**LILIANA LEFTICARIU**

Associate Professor of Geology

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**Professional Preparation:**

2004-2006: ***Postdoctoral Research Associate***, Indiana University, Bloomington IN

2004: ***Ph.D., Geochemistry***, Northern Illinois University, Dekalb IL

2001: ***M.S., Geology***, Northern Illinois University, Dekalb, IL

1988: ***B. Sc. Engineering Geology***, University of Bucharest, Bucharest, Romania

**Appointments:**

07/ 2013 to present: ***Associate Professor***, Geology, Southern Illinois University, Carbondale IL

01/ 2007 to present: ***Member***, Environmental Resources and Policy Program, SIUC, IL

2007-2013: ***Assistant Professor***, Geology, Southern Illinois University, Carbondale IL

2004-2006: ***Postdoctoral Research Associate***, Biogeochemistry, Indiana University, IN

1998-2004: ***Research Assistant***, Stable Isotope Laboratory, Northern Illinois University, IL

1989-1997: ***Research Geologist***, Rare Metal Company (IMR), Geological Survey, Romania

**Research Interests:**

My specialty is low-temperature geochemistry with an emphasis on the stable isotopes of elements that play key roles in biogeochemical processes. My research is primarily devoted to solving diverse theoretical and practical problems with application in the geological and environmental sciences. My current research projects focus on the: 1. Acid mine drainage production and remediation strategies; 2. Distribution and mode of occurrence of trace elements in sediments and coal; 3. Low temperature geochemistry of aqueous systems; 4. Experimental investigation of sulfide minerals oxidation.

**Grants Received (Total $838,177):**

**2015-2016:** Recovery of Rare Earth Elements and other strategic materials (REMs) from coal ash.

Environmental Protection Agency: **14,750.**

**2012-2014**: *Field Demonstration of Alternate Coal Processing Waste Disposal Technology*.

Illinois Clean Coal Institute: **$79,987.**

**2011-2015**: *Improved sulfate-reducing bioreactors for the remediation of high total dissolved solids drainage associated with coal mining and processing in the U.S.*

Office of Surface Mining Reclamation and Enforcement: **$190,541**

**2009-2013**: *Acquisition of an Isotope Ratio Mass Spectrometer for Geochemical, Biological, and Petrologic Research, Education, and Training at Southern Illinois University Carbondale*.

National Science Foundation: **$407, 335.**

**2008-2009**: *Integrated study of mercury and other trace elements distribution in Illinois coal.*

Illinois Clean Coal Institute: **$84,995.**

**2008**: *Stable isotopic fractionation patterns as indicators of oxidation mechanisms of iron sulfide minerals.* SIUC Faculty Seed Grant Application: **$19,983.**

**2007**: *Distribution and mode of occurrence of sulfur and trace elements in Illinois coal*.

Illinois Clean Coal Institute: **$39,986.**

**2007**: *Stable isotope partitioning during sulfide oxidation and its applications to Astrobiology*

SIUC Joint Women’s Studies: **$600.**

**Grants Applied for:**

* MRI: Acquisition of an Isotope Ratio Mass Spectrometer for Geochemical, Biological, and Petrologic Research, Education, and Training at Southern Illinois University Carbondale **- $407, 335 -** National Science Foundation, 01/30/07.
* Sulfur and Carbon Isotope Geochemistry of Coal from the Illinois Basin - **$50,000 -** ACS Petroleum Research Fund, 02/15/08.
* A field demonstration of alternate coal processing disposal technology for sulfate discharge control - **$105,251** - Office of Surface Mining Reclamation and Enforcement, 01/31/2008.
* Occurrence, Distribution, and Geochemical Correlations of Trace Elements in Illinois Coal - **$108,657** - Illinois Department of Commerce and Economic Opportunity/Illinois Clean Coal Institute, 03/30/2009.
* Preliminary Investigation of Carbon Sequestration via Iron Carbonates Formation - **$49,996** - Illinois Department of Commerce and Economic Opportunity/Illinois Clean Coal Institute, 03/31/2010.
* Improved Sulfate-Reducing Bioreactors for the Remediation of High Total Dissolved Solids Drainage Associated with Coal Mining and Processing in the U.S. **- $175,488** - Office of Surface Mining Reclamation and Enforcement, 01/31/2010.
* Cyclic Leaching of Coal Combustion Byproducts and Opportunities for Coal Mine Applications - **$2,500** - American Society of Mining and Reclamation, 03/15/2010.
* Experimental Investigation of Carbon Sequestration via Ferrous Carbonate Formation **- $99,942** - ACS Petroleum Research Fund, 03/18/2011.
* Synchysite and other rare earth minerals within the Illinois-Kentucky Fluorspar District; Implications for a carbonatite complex and potential economic accumulations of rare earth elements in the Midwest, USA (PI: Brett Denny) - **$50,000** – Mineral Resources External Research Program (MRERP), U.S. Geological Survey, 05/11/2011.
* Biogeochemical sulfur cycle in natural and engineered systems impacted by acidic, sulfate- and metal-rich waters  **- $299, 158 -** National Science Foundation, 01/16/14.
* Life, Habitability and Biosignatures in Sulfur-rich Environments (PI: Sally Potter-McIntyre) **- $5,452,089** **-** National Aeronautics and Space Administration (NASA), 04/01/2014.
* Hydrogen and oxygen isotope characterization of precipitation and surface waters in Illinois **- $6,670 –** Illinois Water Resource Center, 10/30/14.
* The effect of highly charged metalliferous environments on sulfate-reducing bacteria: Implications for the mitigation of coal-generated acid mine drainage **- $299, 725 - -** National Science Foundation, 01/16/15.
* MRI: Acquisition of a tandem laser ablation-laser induced breakdown spectroscopy (LA-LIBS) system for multi-disciplinary research and training at SIU (PI: Gregory Whitledge) **- $329, 341 -** National Science Foundation, 01/22/15.
* Extraction feasibility of rare earth elements from Illinois basin coal and coal ash (PI: Manoj Mohanty) - **$550,275** - US Department of Energy, 08/31/15.
* The effect of highly charged metalliferous environments on sulfate-reducing bacteria: Implications for the mitigation of coalmine acid mine drainage - **$199, 725 -** US Department of the Interior Office of Surface & Enforcement: 09/30/2015
* The role of hydrothermal activity and lithology on diagenesis: a case study from Illinois Basin**- $110,000** - ACS Petroleum Research Fund, 10/15/2015.
* Extraction of rare earth elements from coal ash PI: Manoj Mohanty) – **$74,995** - Environmental Protection Agency EPA-P3-PHASEII, 04/01/2016.

**Awards, Fellowships, and Honors:**

* Excellence in Review Award, Environmental Science & Technology 2011.
* NASA Post-Doctoral Fellowship: 2004, 2005, 2006.
* American Association of Petroleum Geologist Research Grant: 2001.
* Goldich Research Grant: 1999, 2001, 2002, 2004.

