

Lynda B. Williams

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Research Interests: Biogeochemistry, stable isotopes, clay mineralogy, chemical interactions of fluids, minerals, microbes and organic compounds in sediments, with applications in hydrocarbon exploration, environmental issues, medical geology and origins of life.

Education: Ph.D. (2000) Geochemistry, The University of Calgary (Alberta, Canada)
M.S. (1984) Geology, Dartmouth College (Hanover, NH, USA)
A.B. (1980) Geology, Smith College (Northampton, MA, USA)
Field School ('79) Geology Field Camp, Cardwell, MT (Indiana University)

Awards/Honors: *Bailey Distinguished Lecturer Award from the Clay Minerals Society, 2022*
Elected President of the Clay Minerals Society 2018-2019
Recipient of the Academy of Romania Ludovic Mrazec Prize, 2019
Elected Fellow of the Society of Economic Geologists, 2017
Brian Skinner Honorable Mention Award for SEG paper, 2017
17th George Brown Honorary Lecturer, Clay Minerals Group (Min. Soc. Great Britain and Ireland), 2016
M.L. Jackson mid career-award from the Clay Minerals Society, 2009
Elected Fellow of the Geological Society of America, 2006
Elected Councilor Clay Minerals Society, 2006
John Kendall Doctoral Thesis Honorable Mention 2001
ICGS Best Dissertation, University of Calgary 2000
International Clay Conference, Best paper, Ottawa, Ontario 1997
AMAX Exploration Scholarship 1979
Thomas Logue Academic College Scholarship 1976

Professional Societies: Clay Minerals Society
Geochemical Society
Geological Society of America, (Geology and Health Division)
International Medical Geology Association
Mineralogical Society of America

Work Experience:

2009 -present Research Professor, School of Earth and Space Exploration, ASU
• Manager of the Secondary Ion Mass Spectrometry Facility at ASU
2003 - 2009 Associate Research Professor, School of Earth and Space Exploration, ASU.
1994 - 2003 Faculty Research Associate, Center for Solid State Science, ASU.
1991- 1994 Faculty Research Assistant, Department of Geological Sciences, ASU.
1985 - 1991 Research Associate, Basin Research Institute, Louisiana State University.
1984 - 1985 Environmental Science Div., Argonne National Laboratory, Argonne IL.
1982 -1984 Teaching and Research Assistant at Dartmouth College
1980 -1982 Geologist for F.M. Beck Inc., Mineral Exploration Consultant, Yarmouth, ME.

Grants**Current:**

Shock, E. (PI), Gould, I., Hartnett, H., Williams, L. (Co-PIs). Using Organic Compound Reactivity to Reveal Geologic Processes in Habitable Worlds. NASA-Habitable Worlds. \$644,638

Williams, L.B. (PI), Bose, M. and Hervig, R.L. (Co-PIs). Li in kerogen, a potential resource and contributor to the global geochemical cycle. 8/1/2018 – 5/31/22. (\$598,959).

Hervig, R.L. (PI), Bose, M., Till, C., Williams, L.B. and Williams, P. (Co-PIs) Community Facility Support: The Arizona State University SIMS Laboratories. 6/1/2018 – 5/30/2022. (\$1,638,730).

Past:

Williams, L.B., Patel, R., (PIs) Schmidt-Malan, S (Co-PI) Leveraging Geochemical Processes to Combat Drug Resistant Bacteria. ASU/Mayo Seed Grant Funds. 1/1/2020 – 3/31/2021. (\$50,000).

Williams, L.B. (PI), Patel, R. (Co-PI) Mayo Clinic, Rochester, MN: Antibacterial clay effects on pathogenic biofilms. National Science Foundation, EAR-1719325: EAGER funding, 4/1/17-3/31-2020. (\$240,784).

Williams, L.B. (PI) Clay Minerals Society Conference Support for Joint Meeting with Euro-clay 2019. 6/1/2019 – 12/31/2019. (\$20,000).

Williams, L.B. (PI) Supplement: Antibacterial mineral mapping: A new economic geology. NSF Geochemistry and Geobiology, 9/30/2015 – 9/14/2017 (\$70,000).

Shock, E., Gould, I., Williams, L. (Co-PI), 2/2014-1/2017. How minerals control hydrothermal organic reactivity. NSF OCE-MGG (\$448,932).

Hervig, R.L., Williams, P and Williams, L.B. (Co-PI), Facility Support: Arizona State University Secondary Ion Mass Spectrometry Laboratories. NSF-Instrumentation and Facilities 10/2014 – 09/2017. (\$1,049,881).

Williams, L.B. (PI) Antibacterial mineral mapping: A new economic geology. NSF Geochemistry and Geobiology, 9/15/2011 – 9/14/2015. (\$379,775).

Everett Shock (PI), I. Gould, H. Hartnett, J. Holloway and L. Williams (Co-PI's) Organic Geochemical Transformations and the Deep Biosphere: Identifying the Food Sources for Microbes in Sedimentary Systems. NSF Emerging Topics in Biogeochemical Cycles 9/1/2008 – 8/31/2013 (\$ 1,528,290)

Williams, P. et al., (2012) (L.Williams; Collaborator) Acquisition of a Nanosims 50L Imaging Secondary Ion Mass spectrometer. (\$3,266,911)

Williams, L.B. and Hervig, R.L. (2013) CLAS award, seed funding for pilot study on using boron and lithium isotopes for tracing hydrocarbon sources. \$10,000.

Hervig, R.L., Williams, P and Williams, L.B. (Co-PI), 2010, Facility Support: Arizona State University Secondary Ion Mass Spectrometry Laboratory. 2/1/2010 – 6/1/2013 (\$909,546)

Sandra Pizzarello (PI) and Lynda Williams (Co-PI) 2007 – 2009 Meteorite organics: Tracers of molecular asymmetry in Cosmochemistry NASA-Goddard Space Flight Center 018820-001 (\$36,000)

Williams, L.B. (PI), Haydel, S. Co-PI (ASU Biodesign Inst.), Dennis Eberl (USGS), Ross Giese (SUNY Buffalo), 2006-2009 Assessing a clay mineral alternative antibiotic treatment for Buruli ulcer. National Institutes of Health, National Center for Complementary and Alternative Medicine (\$438,970)

Williams, L.B. (PI) and Hervig, R.L. (Co-PI) 2004-2008, A SIMS study of the chemical dynamics of organic/inorganic interactions in sedimentary basins. Lithium Isotopes. U.S. Dept. of Energy, Renewal Grant DE-FG02-04ER15505 (\$400,254)

- Williams, L.B. (P.I.) and Hervig, R.L. (Co-P.I.) 2004-2007 Intra-crystalline boron isotope fractionation in illite/smectite: a geothermometer and paleo-fluid indicator. National Science Foundation Geology and Paleontology EAR-0229583 (\$281,945)
- Williams, L.B. (P.I.), 2002-2003 Smectite incubation of organic molecules in seafloor hydrothermal systems. Polymerization of organic compounds by kinetic pathways of smectite illitization. NSF Small Grant for Exploratory Research (\$50,000)
- Williams, L.B. (P.I.) and Hervig, R.L. (P.D.), 2000-2003, A SIMS study of the chemical dynamics of organic/inorganic interactions in sedimentary basins. U.S. Dept. of Energy, Renewal Grant #DE-FG03-94ER14414 (\$315,106)
- Williams, L.B. (P.I.) and Hervig, R.L. (Co-P.I.) 2001-2002 Boron isotopes in illite/smectite, a potential low temperature geothermometer. NSF Small Grant for Exploratory Research (\$30,000)
- Hervig, R.L. (P.I.) and Williams, L.B. (Co-P.I.), 1997-2000 Chemical Dynamics of Hydrocarbon Reservoirs Investigated by Secondary Ion Mass Spectrometry. U.S. Dept. of Energy, Renewal Grant #DE-FG03-94ER14414 (\$364,326)
- Hervig, R.L. (P.I.) and Williams, L.B. (Co-P.I.), 1995-1996 A Microanalytical (SIMS) Study of the Trace Element and Isotopic Geochemistry of Diagenetic Silicates Supplemental Funds, U.S. Department of Energy, Grant #DE-FG03-94ER14414, Supplement (\$29,046)
- Hervig, R.L. (P.I.) and Williams, L.B. (Co-P.I.), 1993-1996 A Microanalytical (SIMS) Study of the Trace Element and Isotopic Geochemistry of Diagenetic Silicates, U.S. Department of Energy, Grant #DE-FG03-94ER14414, (\$180,000)
- Williams, L.B. (P.I.) 1991-1993, Organic/Inorganic Interactions of Nitrogen in Oilfields, Part1: Geochemistry, U.S. Department of Energy, Grant # DE-FG02-91ER14218, (\$107,975)
- Williams, L.B. (P.I.) 1991, Continuing Research Grant for Analytical Expenses, LSU, Basin Research Institute, (\$5000)
- Williams, L.B. (P.I.) and Ferrell, R.E. (P.D.), 1991, Fourier Transform Infrared Spectrometer System, LSU Basin Research Institute, (\$20,000)
- Williams, L.B. (P.I.) and Ferrell, R.E. (P.D.), 1987-1990, Ammonium Silicate Diagenesis and its Influence on the Interpretation of Fixed-Ammonium as an Exploration Tool, U.S. Department of Energy, Grant #DE FG05-87ER13748, (\$183,349)

Patents:

US 9,429,554 B2 (08/30/2016) Boron and lithium isotopic method for tracing hydrocarbons and their by-products. Lynda B. Williams and Richard L. Hervig, Inventors, ABOR, Assignee.

