Timothy Filley
Purdue University, Department of Earth, Atmospheric, and Planetary Sciences, West Lafayette, IN, USA 47907. Filley@purdue.edu; Office 3225 HAMP, Ph +1 765-494-6581.

EDUCATION

B.Sc. Loyola University of Chicago (1990) Chemistry
Ph.D. Pennsylvania State University (1997) Geosciences (Advisors: Pat Hatcher and Kate Freeman).
Postdoctoral Fellow (1998 - 2000) Carnegie Institution of Washington (CIW) Geophysical Laboratory (Advisor: George Cody)

PROFESSIONAL POSITIONS

8/13-Present.	Professor, Department of Earth, Atmospheric, and Planetary Sciences, Purdue University
7/17-Present	Interim Director, Purdue's Center for the Environment (C4E)
4/12-6/16.	US Director of the US-China EcoPartnership for Environmental Sustainability. http://www.purdue.edu/discoverypark/ecopartnership-cn/
8/06-7/13.	Associate Professor, Department of Earth, Atmospheric, and Planetary Sciences, Purdue University
7/00-7/06.	Assistant Professor, Department of Earth, Atmospheric, and Planetary Sciences, Purdue University
01/98-7/00.	Carnegie Institution of Washington (CIW) Post Doctoral Fellow

AWARDS/HONORS

2004	Purdue University Seeds for Success Award (presented to faculty who have secured a sponsored research grant in excess of one million dollars in one year awarded to Purdue).
2007	Elected National Chair and Program Chair -Geochemistry Division of the American Chemical Society (2007-2008)
2008	Member of Editorial Board for Geochemical Transactions (2008-2011)
2011	Appointed Senior Visiting Professor, Chinese Academy of Sciences, Institute of Applied Ecology.
2012	U.S. Director of the US-China EcoPartnership for Environmental Sustainability (2012-2016). http://www.purdue.edu/discoverypark/ecopartnership/
2015	Appointed Jiangsu Province, China High End Foreign Expert for Nanjing Agricultural University (2015-2017)
2016	Department of Chemistry and Biochemistry, Loyola University of Chicago Alumnus of the year

BIOSKETCH

Timothy Filley is a professor of geochemistry in the Department of Earth, Atmospheric, and Planetary Sciences and the Department of Agronomy, Purdue University. His scientific research and his work at the science/policy interface focus on developing solutions for sustainable management of our natural and built resources. Filley uses isotope geochemistry, molecular biology, and analytical chemistry to study the biogeochemical mechanisms and social drivers of organic matter transformations in litter, soil, and water within natural and intensively managed landscapes. He is particularly interested in how information about soil carbon dynamics can lead to better understanding of society's vulnerability to climate and land use change. Filley has published over 85 peer-reviewed articles and helped to secure over $10 million in funding for his research projects of which $3.5 million directly supported his lab. At Purdue he has mentored

four postdoctoral researchers, graduated six PhD and four MS students; he has also co-advised four PhD students in China and hosted over twenty-five international visiting scholars for extended research stays. Filley was elected National Program Chair for the Geochemistry Division of the American Chemical Society for 2007-2008. He is a founding member of the Purdue Climate Change Research Center where he also served on the executive committee for 8 years. He has served on the executive committee of the Discovery Park Center for the Environment since 2012. He was appointed senior visiting professor at the Chinese Academy of Sciences in 2011 and served as a senior foreign expert at Nanjing Agricultural University in 2014 and 2015. In 2012, Filley was appointed director for the U.S.-China EcoPartnership for Environmental Sustainability, a bilateral program supported by the U.S. Department of State and China National Development and Reform Commission. He served as director until 2016, completing the program's 5-year mission. With a focus on the science/policy interface, Filley worked to create, facilitate, and promote bilateral collaborations at the subnational level aimed at devising sustainable solutions to linked environmental and economic challenges. Filley received a PhD in geochemistry from The Pennsylvania State University and was a Carnegie Institution Postdoctoral Fellow.