**Courses Taught:**

* **Geology 111** – Geology and the Environment (Fall 2007; Spring 2008; Summer 2008; Fall 2009)
* **Geology 330** – The Planets (Spring 2009; Spring 2010, Spring 2011; Spring 2012; Spring 2013; Spring 2014; Spring 2015)
* **Geology 416** – Geochemistry of Natural Waters (Spring 2008; Fall 2010; Fall 2012; Fall 2014)
* **Geology 417** – Isotope Geochemistry (Spring 2007, Fall 2009; Fall 201; Fall 2011; Fall 2013; Fall 2015)
* **Geology 418** – Low Temperature Geochemistry (Fall 2014)
* **Geology 585** – Earth and Space Science for Teachers (Fall 2009; Fall 2011)
* **Geology 515** – Instrumental Analysis (Spring 2012; Spring 2014; Fall 2015)
* **Geology 517** – Water-Rock Interaction (Spring 2011; Spring 2013; Fall 2014)

***Guest Lectures*:**

* **UHON 351** – Mars, our next home? (Spring 2014)
* **Geology 405 -** Science Writing (Fall 2011; Fall 2013)
* **Geology 420** – Petroleum Geology (Spring 2009)

**Students:**

***Graduate Students advised and co-advised***

1. Kyle Klitzing M.S. Student (Department of Geology) (2015-Present)
2. Kerry McLeran, Ph. D. Student (Environmental Resources and Policy & IGERT Program), (2013-Present)
3. Paul Behum, Ph. D. Student (Environmental Resources and Policy) co-advised with Dr. Yoginder P. Chugh (2007-Present)

***Past Graduate Students***

1. Gary Vancil, M.A. Student (Department of Geology): graduated in 2014.
2. Magdalena Gorczynska M.S. Student (Department of Geology): graduated in 2015
3. Evan Walters, M.S. Student (Department of Geology): graduated in 2013.
4. Kerry McLeran, M.S. Student (Department of Geography): graduated in 2013.
5. Rajesh Singh, M.S. Student (Department of Geology): graduated in 2011.
6. Jonathan Lewis, Ph. D. Student (Department of Geology) (2012-2013)
7. William Cherry, Ph. D. Student (Department of Geology & IGERT Program) (2012-2013)
8. Samuel Howard, M.S. Student (Department of Geology) (2011-2012)
9. Myla Oliver-Blandford, Ph. D. Student (Department of Anthropology) (2010-Present)
10. Anastasia Holobinko (Department of Anthropology), co-advised with Dr. Prowse (2008-2011)
11. Rahman, M.W., Ph. D. Student (Environmental Resources and Policy) (2009-2010).
12. Yosief T. Segid, M.S. Student (Department of Geology): graduated in 2010.

***Undergraduate Students advised and co-advised***

1. Jessica Whiteaker (Department of Geology)
2. Stephania L. Zneimer (Department of Geology)
3. Gabriela Brito (Department of Microbiology)
4. Josh Bergbower (Department of Geology)
5. Shou Jie Ho (Department of Geology)
6. Minka E. Bentley (Department of Geology)
7. William Kipp (Department of Geology)
8. Justin Cowart (Department of Geology)
9. Ross Hintz (Department of Geology)

***Masters and PhD Committee member***

Served or currently serving on 26 graduate committees for students working on graduate degrees under the supervision of other faculty.

***Students’ Grants***

### 2014-2015: Stephania L. Zneimer received the Undergraduate Research/Creative Activity Award from the REACH Program & Undergraduate Assistantship for the academic year. Research project: *Tracking regional climate patterns through stable water isotopologues in precipitation and surface waters of southern Illinois.*

* **2014-2015**: **Minka Bentley** received the Undergraduate Research/Creative Activity Award from the REACH Program & Undergraduate Assistantship for the academic year. Research project: ***Hydrogen and Oxygen Stable Isotope Characterization of Precipitation and River Waters in Southern Illinois.***
* **2013-2014**: **William Kipp** received the Undergraduate Research/Creative Activity Award from the REACH Program & Undergraduate Assistantship for the academic year. Research project: ***Rare Earth Element distributions in Hick's Dome fluorite.***
* **2013: William Cherry**, Ph. D. Student (IGERT Program) received the ***Geological Society of America Student Research Grant.***

**Professional Service and Activities:**

***Professional Society Memberships*:**

* Geochemical Society
* Geological Society of America
* American Geophysical Union
* Association of Women in Science

**External Service**

***Professional Leadership*:**

* Organizer and Chair of the Scientific Session: “***Trace Elements and Mineral Matter in Coal***” 26th Annual Goldschmidt Conference, Yokohama, Japane, June 26 – July 1, **2016**.
* Organizer and Chair of the Scientific Session: “***Anthropogenic Impacts on Soil, Water, and Air***” 50th Annual Meeting of the GSA North-Central Section, Champaign, Illinois, 18–19 April **2016**.
* Organizer and Co-Chair of the Scientific Session: “***Mississippi Valley–Type and Other Mineral Deposits of the Midwest USA***” 50th Annual Meeting of the GSA North-Central Section, Champaign, Illinois, 18–19 April **2016**.
* Member ofthe **NASA Peer Review Panel** for ***Solar System Workings* (2015)**
* Organizer and Co-Chair of the Scientific Session: “***Impact of Energy Use on Human Health and the Environment***” 20th Annual Goldschmidt Conference, Knoxville, Tennessee, June 13 – 18, 2010.
* Member ofthe **NASA Peer Review Panel** for ***Outer Planets Program* (2009).**
* Participated in the ***Earth Science Literacy Initiative (ESLI),*** funded by the National Science Foundation **(2009)**. The participants gathered and codified the underlying understandings of Earth sciences into a succinct document that have broad-reaching applications in both public and private arenas. http://www.earthscienceliteracy.org/
* Participated in the following **NASA white papers**:

1. Astrobiology Priorities for Planetary Science Flight Missions

2. Groundbreaking Sample Return from Mars: The Next Giant Leap in Understanding the Red Planet

3. Development of Capabilities and Instrumentation for Curation and Analysis of Returned Samples

* Organizer and Co-Chair, Symposium on “***Innovative Applications of Isotope Geochemistry in Environmental Geology***” GSA 2008 North-Central Section Meeting in Evansville, Indiana, April 2008.
* Associate Editor, *“****Annals of University of Craiova. Chemistry Series****”. AUC (ISSN - 1223 - 6039*

***Professional Service*:**

***Manuscript reviews***

* Book chapters for the new McGraw-Hill Textbook: “***Environmental Geology”*** First Edition by James Reichard*(2008)*
* Book chapters ***"Redox-active Minerals: Properties, Reactions and Applications in Clean Technologies",*** Mineralogical Society and the European Mineralogical Union, Ed. Dr. Karen Hudson-Edwards *(2013).*
* *Astrobiology (2007)*
* *Applied Geochemistry (2011, 2012, 2013, 2014, 2015)*
* *Applied and Environmental Microbiology (2015, 2016)*
* *Chemical and Biochemical Engineering Quarterly (2006, 2008)*
* *Chemical Geology (2011, 2012)*
* *Ecological Engineering (2015)*
* *Environmental Science and Technologies (2011, 2012, 2014, 2015; 2016)*
* *FEMS Microbiology Letters (2016)*
* *Geochimica et Cosmochimica Acta (2006, 2011, 2012, 2014, 2015)*
* *Isotopes in Environmental and Health Studies (2008, 2009)*
* *International Journal of Coal Geology (2013, 2014, 2015; 2016)*
* *International Journal of Environmental Research and Public Health (2015)*
* *International Solvothermal & Hydrothermal Association Conference (2010)*
* *Journal of Asian Earth Sciences (2012, 2013)*
* *Journal of Radioanalytical and Nuclear Chemistry (2014)*
* *Minerals (2013, 2014; 2015)*
* *Nature Geosciences (2015)*
* *Soil Science Society of America Journal (2015)*
* *Research on Chemical Intermediates (SCI, Published by Springer) (2010)*
* *Science of the Total Environment (2011)*

***Proposal reviews***

* *U.S. National Science Foundation (2009, 2010, 2012, 2013, 2014)*
* *NASA (2008, 2011;2015;2016)*
* *Petroleum Research Fund (2015)*
* *Natural Sciences and Engineering Research Council of Canada (2015)*
* *Oak Ridge Associated Universities (2009, 2010)*
* *Georgia National Science Foundation (2008, 2009, 2010, 2013, 2014, 2015)*
* *Shota Rustaveli National Science Foundation (2011)*
* *Azerbaijan-U.S. Bilateral Grants Program (2008)*

***Academic Service:***

***Department Committees***

* Scholarship and Fellowship Committee, Southern Illinois University, 2007- present.
* Chair Colloquium Committee, Southern Illinois University, 2014- 2015.
* Faculty Search Committee Member for the “*Mineralogy/Ore Deposits lecturer”* Geology Department, Southern Illinois University, 2013, 2014.
* Member of the Curriculum Committee, Geology Department, Southern Illinois University, 2012 -2014.
* Faculty Search Committee Member for the “*Stratigraphy and Sedimentology*” position, Geology Department, Southern Illinois University, 2012.
* Department Workload Committee, Southern Illinois University, 2012 – 2014.
* Faculty Search Committee Member for the “*Coal Geology* “ position, Geology Department, Southern Illinois University, 2007 and 2008.
* Faculty Search Committee Member for the “*Geophysics*” position, Geology Department, Southern Illinois University, 2008.
* Computer Committee, Southern Illinois University, 2007-present.
* Co-chair Colloquium Committee, Northern Illinois University, 8/2001 - 8/2004.