Provisional Patents filed:

- International Patent Application WO 2010/141070 A1, Published 12/9/2010, Williams, L.B., (ASU) and Eberl, D.D. (USGS). Synthetic antibacterial clay compositions and method of using same.
- US patent application, Invention ID D18-169, filed 6/25/2018 Bockisch, C* (Shock, Gould, Hartnett, Williams) Nickel-Catalyzed reduction and deoxygenation
- US patent application number 62/915,334 filed on 10/15/2019, Robinson, K.* (Bockisch, Shock Gould, Hartnett, Williams), Geomimetic hydrocarbon synthesis.
- US patent Invention ID M20-094P, filed 10/7/2019, Loescher, G.* (Shock, Gould, Hartnett, Williams) Single Step Process for production of Phenol and Copper Metal

Manuscripts in progress (*denotes student co-author)

- *Teichert, Zebediah., Ebel, Cortland, Bose, Maitrayee., Williams, Lynda B. (in preparation) Lithium content and isotope compositions after contact metamorphism of a single coal seam. To be Submitted to Chemical Geology.
- Norbert Clauer, Lynda B. Williams, and I. Tonguç Uysal (in revision) Boron and lithium isotopic signatures of nanometer-sized smectite-rich clays from bentonite beds of the Campos Basin (Brazil). To be submitted to Clays and Clay Minerals

Refereed Publications

78. *Teichert, Z., Bose, M., Williams, P., Hervig., R.L., Williams. L.B. (in press) Secondary ion mass spectrometry of lithium content and isotope ratios in carbon matrices. *Geostandards and Geoanalytical Research*.
77. Clauer, N., Williams, L.B., Fallick, A.E. (in press) Tracing organic-inorganic interactions by light stable isotopes (H, Li, B, O) of an oil-bearing shale and its clay fraction during hydrous pyrolysis. *Clays and Clay Minerals*.
76. Williams, L.B., Schmidt-Malan, S.M., Patel, R. (in press) Evaluating *in vivo* applications of a natural antibacterial clay to wound infections. Invited paper for Special Issue of *Clays and Clay Minerals* on Clay Minerals in Health Applications.
75. Finn-Johnston, Kristin N., Gould, I.R., Williams, L.B., Hartnett, H.E. and Shock, E.L. (2021) Hydrothermal One-Electron Oxidation of Carboxylic Acids in the Presence of Iron Oxide Minerals. *ACS Earth & Space Chemistry*. 5: 10: 2715–2728.
<https://doi.org/10.1021/acsearthspacechem.1c00139>
74. Williams, L.B. (2021) Antibacterial Clays: Scientific investigation of their practical applications in medicine. Chapter 20 *In* (Finkelman, R. Seigel, M. and Selinus, O., editors) *Practical Applications of Medical Geology*, Springer. pp. 671-696. ISBN 978-3-030-53892-7
https://doi.org/10.1007/978-3-030-53893-4_20
73. *Robinson, Kirtland J.; Gould, Ian; Hartnett, Hilairy H.; Williams, Lynda B.; Shock, Everett L. (2021) Hydrothermal Experiments with Protonated Benzylamines Provide Predictions of Temperature-Dependent Deamination Rates for Geochemical Modeling. *ACS Earth & Space Chemistry*. <https://doi.org/10.1021/acsearthspacechem.1c00104>
72. *Robinson, K.J., Bockisch, C., Gould, I.R., Liao, Y., Yang, Z., Glein, C.R., Shaver, G.D., Hartnett, H.E., Williams, L.B., Shock, E.L. (2021) Quantifying the extent of amide and peptide bond synthesis across conditions relevant to geologic and planetary environments. *Geochimica et Cosmochimica Acta* 300: 318-332.
71. * Kristin N. Johnson-Finn, Ian R. Gould, Lynda B. Williams, Hilairy E. Hartnett, Everett L. Shock (2020) Kinetics and mechanisms of hydrothermal ketonic decarboxylation. *ACS Earth Space Chem*. 4: 2082–2095. <https://dx.doi.org/10.1021/acsearthspacechem.0c00189>
70. *Martos-Villa, R.; Mata, M.P.; Williams, L.B.; Nieto, F.; Arroyo Rey, X.; Sainz-Díaz, C.I. (2020) Evidence of Hydrocarbon-Rich Fluid Interaction with Clays: Clay Mineralogy and Boron Isotope Data from Gulf of Cádiz Mud Volcano Sediments. *Minerals*, **10**: 651.
<https://doi:10.3390/min10080651>
69. *Teichert, Zebediah, Bose, Maitrayee, Williams, Lynda B. (2020) Lithium isotope compositions of organic-rich rocks: Potential tracer of hydrocarbons. *Chemical Geology* 549 (2020) 119694. <https://doi.org/10.1016/j.chemgeo.2020.119694>
68. *Robinson, K.J., Fecteau, K.M., Gould, I.R., Hartnett, H.E., Williams, L.B. and Shock, E.L. (2020) Metastable equilibrium of substitution reactions among oxygen- and nitrogen-

- bearing organic compounds at hydrothermal conditions. *Geochim. et Cosmochim Acta* 272:93-104.
67. *Fecteau, K.M., Gould, I.R., Williams, L.B., Hartnett, H.E., *Shaver, G., *Johnson K.N., Shock, E. (2019) Bulk gold catalyzes hydride transfer in the Cannizzaro and related reactions. *New J. Chem.*, 2019, 43: 19137- 19148. <https://doi.org/10.1039/c9nj04029c>
 66. *Bockisch, C., Lorange, E.D., *Shaver, G., Hartnett, H.E., Williams, L.B., Shock, E.L., Gould, I.R. (2019) Selective green hydrothermal reductions using geomimicry. *Green Chemistry*. <https://doi.org/10.1039/c9gc00636b>
 65. Shock, E., *Bockisch, C., *Estrada, C., *Fecteau, K., Gould, I., Hartnett, H., *Johnson, K., *Robinson, K., *Shipp, J., Williams, L. (2019) Earth as Organic Chemist, Chapter 7 in (B. Orcutt, R. Dasgupta and I. Daniels, eds.) *Whole Earth Carbon*, Cambridge Univ. Press.
 64. *Fecteau, K.M., Gould, I.R., Glein, C.R., Williams, L. B., Hartnett, H.E., Shock, E.L. (2019) Production of carboxylic acids from aldehydes under hydrothermal conditions: A kinetics study of benzaldehyde. *ACS Earth and Space Chemistry* 3, 170–191. <https://doi.org/10.1021/acsearthspacechem.8b00130>
 63. *Köster, M.H, Williams, L.B., Kudejova, P. and Gilg, H.A. (2019) The boron isotope geochemistry of smectites from sodium, magnesium and calcium bentonite deposits. *Chemical Geology*, 510: 166-187. <https://doi.org/10.1016/j.chemgeo.2018.12.035>
 62. Williams, L.B., (2019) Natural antibacterial clays: Historical uses and modern advances. *Clays and Clay Minerals* 67: 7-24.
 61. *Robinson, K.J., Gould, I.R., *Fecteau, K.M., Hartnett, H.E., Williams, L.B., Shock, E.L. (2019) Deamination reaction mechanisms under acidic hydrothermal conditions. *Geochimica et Cosmochimica Acta*. 244: 113-128.
 60. *Cafilisch, K.M., Schmidt-Malan, S.M., Mandrekar, J.N., Karau, M.J., *Nicklas, J.P. Williams, L.B. and Patel, R. (2018) Antibacterial activity of reduced iron clay against pathogenic bacteria from wound infections. *International Journal of Antimicrobial Agents* 52: 692-696. <https://doi.org/10.1016/j.ijantimicag.2018.07.018>
 59. *Liivamägi, S*, Środoń, J. Bojanowski, M., Gerdes, A., Stanek, J., Williams, L., Szczerba, M. (2018) Paleosols on the Ediacaran basalts of the East European Craton: a unique record of paleoweathering with minimum diagenetic overprint. *Precambrian Research*. <https://doi.org/10.1016/j.precamres.2018.07.020>
 58. *Yang, Z., Gould, I.R., Williams, L.B., Hartnett, H.E., Shock, E.L. (2018) Effects of iron-containing minerals on hydrothermal reactions of ketones. *Geochim. Cosmochim. Acta* 233: 107-126. <https://doi.org/10.1016/j.gca.2017.11.020>
 57. Clauer, Norbert, Williams, Lynda, Lemarchand, Damien, Florian, Pierre and Honty, Miroslav (2018) Illitization decrypted by B and Li isotope geochemistry of nanometer sized illite crystals in bentonite beds, East Slovak Basin. Review Article. *Chemical Geology* 477: 177-194. <https://doi.org/10.1016/j.chemgeo.2017.10.027>
 56. Bobos, Iuliu and Williams, L.B. (2017) Boron, lithium and nitrogen isotopes of hydrothermal tobelite from Harghita Bay, Romania, *Chemical Geology*, 473:22-39. <http://dx.doi.org/10.1016/j.chemgeo.2017.10.005>
 55. *Morrison, Keith D., Williams, Stanley N. and Williams, Lynda B., (2017) The Anatomy of an Antibacterial Clay Deposit: A New Economic Geology. *Economic Geology*; 112 (7): 1551–1570. <https://doi.org/10.5382/econgeo.2017.4521>
Note: Awarded the Brian Skinner Best Paper Honorable Mention 2017
 54. *Londoño, S.C., Hartnett, H. and Williams, L.B. (2017) The Antibacterial Activity of Aluminum in Clay from the Colombian Amazon *Environmental Science and Technology*. 51:2401-2408. DOI: [10.1021/acs.est.6b04670](https://doi.org/10.1021/acs.est.6b04670)