SYNERGISTIC ACTIVITIES

1. Workshop/Conference Organization: As part of Filley's appointment as Director of the U.S.-China Ecopartnership for Environmental Sustainability (2012-2016) and election as National Program Chair for the Geochemistry Division of the American Chemical Society (2007-2008) he has chaired or co-chaired eight international conferences in the US and China. He has also co-organized the Organic Geochemistry program for two Goldschmidt conferences and three AGU sessions on soil organic matter dynamics.

2. US-China Binational Research Exchange: Filley promotes international cooperation in the area of soil sustainability with particular emphasis on US-China exchange. He was appointed senior visiting professor at the Chinese Academy of Sciences in 2011 and served as a senior foreign expert at Nanjing Agricultural University in 2014 and 2015. In 2012, Filley was appointed director of the U.S.China EcoPartnership for Environmental Sustainability, a bilateral program supported by the U.S. Department of State and China National Development and Reform Commission. He served as director until 2016.

3. Promotion of Undergraduate Research Experience: In his past role of Associate Head of Purdue's Dept of Earth Atmospheric and Planetary Sciences (EAPS) and current role as Chair of the EAPS undergraduate recruitment committee Filley has worked to integrate undergraduate research into the educational experience for Earth science majors. Filley is also committed to engagement of programs that support Native American Tribal College students with "hands on" STEM experiences using forest ecology/geochemistry-based programs.

4. Workshop and Proposal Panel Participation: Filley has participated in proposal review panels for NSF DEB and EAR directorates in 2009, 2010, 2011, 2012, 2014 and NASA in 2001. He has participated in four NSF supported international CZO workshops (2012, 2104, 2015, 2016) designed to promote research exchange and cooperation among international CZOs.

5. University Level Promotion of Global Change Research: He is a founding member of the Purdue Climate Change Research Center where he also served on the executive committee for 8 years. He has served on the executive committee of the Discovery Park Center for the Environment since 2012. He is currently Interim Director of Purdue's Center for the Environment (7/17-6/18).

PUBLICATION SUMMARY

Google Scholar Citation Report (as of Feb 2017) h-index 33, i10 = 61, 4349 citations

[P] = Post-doc in Filley's group
underlined = Graduate students in Filley's group
* = Visiting scholars in Filley's group

87) Wang, R*., Gibson, C., Berry, T.D., Jiang, Y., Bird, J.A., **Filley, T.R**. (2017) Photooxidation of pyrogenic organic matter reduces its reactive, labile C pool and the apparent soil oxidative microbial enzyme response. *Geoderma* 293, 10–18.

86) Ding, X*., Qiao, Y., **Filley, T**., Wang, H., Lü, X., Zhang, B*., Wang, J (2017) Long-term changes in land use impact the accumulation of microbial residues in the particle-size fractions of a Mollisol. *Biology and Fertility of Soils*, 1-6 (available on-line)

85) Berry, T.D., **Filley, T.R.,** Clavijo, A.P., Bischoff, M., Turco, R.F. (2017) Degradation and Microbial Uptake of C60 Fullerols in Contrasting Agricultural Soils. *Environmental Science & Technology (available on-line)*.

84) Liu, Y., Wang, P., Li, L., Cheng, K., Zheng, J*., **Filley, T.R**., Zhang, X., Zheng, J., Pan, G. (2016) Microbial activity promoted with organic carbon accumulation in macroaggregates of paddy soils under long-term rice cultivation. *Biogeosciences 13 (24) 6565.* doi:10.5194/bg-2016-40.

83) Hatton P.J., Chatterjee, S., **Filley, T.R.,** Dastmalchi, K., Plante, A.F., Abiven, S., Gao, X., Masiello, C.A., Leavitt, S., Nadelhoffer, K.J., Stark, R. E., Bird, J.A. (2016) Tree taxa and pyrolysis temperature interact to control the efficacy of pyrogenic organic matter formation. *Biogeochemistry.* 130 (1-2), 103-116.

82) Baskaran, M., Bianchi, T.S., **Filley, T.R.** (2016) Inconsistencies between 14C and short-lived radionuclides-based sediment accumulation rates: Effects of long-term remineralization. *Journal of Environmental Radioactivity*. In Press. Available on-line. http://dx.doi.org/10.1016/j.jenvrad.2016.07.028

81) Kaal J. and **Filley, T.R**. (2016). Novel molecular proxies for inferring pyrogenic black carbon oxidation state using thermally assisted hydrolysis and methylation (THM-GC-MS) with ^{13}C-labeled tetramethylammonium hydroxide (TMAH). *Journal of Analytical and Applied Pyrolysis.* 121 146-154.

