M.**, and Davis, A., 1986, A relationship between depositional environment and ash fusion characteristics: 20th. Meeting North-Central Section Geological Society of America, Program with Abstracts, v. 18, no. 4, p. 321. (Invited Paper).
7. **Rimmer, S.M.**, and Davis, A., 1985, Geologic controls on the maceral composition of the Lower Kittanning seam: 2nd. Annual Meeting, The Society for Organic Petrology, November 7-9, Houston, TX.
6. **Rimmer, S.M.**, Moore, T.A.[†], Esterle, J. S.[†], and Hower, J.C., 1985, Geologic controls on sulfur content of the Blue Gem coal seam, southeastern Kentucky: 98th. Annual Meeting Geological Society of America, Program with Abstracts, v. 17, no. 7.
5. **Rimmer, S.M.**, and Davis, A., 1984, Variability in coal petrography and mineralogy in the Lower Kittanning coal, western Pennsylvania: Southeast/North-Central Section Meeting, Geological Society of America, v. 16, no. 3, p. 191.

4. **Rimmer, S.M.**, and Davis, A., 1983, Influence of environments of deposition on the inorganic composition of coals: American Chemical Society Annual Meeting, Preprints, v. 29, no. 4, p. 9-13.
3. Davis, A., **Rimmer, S.M.**, Russell, S.J., and Yeakel, J.D., 1981, Some observations on the origin of common minerals in coals and their relationship to the organic petrology: 94th. Annual Meeting, Geological Society of America, Program with Abstracts, v. 13, no. 7, p. 436. (Invited Paper).
2. Stepusin, **S.M. (Rimmer)** and Eberl, D.D., 1978, Vertical variations in the mineralogical and chemical composition of the underclay of the Herrin (No. 6) coal in southwestern Illinois: 27th. Annual Clay Minerals Conference, Program and Abstracts, p. 46.
1. Hood, W.C., and Stepusin, **S.M. (Rimmer)**, 1974, Manganese content of some southern Illinois shales and its relation to acid mine drainage problems: 23rd. Annual Clay Minerals Conference, Program and Abstracts, p. 35.

SELECTED RESEARCH SEMINARS (INVITED) AND ORAL PRESENTATIONS AT MEETINGS (Since 2000)

Rate matters – the effects of rapid heating on organic matter by dikes and sills - The Society for Organic Petrology (Joint meeting with ICCP and AASP), Houston, TX, September 2016.

The impact of rapid heating by intrusion of the geochemistry and petrography of coals and organic-rich shales in the Illinois Basin - 2014 Annual Meeting Geological Society of America, Vancouver, BC, Canada, October 2014.

The influence of maceral composition on oxidative hydrothermal dissolution (OHD) processing of coal – 38th International Technical Conference on Clean Coal and Fuel Systems, Clearwater, FL, June 2013.

The effect of heating rate on organic maturation: Contact metamorphism versus burial maturation – 2009 Annual Meeting Geological Society of America, Portland, OR, October 2009.

Intrusion Confusion: Does contact metamorphism of coal produce different maturation relationships than burial maturation? - International Conference on Coal and Organic Petrology, 25th. Annual Meeting, The Society for Organic Petrology (Joint meeting with ICCP), Oviedo, Spain, September 2008.

Fossil charcoal in Devonian marine shales: An indicator of expanding terrestrial ecosystems, fire, and atmospheric change - Department of Geology, Southern Illinois University at Carbondale, IL, April 2008.

Organic matter preservation in Devonian-Mississippian marine black shales of central Kentucky (U.S.A)- American Association of Petroleum Geologists, Eastern Section, Lexington, KY, September 2007 (Invited).

A maceral-specific approach to isotopic analysis: Deciphering bulk $\delta^{13}C$ and $\delta^{15}N$ compositions using density-gradient centrifugation - The Society for Organic Petrology (Joint meeting with CSCOP and ICCP), Victoria, BC, Canada, August 2007.

Fossil charcoal in Devonian marine shales: An indicator of expanding terrestrial ecosystems, fire, and atmospheric change -
Department of Earth and Planetary Sciences, University of Tennessee, TN, October 2006.
Department of Earth Sciences, Eastern Kentucky University, KY, November 2006.