53. Williams, L.B., (2017) Geomimicry: Harnessing the antibacterial action of clays. *Clay Minerals*, 52: 1-24.
52. *Morrison, K. D., Misra, R. and Williams, L.B. (2016) Unearthing the Antibacterial Mechanism of Medicinal Clay: A Geochemical Approach to Combating Antibiotic Resistance. *Nature Scientific Reports* 5, 19043; DOI 10.1038/srep19043.
50. *Londoño, S.C. and Williams, L.B. (2016) Unraveling the antibacterial mode of action of a clay from the Colombian Amazon *Environmental Geochemistry and Health*. 38:(2): 363-379. DOI 10.1007/s10653-015-9723-y.
49. Williams, L.B. Elliott, W.C. and Hervig, R.L. (2015) Tracing hydrocarbons in gas shale using boron and lithium isotopes: Denver Basin USA, Wattenberg Gas Field. *Chemical Geology* 417:404-413. DOI 10.1016/j.chemgeo.2015.10.027
48. *Yang, Ziming; *Lorance, E.D., *Bockisch, C., Williams, L. B., Hartnett, H. E., Shock, E.L., Gould, I. R. (2014) Hydrothermal Photochemistry as a Mechanistic Tool in Organic Geochemistry. The Chemistry of Dibenzylketone. *J. Organic Chemistry* 79: 7861-7871. DOI 10.1021/jo500899x.
47. *Shipp, Jessie A., Gould, Ian R., Shock, Everett L., Williams, Lynda B. and Hartnett, Hilairy E. (2014) Sphalerite is a geochemical catalyst for carbon-hydrogen bond activation. *Proceedings of the National Academy of Science* 111: 32: 11642-11645. DOI 10.1073/pnas.1324222111.
46. Williams, Lynda B. and Hillier, Stephen (2014) Kaolins and Health: from first grade to first aid. *Elements, an International Magazine of Mineralogy, Geochemistry and Petrology*, invited chapter. July 2014, 10: 207-211.
45. *Pauly, B., Williams, L.B., Hervig, R.L., Schiffman, P., Zierenburg, R. (2014) Methods for in-situ SIMS microanalysis of boron and its isotopes in palagonite. *Clays and Clay Minerals*. 62: 3: 224-234.
44. Clauer, N., Williams, L.B., Fallick, A.E. (2014) Genesis of nanometric illite crystals elucidated by light-element (hydrogen, lithium, boron and oxygen) isotope tracing, and K-Ar and Rb-Sr dating, *Chemical Geology*, 383: 26 – 50. DOI 10.1016/j.chemgeo.2014.05.025
43. *Morrison, K.D., Underwood, J.C., Metge, D.W., Eberl, D.D. and Williams, L.B. (2014) Mineralogical variables that control the antibacterial effectiveness of a natural clay deposit. *Environmental Geochemistry and Health*. 36: 4: 613-631.
42. Williams, L.B., Środoń, J., Huff, W., Clauer, N. and Hervig, R.L. (2013) Light element distributions in Baltic Basin bentonites: Potential for tracing hydrocarbons. *Geochimica et Cosmochimica Acta* 120: 582-599.
41. Pizzarello, S., *Davidowski, S., Holland, G.P., Williams, L.B. (2013) Processing of meteoric organic materials as a possible analog of early molecular evolution in planetary environments. *Proc. Nat. Acad. Sci.* 110: 39: 15614-15619.
40. *Shipp, J., Gould I., Williams, L.B, Shock E. Hartnett H.E., (2013) Organic Functional Group Transformations in Water at Elevated Temperature and Pressure: Reversibility, Reactivity, and Mechanisms. *Geochimica et Cosmochimica Acta* 104: 194-209.
39. *Ziming Yang, Gould, I.R., Williams, L.B., Hartnett, H.E. and Shock, E.L. (2012) The central role of ketones in reversible and irreversible hydrothermal organic functional group transformations. *Geochimica et Cosmochimica Acta* 98: 48-65.
38. Pizzarello, S. and Williams L.B. (2012) Ammonia in the early solar system: an account from carbonaceous meteorites. *Astrophysical Journal*. 749: 161-166.
37. Williams, L.B., Clauer, N.C. and Hervig R.L. (2012) *Light stable isotope microanalysis of clays in sedimentary rocks*. In (Paul Sylvester, ed.) Quantitative mineralogy and microanalysis of

- sediments and sedimentary rocks. Mineralogical Association of Canada Short Course **42**: 55-73.
36. *Nele Muttik, Kalle Kirsimäe, Horton E. Newsom, Lynda B. Williams (2011) Boron isotope composition of secondary smectite in suevites at the Ries crater, Germany: implications for the origin of alteration fluids. *Earth and Planetary Science Letters*, **310**: 244-251.
 35. Williams, L.B., Metge, D.W., Eberl, D.D., Harvey, R.W., *Turner, A.G., Prapaipong, P., Poret-Peterson, A.T. (2011) What makes natural clays antibacterial? *Environmental Science and Technology*, **45**: 3768-3773.
 34. Pizzarello, Sandra, Williams, Lynda B., Lehman, Jennifer, Holland, Gregory and Yarger, Jeffery L. (2011) Ammonia in primitive asteroids: a case for exobiology. *Proceedings of the National Academy of Science*, **108**: 11: 4303-4306.
 33. Williams, L.B., Holloway, J.R., *Canfield, B., Glein, C., Dick, J., Hartnett, H. Shock, E. (2011) Birth of biomolecules from the warm wet sheets of clays near spreading centers, In *Earliest Life on Earth*, Sue Golding and Miryam Glikson eds., Springer Publishing. 316 pp.
[DOI 10.1007/978-90-481-8794-2](https://doi.org/10.1007/978-90-481-8794-2)
 32. Williams, L.B. and Haydel, S.E. (2010) Evaluation of the medicinal use of clay minerals as antibacterial agents, *International Geology Review*, **52**: (7/8): 745-770.
 31. Williams, L.B., Haydel, S.E. and Ferrell, R.E. (2009) Bentonites, Band-aids and Borborygmi, *Elements, an International Magazine of Mineralogy, Geochemistry and Petrology*. Special Issue on Bentonites, edited by Derek Bain, **5**: 2: 99-102.
 30. Williams, L.B., Haydel, S.E., Giese, R.F. and Eberl, D.D. (2008) Chemical and mineralogical characteristics of French green clays used for healing. *Clays and Clay Minerals* **56**: 4: 437-452.
 29. Haydel, S.E. *Remenih, C.M. and Williams, L.B. (2008) Broad-spectrum in vitro antibacterial activities of clay minerals against antibiotic-susceptible and antibiotic-resistant bacterial pathogens. *Journal of Antimicrobial Chemotherapy*, **61**, 353-361.
 28. Williams, L.B. (2007) Clay mineral stable-isotope geochemistry. *Euroclay Conference Proceedings*. Aveiro, Portugal. July 23-27, 2007. Invited lectures, p.42-51.
 27. Williams, L.B., *Turner, A. and Hervig, R.H. (2007) Intracrystalline boron isotope partitioning in illite-smectite: Testing the geothermometer, *American Mineralogist*, **92**: 1958-1965.
 26. *Yabuta, H., Williams, L.B., Cody, G.D., Alexander C.M.O'D. and Pizzarello, S., (2007) The insoluble carbonaceous material of CM chondrites: A possible source of discrete organic compounds under hydrothermal conditions, *Meteoritics & Planetary Science*, **42**: 37-48.
 25. Williams, L.B. and Hervig, R.L. (2006) Crystal size dependence of illite-smectite isotope equilibration with changing fluids. *Clays and Clay Minerals* **54**: 531-540.
 24. *Michalski, J.R., *Kraft, M.D., Sharp, T.G., Williams, L.B. and Christensen, P.R. (2006) Emission spectroscopy of clay minerals and evidence for poorly crystalline aluminosilicates on Mars from TES data. *J. Geophys. Res.-Planets*, **111**: E3004: 14p.
 23. Williams, L.B., and Hervig, R.L. (2005) Lithium and boron isotopes in illite/smectite: The importance of crystal size. *Geochim. et Cosmochim. Acta* **69**: 24: 5705-5716.
 22. Williams, L.B., *Canfield, B.C. *Voglesonger, K.M, and Holloway J.R., 2005. Organic compounds in a primordial womb. *Geology*, **33**: 11: 913-916.
 21. *Michalski, J.R., *Kraft, M.D., Sharp, T.G., L.B. Williams, P.R. Christensen (2005) Mineralogical constraints on the high silica Martian surface component observed by TES. *Icarus* **174**: 161-177.
 20. Williams, L.B., and Hervig, R.L. (2004) Boron isotope composition of coals: A potential tracer of organic contaminated fluids. *Applied Geochemistry* **19**: 1625-1636.

19. Williams, L.B., Holland, M., Eberl, D.D., T. Brunet and L. Brunet de Coursou (2004) Killer Clays! Natural antibacterial clay minerals. Feature article. (Invited) London *Mineralogical Society Bulletin*, **139**: 3-8.
18. Williams, L.B. and Hervig, R.L. (2002) Intracrystalline boron isotope variations in clay minerals: a potential low-temperature single mineral geothermometer. Invited paper. *American Mineralogist* **87**: 1564-1570.
17. Hervig, R.L., Moore, G.M., Williams, L.B., Peacock, S.M., Holloway, J.R., and Roggensack, K.R. (2002) Isotopic and elemental partitioning of boron between hydrous fluid and silicate melt. *American Mineralogist Letter*, **87**:769-774.
16. Williams, L.B., Weiser, M.E., Hutcheon, I., and Hervig, R.L. (2001) Application of boron isotopes to understanding fluid/rock interactions in a hydrothermally stimulated oil-reservoir in the Alberta basin, Canada. *Geofluids* **1**: 229-240.
15. Williams, L. B., Hervig, R. L., Holloway, J. R., and Hutcheon, I. (2001) Boron isotope geochemistry during diagenesis: Part 1. Experimental determination of fractionation during illitization of smectite. *Geochimica Cosmochimica Acta* **65**: 11: 1769-1782.
14. Williams, L.B., Hervig, R.L., and Hutcheon, I. (2001) Boron isotope geochemistry during diagenesis: Part 2. Applications to organic-rich sediments. *Geochimica et Cosmochimica Acta* **65**: 11: 1783-1794.
13. Williams, L.B., Hervig, R.L., Wieser, M.E., and Hutcheon, I. (2001) The influence of organic matter on the boron isotope geochemistry of the Gulf Coast Sedimentary Basin, USA, *Chemical Geology*, **174**: 445-461.
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6. Williams, L.B. and Ferrell, R.E. Jr. (1991) Ammonium substitution in illite during maturation of organic matter: *Clays and Clay Minerals* **39** (4): 400 - 408.
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4. Williams, Lynda B., Ferrell, Ray E., and Carpenter, Paul K. (1988) CHEMOD: an automated chemical and modal analysis technique, *American Mineralogist* **73**: 1457-1464.

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2. Hull, A.B. and Williams, L.B. (1985) The geochemistry of brine in rock salt under temperature gradients and gamma-radiation fields; a selective bibliography, *Argonne National Laboratory, Technical Memorandum*, 73 p.
1. Benton, L.B. (previous name) (1984) NH₄-geochemistry near sedimentary exhalative deposits in the Selwyn Basin: a possible exploration tool, *Yukon Exploration and Geology J. 1983*, Jim Morin (ed.), Whitehorse, Yukon, p. 45-54.