80) Creamer, C.A., **Filley, T.R.,** Boutton, T.W., Rowe, H.I. (2016) Grassland to woodland transitions: dynamic response of microbial community structure and carbon use patterns. *Journal of Geophysical Research: Biogeosciences*. 121(6) 1675-1688. **DOI:** 10.1002/2016JG003347

79) Rose, C., Polissar, P., Tierney, J., **Filley, T.R.,** de Menocal, P. (2016) Changes in Northeast African Hydrology and Vegetation Associated with Pliocene-Pleistocene Sapropel Cycles. *Phil. Trans. R. Soc. B* 371 (1698), 20150243

78) DeMarco, J*., **Filley, T.R.,** and Throop, H.L. (2016) Patterns of woody plant derived soil carbon losses and persistence after brush management in a semi-arid grassland. *Plant and Soil*, 1-17. 277-293.

77) Berry, T.D., Clavijo, A.P., Zhao, Y., Jafvert, C.T., Turco, R.F., **Filley, T.R.** (2016) Soil microbial response to photo-degraded C60 fullerenes. *Environmental Pollution.* 211, 338-345.

76) Zhang, D., Yan, M., Niu, Y., Liu, X., van Zwieten, L., Chen, D., Bian, R., Cheng, K., Li, L., Joseph, S., Zheng, J., Zhang, X., Zheng, J*., Crowley, D., **Filley, T.,** Pan, G. (2016) Is current biochar research addressing global soil constraints for sustainable agriculture? *Agriculture, Ecosystems & Environment* 226, 25-32

75) Wang, J.Q., Liu, X.Y., Zhang, X.H., Smith, P., Li, L.Q., **Filley, T.R.,** Cheng, K., Shen,

M.X., He, YB., Pan, G.X., (2016) Size and variability of crop productivity both impacted by CO_2 enrichment and warming —a case study of 4 year field experiment in a Chinese paddy. *Agriculture, Ecosystems and Environment.*221, 40-49.

74) Gibson, C., Berry, T.D., Wang, R*., Spencer, J.A., Johnston, C.T., Jiang, Y., Bird, J.A., Filley, T.R. (2016) Weathering of pyrogenic organic matter induces fungal oxidative enzyme response in single culture inoculation experiments. *Organic Geochemistry,* 32-41. DOI: 10.1016/j.orggeochem.2015.12.003

73) Chang, C.H., Szlavecz, K., Filley, T.R., Buyer, J.S., Bernard, M.J., and Pitz S.L. (2015) Belowground competition among invading detritivores. *Ecology*. http://dx.doi.org/10.1890/15-0551.1

72). Papanicolaou, A. N. (T.), Wacha, K.M., Abban, B.K., Wilson, C.G., Hatfield, J., Stanier, C., and **Filley, T.R.** (2015), From soilscapes to landscapes: A landscape oriented approach to simulate soil organic carbon dynamics in intensively managed landscapes, *J. Geophys. Res. Biogeosci.,* 120 (11), 2375-2401. doi:10.1002/ 2015JG003078.

71). **Filley, T.R.**, Li, M.L., Zhuang, J., Yu, G.R., Sayler, G., Ouyang, Z.Y., Han, X.G., Zhang, X.D., Jiang, G.B., Zhou, C.H., Wang, F.,; Bickham, JW. (2015) Bi-national research and education cooperation in the US-China EcoPartnership for Environmental Sustainability. *Journal of Renewable and Sustainable Energy* 7, Issue: 4 Article Number: 041512

70). Wu, N*., **Filley, T.R**., Bai, E., Han, S.J., Jiang P. (2015) Incipient changes of lignin and substituted fatty acids under N addition in a Chinese forest soil. *Organic Geochemistry* 79, 14-20.

69). Sarkar, A*., **Filley, T.R.** Bera, R. (2015) Carbon isotopic composition of lignin biomarkers: Evidence of grassland over the Gangetic plain during LGM. *Quaternary International* 355, 194-201.