- Department of Earth and Environmental Sciences, University of Kentucky, KY, November 2006.
- Terrestrial-marine linkages: Records of Devonian charcoal, fire, and paleoatmospheric oxygen level* - Geological Society of America Annual Meeting, Philadelphia, PA, October 2006.
- Charcoal (inertinite) in Late Devonian marine black shales: Implications for terrestrial and marine systems and for paleo-atmospheric composition* - European Geosciences Union General Assembly, Vienna, Austria, April 2006.
- Terrestrial organic matter in Devonian marine black shales: Implications for organic carbon accumulation, terrestrial ecosystems, and paleo-atmospheric oxygen levels* - Annual Meeting North-Central Section, Geological Society of America, Akron, OH, April 2006.
- The effects of contact metamorphism on the elemental and isotopic composition of coal: An example from the Illinois Basin* - The Society for Organic Petrology, Annual Meeting, Louisville, KY, September 2005.
- Deciphering the isotopic composition of organic matter: A maceral-specific approach* - Kentucky Geological Survey, Lexington, KY, April 2005.
- Geochemical paleoredox indicators: What can they tell us about Devonian-Mississippian black shales?* - 2004 Annual Field Conference, Great Lakes Section, SEPM, New Albany, IN, September 2004 (Invited).
- Organic carbon accumulation in Devonian black shales: Muddying the waters of a stratified, anoxic basin model* - Department of Geology, Southern Illinois University, IL, November 2003.
- Organic carbon accumulation in the Devonian Appalachian Basin: Defining the relative importance of higher plants in organic accumulation in marine black shales* - Department of Geology, University of Cincinnati, OH, February 2003.
- Stratigraphic variability in trace-element paleoredox indicators in Devonian-Mississippian marine black shales, central Kentucky* - Geological Society of America Annual Meeting, Denver, CO, October 2002.
- Organic carbon accumulation in the Devonian Appalachian Basin: Muddying the waters of a stratified, anoxic basin model* - Department of Geological Sciences, University of Kentucky, KY, September 2002.
- What controls organic carbon accumulation in Devonian black shales?* - Department of Geological Sciences, Northwestern University, IL, April 2002.
- Controls on organic matter in Devonian-Mississippian marine black shales, east-central Kentucky: Preservation vs. productivity* - The Society for Organic Petrology Annual Meeting, Houston, TX, March 2002.
- Organic matter accumulation in Devonian-Mississippian black shales, east-central Kentucky* - Geological Society of America Annual Meeting, Boston, MA, November 2001.

Geochemical and organic petrographic variations in Devonian-Mississippian marine black shales of east-central Kentucky as indicators of paleoenvironmental conditions - The Society for Organic Petrology Annual Meeting, Bloomington, IN, September 2000.

SHORT COURSE LECTURES

"Introduction to Coal Geology". Organized 3-day short course, held at Southern Illinois University, Carbondale, IL, July 16-18, 2012. Presented 5 of the 15 lectures, and laboratory sessions.

Lectures by SMR: *"Introduction, concept of rank and coal quality."*

"Inorganics in coal and their origins."

"Environments of peat formation"

"Coal mining geology and coal quality"

"Coal sampling strategies"

Lab sessions on hand sample identification, sample preparation, maceral analysis, vitrinite reflectance analysis, and coke petrography.

"Coal Geology and Trace Elements" presented at "Environmentally Important Elements in Coal" University of Kentucky, Lexington, KY, March 7-11, 1994.

"Practical Applications of Quantitative Fluorescence Microscopy" presented at "Workshop on Fluorescence Microscopy" Sponsored by The Society for Organic Petrology, Carbondale, IL, November 1989.

"Mineral Matter in Coal" presented at "Chemistry of Coal Utilization: A Short Course" IMMR/OISTL, University of Kentucky, Lexington, KY, July 1984.

"X-ray Diffraction and its Application to Coal" presented at "Analytical Methods for Coal" Exxon Research and Engineering Co., Baytown, TX, July 1981.

PROFESSIONAL ACTIVITIES

a). Professional Affiliations:

Registered Professional Geologist (No. 113065, Legacy No. 2060), Kentucky (1994-present)

Geological Society of America (GSA)

The Society for Organic Petrology (TSOP)

Association for Women Geoscientists (AWG)

b). Professional Service:

The Society for Organic Petrology (TSOP):

President (1991-1992), President-Elect (1990-1991), Vice-President (1989-1990)

Treasurer/Secretary (1986-1989)

Nominating Committee (1985, 1993, 2004) (Chair in 1993)

Best Student Paper Committee - Annual Meeting (2000, 2016)

Castañó Honorary Membership Award Committee (2013-2015)

Geological Society of America:

Coal Geology Division, Past Chair (2012-2013), Chair (2011-2012); 1st Vice Chair (2010-2011), 2nd Vice Chair (2009-2010), Secretary (1987-1990)

Joint Technical Program Committee (Annual Meeting) (2010, 2011)

Technical Program Committee, Joint NC-SE Sectional Meeting, Lexington, KY (2002)

Campus Representative (1989-1993)

Best Paper Committee - Coal Geology Division - Annual Meeting (1989)

Medlin Award Selection Committee Chair (2011)
Cady Award Selection Committee Chair (2013)

Association for Women Geoscientists (AWG):

Selection committee for Outstanding Educator Award (2015-2016)

Session convener/meeting organizer:

Organizer and presenter, Geology Break-out Sessions, Educational Summit for High School Science Teachers (IBHE-funded), (September 2017), Touch of Nature Environmental Center, Makanda, IL.

Organizer, Ohio Valley Organic Petrographers Annual Meeting, Carbondale, IL (April 11, 2017)
Session Co-Chair (with Petra David) "Organic Petrology Applied to Climate and Environmental Studies" International Conference on Coal and Organic Petrology, 25th. Annual Meeting, The Society for Organic Petrology (Joint meeting with ICCP), Oviedo, Spain (2008).