***College of Science Committees***

* Faculty Representative to the COS Strategic Planning Committee, College of Science (2 yr. terms) 20012-2014.
* Faculty Representative to the COS Policy Committee (2 yr. terms) 20012-2014.
* Faculty Representative in the College of Science Task Force “***Southern at 150***” 2008-2009.
* Poster judge, Illinois Junior Science and Humanities Symposium, Carbondale IL, 2007 - present.
* Graduate Student Representative of the College of Liberal Arts and Sciences to the Graduate Council, Northern Illinois University, 8/2002 - 8/2004.
* Graduate Student Representative to the Graduate Student Advisory Committee of the College of Liberal Arts and Sciences, Northern Illinois University, 8/2002 - 8/2004.

***University Committees***

* Member of the ***ERP Admission Committee***, 2012-present.
* Faculty Representative of the College of Science to the “***University-Level Teaching Excellence Award Committee***”, 2016.
* Faculty Representative of the College of Science to the ***Undergraduate Research Advisory Committee,*** 2014-present.
* Member of the ***Chancellor Honors Program Committee***, 2014.
* Internal reviewer for the Mining and Mineral Resources Engineering Department, Southern Illinois University, 2013‐2014.
* Member of the ***Outstanding Thesis Committee,*** 2013.
* Faculty Representative to the Policy Committee, College of Science (2 yr. terms) 20012-2014.
* Faculty Representative to the Graduate Council designee for the 2010‐2011 Program of Reviews. ***Internal reviewer*** for the Global Media Research Center, Southern Illinois University.
* Faculty Representative to the ***Undergraduate Student Assistantship*** Committee (1 yr. term). 20011-2012.
* Faculty Representative to the ***Undergraduate Curriculum Committee***, Southern Illinois University, 2009-2011.
* Faculty Representative to the ***Library Affairs Advisory Committee***, Southern Illinois University, 2007-2009.
* Graduate Student Representative to the ***Search Committee*** for Vice President for Research and Dean of the Graduate School, Northern Illinois University, 2003.

***Other Professional Activities***

* Faculty Member of the Tisza Connectivity Advisory Committee, 2012-2014.
* Judge Volunteer for IGERT Trainee Video and Poster Competition, May 21-24, 2013.
* **Isotope Ratio Mass Spectrometry (IRMS) Laboratory:** the new IRMS lab serves as a campus facility and provides much needed analytical support for research, education, and training for a broad range of research programs in multiple departments and centers at SIUC. In collaboration with Dr. Mary Kinsel, Director MSF, and Mihai Lefticariu, Research Scientist MSF, I worked at the installation, testing, and optimization of the ThermoFinnigan Delta-V IRMS and the EA, TC-EA, and GasBench II units. In addition, my lab has developed robust methods for sample preparation (e.g., water, biological materials, carbonates, organic materials, sulfates) and analysis.
* **Curriculum Development:** 
  + **Geology 330** – ***The Planets:*** Develop a new Interdisciplinary Core Curriculum Course & Lab. “***Build your own planet***” lab exercises: this specially designed package includes some of the most popular lab exercises for non-major students).
  + ***Geology 585 Earth and Space Science for Teachers***: Develop a new online course for a new Master’s Degree program in Elementary Math and Science Education for Middle and High school teachers funded by the Illinois State Board of Education.
* **Educational Outreach:** 
  + Presentation at the ***Research Connections,*** College of Science, Southern Illinois University, Sep 30, 2013.
  + Presentation at the SIU Public Astronomy Club “***What Are We Looking For on Mars***.” March 24, 2013.
  + Organized lab/demonstrations “***Hands-On activities in******Water analysis***” scheduled for middle school students at the 20th annual Expanding Your Horizons conference on November, 2009. The program played an important role in helping approximately 120 girls from the southern Illinois region to catch a vision of the career possibilities open to them in Science, Engineering, Technology, and Mathematics.
  + Organized and participated in the 2010 Summer Workshop “***Earth Science for Elementary School Teachers: Earth Science, Life Science, & Physical Science***’. I organized three presentations on “***Introduction to Water Resources***” for the Earth Science discipline. The workshop was intended to teach basic concepts and skills to the K-8 classrooms science teachers.
  + Organized lab/demonstration scheduled for ***Benton High School*** students during their Campus Visit on January 28, 2010.
  + Organized and participated in the 2011 Junior Science Symposium Labs on Friday, March 25th, 2011. I organized laboratory demonstration titled “***Water Analysis***” for high school students.
  + Organized lab/demonstration “***Earth's Water: Water On and Under the Ground***” scheduled for middle school students at the 20th annual Expanding Your Horizons conference on November, 2011. The program played an important role in helping from the Southern Illinois region to catch a vision of the career possibilities open to them in Science, Engineering, Technology, and Mathematics.
  + 05/02/2014 Elverado Intermediate School in Vergennes

**Publications:**

\* Author is a student working with Dr. Lefticariu Liliana.

***Peer Reviewed Publications***

1. ***Lefticariu, L.*,** Sutton, S.R., Bender, K.S., Lefticariu6, M., Pentrak, M.(**2016**) Biogeochemical evidence for the impact of nano- and micron-scale detrital clay particles on coal-mine contaminant dynamics. ***Environmental Science and Technology*** (submitted).
2. Huiyong Yin, Jiuchuan Wei, ***Liliana Lefticariu,*** Jianbin Guo, Daolei Xie, Zilin Li, Peng Zhao (**2016**) Numerical simulation of water flow from the coal seam floor in a deep -longwall mine in China. Mine Water and the Environment 2, 1-10.