Abstracts/Presentations

- Williams, L.B., Schmidt-Malan, S.M., Patel, R. (2021) Preliminary evaluation of natural antibacterial clays for treating wound infections. Clay Minerals Society Workshop on Clay Minerals in Health Applications, Oct 14, 2021. Invited.
- Teichert, Z., Bose, M., Williams, P., Hervig, R.L., Williams, L.B. (2021) Quantification of lithium content in organic matrices by Secondary Ion Mass Spectrometry. Abstract Goldschmidt Conference, Lyon France, 2021.
- Schmidt-Malin, S.M., Patel, R., Williams, L.B. Evaluating *in vivo* applications of a natural antibacterial clay to wound infections. GeoHealth (2020), Bari Italy, Sept 1, 2020.
- Teichert, Z., Bose, M., Williams, L.B. (2019) Evaluating thermal effects on lithium isotopes in kerogen: Implications for energy resources. Geological Society of America, 22-25 Sept, Phoenix, AZ.
- Williams, L.B., (2019) Teaching the art of solid-state stable isotope measurements in clays: What can be learned from nanometric isotope analyses? Invited talk; Euroclay Conference Paris, France, July 1-5, 2019.
- Teichert, Z., Bose, M., Williams, L.B. (2019) Lithium isotope systematics in coal. Euroclay Conference, Paris France, July 1-5, 2019.
- *Cafilisch, K.M., Schmidt-Malan, S.M., Williams, L.B., Patel, R. (2019) Activity of Oregon Mineral Technologies Blue clay against *Cutibacterium acnes* biofilms. American Society for Microbiology annual meeting, San Francisco, June 20-24, 2019.
- *Estrada, C.F., *Bockisch, C. Fecteau, K., Gould, I., Hartnett, H, Robinson, K., Williams, L., Shock, E. (2019) Goethite surface inhibition of the dehydration of cis-1,2-cyclohexanediol at 200°C. Am. Chem. Soc. 257th National Mtg., Orlando, Florida.
- Williams, L.B. Eberl, D.D., Londoño, S.C., Morrison, K.D., Schmidt-Malan, S.M. Cafilisch, K.M. and Patel, R. (2018) Antibacterial clays: From ancient uses to modern medicine. American Geophysical Union Abst. Washington, D.C. Dec 9-14.
- Londoño, S.C. and Williams, L.B. (2018) Providing a scientific basis for the use of a healing clay among the Uitoto of the Colombian Amazon. American Geophysical Union Abst. Washington, D.C. Dec 9-14.
- *Elisha, B., Katzir, Y., Vapnik, Y., Williams, L. Kylander-Clark, A., Dvir, O. (2018) Syn-metamorphic fluids as the source for rare element pegmatites: B isotopes, fluid inclusions and U-Pb petrochronology of the late Pan-African Elat metamorphic complex, S. Israel. Goldschmidt Conference, Boston, MA.
- *Teichert, Z., Williams, L.B. and Bose, M. (2018) A study of lithium isotope alteration in meteoritic organics. CMS 55th Annual Conference, Urbana, IL, June, 2018.
- Williams, L.B. and Bose, M. (2018) Measurements of the lithium isotope heterogeneity in coals and kerogen indicate an unrecognized lithium contribution to the global geochemical cycles. CMS 55th Annual Conference, Urbana, IL., June 2018.
- Morrison, K.M. and Williams, L.B., (2018) The Anatomy of an Antibacterial Clay Deposit. CMS 55th Annual Conference, Urbana, IL. June 2018.
- *Cafilisch, K.M., Schmidt-Malan, S.M., Mandrekar, J.N., Karau, M.J., Nicklas, J.P., Williams, L.B., Patel, R. (2018) Investigating the Antibacterial Properties of OMT Blue Clay Against Drug-Resistant Bacterial Biofilms. Am. Microbiol. Soc. Annual Meeting.

- Schmidt-Malan, S.M., *Cafilisch K.M., Mandrekar, J.N., Williams L.B., Patel R. (2018), Activity of antibacterial clay against drug-resistant bacteria. CMS 55th Annual Conference, Urbana IL
- Williams, L.B., (2017) Nano-secondary ion mass spectrometry of kerogen nanopores in oil shale. Annual conference of the Clay Minerals Society, Edmonton, Alberta, Canada.
- Shock, E., *Robinson, K., *Bockisch, C., *Johnson, K., *Fecteau, K., Gould, I., Williams, L., Hartnett, H. (2017) Deep organic geochemistry and metastability. Deep Carbon Observatory Conference, St. Andrews, Scotland, March 2017.
- *Robinson, K., Gould, I., Hartnett, H., Williams, L., Shock, E. (2017) Hydrothermal reactions of model amines as proxies for prebiotic chemistry. Astrobiology Science Conference, Mesa, AZ.
- *Bockisch, C.D., Williams, L.B., Hartnett, H.E., Shock, E.L. and Gould, I.R. (2017) Nickel-catalyzed reductions and deoxygenations at hydrothermal conditions. Astrobiology Science Conference, Mesa, AZ.
- Williams, L.B. (2016) Tracing hydrocarbons in kerogen nanopores using Nano-Secondary Ion Mass Spectrometry. Invited lecture. Colloquium, University of Oklahoma (Sept 15, 2016).
- Williams, L.B. (2016) Geomimicry: Harnessing the antibacterial action of clays. Plenary Lecture (invited) for the 8th Mid-European Clay Conference, Kocise Slovakia, July 4-8, 2016.
- Williams, L.B., (2016) How to identify antibacterial clays. Clay Minerals Society 53rd Annual Meeting, Atlanta, GA June 5-8, 2016.
- Williams, L.B., Morrison, K.D., Eberl, D.D. and Williams, S.N. (2015) The anatomy of an antibacterial clay mine. Euroclay Conference, Edinburgh, Scotland, July 2-8, 2015.
- Williams, L.B., and Bose, M. (2015) Characterizing the contents of nanopores in black shale using Nano-Secondary Ion Mass Spectrometry (SIMS) Euroclay Conference, Edinburgh, Scotland July 2-8, 2015.
- Morrison, K.D. and Williams, L.B. (2015) Unearthing the antibacterial activity of medicinal clays; the role of metal toxicity. Euroclay Conference, Edinburgh, Scotland July 2-8, 2015.
- Köster, M.H., Williams, L.B., Kudejova, P., Dohrmann, R., Gilg, H.A. (2015) Boron content and boron isotope composition of Na, Ca and Mg bentonites. Euroclay Conference, Edinburgh, Scotland July 2-8, 2015.
- Williams, L.B., (2015) The mystery of antibacterial clays: a story of mud, metals and metabolic malfunction. International Applied Geochemistry Conference, Tucson, Az.
- Londoño, S.C. and Williams, L.B., (2015) Evaluating the antibacterial action of a clay from the Colombian Amazon. International Applied Geochemistry Conference, Tucson, Az.
- Londoño, S.C. and Williams, L.B. (2015) Evidence for clay mineral sorption of bacterial nutrients causing growth inhibition. Geological Society of America Annual Meeting, Baltimore, MD.
- Bockish, C.D., Williams, L.B., Hartnett, H.E., Shock, E.L., Gould, I.R. (2015) Dehydration and deoxygenation of organic compounds under hydrothermal conditions: Geomimicry. Geological Society of America Annual Meeting, Baltimore, MD.
- Johnson, K.N., Williams, L.B., Gould, I.R., Hartnett, H.E., Shock, E.L. (2015) Mineral-assisted organic transformations of carboxylic acids at hydrothermal conditions. Geological Society of America Annual Meeting, Baltimore, MD.
- Johnson, K., Gould, I, Williams, L., Hartnett, H., Shock, E. (2015) Hydrothermal mineral-assisted organic transformations of carboxylic acids. Astrobiology Science Conference, 2015, Chicago, IL.
- Hartnett, H., Shipp, J., Yang, Z., Williams, L., Gould, I., Shock, E. (2015) Minerals can be catalysts for organic reactions in hydrothermal environments (invited). American Chemical Society, Geochemistry Division, 249th national Meeting, March 22-26, Denver, CO.
- Londono, S.C. and Williams, L.B. (2014) The cell-clay separation and elemental composition analysis applied to antibacterial clay research. Geological Society of American Annual Meeting, Vancouver, B.C. Oct. 19-23, 2014.
- Williams, L.B., Bose, M., Anderson, J.R. (2014) Boron isotope measurements of oil shale and coal combustion products. Goldschmidt, Sacramento CA. June 9-13, 2014.
- Morrison, K.D. and Williams, L.B. (2014) The antibacterial activity of minerals provides new insights on metal toxicity. Clay Minerals Society annual meeting, College Station, Texas. (2nd place award)
- Londono, S.C. and Williams, L.B. (2014) Transmission electron microscopy in antibacterial clay investigations. Clay Minerals Society annual meeting, College Station, Texas.