Convener (with Harry Rowe, University of Kentucky) "Multi-proxy Investigations of Black Shales: What Can They Tell Us?" 40th Annual North-Central GSA Meeting, Akron, OH (2006)

Co-leader Field Trip (with Joe Hannibal and Douglas Dunn, Cleveland Museum of Natural History; Robert Carr, Ohio University; Philip Banks, Case Western Reserve University), "Classic Cleveland Shale Localities in the Cleveland, Ohio Area," 40th Annual North-Central GSA Meeting, Akron, OH (2006)

Organizing Committee, 22nd Annual Meeting, The Society for Organic Petrology, Louisville, KY (2005)

Session chair "Petroleum and Source Rocks," 22nd Annual Meeting, The Society for Organic Petrology, Louisville, KY (2005)

Convener (with Lavern Stasiuk, Geological Survey of Canada) "Geochemistry, Diagenesis, and Diapirism of Mudrocks" Technical Session, Annual Meeting, American Association of Petroleum Geologists, Calgary, Canada (2005)

Convener (with Rich Schultz, Elmhurst College) "Chemostratigraphy: An Emphasis on Metal-Rich Black Shale Deposits" Theme Session, Annual Meeting, Geological Society of America, Denver, CO (2002)

Convener (with Maria Mastalerz, Indiana Geological Survey), "Black Shales - Old Problems, New Solutions, I and II" Theme Sessions, Joint NC-SE GSA Sectional Meeting, Lexington, KY (2002)

Co-host (with Jim Hower, Center for Applied Energy, UK), 8th. Annual Meeting of The Society for Organic Petrology (TSOP), Lexington, KY (1991)

Fluorescence Microscopy Workshop (with Jack Crelling, David Bensley, and Charlie Landis, Southern Illinois University), The Society for Organic Petrology, Carbondale, IL (1989)

Co-host (with Jim Hower, Center for Applied Energy, UK), 3rd. Annual Meeting of The Society for Organic Petrology (TSOP), Lexington, KY (1986)

c). Editorial/Review Service:

Evolving Earth, Editorial Board (2023 to present)

International Journal of Coal Geology, Editorial Board (1991-1994, 2018 to present)

Minerals, Editorial Board (2020-2021)

Co-Editor (with J. Hower, CAER - Univ. Kentucky) "Coal and Coke Petrology: Reflections in Memory of John C. Crelling" International Journal of Coal Geology Special Issue, 2019-2020.

Topical Editor, Solid Earth (2010-2016)

Co-Editor (with R. Schultz, Elmhurst College) "Geochemistry of Organic-Rich Shales: New Perspectives," Chemical Geology, Special Issue, Vol. 206, 2004

Co-Editor (with J. Hower, CAER - Univ. Kentucky) Organic Geochemistry, Proceedings 8th TSOP Meeting, Lexington, KY, 1991; Vol. 20, No. 2, 1993

Co-Editor (with J. Hower, CAER - Univ. Kentucky) Organic Geochemistry, Proceeding 3rd TSOP Meeting, Lexington, KY, 1986; Vol. 12, No. 4, 1988

Manuscript reviewer:

AAPG Bulletin

Arabian Journal of Geosciences

Australian Journal of Earth Sciences

Chemical Geology

Earth and Planetary Science Letters

Elements

Energy and Fuels

Fuel

Geochimica et Cosmochimica Acta

Geochemical Transactions

Geofluids

Geological Journal

Geology

Global and Planetary Change

International Journal of Coal Geology

Journal of African Earth Sciences

Journal of Geochemical Exploration

Journal of Geophysical Research

Journal of Marine and Petroleum Geology

Journal of South American Earth Sciences

Minerals

Natural Resources Research

Nature Communications

Nature Geoscience

Organic Geochemistry

Palaeogeography, Palaeoclimatology, and Palaeoecology

Sedimentary Geology

Science China Earth Sciences

Science of the Total Environment

Society of Economic Paleontologists and Mineralogists

Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy

Utah Geological Association

Proposal reviewer:

NSF - National Science Foundation

NSERC - Natural Sciences and Engineering Research Council of Canada

ACS-PRF - Petroleum Research Fund, American Chemical Society

U.S. Civilian Research and Development Foundation

United States Geological Survey

THESES AND DISSERTATIONS DIRECTED

SOUTHERN ILLINOIS UNIVERSITY CARBONDALE:

Zain Abdi, Ph.D., 2023, Organic Petrology and Geochemistry of the Bakken Formation, Williston Basin, North Dakota. (B.S., M.S., University of Texas at Arlington).

Jacob Dyson, M.S., 2019, Geochemistry and Organic Petrology of the Anna Shale (Pennsylvanian) and the Occurrence of Pyrite “Suns” in Southwestern Illinois. (B.S., SIU).

Dakota Lindsey, M.S., 2018, Geochemistry of Artificially Matured Anna Shale: Implications for the Use of Redox-sensitive Geochemical Proxies in Mature Organic-rich Black Shales. (B.S., Colorado Mesa University).

Amberly Tobin, M.S., 2016, OHD Processing of Coal Waste Materials. (B.S., SIU).

Jack Sanders, M.S., 2015, Controls on Organic Carbon Accumulation in the Devonian-Mississippian Black Shales of Central Kentucky, Appalachian Basin (B.A., UCLA).

Severin Presswood, M.S., 2015, Geochemical and Petrographic Alteration of Rapidly Heated Coals from the Herrin (No. 6) Coal Seam, Illinois Basin. (B.S., SIU).

Vishnu Srinivasaraghavan, M.S., 2015, Influence of Coal Maceral Composition on OHD (Oxidative Hydrothermal Dissolution) Processing of Illinois Basin Coals. (B.S., Purdue University).

Mohammad Wahid Rahman, Ph.D. Environmental Resources and Policy, 2014, Geochemistry of Thermally Altered Coals and Organic-rich Shales: The Impact of Rapid Heating on Physical and Chemical Properties of Organic Matter. (M.S., Auburn; M.S., B.S., Dhaka).