<http://link.springer.com/article/10.1007/s10230-016-0385-5>

1. Behum\*, P.T., Chugh, Y.P., ***Lefticariu, L.,*** **(2016)** Control of sulfate and chloride discharge from coal processing facilities: Part 1 - Investigation of the co-disposal of fine and coarse coal refuse. ***Mine Water and the Environment*** (in press).
2. Behum\*, P.T., ***Lefticariu, L.,*** Chugh, Y.P., **(2016)** Control of sulfate and chloride discharge from coal processing facilities: Investigation of coal stockpile weathering using laboratory kinetic tests. ***International Journal of Coal Geology*** (under review).
3. Wei, J.C., Yin, H.Y., Lefticariu, L., Guo, J.B., Li, Z.L., Guan, Y.H. **(2016)** In-situ dynamic monitoring stress revolution with time and space under coal seam floor with longwall mining. ***International Journal of Rock Mechanics and Mining Sciences*** (under review).
4. Yin, H.Y., ***Lefticariu, L.,*** Wei, J.C., Zhu, L., Guo, J.B., Li, Z.L., Guan, Y.H. **(2016)** A multi-method approach for estimating the failure depth of coal seam floor: A case study in the Nantun coal mine, Shandong Province, China. ***Energy Exploration and Exploitation*** (under review).
5. ***Lefticariu L.,*** Walters\*, E.R., Pugh, C.W., Bender, K.S. **(2015)** Sulfate reducing bioreactor dependence on organic substrates for remediation of coal-generated acid mine drainage: Field experiments. ***Applied Geochemistry*** 63, 70-82. <http://www.sciencedirect.com/science/article/pii/S0883292715300196>
6. Denny, B.F., Guillemette, R.,N., ***Lefticariu, L.,*** **(2015)** Rare earth mineral concentrations in ultramafic alkaline rocks and fluorite within the Illinois-Kentucky Fluorite District: Hicks Dome cryptoexplosive complex, southeast Illinois and Northwest Kentucky (USA). In: Z. Lasemi, ed., Proceedings of the 47th Forum of the Geology of Industrial Minerals. ISGS Publications Series, Circular 587, 1-16. <http://isgs.illinois.edu/sites/isgs/files/files/publications/ofs2011-02-230-FULL.pdf>
7. Perry, E. C., ***Lefticariu, L.*** **(2014)** Formation and geochemistry of Precambrian cherts. In: **Treatise on Geochemistry, 2rd Edition**; H. Holland and K. Turekian (Eds.) pp. 113–139. <http://www.sciencedirect.com/science/article/pii/B9780080959757007051>
8. Walters\*, Evan R., Behum\*, Paul T., ***Lefticariu, Liliana*** **(2013)** Sulfate reducing bioreactor dependence on organic substrates for long-term remediation of acid mine drainage: field experiments. – In: Brown, A.; Figueroa, L. & Wolkersdorfer, Ch. ***Reliable Mine Water Technology*** (Vol I). – p. 747 – 748; Denver, Colorado, USA (Publication Printers).
9. Behum\*, P.T., ***Lefticariu L***., Walters\*, E.R., Kiser, R., **(2013)** Passive treatment of coal-mine drainage by a sulfate-reducing bioreactor in the Illinois Coal Basin. ***Reclamation Matters***, Spring 2013, 33-37.
10. Burns, A.S., Pugh, C.C., Behum\*, P.T., Segid\*, Y.T., ***Lefticariu L.,*** Bender, K.S. **(2012)** Microbial community dynamics of a sulfate-reducing bioreactor treating coal generated acid mine drainage. ***Biodegradation*** 23 ( 3), 415-429 <http://dx.doi.org/10.1007/s10532-011-9520-y>
11. Silver, B.J., Raymond, R., Sigman, D.M., Prokopeko, M., Sherwood Lollar, B., Lacrampe-Couloume, G., Fogel, M. L., Pratt, L. M., ***Lefticariu L.,*** and Onstott T.C. **(2012)** The origin of NO3¯ and N2 in deep subsurface fracture water of South Africa. ***Chemical Geology*** 294-295, 51-62. <http://dx.doi.org/10.1016/j.chemgeo.2011.11.017>
12. Behum\*, P.T., ***Lefticariu L.,*** Segid\*, Y.T., Bender, K.S., Pugh, C.C., Burns, A.S. **(2011)** Remediation of coal-mine drainage by a sulfate-reducing bioreactor: A case study from the Illinois coal basin, USA. ***Applied Geochemistry*** 26 (1), 162-166. http://dx.doi.org/10.1016/j.apgeochem.2011.03.093
13. ***Lefticariu, L.,*** Blum, J. D., Gleason, J. D. **(2011)** Mercury Isotopic Evidence for Multiple Mercury Sources in Coal from the Illinois Basin. ***Environmental Science and Technology*** 45, 1724–1729. <http://pubs.acs.org/doi/full/10.1021/es102875n>
14. ***Lefticariu, L.*** **(2010)** Biogeochemical evaluation of a passive acid mine drainage treatment system from Illinois, USA. ***Romanian Journal of Mineral Deposits*** 84, 101-108. <http://rjmd.igr.ro/files/7th_Symposium_SEGR_2010.pdf>
15. ***Lefticariu, L.,*** Pratt, L. M., LaVerne, J. A., Schimmelmann, A. **(2010)** Radiolysis of water coupled to oxidation of pyrite as a source of biosustaining energy. ***Earth and Planetary Science Letters*** 292 (1-2), 57-67. <http://dx.doi.org/10.1016/j.epsl.2010.01.020>
16. Fischer, M. P., Higuera-Diaz, C. I., Evans, M. E., Perry, E. C., and ***Lefticariu, L.* (2009)** Fracture-controlled paleohydrology in a map-scale detachment fold: insightsfrom the analysis of fluid inclusions in calcite and quartz veins. ***Journal of Structural Geology*** 31 (12), 1490-1510. <http://dx.doi.org/10.1016/j.jsg.2009.09.004>
17. ***Lefticariu, L.,*** **(2009)** Oxidation of sulfide minerals: from acid mine drainage to life on Mars. Special Publication “Mineralogy and Geodiversity” dedicated to the 70th anniversary of Professor Dr. Emil Constantinescu, 8 pp.
18. ***Lefticariu, L.,*** Schimmelmann, A., Pratt, L. M., and Ripley, E. M. **(2007)** Oxygen isotope fractionation during oxidation of pyrite by H2O2 and its dependence on temperature. ***Geochimica et Cosmochimica Acta*** 71 (21), 5072–5088. <http://dx.doi.org/10.1016/j.gca.2007.08.022>
19. Perry, E. C., ***Lefticariu, L.*** **(2007)** Formation and geochemistry of Precambrian cherts. In: **Treatise on Geochemistry (**Online Updated Edition**)**; H. Holland and K. Turekian (Eds.) Volume 7, Sediments, Diagenesis, and Sedimentary Rocks; F.T. MacKenzie (Ed.), 99-113. <http://www.treatiseongeochemistry.com/>
20. ***Lefticariu, L.,*** Pratt, L. M., and Ripley, E. M. **(2006)** Mineralogical and sulfur isotope effects accompanying the oxidation of pyrite in millimolar solutions of hydrogen peroxide at temperatures from 4 to 150 °C. ***Geochimica et Cosmochimica Acta*** 70 (19), 4889-4905. <http://dx.doi.org/10.1016/j.gca.2006.07.026>
21. ***Lefticariu, L.,*** Pratt, L. M., LaVerne, J.A., and Ripley, E. M. **(2006)** Radiolytic oxidation of pyrite: a viable mechanism for sulfate production on Mars? In Workshop on Martian Sulfates as Recorders of Atmospheric -Fluid-Rock Interactions, p. 73-76. ***LPI Contributions No. 1331***, Lunar and Planetary Institute, Houston. <http://www.lpi.usra.edu/meetings/sulfates2006/>
22. ***Lefticariu, L.,*** Pratt, L. M., Eng, P. J., Gose, S. K., and Bish D. L. **(2006)** Interaction of radiolytically produced oxidants with the pyrite surface: a Crystal Truncation Rod (CTR) study. ***Lunar and Planetary* *Science***, vol. XXXVII, 2167-2168. <http://www.lpi.usra.edu/meetings/lpsc2006/pdf/2167.pdf>
23. ***Lefticariu, L.,*** Pratt, L. M., LaVerne, J A., and Ripley E. M. **(2006)** Experimental study of radiolytic oxidation of pyrite: implications for Mars relevant crustal processes. ***Lunar and Planetary Science***, vol. XXXVII, 1953-1954. <http://www.lpi.usra.edu/meetings/lpsc2006/pdf/1953.pdf>
24. Lefticariu, M., Perry, E. C., Ward, W., and***Lefticariu L.*****(2006)** Post-Chicxulub depositional and diagenetic history of the northwestern Yucatan Peninsula, Mexico. ***Sedimentary Geology*,** 183(1-2), 51-69. <http://dx.doi.org/10.1016/j.sedgeo.2005.09.008>
25. ***Lefticariu, L.,*** Perry, E. C., Fischer, M. P., and Banner, J. **(2005)** Evolution of fluid compartmentalization in a detachment fold complex. ***Geology***, 33(1), 69-72. <http://dx.doi.org/10.1130/G20592.1>
26. Lefticariu, M., Perry, E. C., ***Lefticariu L.,***Ward W.(**2004**) Diagenetic evolution of the Cenozoic Formations associated with the Chicxulub impact crater, Northwestern Yucatan Peninsula, Mexico. ***Lunar and Planetary Science***, vol. XXXV, 1083-1084. <http://www.lpi.usra.edu/meetings/lpsc2004/pdf/1083.pdf>
27. ***Lefticariu*, *L*.** (**2004**) Geochemical constraints on the evolution of the fluid-rock system in the salt-detached Nuncios Fold Complex, Mexico. **Ph. D. Dissertation**, Northern Illinois University, DeKalb Il, 385 pg.
28. Perry, E. C. and ***Lefticariu***, *L.* (**2003**) Formation and geochemistry of Precambrian cherts. In: Treatise on Geochemistry; H. Holland and K. Turekian (Eds.) Volume 7, Sediments, Diagenesis, and Sedimentary Rocks; F.T. MacKenzie (Ed.), 99-113. <http://www.sciencedirect.com/science/referenceworks/0080437516>