- Williams, L.B. and Hervig, R.L. (2013) Unconventional isotopes in unconventional oil shales. Clay Minerals Society 50th Anniversary meeting, Champaign-Urbana, IL, Oct 6-10, 2013.
- Morrison, K.D. and Williams, L.W. (2013) Mineralogical and geochemical variations in an antibacterial clay deposit. Clay Minerals Society 50th Anniversary meeting, Champaign-Urbana, IL, Oct 6-10, 2013.
- Londoño, S. C. and Williams, L.B., (2013) Evaluating the role of zeta potential in a natural antibacterial clay from the Colombian Amazon. Clay Minerals Society 50th Anniversary meeting, Champaign-Urbana, IL, Oct 6-10, 2013.
- Martos-Villa, R., Campo, M.P.M., Williams, L.B., Nieto, F. and Sainz-Diaz, I. (2013) Clay mineralogy and B isotope data of mud volcano sediments of the Gulf of Cádiz: Evidence of interactions of hydrocarbon-rich fluids with clays at depth. Geophysical Research Abstracts, European Geophysical Union General Assembly 2013. Clay Minerals Society 50th Anniversary meeting, Champaign-Urbana, IL, Oct 6-10, 2013.
- Mata, P., Williams, L.B., Nieto, F. Martos, R. and Sainz-Diaz, I. (2012) Preliminary B and Li isotope data of illite-smectite from mud volcano sediments from the Gulf of Cadiz. Mineralogical Society of Spain. 16: 100 – 101.
- Williams, L.B. (2013) Healing clay processes. 5th International Medical Geology Association meeting, MEDGEO 2013, August 25-29, Arlington, VA.
- Londoño, S. C., Williams, L.B. (2013) Explorativo of the cytotoxicity of antibacterial natural clay of lacustrine origin. 5th International Medical Geology Association meeting, MEDGEO 2013, August 25-29, Arlington, VA.
- Morrison, Keith D.*; Williams, Lynda B. (2013) Antibacterial minerals: establishing an antibacterial mechanism. 5th International Medical Geology Association meeting, MEDGEO 2013, August 25-29, Arlington, VA.
- Morrison, K.D. and Williams, L.B., (2012) Evaluating the role of iron in antibacterial minerals. Geological Society of America Annual Meeting, Charlotte, NC, Abst. 212233.
- Londoño, S. C. and Williams, L.B. (2012) Unraveling the mode of action for a natural antibacterial clay of lacustrine origin. Geological Society of America Annual Meeting Charlotte, NC, Abst. 213025.
- Bruce D. Pauly, Lynda B. Williams, Richard L. Hervig, Robert A. Zierenberg, and Peter Schiffman (2012) Determination of geochemical characteristics of glass alteration environments using boron isotopes. American Geophysical Union Annual meeting, San Francisco, CA.
- Morrison, K. and Williams, L.B. (2012) Interactions between antibacterial clays and bacteria: Determining the reactivity and geochemistry of transition metals. Clay Minerals Society Annual Meeting, Golden, CO.
- Londoño, S. C. and Williams, L.B. (2012) Physical and chemical characterization of an antibacterial clay from the NW Amazon Basin: Implications for its mode of action. Clay Minerals Society Annual Meeting, Golden, CO.
- Williams, L.B., Hervig, R.L. Šrodoń, J., Huff, W., Clauer, N (2012) Organic maturity and hydrocarbon migration recorded by nitrogen, boron and lithium trace elements and isotopes in authigenic illite from the Baltic Basin. Clay Minerals Society Annual Meeting, Golden, CO.
- Williams, L.B., Clauer, N. and Hervig, R.L. (2012) Light stable isotope microanalysis of clays in sedimentary rocks. Geological Society of Canada-Mineralogical Society of Canada Annual Meeting, St. Johns, Newfoundland. May, 25-26. Invited Lecture for Short Course on Quantitative Mineralogy and Microanalysis of Sediments and Sedimentary Rocks.
- Williams, L.B. and Hervig, R.L. (2011) The boron isotopic composition of elephant dung: Inputs to the global boron budget. American Geophysical Union Annual meeting, San Francisco. V13a 2582.
- Williams, L.B. and Hervig, R.L. (2011) What's all the stink about BO-? Using negative molecular ions to measure boron isotopes in samples with trace boron. American Geophysical Union Annual meeting, San Francisco. V13a 2581.
- Yang, Z., Gould, I.R., Hartnett, H.E., Williams, L.B. Shock, E.L. (2011) Pathways and mechanisms for hydrothermal reactions of ketones. American Geophysical Union Annual meeting, San Francisco.
- Shipp, J., Hartnett, H.E., Gould, I.R., Shock, E., Williams, L.B., (2011) Reversible interconversion between alkanes, alenes, alcohols and ketones under hydrothermal conditions. American Geophysical Union Annual meeting, San Francisco. V11b 2522.
- Williams, L.B. (2011) Antibacterial Clays and their Potential for Medicinal Applications. GEOMED 2011,

- Bari Italy, Sept 20-25. Invited Plenary Lecture.
- Bobos, I and Williams, (2011) L.B., Boron, lithium and nitrogen isotope geochemistry of K- and NH₄-rich illite/smectite clays in fossil hydrothermal systems. Goldschmidt Conference, Prague, Czech Republic, Mineralogical Magazine, Vol. 75 (3): 539.
- Muttik, Nele, Kirsimae, Kalle, Newsom, Horton E. and Williams, Lynda B. (2011), Boron isotope composition of smectite in suevites at the Ries Crater, Germany. Lunar and Planetary Science Conference, Houston, Tx Abst. 2413.
- Williams, L.B. (2010) What makes clay minerals antibacterial? Geological Society of America. Geological Society of America, Abstracts with Programs, Vol. 42, No. 5, p. 220
- Williams, L.B., Hervig, R.L. and Srodon, J. (2010) Ex-situ studies of nanominerals by Secondary Ion Mass Spectrometry. Goldschmidt Conference, Knoxville Tennessee. June 13-18, 2010. Geochim. Cosmochim. Acta Supplement 74(12).
- Holloway, J., Williams, L., Canfield, B., Dick, J., Glein, C. Hartnett, H. and Shock, E. (2010) Abiotic organic synthesis in clays. Goldschmidt Conference, Knoxville, TN, June 13-18. Geochim. Cosmochim. Acta Supplement 74(12).
- Glein, C.R., Gould, I.R., Williams, L.B., Hartnett, H.E. and Shock, E.L. (2010) Mechanistic organic geochemistry of carboxylic acids. Goldschmidt Conference, Knoxville Tennessee. June 13-18, 2010. Geochim. Cosmochim. Acta Supplement 74(12).
- Shipp, J.A., Hartnett, H.E., Gould, I.R., Shock, E.L. and Williams, L.B. (2010) Mineral effects on the interconversion between alkanes and alkenes in hydrothermal systems. Goldschmidt Conference, Knoxville Tennessee. June 13-18, 2010. Geochim. Cosmochim. Acta Supplement 74(12).
- Yang, Z., Gould, I.R., Williams, L.B., Hartnett, H.E. and Shock, E.L. (2010) Reversible functional group interconversion in organic hydrothermal reactions; the central role of ketones. Goldschmidt Conference, Knoxville Tennessee. June 13-18, 2010. Geochim. Cosmochim. Acta Supplement 74(12).
- Ross, D.K., Ito, M., Rao, M.N., Hervig, R., Williams, L.B., Nyquist, L.E. and Peslier, A., (2010) Jarosite in the Shergottite Que 94201. Lunar and Planetary Science Conference, Houston, Tx.
- Metge, D.W., Harvey, R.W., Eberl, D.D., Wasylenki, L.E. and Williams, L.B. (2009) Evaluating the oxidation state of antibacterial minerals. Goldschmidt conference, Davos, Switzerland. Volume 73, Issue 13 Supplement 1, A875.
- Williams, L.B. (2009) Stable isotopes of clay minerals archive organic sources. Invited lecture for the M.L. Jackson Mid-Career Award. 46th Annual Clay Minerals Society Meeting, abstract. Billings, Montana June 5-11.
- Williams, L.B., Eberl, D.D., Metge, D.M. and Harvey, R.W. (2009) Mineralogical and chemical comparison of antibacterial clays. Abstract D5. 46th Annual Clay Minerals Society Meeting, abstract. Billings, Montana June 5-11.
- Pauly, B.D., Williams, L.B., Hervig, R.E. and Schiffman, P. (2009) Boron behavior during seawater palagonitization revealed using SIMS microanalyses: implications for environmental control. 46th Annual Clay Minerals Society Meeting, abstract. Billings, Montana June 5-11.
- Pizzarello, S. and Williams, L.B. (2009) Soluble organic species released from the insoluble carbonaceous material of a pristine CR2 meteorite. Lunar and Planetary Science Conference, Houston, TX.
- Williams, L.B. and Hervig, R.L. (2008) SIMS analysis of illite isotopic systems during crystal growth: Application to gas exploration. Bi-annual geological SIMS workshop 5, Madison, Wisconsin, June 2008. Abstract for poster.
- Williams, L.B., Elliott, C.W., Hervig, R.L. (2008) Tracing natural gas migration using boron and lithium isotopes, Goldschmidt Conference Proceedings, Abstract 593. Vancouver, B.C.
- Spivak-Birndorf L. J., Wadhwa M. and Williams L. B. (2008) Boron isotopes in the nakhlites: Implications for crustal fluids on Mars. Geochimica et Cosmochimica Acta, 72, Supplement, A889.
- Spivak-Birndorf L. J., Wadhwa M. and Williams L. B. (2008) Boron isotopic composition of igneous minerals and secondary alteration products in Nakhla. Ground Truth From Mars Conference, Abstract 4050.
- Spivak-Birndorf L. J., Wadhwa M. and Williams L. B. (2008) The boron isotopic composition of Nakhla iddingsite. LPS XXXIX, Abstract #1904.
- Rampe, E. B., Kraft, M. D., Sharp, T. G., Williams, L., and Turner, A. (2008) Characterization of Natural Mixed-Layer Illite/Smectite and Physical Mixtures of Illite and Smectite Using TIR and VNIR