Lucas Hagemann, M.S., 2013, Pyrite Framboid Size as a Redox Indicator in Devonian-Mississippian Black Shales (B.S., Missouri State).

Seare G. Ocubalidet, M.S., 2013, Geochemistry of the New Albany Shale, West-Central Kentucky, Illinois Basin (B.S., Asmara, Eritrea).

Margaret McPherson Sanders, M.S., 2012, Petrography, Geochemistry, and Isotopic Composition of Antarctic Coals. (B.S., UCLA).

UNIVERSITY OF KENTUCKY:

Rachael Von Mann Nipp, M.S., 2010, Influence of Primary Productivity on Organic Matter Preservation in the Middle Ordovician Decorah Formation and the Late Ordovician Maquoketa Group of Eastern Iowa. (B.S., Kentucky).

Lois Yoksoulian, Ph.D., 2010, Effects of Contact Metamorphism on Coal Geochemistry and Petrology: Implications for the Release of ¹³C-depleted Methane. (B.S., Wyoming; M.S., Kentucky).

Lehne Slater, M.S., 2009, Petrography of Ancient Organic Matter in Kerogen Weathering Profiles. (B.S., Furman).

Brian Scott, M.S., 2009, C/P Ratios in Devonian-Mississippian Marine Black Shales. (Co-advised with H. Rowe). (B.S., Kentucky).

- Lois Yoksoulian, M.S., 2006, Geochemical Investigation of the Diamond-barren Kimberlites of Elliot County, Kentucky, U.S.A: Application to Diamond Survivability During Kimberlite Ascent. (Co-advised with D. Moecher). (B.S., Wyoming).
- Sarah Hawkins, M.S., 2006, Fossil Charcoal in Devonian-Mississippian Shales: Implications for the Expansion of Land Plants, Paleo-atmospheric Oxygen Levels, and Organic-rich Black Shale Accumulation. (B.S., Kentucky).
- Kristin Toth, M.S., 2004, The Role of Clay-Mineral Surface Area in the Accumulation of Organic Carbon in Marine Shales. (B.S., Kentucky).
- Shane Goodnight, M.S., 2004, $\delta^{13}\text{C}_{\text{org}}$ and $\delta^{15}\text{N}_{\text{org}}$ Variability in Devonian-Mississippian Black Shales. (B.S., Western Kentucky).
- Jennifer Thompson, M.S., 2004, Assessing Organic Matter Type in Upper Devonian-Lower Mississippian Black Shales: A Case Study from the Central Appalachian Basin. (B.S., Smith).
- Penny Padgett, M.S., 1997, Sulfur Variability and Petrology of the Lower Block Coal (Pennsylvanian) in Southwestern Indiana. (B.S., Indiana).
- Chris Toles, Ph.D., 1995, Production of Activated Carbons from Coal and Coal Maceral Concentrates Using Phosphoric Acid. (B.S., Illinois State; M.S., Missouri – Columbia).
- Daniel Vogler, M.S., 1994, Depositional Model of the Pond Creek Seam, Eastern Kentucky, Based on Detailed Megascopic and Microscopic Analysis. (B.S., Kentucky).

AWARDS TO GRADUATE STUDENTS ASSOCIATED WITH MY RESEARCH LAB

Funding:

- 2018 Kuo Li, Spackman Award, The Society for Organic Petrology (Graduate Student Research Award).
- 2018 Jacob Dyson, Geological Society of America Energy Geology Division, Antoinette Lierman Medlin Scholarship (Research Award).
- 2017 Dakota Lindsey, Sigma Xi Grants-in-Aid of Research.
- 2017 Dakota Lindsey, Spackman Award, The Society for Organic Petrology (Graduate Student Research Award).
- 2017 Kuo Li, Geological Society of America Energy Geology Division, Antoinette Lierman Medlin Scholarship (Research Award).
- 2016 Qiang Wei, Spackman Award, The Society for Organic Petrology (Graduate Student Research Award).
- 2016 Qiang Wei, Geological Society of America Energy Geology Division, Antoinette Lierman Medlin Scholarship (Research Award).
- 2015 Amberly Tobin, Spackman Award, The Society for Organic Petrology (Graduate Student Research Award).
- 2015 Severin Presswood, Geological Society of America Coal Division, Antoinette Lierman Medlin Scholarship (Research Award).
- 2012 Mohammad Wahid Rahman, Geological Society of America Coal Division, Antoinette Lierman Medlin Scholarship (Research Award).
- 2011 Mohammad Wahid Rahman, Spackman Award, The Society for Organic Petrology (Graduate Student Research Award).
- 2009 Margaret McPherson, Spackman Award, The Society for Organic Petrology (Graduate Student Research Award).