68). Wang, R*+., Dorodnikov, M. ,Yang, S., Zhang, Y., **Filley, T.R**., Turco, R.F., Zhang, Y., Xu, Z., Li, H., Jiang, Y., (2015) Responses of enzymatic activities within soil aggregates to 9-year nitrogen and water addition in a semi-arid grassland. *Soil Biology & Biochemistry* 81. 159e167

67). Ma, Y., **Filley, T.R.**, Szlavecz, K., McCormick, M.K. (2014) Controls on wood and leaf litter incorporation into soil fractions in forests at different successional stages. *Soil Biology and Biochemistry.* 69, 212–222.

66). Routh, J*., Hugelius, G., Kuhry, P., **Filley, T**., Tillman, P.K., Becher, M., Crill, P. (2014) Multi-proxy study of soil organic matter dynamics in permafrost peat deposits reveal vulnerability to climate change in European Russian Arctic. *Chemical Geology.* 368, 104-117.

65). Penning, B.W., Sykes, R.W., Babcock, N.C., Dugard, Klimek, J.F., Gamblin , D.G., Davis, M., **Filley, T.R.,** Mosier, N.S., Weil, C., McCann, M.C., Carpita, N.C., (2014) Validation of PyMBMS as a high-throughput screen for lignin abundance in lignocellulosic biomass of grasses. *Bioenergy Research*. 7, x Issue: 3 Special Issue: SI 899-908

64). Top, S. and **Filley, T.R.** (2014) Effects of elevated CO_2 on the extractable amino acids of leaf litter and fine roots. *New Phytologist.* DOI: 10.1111/nph.12762

63). Aronson, R.B., Hilbun, N.L.*, Bianchi, T.S., **Filley, T.R.,** McKee, B.A. (2014) Land use, water quality, and the history of coral assemblages at Bocas del Toro, Panama. *Marine Ecological Progress Series.* 504, 159-170.

62). Berry, T.D., Filley, T.R., Blanchette, R. (2014) Oxidative enzymatic response of white-rot fungi to single-walled carbon nanotubes. *Environmental Pollution.*193, 197-204.

61). Hopkins, F.M., Filley, T.R., Gleixner, G., Lange, M., Top, S.M., Trumbore, S.E., (2014). Increased belowground carbon inputs and warming promote loss of soil organic carbon through complementary microbial pathways. *Soil Biology and Biochemistry* 76, 57-69.

60). Wang, R*., Xu, Z., Wang, M., Li , T., Luo, Y., Jiang. Y. (2014) Coupled response of soil carbon and microbial activity to nitrogen and water addition in a semi-arid grassland. *Plant and Soil.* 381, Issue: 1-2, 323-336.

59). Klotzbücher, T*., Kaiser, K., Kalbitz, K., **Filley, T.R.,** (2013) Processes controlling the production of aromatic water-soluble organic matter during litter decomposition. *Soil Biology and Biochemistry* 67, 133-139.

58). Samanta, A.; Bera, M. K.; Ghosh, R; Bera, S., **Filley T.R.,** Pande, K., Rathore, S.S., Rai, J., Sarkar, A.* (2013) Do the large carbon isotopic excursions in terrestrial organic matter across Paleocene-Eocene boundary in India indicate intensification of tropical precipitation? *Paleogeography, Paleoclimatology, Paleoecology* 387, 91-103 DOI: 10.1016/j.palaeo.2013.07.008

57). Ma, Y., **Filley, T.R.**, Johnston, C.T., Crow, S.E.[P], Szlavecz, K., McCormick, M.K., (2013). The combined controls of land use legacy and earthworm activity on soil organic matter chemistry and particle association during afforestation. *Organic Geochemistry* 58, 56-68.

56). Schilling, J.S., Blanchette, R.A., Duncan, S.M., **Filley, T.R**., Jurgens, J.A, and Presley, G.N. (2013) Colocalizing incipient reactions in wood degraded by the brown rot fungus *Postia placenta. International Biodeterioration and Biodegradation* 83, 56-62. (IBB-D-13-00165).

55). Creamer, C., **Filley, T.,** Boutton, T. (2013). Controls on carbon loss during long-term incubation of size and density separated soil fractions. *Soil Biology and Biochemistry* 57, 496-503.