- Spectroscopy: Are Mixed-Layer Clays on Mars? *Eos Trans. AGU*, 89(53), Fall Meet. Suppl., Abstract P53B-1444.
- Turner, A., Remenih, C., Haydel, S.E. and Williams, L.B. (2008) Comparing antibacterial clay properties in search of new medicinal applications, 45th Annual Clay Minerals Society of America Annual Meeting, New Orleans, April 5-10.
- Haydel, S. E. and Williams, L.B. (2008) Broad-spectrum antibacterial activities of clay minerals. 45th Annual Clay Minerals Society of America Annual Meeting, New Orleans, April 5-10.
- Haydel, S.E., Remineh, C. and Williams, L.B., 2007, Broad-spectrum in vitro antibacterial activities of clay minerals against antibiotic-susceptible and antibiotic-resistant bacterial pathogens. Geological Society of America, Abstracts with Programs, Denver, CO. Oct 28-31. Abstract 129372.
- Williams, L.B., Haydel, S.E., Eberl, D.D. and Blum, A.E., 2007, Chemical and mineralogical characteristics of French Green Clays used for healing. Geological Society of America, Abstracts with Programs, Denver, CO. Oct 28-31. Abstract 127547.
- Metge, D., Harvey, R., Eberl, D. and Williams, L.B., 2007, Bactericidal properties of clays used for treatment of Buruli ulcer- an emerging public health threat. Geological Society of America, Abstracts with Programs, Denver, CO. Oct 28-31. Abstract 130928.
- Williams, L.B., 2007, Clay mineral stable-isotope geochemistry. Euroclay Conference. Aveiro, Portugal. July 23-27, 2007. Invited lectures, p.42-51.
- Williams, L.B., Srodon, J., Huff, W. and Hervig, R.L., 2007, Volatile light element distributions in Baltic Basin bentonites and the potential connection to hydrocarbon sources. Clay Minerals Society of America Annual Meeting, Santa Fe, NM June 1-7.
- Williams, L.B., Haydel, S.E. and Eberl, D.D., 2006, Scientific validation of antibacterial minerals needed for public policy support. Geological Society of America, Abstracts with Programs Vol. 38, No. 7. Philadelphia, PA. Oct 22-26. Abst. 111638.
- Hervig, R.L., Williams, L.B., and Bell, D.R., SIMS 2006, Microanalyses of Li and B Isotopes: Quantification and Applications to the Earth's Crust. Goldschmidt Conference, Melbourne, Australia, Abstract.
- Williams, L.B. and Hervig, R.L., 2006, Evaluating Li-isotopic equilibrium in smectite. Clays and Clay Minerals Annual Meeting, Oleron, France, June 2-7.
- Williams, L.B. and Hervig, R.L., 2005, Exploring the Chemical Dynamics of Organic Interactions with Clay Minerals using Stable Isotopes, American Chemical Society Meeting, Invited lecture. Southeast Regional ACS conference, Joplin, MO.
- Williams, L.B. and Hervig, R.L., 2005, Crystal size dependence of illite-smectite isotope equilibration during crystal growth. Biennial Geological SIMS Workshop. Lake Arrowhead, CA.
- Williams, L.B. and Hervig, R.L., 2005, Probing tetrahedral and octahedral site activity during illitization using boron and lithium isotopes Clay Minerals Society 42nd Annual Mtg, Burlington Vt. June 11-15.
- Turner, A. and Williams, L.B., 2005, Boron isotope variations during illitization in a natural closed system: Bentonite. Clay Minerals Society 42nd Annual Mtg, Burlington Vt. June 11-15.
- Williams, L.B., and Hervig, R.L., 2005, Probing crystal growth mechanisms with non-traditional stable isotopes. Goldschmidt Conference, May 20-25, Moscow, Id. #1411.
- Williams, L.B., and Hervig, R.L., 2005, Analyzing lithium and boron isotopes by SIMS, DOE Symposium on Analytical and Isotopic Geochemistry, Gaithersburg, MD, June 5-6, 2005.
- Yabuta, H., Williams, L., Cody, G. and Pizzarello, S., 2005, The insoluble carbonaceous material of CM chondrites as possible source of discrete organics during the asteroidal aqueous phase. Lunar and Planetary Science Meeting, Houston, Tx.
- Ashley, J.W., Huss, G.R., Garvie, L.A.J., Guan, Y., Buseck, P., Williams, L., 2005, Nitrogen and carbon isotopic measurements of sub-micron carbon nanospheres from the Tagish Lake meteorite by secondary ion mass spectrometry: Lunar and Planetary Science Meeting, Houston, Tx.
- Gerke, T.L., Voglesonger, K.M., Holloway, J.R. and Williams, L.B., 2004, Reaction Vessel Design for Sampling Nanoparticles During Growth Under Controlled T, P, pH and Oxidation State, American Geophysical Union abstract. Fall Meeting, San Francisco. #8570.
- Hervig, R.L., Bell, D.R., Moore, G.M., Williams, L.B., Yamamoto, J. and Buseck, P.R., 2004, SIMS

- Analyses for Li Isotope Ratios: From Olivine to Clay Minerals. American Geophysical Union abstract. Fall Meeting, San Francisco.
- Williams, L.B. and Hervig, R.L., 2004, Stable isotopic evidence for metastable illite growth in a matrix of non-equilibrium smectite: Clay Minerals Society 41st Annual Meeting, Richland, WA June 19-24.
- Williams, L.B. and Hervig, R.L., 2003, Lithium isotopic fractionation in subduction-zones: clues from clays, American Geophysical Union abst. Fall Meeting, San Francisco, p. 359.
- Williams, L.B., 2003, Killer clays! A medicinal application of minerals. A Special symposium on Medicinal applications of minerals. Clay Minerals Society 40th Annual Meeting, Athens, GA, June 7-12.
- Canfield, B., Williams, L.B., Holloway, J.R., 2002, Organic Complexing in Smectite Clay Minerals Under Hydrothermal Vent Conditions, American Geophysical Union (abstract). EOS Trans. V72A-1292.
- Williams, L.B., Canfield, B., Holloway, J.R. and Williams, P., 2002, Smectite Incubation of Organic Molecules in Seafloor Hydrothermal Systems. The V.M. Goldschmidt Conference, Aug. 18-23, Davos, Switzerland, p. A837.
- Williams, L.B. and Hervig, R.L., 2002, The ins and outs of boron in smectite during burial diagenesis: Examples from the Wilcox fm, U.S. Gulf of Mexico basin. Clay Minerals Society 39th Annual Meeting, Boulder, CO June 8-13, p.179.
- Williams, L.B. and Canfield, B., 2002, Polymerization of Organic Compounds by Kinetic pathways of smectite Illitization. ASU Astrobiology Conference, Phoenix, Feb.11 2002 (lecture/abst).
- Williams, L.B. and Hervig, R.L., 2001, Using SIMS to detect B-associations in organic-rich sediments, Third bi-annual GEOSIMS Workshop, Tempe Buttes, Nov. 2001.
- Williams, L.B. and Hervig, R.L., 2001, Exploring the organic/inorganic boron connection in hydrocarbon reservoirs, Geological Society of America Annual Meeting, Boston. Abstracts, 33:6:97.
- Hervig, R.L., Moore, G., Holloway, J.R. and Williams, L.B., 2001, Isotopic and elemental partitioning of boron between hydrous fluid and melt, Goldschmidt Conference, Reston Va.
- Williams, L.B. and Hervig, R.L., 2000, Insights on the mechanism of smectite illitization revealed by boron isotope variations. Geological Society of America Annual Meeting, Reno, Nevada. Abstracts with Prog., 32:7:320 (Invited Lecture).
- Williams, L.B., Wieser, M.E., Hutcheon, I. and Hervig, R.L., 2000. Boron isotopes as a monitor of fluid/rock interactions in a hydrothermally stimulated oil-reservoir, Alberta Basin, Canada. Geological Society of America Annual Meeting, Reno, Nevada. Abstracts with Prog., 32:7:481.
- Williams, L.B., Hervig, R.L., and Holloway, J.R., 1999, Experiments on the boron isotope fractionation of illite. Geological Society of America Annual Meeting, Denver, Colorado. Abstract 3, p. A344.
- Williams, L.B. and Hervig, R.L., 1999, B-isotope fractionation during illitization of smectite by contact metamorphism, American Geophysical Union. EOS Trans. 80, F1080.
- O'Day, P.A., Williams, L.B., Holloway, J.R., Gentleman, D., Voglesonger, K.M., 1999, Experimental synthesis of organic compounds in hydrothermal systems by dehydration and aromatization reactions with smectite catalysts. American Geophysical Union. EOS Trans.
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- Hervig, R. L. and Williams, L. B. (1998) Warm, wet boron between the sheets of clay: SIMS analyses for isotopes (abstr). American Geophysical Union EOS, Trans. 79, F952.
- Williams, L.B., Wieser, M.E., Hervig, R.L., and Hutcheon, I., 1997, Isotopic investigation of the role of organic matter in the sedimentary cycle of boron, Applied Isotope Geochemistry Symposium 2, IAGC, Lake Louise, Alberta. (abstract).
- Williams, L.B., and R.L. Hervig, 1997, Potential for in-situ measurements of O-isotopic ratios in clay minerals using Secondary Ion Mass Spectrometry (SIMS), 11th International Clay Conference, (Invited lecture), p. A80.
- Williams, L.B., Hervig, R.L., and Bjørlykke, K., 1996, The origin of quartz cements in hydrocarbon reservoirs, offshore Norway: evidence from O-isotope microanalyses. Geological Society of America Annual Meeting, Abstracts with Programs, 28, 340.
- Williams, L.B., Hervig, R.L., and Kacandes, G.H., 1996, Boron isotope ratios during experimental and natural reactions of smectite to illite. The Clay Minerals Society 33rd Annual Meeting, Gatlinburg, TN, June 15-20.

- Hervig, R.L. and Williams, L.B., 1996, Fluid compositional changes in petroleum reservoirs recorded by O isotope analyses of quartz overgrowths. DOE/Basic Energy Sciences/ Geosciences Program Research Symposium: "Reactivity and Mobility of Geologic Fluids: Constraints from Inorganic Chemistry", 29-30 January 1996, Oak Ridge, TN.
- Williams, L.B., Hervig, R.L., and Dutton, S.P., 1995, Interpreting paleofluid compositions by microanalysis of oxygen isotopes in diagenetic quartz. The V.M. Goldschmidt Conference, May24-26, University Park, Pa.
- Williams, Lynda B. and Hervig, Richard L., 1994, Correlating cathodoluminescence and oxygen isotopic compositions of detrital and diagenetic quartz. Geological Society of America Annual Meeting , Abstracts with Programs, 26, 490.
- Hervig, R.L., Williams, L.B., Kirkland, I. and Longstaffe, F.J., 1993, Oxygen isotopic compositions of diagenetic quartz determined by secondary ion mass spectrometry. Geological Society of America Annual Meeting, Abstracts with Programs, 25 , 316.
- Williams, L.B., Ferrell, R.E., Hutcheon, I., Krouse, H.R., and Bakel, A., 1993, Nitrogen isotopic variations inorganic matter and minerals influenced by fluid migration during diagenesis. Geological Society of America Annual Meeting Abstracts with Programs, 25 , 25.
- Maciasz, G.M., Ferrell, R.E., and Williams, L.B., 1993, Clay mineral petrography of two Wilcox Formation reservoirs. Clay Minerals Society Annual Meeting. Abst.
- Malatesta, A.S., Dohmann, C.Y., Ferrell, R.E., Leblanc, W.S., Wood, M.I., Williams, L.B., 1993, Quantitative mineralogical applications of FT-IR. GSA Southeastern Section Meeting, Tallahassee, Florida No. 34643.
- Williams, Lynda B., Ferrell, Ray E. Jr., and Walsh, Maud M., 1992 Distribution of fixed-NH₄ in I/S across a Louisiana oilfield: Implications for enhanced oil recovery. Clay Minerals Society Annual Meeting. Agronomy Abstracts, 383.
- Ferrell, R.E., and Williams, L.B., 1992, Low BTU gas derived from diagenesis of NH₄-illite/smectite. Clay Minerals Society Annual Meeting. Agronomy Abstracts, 369.
- Walsh, M., Williams L., Ferrell, R. and Portier R., 1992, Are Bacteria in the Deep Subsurface a Complicating Factor in Using Ammonium in Clays as a Petroleum Exploration Tool? American Society for Microbiology Annual Meeting.
- Williams, Lynda B., Ferrell, Ray E. Jr., Hutcheon, Ian, and Krouse, H. Roy, 1992, The isotopic composition of nitrogen in clay minerals and associated crude oils. AAPG Annual Convention Calgary, p. 142.
- Ferrell, R.E. and Williams, L.B., 1991, Ammonium silicate diagenesis and its influence on the interpretation of fixed-ammonium anomalies as an exploration tool. Sedimentary Basin Geochemistry and Fluid/Rock Interactions Workshop, Geosciences Research Program ER-15, Norman, Oklahoma, p. 25.
- Williams, L.B. and Ferrell, R.E. Jr. 1991, Organic/Inorganic interactions of nitrogen in oilfields. Sedimentary Basin Geochemistry and Fluid/Rock Interactions Workshop , Geosciences Research Program ER-15, Norman, Oklahoma, p. 27.
- Williams, Lynda B., Ferrell, Ray E. Jr., Compton, John S., 1991, Evolution and mineralization of nitrogen during diagenesis and hydrocarbon maturation, Geological Society of America Abstracts with Programs, 23, p. 56.
- Compton, John S., Williams, Lynda B., and Ferrell, Ray E. Jr., Mineralization of organogenic ammonium in the Monterey Formation, Santa Maria Basin, California. Geological Society of America Abstracts with Programs, 23, p.380.
- Ferrell, R.E. and Williams, Lynda, L.B., 1991, Ammonium fixation during clay mineral diagenesis and hydrocarbon maturation, Clay Minerals Society 28th Annual Meeting.
- Williams, Lynda B., and Ferrell Ray E. Jr., 1990, Chemical and Mineralogical controls on ammonium substitution in authigenic illite, Geological Society of America Abstracts with Programs, 22 , 033261.
- Williams, Lynda B., 1990, Nitrogen diagenesis related to organic maturation in Gulf Coast sediments, AAPG Bull. 74, p. 792.
- Williams, Lynda B., Ferrell, Ray E., Chinn, Elizabeth W., and Sassen, Roger, 1988, Fixed-ammonium in clays associated with hydrocarbon reservoirs, Geological Society of America , Abstracts with