- 2009 Margaret McPherson, Geological Society of America Coal Division, Antoinette Lierman Medlin Scholarship (Research Award).
- 2009 Mohammad Wahid Rahman, Geological Society of America Coal Division, Antoinette Lierman Medlin Scholarship (Field Award).
- 2009 Lois Yoksoulian, Geological Society of America Coal Division, Antoinette Lierman Medlin Scholarship (Research Award).
- 2008 Lois Yoksoulian, Geological Society of America Coal Division, Antoinette Lierman Medlin Scholarship (Field Study Award).
- 2008 Lois Yoksoulian, Geological Society of America Southeastern Section Student Grant.
- 2007 Lois Yoksoulian, Spackman Award, The Society for Organic Petrology (Graduate Student Research Award).
- 2006 Rachael Von Mann, Spackman Award, The Society for Organic Petrology (Graduate Student Research Award).
- 2006 Rachael Von Mann, Geological Society of America, Research Grant.
- 2006 Rachael Von Mann, American Association of Petroleum Geologists Grants-in-Aid.
- 2005 Sarah Hawkins, Spackman Award, The Society for Organic Petrology (Graduate Student Research Award).
- 1995 Penny Padgett, Geological Society of America Coal Division, Antoinette Lierman Medlin Research Scholarship.
- 1995 Penny Padgett, Geological Society of America, Research Grant.

Best Paper/Poster Awards:

- 2019 Dakota Lindsey, The Society for Organic Petrology, Best Student Poster Award, Annual Meeting, Bloomington, IN.
- 2014 Vishnu Srinivasaraghavan, Geological Society of America Coal Division, Best Poster, 2013 National GSA meeting in Denver, CO.
- 2012 Lois Yoksoulian, Geological Society of America Coal Division, Best Oral Presentation, 2011 National GSA meeting in Minneapolis, MN.
- 2012 Mohammad Wahid Rahman, Geological Society of America Coal Division, Best Poster, 2011 National GSA meeting in Minneapolis, MN.
- 2007 Lois Yoksoulian, Eastern Section AAPG, Best Student Poster Award - Second Place, Student Expo, Annual Meeting, Lexington, KY.
- 2007 Sarah Hawkins, The Society for Organic Petrology, Best Student Paper Award, Annual Meeting, Victoria, British Columbia, Canada.
- 2007 Lois Yoksoulian, The Society for Organic Petrology, Best Student Poster Award, Annual Meeting, Victoria, British Columbia, Canada.
- 2005 Sarah de la Rue (Louisiana State University), The Society for Organic Petrology, Best Student Poster Award, Annual Meeting, Louisville, KY.
- 1996 Penny Padgett, The Society of Organic Petrology, Best Student Presentation, Annual Meeting, Carbondale, IL.
- 1989 Rod Hatt, American Chemical Society Annual Meeting, Division of Fuel Chemistry, R.A. Glenn Best Paper Award Honorable Mention, Dallas, TX.

OTHER GRADUATE STUDENT ADVISORY COMMITTEES

SOUTHERN ILLINOIS UNIVERSITY CARBONDALE:

- Jason Williams, Ph.D., 2021, Exploring Tourmaline Mineral Relationships Using Machine Learning and Geospatial Techniques. (Director: S. Potter-McIntyre).
- Jake Crandall, Ph.D., 2021, Magma-sediment Interaction on Mars: Detectability and Habitability as Constrained by Terrestrial Analogs. (Director: J. Filiberto).

- John Ejembi, Ph.D., 2018, Sedimentology and Stratigraphic Evolution of the Paradox Basin in the Middle-Late Jurassic, Western United States. (Director: E. Ferré).
- Margaret McPherson Sanders, Ph.D., 2017, The Application of Oxidative Hydrothermal Dissolution (OHD) to Organic-rich Shales (Director: K. Anderson).
- Andrea Meado, M.S., 2017, Crystallization history of gabbroic shergottite NWA 6963 as revealed by pyroxene zoning. (Director: J. Filiberto).
- Jeremy Breeden, M.S., 2017, Detrital Zircon Geochronology and Provenance of the Cretaceous McNairy and Owl Creek Formations, Southern Illinois (Director: S. Potter-McIntyre)
- Tom Fullingim, M.S., 2013, Investigating the Feasibility of Oxidative Hydrothermal Dissolution of Underground Coal Seams in the Illinois Basin (Director: K. Anderson).
- Rajesh Singh, M.S., 2011, An Evaluation of the Sequential Extraction Method for Quantifying Sulfur Fractions in Coals from the Illinois Basin (Director: L. Leticariu).
- Sarah Friedman, M.S., 2011, XenoMag: A New Magnetic Model for the Lithospheric Mantle (Director: E. Ferré).
- Megan Carlson, M.S., 2010, Using MAZUS-MH to Model Flooding Patterns Associated with River Engineering on the Middle Mississippi River (Director: N. Pinter).
- Molly Patterson, M.S., 2010, Foraminifera Fauna Recovered from ANDRILL's (ANTarctica geological DRILLing program) Southern McMurdo Sound (SMS) Project (Director: S. Ishman).
- Michael Marsh, M.S., 2010, Magma Dynamics in the Karoo LIP: Investigations of Two Sills Using Rock Magnetism, Magnetic Fabric and Image Analysis (Director: E. Ferré).
- Luis Parra, M.S., 2010, Rediscovering Southeast Missouri Mississippi Valley-Type Pb-Zn Deposits: The Cobalt-Nickel Enriched Higdon Deposit, Madison and Perry Counties (Director: R. Fifarek).
- UNIVERSITY OF KENTUCKY:**
- James Ward, Ph.D., 2008, The Mobility of Fecal Indicator Microorganisms Within a Karst Groundwater Basin in the Inner Bluegrass Region (Director: A. Fryar).
- Rachel Galvin, M.S., 2006, The Cambro-Ordovician Knox Group Aquifer in the Bluegrass Region of Central Kentucky: Geochemical and Isotopic Constraints (Director: H. Rowe).
- Tom Reed, M.S., 2006, Role of Suspended Sediment in Facilitating Pathogen Transport in Inner Bluegrass Karst Aquifers (Director: A. Fryar).
- Tao Sun, M.S., 2006, Deciphering the Role of Refractory Terrestrial Organic Input on Carbon Cycling in Late Devonian-Early Mississippian Marine Appalachian Basin: A Molecular and Isotopic Study (Director: A. Carmo).
- Sally Maharaj, M.S., 2006, Differentiating and Quantifying "New" Carbon on Reclaimed Coal Mine Sites using Thermogravimetry: Method Development and Field Validation. (Directors: C. Barton, Department of Forestry, and H. Rowe).