***Peer Reviewed Conference Proceedings***

1. Behum\*, P.T. Jr., Mick, A., Krystal Pankey, K., ***Lefticariu, L. (2016)*** Remediation of acid mine drainage using a sulfate-reducing bioreactor at the Tab-Simco Passive Treatment System. Proceedings to the 33rd Annual Meeting of the American Society of Mining & Reclamation, June 4th to 9th, 2016 Spokane, Washington American Society of Mining and Reclamation ﴾ASMR﴿.
2. ***Lefticariu, L.,*** Behum\*, P.T. Jr., Chugh,Y. P., **(2014)** A field evaluation of alternate coal processing waste management technology. Proceedings to the 31th Annual International Pittsburgh Coal Conference, CD-ROM.
3. Yin, H.Y., Wei, J.C., ***Lefticariu, L.,*** Guo, J.B., **(2014)** Using the Geological-Tectonic-Lithological-Structure Index to predict water abundance in sandstone aquifers in coal deposits. Proceedings to the 31th Annual International Pittsburgh Coal Conference, CD-ROM.
4. Behum\*, P.T. Jr., ***Lefticariu, L.,*** Bender, K.S., Lewis, L., Segid\*, Y.T., Burns, A.S., Pugh, C.C., **(2012)** Passive treatment of coal-mine drainage by a sulfate-reducing bioreactor: A case study from the Illinois coal basin, USA. Proceedings of the 9th International Conference on Acid Rock Drainage, CD-ROM.
5. ***Lefticariu, L.,*** Rahman\*, M.W., Singh\* R.,**(2009)** Distribution and mode of occurrence of mercury and sulfur in Illinois coal. Proceedings to the 26th Annual International Pittsburgh Coal Conference, CD-ROM.
6. Lefticariu, M., Perry, E. C., ***Lefticariu, L.*** **(2003)** Diagenetic evolution of the Cenozoic Formations associated with the Chicxulub impact crater, Northwestern Yucatan Peninsula, Mexico. In: L. Marin and A. H.-D. Cheng (Eds), Proceedings to the 2nd International Conference and Workshop on ***Saltwater Intrusion and Coastal Aquifers: Monitoring, Modeling, and Management***, vol. 1, 121-127. <http://www.olemiss.edu/sciencenet/saltnet/swica2/Lefticariu.pdf>

***Technical Reports***

1. ***Lefticariu, L.* (2015)** Field demonstration of alternative coal processing waste disposal technology. Final report to Illinois Clean Coal Institute, January 2015, 44 pp. <http://www.icci.org/reports.php>
2. ***Lefticariu, L.* (2015)** Improved sulfate-reducing bioreactors for the remediation of high total dissolved solids drainage associated with coal mining and processing in the U.S. Final report to Office of Surface Mining Reclamation and Enforcement, February 2015, 67pp.
3. ***Lefticariu, L.* (2013)** Acquisition of an Isotope Ratio Mass Spectrometer for Geochemical Biological and Petrologic Research, Education and Training at Southern Illinois University NSF Award 0821646 - Final Project Report. <http://center.ncet2.org/index.php?option=com_patents&controller=awards&tmpl=component&view=awards&layout=award&frame=awards&user=14603&id=22046_nsf>
4. ***Lefticariu, L.* (2009)** Integrated Study of Mercury and Other Trace Elements Distribution in Illinois Coal. Final report to Illinois Clean Coal Institute, December 2009, 44 pp. <http://www.icci.org/reports.php>
5. ***Lefticariu, L.* (2008)** Distribution and mode of occurrence of sulfur and trace elements in Illinois coal. Final report to Illinois Clean Coal Institute, December 2008, 20 pp.

<http://www.icci.org/reports.php>

**Presentations:**

***Invited Talks:***

**02/04/2016: “***The role of nano- and micron-scale detrital particles in coalmine contaminant dynamics***”.** Argonne National Laboratory, Argonne, IL.

**08/01/2015:** “*Water for a sustainable world*”. SIU Sustainability Film Series at Southern Illinois University, Carbondale, IL.

**10/8/2014: “***A Tale of Small Moons: Is there life in the outer solar system?”*19th Annual Science in the South conference at Southern Illinois University, Carbondale, IL.

**02/20/2014: “***Field demonstration of alternate coal processing waste disposal technology*”. ICCI Meeting Energy Research for a Cleaner Environment, Fairview Heights, Il.

**01/31/2013: “***Was life ever present on Mars?”*18th Annual Science in the South conference at Southern Illinois University, Carbondale, IL.

**11/11/2013:** “*Oxidation of sulfide minerals: from acid mine drainage to life on Mars*” Invited presentation Fall 2013 at Illinois State Geological Survey Seminar Series, Champaign, IL .

**06/16/2013**: “*Oxidation of sulfide minerals: from acid mine drainage to life on Mars*”. Invited presentation Spring 2012 Colloquia at Universitatea Babeş Bolyai, Cluj Napoca, Romania.

**07/18/2012:** “*Coal Utilization II: Trace elements and mercury. Power plant emissions problems*”. Coal Geology Short Course, at Southern Illinois University, Carbondale, IL.

**05/14/2012:** “*Passive Systems for Treating Acid Mine Drainage*”. Geology and Geophysics Department, Bucharest University, Romania.

**02/23/2012**: “*Oxidation of sulfide minerals: from acid mine drainage to life on Mars*”. Invited presentation Spring 2012 Colloquia at University of South Carolina, Colombia, SC.

**02/10/2011**: “*Oxidation of sulfide minerals: from acid mine drainage to life on Mars*”. Invited presentation Spring 2011 Colloquia at Central Michigan University, Mount Pleasant, MI.

**04/09/2011**: “*Earth's Water: Water On and Under the Ground*”. Three presentations for Saluki Bassers Open House at Southern Illinois University, Carbondale, IL.

**06/15/2010**: “*Mercury Isotopes in Illinois Basin Coal: Organic and Inorganic Constituents*” Invited speaker @: New Horizons in Coal Science: Organic Petrology, Geochemistry, and Environmental Effects, Goldschmidt Conference, Knoxville, Tennessee.