- Programs, 20, p. 259.
- Williams, Lynda B., Ferrell, Ray E., and Carpenter, Paul K., 1987, CHEMOD: an automated chemical and modal analysis technique, Geological Society of America, Abstracts with Programs, 19, p. 890.
- Benton, L.M. (previous name), 1984, Ammonium geochemistry of sedimentary exhalative Pb-Zn-Ag deposits: a possible exploration tool, Geological Society of America, Abstracts with Programs, 16, p. 442.

Invited Lectures:

- 2021: Bailey Lecture of the Clay Minerals Society, Istanbul, Turkey, July 2022.
- 2021: Dixie State University, St. George, UT, "Geomimicry in Medical Applications", 1 March 22.
- 2020: Miami of Ohio Colloquium, "Natural antibacterial clays: *in vitro* and *in vivo* studies".
April 20, 2020 (cancelled due to COVID pandemic).
- 2019: Lehigh University Colloquium, 'Unearthing the Antibacterial Properties of Clays to Combat Antibiotic -Resistant Pathogens' April 5, 2019
- 2019: Euroclay Conference 2019; Invited lecture: Teaching the art of solid-state stable isotope measurements in clays: What can be learned from nanometric isotope analyses?
- 2018: Clay Minerals Society, Medicinal Applications of Clays, 2018 Workshop at the Annual Clay Minerals Society Meeting, University of Illinois, Urbana-Champaign. June, 2018.
- 2017: Antibacterial clays: Integrating Mineralogy and Medicine, Mayo Clinic, Rochester, MN
- 2016: University of Oklahoma Colloquium, Sept. 15, 2016. Tracing hydrocarbons in kerogen nanopores using Nano-Secondary Ion Mass Spectrometry. Norman, Oklahoma
- 2016: Plenary Lecture, Geomimicry: Harnessing the antibacterial action of clays.
8th Mid-European Clay Conference, Kosice Slovakia, July 4-8 2016.
- 2014: University of Illinois, Chicago Colloquium, April 4, 2014. Hydrothermal experiments for calibrating stable isotopes of boron and lithium in clays: Applications for tracing hydrocarbons.
- 2014: Univ. Illinois, Special Lecture: Antibacterial clays, April 5, 2014.
- 2013: Clay Minerals Society, Unconventional isotopes in unconventional oil shale. 2013. 50th Anniversary of the Clay Minerals Society, session on Isotopes in Clays.
- 2012: U.S. Geological Survey, Lakewood, CO. July 10, 2012. Introducing antibacterial clay research; what makes natural clays antibacterial? Hosted by Geoff Plumlee, Minerals and Health Division.
- 2012: Geol. Soc. Canada-Min. Soc. Canada, Keynote Lecture, Shortcourse on Quantitative Mineralogy and Microanalysis of Sediments. Mineralogical Association of Canada Workshop, Newfoundland, May 2012.
- 2011: GEOMED, Plenary Lecture for the International Medical Geology Association, Antibacterial Clays and their Potential for Medicinal Applications. Bari Italy, Sept 20-25.
- 2010: Astrobiology Seminar: 'Abiotic organic synthesis of biomolecules in clay' February, 2010, ASU.
- 2010: ASU Seminar: 'Mineralogical and chemical comparison of antibacterial clays' Oct 29, Arizona State University.
- 2010: Astrobiology Seminar: 'Boron isotopes in hydrocarbon systems; following the oil' March, 2010.
- 2009: Plenary Lecture: Trace element and isotopic geochemistry of clays applied to research in energy, life and medicine. Clay Minerals Society, Jackson Lecture, June 2009.
- 2008: Colloquium: Exploring chemical and physical properties of antibacterial clays. SUNY Buffalo Oct 23.
- 2007: Colloquium: Volatile Light Elements in Baltic Basin Bentonites: Correlating Crystal Growth and Chemical Tracers for Hydrocarbon Exploration. Univ. New Mexico Nov. 16.

- 2007: Invited Lecture, EUROCLAY Conference, Stable isotope geochemistry of clay minerals. Aveiro Portugal, July 23-27.
- 2005: Colloquium: Exploring the chemical dynamics of organic interactions with clay minerals using stable isotopes. U. S. Geological Survey, Denver, CO, December, 2005.
- 2005: Colloquium: Exploring the chemical dynamics of organic interactions with clay minerals using stable isotopes. University of California, Riverside, November 2005.
- 2004: Colloquium: Trace element isotopic variations during burial reflecting illite growth in a matrix of smectite. Arizona State University, Tempe, March 2004.
- 2003: Colloquium: Stable isotope tracers of environmental change: insights from the clay mineral record, SUNY Buffalo, Buffalo, New York, January 2003
- 2003: Colloquium: Exploring new stable isotopic tracers of environmental change and subsurface fluid migration, Wellesley College, Wellesley Massachusetts, February 2003
- 2003: Colloquium: Isotopes in nanospace: a new frontier for understanding organic/inorganic interplays in minerals, University of California, Davis, March, 2003
- 2003: Informal Lecture: Origins of Life Between the Nanosheets? Investigation of a clay mineral incubator in seafloor hydrothermal systems, University of California, Davis, March, 2003
- 2002: Informal Lecture: Textural analysis and potential surface and chemical properties of illite that may influence mycobacterial growth. Missillac, France, August, 2002.

Committees/Service:

University Committees:

- 2019 – 2021 Deans Advisory Council for fixed term academic appointments
- 2015 – present Research Professor Committee
- 2015 SESE Post-Doc Committee
- 2010 – present SESE Safety Officer, Committee Chair
- 2008 – 2009 CLAS Committee on Excellence (2008-2009)
- 2008 Advisory committee on ASU Facilities Cost-Benefits analysis (2008)

National/International Service:

- 2021 GSA, Geology & Health Division Organizing Committee for a virtual student-oriented medical geology/environmental health conference for Latin America. Sponsored by Geology & Health Division, AGU GeoHealth Section, SEGH, IMGGA, the Environmental & Health Sciences Consortium, ISEG and ISEH.
- 2021 Judge at the INTEL International Science Fair, Phoenix, AZ May 2021
- 2021 - 2023 Clays and Clay Minerals Journal Associate Editor
- 2019 – 2020 Clay Minerals Society Past-President
- 2018 – 2019 Clay Minerals Society, President (Presided over Euroclay 2019, Paris)
- 2019 National Science Foundation EAR-GG Panelist (Nov 6-8)
- 2017 – 2018 Clay Minerals Society, Vice-president
- 2013 – 2018 American Mineralogist, Associate Editor
- 2017 – 2019 Chair, CMS Committee Nominations,
- 2017 – 2019 CMS Finance and Budget Committee
- 2016 – 2019 CMS Nomenclature Committee
- 2018 Session Chair: *New Visions in Clay Science: Bio-nanoclays in medicine;*
- 2018 Workshop Organizer: Medicinal Applications of Clays (June 9, 2018).
- 2014 – 2017 Clay Minerals Society: Chair, Student Awards Committee 2014 - 2017
- 2016 Clay Minerals Society Annual Meeting Clays and Health Session Chair.
- 2016 Clay Minerals Society Ad Hoc committee on Journal merger.

- 2016 Judge at the INTEL International Science Fair, Phoenix, AZ May 2016
 2012 – 2016 National Science Foundation Panelist: Geobiology and Geochemistry
 2015 Session Chair, Bioreactive clay minerals: impacts on environmental and human health, Euroclay Conference, Edinburgh, Scotland. July 5-10.
 2014 Chair, Membership committee, GSA Geology and Health Division, 2014
 2013 Technical Program Chair, Int. Medical Geology Association, MEDGEO conference, Washington, D.C.
 2013 Judge at the INTEL International Science Fair, Phoenix, AZ May 2013.
 2011 Panelist for NASA: MSL Participating Scientist Proposal Review, Fall
 2010 – 2011 Clays and Clay Minerals Committee on Committees 2010-2011
 2008 – 2011 Associate Editor: Clays and Clay Minerals 2008 – 2011
 2007 – 2009 Chair, Membership committee 2007-2009, Clay Minerals Society
 2005 – 2006 Geology & Health Division of the Geological Society of America, Denver
 2005 – 2006 News editor, Clay Minerals Society newsletter in ELEMENTS, 2005-2006
 2006 – 2007 Nominating committee for Clay Minerals Society 2006-2007
 2006 Chair, Bailey Award Committee, Clay Minerals Society 2006
 2006 Nominating committee for the Geology and Health Division of the GSA,
 2005 Panelist for NSF Geobiology and Low Temperature Geochemistry, 2005
 2004 – 2007 Elected to the Clay Minerals Society Council 2004-2007
 2003 Clay Minerals Society Committee on Awards
 2003 Clay Minerals Society Ad Hoc fund raising committee for Reynolds scholarship

Reviewer for the following Journals:

American Mineralogist, Clays and Clay Minerals, Clay Minerals, Applied Clay Science, Colloids and Surfaces B: Biointerfaces, Applied Geochemistry, Geochimica et Cosmochimica Acta, Chemical Geology, Earth & Planetary Science Letters, Geology, Journal of Hazardous Materials, Atmospheric Environment, Chemosphere, Environmental Science & Technology, Environmental Geochemistry and Health, Reviews in Mineralogy, Nature Science Reports, Nature Geoscience, ACS Earth & Space Chemistry, Minerals.