- Thomas Becker, Ph.D., 2004, Distinguishing Provenance in Foreland Basins (Director: W. Thomas).
- Danita LaSage, Ph.D., 2004, Natural Attenuation along a First-order Stream Receiving Contaminated Ground-water Discharge (Director: A. Fryar).
- Todd McFarland, M.S., 2003, Characterizing Sediment Transport During Storm Flow Through an Inner Bluegrass Karst Aquifer (Director: A. Fryar).
- Abhijit Mukherjee, M.S., 2003, Identification of Natural Attenuation of Trichloroethene and Technetium along Little Bayou Creek by Tracer Tests (Director: A. Fryar).
- Christofer Sweat, M.S., 2000, The Role of Organic Carbon in Natural Attenuation of a Trichloroethene-contaminated Aquifer System, Paducah, Kentucky (Director: A. Fryar).
- Elizabeth Haynes, M.S., 2000, Oxygen Isotope Composition of Carbonates, Silicates, and Oxides in Carbonatites: Constraints on Crystallization Temperatures of Carbonatite Magmas (Director: D. Moecher).
- Marit Jagtoyen, Ph.D., 1999, Synthesis of Activated Carbon by the Phosphoric Acid Activation of Wood (Director: F. Derbyshire, Department of Chemical Engineering).
- Stephen F. Barnett, Ph.D., 1995, The Portwood Member (Upper Middle Devonian) of the New Albany Shale of Central Kentucky: Nature and Origin (Director: F. Ettensohn).
- Darrell N. Taulbee, Ph.D., 1994, A Technique to Measure the Adsorption and Cracking of Hydrocarbons over Processed Oil Shale Substrates (Director: S. Smith, Department of Chemistry).
- Stephen F. Greb, Ph.D., 1992, Sedimentology of a Pennsylvanian Sandstone (Lower Breathitt Formation) from Bedding-plane Exposures at the Laurel River Dam Spillway, Whitley County, Kentucky (Director: J. Ferm).
- David R. Wunsch, Ph.D., 1992, Ground-water Geochemistry and its Relationship to the Flow System at an Unmined Site in the Eastern Kentucky Coalfield (Director: J. Thrailkill).
- Joan S. Esterle, Ph.D., 1990, Trends in Petrographic and Chemical Characteristics of Tropical Domed Peats in Indonesia and Malaysia as Analogies for Coal Formation (Director: J. Ferm).
- Donald R. Chesnut, Jr., Ph.D., 1988, Stratigraphic Analysis of the Carboniferous Rocks of the Central Appalachian basin (Co-Directors: N. Rast and F. Ettensohn).
- Jam'al M. Assad, M.S., 1988, Geology of the Upper Elkhorn No. 3 Coal in the Eastern Kentucky Coalfield (Director: J. Cobb).
- Timothy A. Moore, M.S., 1986, Characteristics of Coal Bed Splitting in the Anderson-Dietz Coal Seam (Paleocene), Powder River Basin, Montana (Director: J. Ferm).

External Examiner:

- B. Murathi, M.Sc., 2022, Effects of dolerite intrusion on the mineralogy and geochemistry of coals from the Manungu Colliery, Witbank Coalfield, South Africa. Department of Geology, University of Johannesburg, South Africa (Director: O.M. Moroeng).

B. Davis, Ph.D., 2020, Fluid source and emplacement mechanisms for phosphorus and fluorine bearing minerals in Bowen Basin coals, School of Earth and Environmental Sciences, University of Queensland, Australia (Director: J. Esterle).

D.G. Pretorius, M.S., 2015, Characterization and beneficiation of coal from the New Vaal colliery, Sasolburg-Vereeniging Coalfield, South Africa, through application of automated mineralogy. Department of Geology, University of Johannesburg, South Africa (Director: K.S. Viljoen).

M.G. Smith, Ph.D., 1996, The Bakken Formation (Late Devonian-Early Mississippian): A Black Shale Source Rock in the Williston Basin, Department of Earth and Oceanic Sciences, University of British Columbia, Canada. (Director: M. Bustin).

R.S. Shetty, Ph.D., 1995, Synthesis of Triaromatic Steroid Biomarker, Department of Chemistry, University of Kentucky. (Director: D. Watt).

K.W. Sander, Ph.D., 1990, Movement of Atrazine, Cyanazine, and Simazine in Conventional and Conservation Tillage, Department of Agronomy, University of Kentucky.

UNDERGRADUATE STUDENT RESEARCH

SOUTHERN ILLINOIS UNIVERSITY CARBONDALE

Hillary Martinez, B.S., Geology, 2019, Effects of Intrusion on Underclay Mineralogy and Geochemistry.