**11/06/2010**: “*Mercury in the Environment: a geochemical perspective*”. ERP Seminar Series, Southern Illinois University, Carbondale IL.

**11/13/2010**: “*The Challenges of a Changing Planet*” SIUC Expanding Your Horizons Conference, Southern Illinois University, Carbondale IL.

**02/19/2010**: “*Oxidation of Sulfide Minerals: From Acid Mine Drainage to Life on Mars*”. Invited presentation Spring 2010 Colloquia at Northern Illinois University, DeKalb IL.

**02/10/2010**: “*Oxidation of Sulfide Minerals: From Acid Mine Drainage to Life on Mars*”. Invited speaker @: The College of Science Living and Learning Community (LLC) Students at Felts Hall

**5/24/2008:** “*Radiolytic oxidation of pyrite: a possible source of sulfate on Mars*?” Geology and Geophysics Department, Bucharest University, Romania.

**3/26/2008**: “*What can we learn from studying sulfate minerals on Earth about surface processes on Mars*?” SIUC Celebrating Scholarship By and About Women Panel, Southern Illinois University, Carbondale IL.

**1/24/2006**: “*Radiolytic oxidation of pyrite by gamma radiation*”.Department of Geology, Southern Illinois University, Carbondale IL.

**8/8/2005**: “*Experimental study of sulfur isotope fractionation associated with pyrite oxidation by H2O2*”. Forum for Astrobiology Research (FAR) Series. Webcast NASA Astrobiology Institute Seminar. <http://nai.arc.nasa.gov/seminars/index.cfm>

**1/31/2005**: “*Gypsum-anhydrite transition: a source of water during diagenesis*?”Department of Geological Sciences, Indiana University, Bloomington IN.

**10/4/2002**: *“Fluid migration during salt-detached folding in Northeastern Mexico*”. Department of Geology, Northern Illinois University, DeKalb IL.

***Presentations at Meetings:***

1. ***Lefticariu, L.,*** Behum\*, P.T. Jr., Bender K.S.,**(2016**) Remediation of aqueous wastes from hydrothermally-altered coal mining. The 25rd Annual Goldschmidt Conference, June 26-July 1, 2016, Yokohama, Japan.
2. Klitzing\*, K.L., Kolker, A., Geboy, N., Vancil, G., ***Lefticariu, L.*****(2016)** Rare Earth and Strategic Elements in Illinois Coal Deposits and Coalmine Waste. GSA North-Central Section 50th Annual Meeting, 18–19 April 2016, Urbana-Champaign, USA.
3. Zneimer\*, S.L., Lefticariu, M., ***Lefticariu, L.,* (2016)** Integrating stable isotopes of precipitation and Earth system models to elucidate local water cycle dynamics. GSA North-Central Section 50th Annual Meeting, 18–19 April 2016, Urbana-Champaign, USA.
4. ***Lefticariu, L.,*** Behum\*, P.T. Jr., Bender K.S.,**(2016**) Coal-generated acid mine drainage remediation options. GSA North-Central Section 50th Annual Meeting, 18–19 April 2016, Urbana-Champaign, USA.
5. Behum\*, P.T. Jr., Mick, A., Pankey, K., ***Lefticariu, L.,* (2016)** Remediation of acid mine drainage using a sulfate-reducing bioreactor at the Tab-Simco passive treatment system – an update. American Society of Mining and Reclamation ﴾ASMR﴿, June 4‐8, 2016, Spokane, Washington, U.S.
6. McLeran\*, K., Therrell, M., ***Lefticariu, L.* (2015**) Oxygen and carbon isotope analysis in tree-rings of Pterocarpus Angolensis in Zimbabwe. AGU Fall Meeting, San Francisco, 14-18 December 2015.
7. Geboy, N.J., Kolker, A., ***Lefticariu, L.,*** Vancil\*, G***.* (2015**) A compositional data analysis approach to understanding trace element distribution during beneficiation of an Illinois Basin coal. The 2015 GSA Annual Meeting in Baltimore, Maryland, USA (1-4 November 2015).
8. McLeran\*, K., Therrell, M., ***Lefticariu, L.* (2015**) Oxygen isotope analysis in tree-rings of Pterocarpus Angolensis in Zimbabwe. HiRes2015: the Conference on High Resolution Proxies on Paleoclimate. May 31-June3, 2015. University of Wisconsin Madison (WI).
9. Zneimer\*, S.L., Lefticariu, M., ***Lefticariu, L.,* (2015)** Tracking regional climate patterns through stable water isotopologues in precipitation and surface waters of southern Illinois. Undergraduate Research Forum, Student Center Ballrooms, April 6, 2015, Southern Illinois University Carbondale.
10. Brito, G.\*, Lefticariu, M., ***Lefticariu, L.,* (2015)** Stable isotope composition of surface waters in Southern Illinois and Missouri. Undergraduate Research Forum, Student Center Ballrooms, April 6, 2015, Southern Illinois University Carbondale.
11. ***Lefticariu, L.,*** Behum\*, P.T. Jr., Chugh,Y. P., **(2014)** A Field Evaluation of Alternate Coal Processing Waste Management Technology. The 2014 Annual International Pittsburgh Coal Conference, October 6 – 9, Pittsburgh, PA. <http://www.engineering.pitt.edu/PCC.aspx?id=2147488856>
12. Huiyon\*, Y., Jiuchuan, W., ***Lefticariu, L.,*** Qiang, W., **(2014)** Using the Geological-Tectonic-Lithological-Structure Index to predict water abundance in sandstone aquifers in coal deposits. The 2014 Annual International Pittsburgh Coal Conference, October 6 – 9, Pittsburgh, PA. <http://www.engineering.pitt.edu/PCC.aspx?id=2147488856>
13. ***Lefticariu, L.,*** Walters\*, E.R., Behum\*, P.T., Giesting, P., **(2014)** Chemistry and mineralogy of Fe-rich precipitates from an acid mine drainage-treatment system. The 24rd Annual Goldschmidt Conference, June 9-14, Sacramento, California, USA. <http://goldschmidt.info/2014/uploads/abstracts/finalPDFs/1395.pdf>
14. Behum\*, P.T. Jr., Chugh,Y. P., ***Lefticariu, L.,* (2014)** Geochemistry of Coal Refuse Disposal Alternatives: Results of Kinetic Testing. The 24rd Annual Goldschmidt Conference, June 9-14, Sacramento, California, USA. <http://goldschmidt.info/2014/uploads/abstracts/finalPDFs/156.pdf>
15. Kipp\*, W.R., Bentley\*, M.E., Denny, B. F., ***Lefticariu, L.,* (2014)** Rare Earth Element concentrations and distributions in minerals within the Illinois/Kentucky Fluorspar District. Undergraduate Research Forum, Student Center Ballrooms, April 7, 2014, Southern Illinois University Carbondale.
16. Bentley\*, M.E., McLeran\*, K.E., Lefticariu, M., ***Lefticariu, L.,* (2014)** Hydrogen and oxygen isotope characterization of precipitation in Carbondale, IL. Undergraduate Research Forum, Student Center Ballrooms, April 7, 2014, Southern Illinois University Carbondale.
17. Cherry\*, W., Forray, F.L..***Lefticariu, L.,*** **(2013)** Connectivity of the Tisza River System: trace element and isotopic constraints. American Geophysical Union, Fall Meeting 2013, abstract #H51B-1195. <http://adsabs.harvard.edu/abs/2013AGUFM.H51B1195C>
18. Walters\*, E.R., Behum\*, P.T., ***Lefticariu, L.*** **(2013)** Sulfate reducing bioreactor dependence on organic substrates for long-term remediation of acid mine drainage: field experiments. Annual International Mine Water Association Conference – Reliable Mine Water Technology” Golden, Colorado, USA. <http://www.imwa.info/docs/imwa_2013/IMWA2013_Walters_473.pdf>
19. Walters\*, E. R., Pugh, C. W., Bender, K. S., & ***Lefticariu, L.* (2013)** Use of stable isotopes to quantify biological and abiotic processes contributing to sulfur cycling in an AMD treatment system. The 23rd Annual Goldschmidt Conference, Florence, Italy, August 25-30, 2013.
20. Behum\*, P.T., ***Lefticariu, L.,*** Walters, E.R., Kiser, R. **(2013)** Passive treatment of coal-mine drainage by a sulfate-reducing bioreactor in the Illinois Coal Basin.  West Virginia Mine Drainage Task Force Symposium. Morgantown, WV March 26-27, 2013.
21. McLeran\*, K., Therrell, M., ***Lefticariu, L.* (2012**) Oxygen isotope analysis in tree-rings of Pterocarpus Angolensis in Zimbabwe. AGU Fall Meeting, San Francisco, 3-7 December 2012. <http://fallmeeting.agu.org/2012/>
22. Walters\*, E.R., Pugh, C.W., Bender, K.S., ***Lefticariu, L.* (2012**) Geochemical and microbial community dynamics of a remediation system treating coal-derived mine drainage. GSA Annual Meeting, in Charlotte, North Carolina, 4–7 November 2012.