54). Zhang, B., He, H.B., Ding, X.L., Zhang, X.D., Zhang, X.P., Yang, X.M., **Filley, T.R.** (2012). Soil microbial community dynamics over a maize (Zea mays L.) growing season under conventional- and no-tillage practices in a rainfed agroecosystem. *Soil & Tillage Research*, 124153-160 DOI: 10.1016/j.still.2012.05.011.

53). Creamer, CA., **Filley, T.R**., Boutton, T.W. (2012). Long-term incubations of size and density separated soil fractions to inform soil organic carbon decay dynamics, *Soil Biology and Biochemistry*. http://dx.doi.org/10.1016/j.soilbio.2012.09.007

52). Creamer, CA., **Filley, T.R**., Boutton, T.W., Olk, D., Plante, A., Peltre, C., Top, S. (2012) Degree of woody encroachment into grasslands controls soil carbohydrate and amino compound changes during long term laboratory incubation. *Organic Geochemistry*, 52 (2012) 23–31.

51). Thomas, D.C.*, Zak, D.R., **Filley, T.R**. (2012). Chronic N Deposition Does Not Alter the Biochemical Composition of Forest Floor and Soil Organic Matter. *Soil Biology and Biochemistry,* 54, 7-13.

50). Schilling, J., Jun A., Blanchette;, R.A., Duncan, S..A., **Filley, T.R.,** Tschirner, U.W. (2012). Lignocellulose modifications by brown rot fungi and their effects, as pretreatments, on cellulolysis. *Bioresource Technology*, 116, 147-154.

49). Creamer, CA., **Filley, T.R**., Boutton, T.W., Olk, D., Stott , D.E. Dooling, V. (2012) Changes to soil organic N dynamics with leguminous woody plant encroachment into grasslands. *Biogeochemistry* DOI 10.1007/s10533-012-9757-5

48). Klotzbücher, T.*, **Filley**, **T.R**., Kaiser, K., Kalbitz, K. Lignin degradation in leave and needle litters studied with 13C-TMAH thermochemolysis – comparison with other methods. (2011). *Organic Geochemistry*, 42, 1271-1278. DOI:10.1016/j.orggeochem.2011.07.007.

47). Bianchi, T.S., Wysocki, L.A.*, Schreiner, K.M., **Filley, T.R.,** Corbett, D.R., Kolker, A.S., (2011). Sources of Terrestrial Organic Carbon in the Mississippi Plume Region: Evidence for the Importance of Coastal Marsh Inputs. *Aquatic Geochemistry*, 17, 431-456. DOI: 10.1007/s10498-010-9110-3.

46). Creamer, C.A., **Filley, T.R.,** Boutton, T.W., Oleynik, S., Kantola, I.B., (2011). Controls on soil carbon accumulation during woody plant encroachment: Evidence from physical fractionation, soil respiration, and $\delta^{13}C$ of respired CO2. *Soil Biology and Biochemistry*, DOI:10.1016/j.soilbio.2011.04.013.

45). Szlavecz, K., McCormick, M., Xia, L., Saunders, J., Morcol, T., Whigham, D., **Filley, T.R.** (2011). Ecosystem effects of non-native earthworms in Mid-Atlantic deciduous forests. *Biological Invasions* doi: 10.1007/s10530-011-9959-0

44). Mason S.L., **Filley, T.R.** and Abbott. G.A. (2010). A comparative study of the molecular composition of a grassland soil with adjacent unforested and afforested moorland ecosystems using ^{13}C labelled tetramethylammonium hydroxide (^{13}C-TMAH) thermochemolysis. *Organic Geochemistry*. doi:10.1016/j.orggeochem.2010.11.003

43). Kleber, M., Nico, P., Plante, A., **Filley, T.R.,** Kramer, M., Swanston, C., Sollins, P. (2010). Old and stable soil organic matter is not necessarily chemically recalcitrant: Implications for modeling concepts and temperature sensitivity. *Global Change Biology*. DOI: 10.1111/j.1365-2486.2010.02278.x

42). Arantes,V., Milagres, AEM., **Filley, T.R.,** Goodell, B (2010). Lignocellulosic polysaccharides and lignin degradation via nonenzymatic Fenton-based reactions mediated by Fe^{3+}-reductants purified from cultures of wood decay fungi. Journal of Industrial *Microbiology & Biotechnology* DOI: 10.1007/s10295-010-0798-2.