Kailey Zalucha, B.S. Geology, 2017, Vitrinite Reflectance and Alginite Fluorescence in Devonian Shales, 2016-2017.

Catherine Dempsey, B.S. Geology, 2015, Intruded Coals of the Raton Basin, 2015.

Julie Driebergen, B.S. Geology, 2016, Web-based Coal Maceral Atlas: Updates and New Developments 2014.

Amberly Tobin, B.S. Geology, 2013, OHD Processing of Illinois Basin Coals, 2012-2013.

Jennifer Stephenson, B.S., Geology, 2011, Organic Petrology of Intruded Coals and Organic-rich Shales, 2009-2010.

UNIVERSITY OF KENTUCKY

J.D. Stucker, B.S. Geology, 2008, University of Kentucky, Geochemistry of the Barnett Shale, summer 2008 (co-advised with H. Rowe).

Bryan Loudon, B.S. Geology, 2008, University of Kentucky, Geochemistry of the Marcellus Shale, New York, 2007-2008 (co-advised with H. Rowe).

Shannon Daugherty, B.S. Geology, 2007, University of Kentucky, Geochemistry of Devonian Shales.

Rachael Von Mann, B.S. Geology, 2005, University of Kentucky, X-radiography and Geochemistry of Laminated and Bioturbated Devonian Black Shales, 2003-2005.

Rachael Von Mann, B.S. Geology, 2005, University of Kentucky, Geochemistry of Lake Sediment Cores from Big Bone Lick, KY, 2004.

Ben Otto, B.S. Geology, 2004, Northern Kentucky University, Organic Petrology and Geochemistry of the Cretaceous Pierre Shale, Summer 2004.

Leah Barth, B.A. Anthropology, 2005, University of Kentucky, Organic Petrology of Devonian Black Shales. Summer 2003.

Sarah Hawkins, B.S. Geology, 2002, University of Kentucky, Pyrite Framboid Size: A Paleoredox Indicator in Devonian-Mississippian Black Shales (2000 through 2002).

Andrea Hougham, B.S. Geology, 2001, University of Kentucky, Clay Mineralogy Techniques for Devonian Black Shales, Summer 2001. M.S. 2006, Graduate School of Oceanography, University of Rhode Island.

OTHER STUDENTS/VISITORS ASSOCIATED WITH MY LAB

SOUTHERN ILLINOIS UNIVERSITY CARBONDALE:

Kuo Li, Ph.D. 2019, China University of Mining and Technology, Beijing, China. Graphitization of Coals Associated with Igneous Intrusions. (Spring 2017 - Summer 2018). (Advisor: Q. Liu).

Munira Raji, Ph.D. 2018, Durham University, United Kingdom. Kerogen Typing, Vitrinite Reflectance, and Density-gradient Centrifugation of the Kimmeridge Clay Formation (Fall 2015- Spring 2016). (Advisor: D. Gröcke).

Qiang Wei, Ph.D. 2017, China University of Mining and Technology, Beijing, China. Density-gradient Centrifugation of Chinese Low-rank Coals: Trace-element/maceral Associations. (Fall 2015-Fall 2016). (Advisor: S. Dai).

Vicky Hudspith, Post-doc, University of Illinois. Reflectance of Inertinites, including Permian and Modern Charcoal (2013).

UNIVERSITY OF KENTUCKY:

Jennifer Cooper, M.S. 2006, University of Missouri – Columbia, Vitrinite Reflectance Analysis of Intruded Coals, Raton Basin (Spring and Summer 2005).

Sally Maharaj, M.S. 2006, Petrographic Identification and Quantitative Analysis of Modern and Ancient Carbon in Coal-mine Sites (2005-2006).

Donna Webb, B.A., 1998, Geochemistry of Devonian Shales (2006).

Todd McFarland, M.S., 2003, Clay Mineral Separations and X-ray Diffraction Analysis (2001-2002).

Christofer Sweat, M.S., 2000, Clay Mineral Separations and X-ray Diffraction Analysis (1998-1999).

Elizabeth Haynes, M.S., 2000, X-ray Diffraction Analysis. Also, trained to provide instruction for other users (students and faculty) on the XRD unit (1996-1999).

Marit Jagtoyen, Ph.D., 1999, Department of Chemical Engineering, Organic Petrography of Woods and Activated Carbons (1993-1995).

Donna Webb, B.A., 1998, Petrography and XRD of Kimberlite Samples (1998).

UNIVERSITY SERVICE

SOUTHERN ILLINOIS UNIVERSITY CARBONDALE:

Department Level:

Scholarship and Fellowship Committee (2013-2019)
Graduate Admissions Committee (2009-2010, 2012-2103)
Graduate Program Coordinator (2010-2012)
Science Fair Judge (2011-2012)
Web Site Redesign and Maintenance (2009-2019)
Supervision of X-Ray Diffraction Lab (2010-2021)

Search Committee, Lecturer (2018)
Search Committee Chair, Researcher I Multihazard Mitigation Support Specialist (2018)
Search Committee, Economic Geology/Mineralogy Faculty Position (2016)
Search Committee Chair, Stratigraphy and Sedimentology Faculty Position (2012)
Search Committee, Igneous and Metamorphic Petrology Faculty Position (2011)

College/University Level:

Research and Graduate Studies:

Research Misconduct Inquiry Team (2019)
Campus-wide Assessment Committee (CWAC) (2018-2019)
Graduate Council (2016-2019), Chair Program Review Committee (2016-2019)
Graduate Council Executive Expanded Committee (2016-2019)
Research Misconduct Investigation Panel (2016)
Graduate Council Executive Expanded Committee, ex officio (2012-2013)
Graduate Council, ex officio (2012-2013)
Research Committee of the Graduate Council, ex officio (2012-2013)
Tuition on Grants Committee (ad hoc) (2012-2013)
Testing Accounts Committee (ad hoc) (2012-2013)
McLafferty Taskforce (2012-2013)
Interdisciplinary Research Taskforce (2012-2013)
Research Advisory Group, (2012-2013)
Research Lens, Strategic Planning Committee (2011)
Enhancement of Proposal and Award Administration Procedures Committee (ad hoc), Chair (2011-2012)

Awards Committees/ P&T Committee:

University-level Scholar Excellence Award Selection Committee, Chair (2018)
Promotion and Tenure Committee, College of Science (2015-2018)
College-level Outstanding Scholar Award Selection Committee (2009-2011)

Search Committees:

Search Committee, College of Sciences Dean (2013-2014)
Search Committee, Director of Undergraduate Research (2012)
Search Committee, Director of Office of Sponsored Projects Administration (OSPA) (2011)
Search Committee, Director of the Coal Extraction and Utilization Research Center (2011)

UNIVERSITY OF KENTUCKY:

Department Level:

Personnel and Budget Committee (2000-2008)
Executive Committee (1992-1993, 1995-1996)
Ad-hoc Strategic Planning Committee (1997-1998)

Graduate Committee (2001-2008)
Undergraduate Committee (1998-2002)
Undergraduate Curriculum Committee (1995-1996)
Research and External Funding Committee (1995-1996)
Awards Committee (1989, 1993, 2007-2008)
Responsibility for Class Scheduling (1989)
Search Committee Chair, Applied Seismology Faculty Position (2000-2001)
Search Committee Chair, Department Chair (2001)
Search Committee Chair, Geophysics Faculty Position (1999-2000)
Search Committee, Department Chair, External Search (1989-1990)

Web Site Design and Maintenance (2001-2008)
Supervision of X-ray Diffraction Lab (1987-2008)
Ad-hoc Space Committee (2005)
Resources and Safety Committee (2001-2004)
Department Space Allocation Committee (1995-1996)

College/University Level:

Graduate Education:

Graduate Council Committee on Fellowships and Traineeships (2000-2003, 2005-2006)
Graduate School Presidential Fellowship Panel (2006)
Graduate Council (1992-1993, 2001-2002)
Graduate School Dissertation Year Fellowship Panel, Chair (2003)
Graduate School Multi-Year Fellowship and Academic Year Fellowship Selection Panels (2002)

Undergraduate Education:

Arts and Sciences Council (1992-1993)
Arts and Sciences Scholarship Committee (1992); Chair (1993)
Committee on Large Lecture Courses in the Mathematical and Natural Sciences, College of Arts and Sciences (2002)
Environmental Studies Committee, College of Arts and Sciences (1993-1999)
Undergraduate Awards Committee, Department of Chemistry (1994)
First Year Focus Workshop (1994)
Science Education Initiative Committee, College of Arts and Sciences (1992-1993)
University Studies Committee (1990-1991)
Area A Curriculum Committee, College of Arts and Sciences (1989-1990)
Exceptions (Special Admissions) Committee (1990)

Unit Reviews:

Review Committee Chair, Program in Archaeology, Arts and Sciences (2005)
Review Committee, Kentucky Geological Survey (2004)
Review Committee, College of Education (1999-2000)
Review Committee, Department of Chemistry, Arts and Sciences (1990)

Search Committees:

Search Committee, Assistant Dean for Administration and Finance, Arts and Sciences (2005)
Search Committee Chair, University Registrar (1996)

Advisory and Policy Committees:

Arts and Sciences Committee on Women Faculty (2005-2006)
University Senate Ad-hoc Committee on Post-tenure Review (1998-1999)
UK Scientific Misconduct Review Committee (1999)

Lexington Campus Blue Ribbon Committee (1997-1998)
Lexington Campus Research Advisory Committee (1993-2000)
University Research Advisory Committee (1993-2000)
Institute for Mining and Minerals Research (IMMR) Board of Directors (1992-1993)
Senate Advisory Faculty Code Committee (1992-1995)

Awards Committees:

Selection Committee, Raymond-Blythe Professorship, Civil Engineering, College of Engineering (2002)
Selection Committee, TVA Professorship in Mechanical Engineering, College of Engineering (2000)
Selection Committee for Postdoctoral Positions for Women in Underrepresented Areas (1996-1999)
University Research Professorship Committee (1992)

External Academic Service:

Review Committee, Department of Geology, Southern Illinois University, Carbondale (2000-2001)
NASA/EPSCoR Subcommittee, Kentucky EPSCoR Program (1993-1999)

External reviewer for tenure and promotion cases:

Assistant to Associate Professor:	Towson University, 2004 Oklahoma State University, 2004
Associate to Full:	Hobart and William Smith Colleges, 2015 University of Regina, Saskatchewan, 2009 University of Nebraska - Lincoln, 2008 Dakota State University, 2000 Southern Illinois University Carbondale, 1997, 2006