Public Recognition/Outreach:

2020 Annual SIMS Workshop organizer (Jan 6-8, 2020)

2019

2019 Academy Award: from the Academy of Romania Ludovic Mrazec Prize, for a paper published in Chemical Geology in 2017:
 Bobos, Iuliu and Williams, L.B. (2017) Boron, lithium and nitrogen isotopes of hydrothermal tobelite from Harghita Bay, Romania, *Chemical Geology*, 473:22-39.
<http://dx.doi.org/10.1016/j.chemgeo.2017.10.005>

2019 Mayo Clinic Alumni Issue 3 Magazine Research Highlight: Fighting disease causing bacteria in wounds.

2019 ResearchGate Award for 'Most Read Research Item From SESE' (67 Reads) achieved Dec 22, 2019 for 'Killer Clays: Natural Antibacterial Clay Minerals' (Min. Soc. London Bull., 2004)

Night of the Open Door 2019

Annual SIMS Workshop organizer (Jan 3-5, 2019) (Supports 15 students from across the US to learn Secondary Ion Mass Spectrometry with hands on experiences over 3 days).

2018

Night of the Open Door,

Annual SIMS Workshop organizer (Jan 3-5, 2018)

EoS Buzz article (Dec 21, 2018) from AGU presentation

https://www.magnetmail.net/actions/email_web_version.cfm?ep=QtEB41I2lk4e76VNvoP8GEZVKT4KcO9Xll1OvB6s41c1QwXsenVtvgmcK5HljqCUI64OudTflh7rLkOgR3tVfsaH79WMIi7qf0nn4Xq3lkSgAVMB2GmE_ilsPECNHSQr

Top 10 NSF funded research for 2018

<https://medium.com/@NSF/our-most-popular-stories-of-2018-dd1135bca1dc>

<https://twitter.com/NSF/status/1089959062840725504>

2017

Infectious Diseases Hub invited Article 2017 (on-line resource)

Williams, L.B., (2017) An ancient alternative to antibiotics: Clays

<https://www.id-hub.com/2017/11/10/ancient-alternative-antibiotics-clays/>

Night of the Open Door, Annual SIMS Workshop organizer (Jan, 2017)

Williams, L.B., (2017) Alternatives to Antibiotics: Clays, Opinion Editorial, invited for Infectious Diseases Hub. (Nov. 15, 2017), Martha Powell editor. www.id-hub.com

2016

NSF Press Release:

Geochemical News: Top research highlight of 2016

National Science Foundation Top 10 cited NSF Highlight of 2016

http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=137239&org=NSF_Scientists_discover_how_blue_and_green_clays_kill_bacteria_|_NSF_-_National_Science_Foundation

www.nsf.gov

<http://phys.org/news/2016-01-scientists-blue-green-clays-bacteria.html>

[+12 on-line articles](#)

Earth & Space Exploration Day, Night of the Open Door, Annual SIMS Workshop

National Public Radio

<http://science.kjzz.org/content/249809/asu-scientists-uncover-how-clay-can-kill-harmful-bacteria>

2014

NSF Discovery Article http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=132052&org=NSF

<http://www.iflscience.com/health-and-medicine/minerals-clay-could-be-used-combat-antibiotic-resistance> (over 50 on-line stories on this research).

Earth Magazine, News Notes, Antibacterial clays could fight superbugs, Sara Pratt.

ASU press release <http://sese.asu.edu/node/1886> on Shipp et al., 2014 PNAS paper.

Physics Today, Physics Update, Oct., 2014. (Mark Wilson ed.)

Geochemical News: <https://asunews.asu.edu/20140728-sphalerite-research>

Earth and Space Exploration Day K-12 Outreach: Clays of our Lives, 2014

Organized Annual SIMS Workshop (Jan 8-10, 2014).

2013

Technical Program Director and Organizer of the International Medical Geology Association Meeting, Washington, D.C. August 25-19, 2013

Session Chair 2013 Clays and Health, Clays and Clay Minerals Society, 50th Anniversary, Champaign-Urbana II.

Organized Annual SIMS Workshop (Jan 9-11, 2013).

Earth and Space Exploration Day K-12 Outreach: Clays of our Lives, 2013

2012

Organized Annual SIMS Workshop (Jan 4-6, 2012).

Earth and Space Exploration Day K-12 Outreach: Clays of our Lives, 2012
 Session Chair for 2012 Clay Minerals Soc. Meeting, Clays and Health, Golden, CO.

2011

Organized Annual SIMS Workshop (Jan 5-7, 2011)

Earth and Space Exploration Day K-12 Outreach: Booth on Nano-minerals, 2011

2010

Managed Annual SIMS Workshop (Jan 12-14, 2010) for hands-on SIMS experience.

Earth and Space Exploration Day K-12 Outreach: Booth on Nano-minerals, 2010

2009

Organized symposium 'Drugstore in the Dirt' at the 2009 Annual CMS Meeting

Research Highlighted in Eurekalerts (written by Carol Hughes)

Highlighted in ASU Research Stories (written by Conrad Storad)

2008

Featured in Nov/Dec: *Phoenix Woman Magazine*, Editorial: Top Arizona Women Scientists

ACS Press release on antibacterial clays research. Associated press coverage. Jan 2008

Scientific American Article Jan. 2008

Geotimes Article, Feb. 2008

C&EN News article April, 2008

Arizona Republic and USA Today front page headlines

Symposium organizer, 'Clay Minerals and Health', 2008 Joint meeting of the Clay Minerals Society with Am. Chem. Soc., Geochemistry Division, New Orleans.

2007

Interview with Morning Star TV on 'healing clay' research

Salley Ride Festival, Clays and cosmetics (Middle school science class).

Interview with Biogeochemistry.org on Medicinal clay research

Symposium organizer, 'Beneficial aspects of minerals in public health' 2007

2006

Science News Media stories on Williams et al., Healing Clay research

Interview with School of Life Science Podcast.

Fellow of the Geological Society of America (2006) citation.

Nominated by: Dr. Lynn M. Walter (University of Michigan)

"Professor Lynda B. Williams is nominated for her exceptionally broad impact on the field of low temperature geochemistry. Lynda has made major intellectual contributions to the understanding of water/rock interactions, developing boron isotope systematics, origin of biopolymers, and the potential public health implications of clay minerals."

2005

NSF and GSA Press Release on Williams et al., Origins of Life research, GEOLOGY.

National Public Radio interview (KJZZ) with Roland Pease, Producer. BBC Radio

Symposium organizer, 2005 Clays and Health, Clay Minerals Society, Burlington, VT.

2003

Symposium organizer 'Medicinal Applications of Minerals' for the 2003 joint CMS/MSA Annual Meeting, Athens, GA. Funded keynote lecturer Prof. Graham Cairnes-Smith.

Students Advised:

2 Post-docs, 5 Ph.D students, 1 Masters student, 7 undergraduates, 11 Graduate Committees

2021 Victoria Froh, Barrett Honors Thesis committee

2019 – Zebediah Teichert, Ph.D. Candidate (Dissertation Advisor) 2017 - 2022

2018 Mathias Köster, Ph.D. Technische Universität München, Munich, Germany

2016 Sandra Carolina Londono-Arias (2009-2016 Ph.D, Advisor)

Dissertation accepted July, 2016, 'Ethnogeology at the Core of Basic and Applied Research: Surface Water Systems and Mode of Action of a Natural Antibacterial Clay of the Colombian Amazon', Committee Members: Lynda Williams, Steven Semken, Betsy

- Brandt, Hilairy Hartnett, Jason Raymond.
- 2016 Xinming Chen, Ph.D. candidate, Antifungal activity of OMT clay (2nd project advisor).
'Toxicity of Oregon Blue clay on the fungus *Aspergillus flavus*'. Committee members:
Ariel Anbar, Lynda Williams, Thomas Sharp, Jason Raymond, Patrick Young.
- 2015 Keith David Morrison (2010-2015 Ph.D., Advisor)
Dissertation accepted June 2015, 'Unearthing the Antibacterial Activity of a Natural Clay
Deposit', Committee Members: Lynda Williams, Stanley Williams, Rajeev Misra, Everett
Shock, Ariel Anbar.
- 2014 Clelia Tommimabry, (2013-2014) Space Grant undergraduate research student
- 2008 Amanda Turner, B.S. Geology and Chemistry 2008 (Honors project advisor)
- 2007 Ken Voglesonger, Post-doc 2007
- 2006 Tami Gerke, Post-doc, 2006

Advisory Committees:

- | | | | |
|------|--------------------------------------|------|-------------------------------------|
| 2018 | Xinming Chen, Ph.D. committee | 2011 | Elizabeth B. Rampe, Ph.D. committee |
| 2012 | Katie Noonan, Ph.D. committee | 2009 | Vicki Mills M.S. committee |
| 2012 | Jorge Nunez, Ph.D. committee | 2008 | Mike Kraft, Ph.D. committee |
| 2012 | Steve Guggino, Ph.D. committee | 2007 | Joe Michalski, Ph.D. committee |
| 2012 | Chris Glein, Ph.D. committee | 2006 | Brandon Canfield, Ph.D. committee |
| 2012 | Lev Spivack-Birndorf Ph.D. committee | | |

Outside Examiner on student committee

- 2017 Cyril S. Dube, Rhodes University, Grahamstown, South Africa (M.S. Pharmacy)
- 2018 Mathias Köster, Technische Universität München (Ph.D. Geology)
- 2021 Mark Peterman, Mississippi State University, (Ph.D. Veterinary Medicine)