<https://gsa.confex.com/gsa/2012AM/dis/papers/index.cgi?username=211762&password=674645>

1. ***Lefticariu, L.,*** Walters\*, E.R., Pugh, C.W., Bender, K.S. **(2012)** Stable isotope and microbial indicators of sulfur cycle pathways in an AMD treatment system. GSA Annual Meeting, in Charlotte, North Carolina, 4–7 November 2012. <https://gsa.confex.com/gsa/2012AM/dis/papers/index.cgi?username=211095&password=186336>
2. ***Lefticariu, L.,*** Behum\*, P.T. Jr., Pugh, C.W., Bender, K.S. **(2012)** Remediation of Coal-Mine Drainage by Sulfate-Reducing Bioreactor. The 22th Annual Goldschmidt Conference, June 24-29, 2012, Montreal, Canada. <http://www.vmgoldschmidt.org/2012/index.htm>
3. Pugh, C.W., Burns, A.S., Behum\*, P.T. Jr., ***Lefticariu, L.,*** Bender, K.S. **(2012**) Community Analysis of a Sulfate-Reducing Bioreactor Treating Coal Generated Acid-Mine Drainage. The 112th General Meeting of the American Society for Microbiology, June 16 - 19, 2012, San Francisco, USA. <http://www.asm.org/images/asm2012_finalprogram_webv.pdf>
4. Denny, B.F., ***Lefticariu, L.,*** Freiburg, J.T., Rızaoğlu, T., Uras, Y. **(2012)** Oxygen and carbon isotopic variations of Lower Chesterian Limestones of the Illinois Basin and the Illinois-Kentucky Fluorite District. The 5th International Geochemistry Symposium, May 23-25, 2012, Denizli, Turkey. <http://pau.edu.tr/jeokimyasemp/en/>
5. Behum\*, P.T. Jr., ***Lefticariu, L.,*** Bender, K.S., Lewis, L., Segid\*, Y.T., Burns, A.S., Pugh, C.W., **(2012)** Passive treatment of coal-mine drainage by a sulfate-reducing bioreactor: A case study from the Illinois coal basin, USA. The 9th International Conference on Acid Rock Drainage, May 20 - 26, 2012, Ottawa, Ontario Canada. <http://www.icard2012.ca/index.html>
6. Behum\*, P.T. Jr., Chugh,Y. P., ***Lefticariu, L.* (2012)** Preliminary Results of Simulated Weathering of Coal Stockpiles and Coal Refuse Disposal Areas. The 9th International Conference on Acid Rock Drainage, May 20 - 26, 2012, Ottawa, Ontario Canada. <http://www.icard2012.ca/index.html>
7. Behum\*, P.T. Jr., Lewis, L., Kiser, R., and ***Lefticariu, L.*** **(2012)** Remediation of Acid Mine Drainage using Sulfate-reducing Bioreactors - Case Example: the Tab-Simco Passive Treatment System. The 29th Annual Meeting of the American Society of Mining Reclamation – “Sustainable Reclamation” 8 - 15 June, 2012, Tupelo, Mississippi USA. <http://www.asmr.us/Meetings/2012/ASMR%2029th%20Annual%20Meetings.pdf>
8. Chugh,Y. P., Behum\*, P.T. Jr. ***Lefticariu, L.,* (2011)** Alternate Coal Processing Waste Disposal Technology. Illinois Mining Institute 119th Annual Meeting, August 30-31, 2011, Williamson County Pavilion, Marion, Illinois, USA. <http://www.coalage.com/index.php/calendar/1-coal-age/57-illinois-mining-institute-119th-annual-meeting.html>
9. Denny, B.F., Guillemette***,*** R., N., ***Lefticariu, L.*** **(2011)** Rare earth mineral concentrations within fluorite in the Illinois-Kentucky Fluorite District and igneous intrusives at Hicks Dome Cryptoexplosive Complex, SE Illinois and NW Kentucky (USA). The 47th Forum on the Geology of Industrial Minerals May 15-17, 2011, Champaign, IL. <http://www.isgs.illinois.edu/sections/indust-min/im-home.shtml>
10. Behum\*, P.T., ***Lefticariu L.,*** Segid\*, Y.T., Bender, K.S., Pugh, C.W., Burns, A.S. **(2011)** Remediation of coal-mine drainage by a sulfate-reducing bioreactor: A case study from the Illinois coal basin, USA. Geochemistry of the Earth's Surface (GES9). June 3-7, 2011, Boulder, Colorado, USA. <http://instaar.colorado.edu/meetings/GES-9/>
11. ***Lefticariu, L.*** **(2010)** Biogeochemical evaluation of a passive acid mine drainage treatment system from Illinois, USA. SEGR-2010 – "*MINERAL RESOURCES OF CARPATHIANS AREA*" – 7th International Symposium on Economic Geology, September 10 – 11, Baia Mare, Romania.
12. ***Lefticariu, L.,*** Blum, J. D., Gleason, J. D. **(2010)** Mercury Isotopes in Illinois Basin Coal: Organic and Inorganic Constituents. The 20th Annual Goldschmidt Conference, June 13 – 18, Knoxville, Tennessee. <http://www.goldschmidt2010.org/abstracts/abstractView?abstractId=1325>
13. Segid\*, Y.T., Behum\*, P.T., Bender, K.S., Pugh, C.W., Burns, A.S. & ***Lefticariu L*** **(2010)** Geochemical and Microbial Evaluation of the Tab Simco Treatment System. The 20th Annual Goldschmidt Conference, June 13 – 18, Knoxville, Tennessee.

<http://www.goldschmidt2010.org/abstracts/abstractView?abstractId=3150>

1. Behum\*, P.T. Jr., Chugh,Y. P., Segid\*, Y.T., ***Lefticariu, L.,* (2010)** Results of Simulated Weathering of Coal Stockpiles and Coal Refuse Disposal Areas. The 20th Annual Goldschmidt Conference, June 13 – 18, Knoxville, Tennessee.

<http://www.goldschmidt2010.org/abstracts/abstractView?abstractId=3057>

1. Pugh, C.W., Segid\*, Y.T., Behum\*, P.T., Burns, A.S., Bender, K.S., & ***Lefticariu L*** (**2010**) Community analysis of the acid mine drainage from an abandoned Tab Simco coal mine. Undergraduate Research Forum, Student Center Ballrooms, March 26, 2010, Southern Illinois University Carbondale.
2. ***Lefticariu, L.*** **(2009)** Oxidation of sulfide minerals: from acid mine drainage to life on Mars. Scientific session “Mineralogy and Geodiversity” dedicated to the 70th anniversary of Professor Dr. Emil Constantinescu, October 30-31, Bucharest, Romania.
3. Rahman\*, M.W., Singh\*, R., ***Lefticariu, L.,* (2009)** Concentration and distribution of trace elements in coals from Illinois Basin. GSA Abstracts with Programs, v.41, no. 7, A121-7. <http://gsa.confex.com/gsa/2009AM/finalprogram/abstract_160592.htm>
4. Singh\*, R.,Rahman\*, M.W., ***Lefticariu, L.,* (2009)** Sulfur in Illinois Coal. GSA Abstracts with Programs, v.41, no. 7, A121-6. <http://gsa.confex.com/gsa/2009AM/finalprogram/abstract_160594.htm>
5. ***Lefticariu, L.,*** Rahman\*, M.W., Singh\*, R.,**(2009)** Distribution and mode of occurrence of mercury and sulfur in Illinois coal. The 26th Annual International Pittsburgh Coal Conference, Pittsburgh, PA, September 20 – 23. <http://www.engr.pitt.edu/pcc/>
6. ***Lefticariu, L.,*** Behum\*, P.T. Jr., Chugh,Y. P., **(2009)** Geochemical Evaluation of Coal Processing Facility Drainage: Preliminary Results of Kinetic Testing. The 19th Annual Goldschmidt Conference, June 21 – 26, Davos, Switzerland. <http://www.goldschmidt2009.org/abstracts/L.pdf>
7. ***Lefticariu, L.,*** Behum\*, P.T. Jr., Bender, K.S., Burns, A.S., Pugh, C.W. **(2009)** Biogeochemical Evaluation of the Tab Simco Mine Drainage Treatment System. GSA North-Central Section, GSA meeting in Rockford, IL, 2-4 April 2009. <http://www.geosociety.org/sectdiv/Northc/09mtg/index.htm>
8. Singh\*, R., ***Lefticariu, L.,* (2009)** Distribution and Mode of Occurrences of Sulfur and Trace Elements in Illinois Coal. GSA North-Central Section, GSA meeting in Rockford, IL, 2-4 April 2009. <http://www.geosociety.org/sectdiv/Northc/09mtg/index.htm>
9. Behum\*, P.T. Jr., Chugh,Y. P., Teklehaimanot\*, Y., ***Lefticariu, L.,* (2009)** Geochemistry of Coal Mine Drainage in Response to Improved Material Handling: Preliminary Results of Kinetic Testing. GSA North-Central Section, GSA meeting in Rockford, IL, 2-4 April 2009. <http://www.geosociety.org/sectdiv/Northc/09mtg/index.htm>
10. ***Lefticariu, L.,*** Pratt, L. M., Onstott, T.C., **(2008)** Sulphate Formation on Mars by Radiolytic Oxidation of Sulphide Minerals. The 18th Annual Goldschmidt Conference, July 13 – 18, Vancouver, Canada. <http://www.goldschmidt2008.org/abstracts/L.pdf>
11. ***Lefticariu, L.,* (2008)** What can we learn from studying sulfate minerals on Earth about surface processes on Mars? Simpozion Naţional de Geologie si Geofizica GEO 2008, May 23 – 24, Bucharest, Romania. <http://www.unibuc.ro/uploads_ro/44056/Program_G2008.pdf>
12. ***Lefticariu, L.,*** Crelling, J.C., Atudorei, V. **(2008)** Carbon and sulfur isotope geochemistry of Illinois No. 5 coal. North-Central Section, GSA meeting in Evansville, IN, 24-25 April 2008. <http://www.geosociety.org/sectdiv/Northc/08mtg/index.htm>
13. Raymond, R., Sigman, D., Mislowack, B., Onstott, T.C., Pratt, L. M., ***Lefticariu, L.*** **(2008)** Radiolytic destruction of NH3 as a subsurface source of NO3 and ultimately N2. Astrobiology Science Conference 2008, SETI Institute, Santa Clara, California, April 14-17, 2008. <http://abscicon.seti.org/>
14. ***Lefticariu, L.,*** Schimmelmann, A., Pratt, L. M., and Ripley, E. M. **(2007)** Oxygen and sulfur isotope fractionation associated with pyrite oxidation by H2O2. The 9th ESIR Conference, Studia Universitatis Babes-Bolyai Geologia, vol. 52, No. 1, p. 45. <http://bioge.ubbcluj.ro/studia/pdf/2007/2007_1.pdf>
15. ***Lefticariu, L.,*** Pratt, L. M., and Ripley, E. M., and LaVerne, J. **(2007)** Radiolytic oxidation of pyrite by gamma radiation. Geological Society of America Abstracts with Programs, Vol. 39, No. 6, p. 14. <http://gsa.confex.com/gsa/2007AM/finalprogram/abstract_123149.htm>
16. ***Lefticariu***, *L.*, Pratt, L. M., and Ripley, E. M. **(2006)** Radiolytic oxidation of pyrite: a possible source of sulfate on Mars? Workshop on Martian Sulfates as Recorders of Atmospheric -Fluid-Rock Interactions, October 22–24, 2006, Houston, Texas, USA. <http://www.lpi.usra.edu/meetings/sulfates2006/>
17. ***Lefticariu*,** *L.*, Pratt, L. M., and Ripley, E. M. **(2006)** Stable Isotope Study of Radiolytic Oxidation of Pyrite. The 3rd International Symposium on Isotopomers, 27 – 31 August,University of California, San Diego, La Jolla, California, USA. <http://isi2006.ucsd.edu/>
18. Pratt, L. M., ***Lefticariu*, *L****.*, Ripley E. M., and Onstott, D. L. **(2006)** Radiolysis of Earth Materials. The 16th Annual Goldschmidt Conference, August 27 - September 1, Melbourne, Australia. [http://www.goldschmidt2006.com/](https://www.exchange.iu.edu/exchweb/bin/redir.asp?URL=http://www.goldschmidt2006.com/)
19. Perry, E. C. and***Lefticariu, L****.* **(2006)** The oxygen isotopic composition of Precambrian chert. The 16th Annual Goldschmidt Conference, August 27 - September 1, Melbourne, Australia. [http://www.goldschmidt2006.com/](https://www.exchange.iu.edu/exchweb/bin/redir.asp?URL=http://www.goldschmidt2006.com/)
20. ***Lefticariu*,** *L.*, Pratt, L. M., LaVerne, J A., and Ripley, E. M. **(2006)** Experimental study of radiolytic oxidation of pyrite: implications for Mars relevant crustal processes. The 37th Lunar and Planetary Science Conference, Houston, Texas. <http://www.lpi.usra.edu/meetings/lpsc2006/pdf/1953.pdf>
21. ***Lefticariu***, *L.*, Pratt, L. M., Eng, P. J., Gose, S. K., and Bish, D. L. **(2006)** Interaction of radiolytically produced oxidants with the pyrite surface: a Crystal Truncation Rod (CTR) study. The 37th Lunar and Planetary Science Conference, Houston, Texas. [http://www.lpi.usra.edu/meetings/lpsc2006/pdf/2167.pdf](http://www.lpi.usra.edu/meetings/lpsc2006/pdf/1953.pdf)
22. ***Lefticariu***, *L.*, Pratt, L. M., Ripley, E. M., and Schimmelmann, A. **(2006)** Experimental investigation of radiolytic oxidation of elemental sulfur and its relevance to Europa. Europa Focus Group. NASA Ames Research Center, Moffett Field California. <http://astrobiology.asu.edu/focus/europa/discuss/discuss.html>
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