41). Olk, D. C., Anders, M.M., **Filley, T.R**, Isbell, C. (2009) Crop nitrogen uptake and soil phenols accumulation under continuous rice cropping in Arkansas. Soil Science Society of America Journal, (2009); 73:952-960

40). Arantes, V., Qian, Y., Kelley, S.S., Milagres, A.M.F., **Filley, T.R.**, Jellison, J., Goodell, B. (2009) Biomimetic oxidative treatment of spruce wood studied by pyrolysis–molecular beam mass spectrometry coupled with multivariate analysis and 13C-labeled tetramethylammonium hydroxide thermochemolysis: implications for fungal degradation of wood, *J. Biol. Inorg. Chem*. doi: 10.1007/s00775-009-0569-6.

39). Castañeda, I.S.*, Werne, J.P., Johnson, T.C., and **Filley, T.R.,** (2009). Late Quaternary vegetation history of southeast Africa: The molecular isotopic record from Lake Malawi*, Palaeogeography, Palaeoclimatology, Palaeoecology* 275, 100–112.

38). Crow, S. E., **Filley, T.R.,**McCormick, M., Szlavecz, K., Stott, D.E., Gamblin, D., Conyers, G. (2009) Invasive earthworms and forest successional stage interact to impact plant litter inputs and particulate organic matter chemistry, *Biogeochemistry* doi: 10.1007/s10533-008-9260-1.

37). Schreiner, K.M., **Filley, T.R.,** Blanchette, R.A., Bowen, B.B., Bolskar, R.D. (2009) White-Rot Basidiomycete-mediated Decomposition of C60 Fullerol, *Environmental Science and Technology* doi: 10.1021/es801873q.

36). Jurgens, J.A., Blanchette, R.A., **Filley, T.R.** (2009) Fungal diversity and deterioration in mummified woods from the ad Astra Ice Cap region in the Canadian High Arctic, *Polar Biology* 32, 751-758. DOI:10.1007/s00300-008-0578-x.

35). Crow, S. E.[P], Lajtha, K., **Filley**, **T.R**., Swanston, C.W., Bowden, R.D., Caldwell, B.A. (2009) Sources of plant-derived carbon and stability of organic matter in soil: implications for global change, *Global Change Biology* 15(8) pp. 2003-2019.

34). Boutton, T.W., Liao, J.D., **Filley, T.R.,** S. R. Archer (2009) Below ground carbon storage and dynamics accompanying woody plant encroachment in a subtropical savanna. *Soil Carbon Sequestration and the Greenhouse Effect* (R. Lal and R. Follett, eds.), Soil Science Society of America, Madison, WI.

33). Mason S.L., **Filley**, **T.R**., Abbott, G.C. (2009) The Effect of Afforestation on the Soil Organic Carbon (SOC) of a Peaty Gley Soil Using On-Line Thermally Assisted Hydrolysis and Methylation (THM) in the Presence of 13C-Labelled Tetramethylammonium Hydroxide (TMAH), *Journal of Applied and Analytical Pyrolysis* doi:10.1016/j.jaap.2008.11.005.

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20). Sollins, P., Swanston, C., Kleber, M., **Filley, T.,** Kramer, M., Crow, S., Caldwell, B., Lajtha,K., and Bowden, R. (2006) Organic C and N stabilization in a forest soil: evidence from sequential density fractionation. *Soil Biology and Biochemistry*, 38, 3313–33244.

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12). Bianchi, T.S., **Filley, T.R.,** Dria, K., and Hatcher, P.G. (2004) Temporal Variability in Sources of Dissolved Organic Carbon in the Lower Mississippi River. *Geochimica et Cosmochimica Acta* 66, 959-967.
11). **Filley, T.R** (2003) Assessment of fungal wood decay by lignin analysis using tetramethyl-ammonium hydroxide (TMAH) and C-13-labeled TMAH thermochemolysis In: *Wood Deterioration and Preservation-Advances in our Changing World*. Editors: Goodell B; Nicholas DD; Schultz TP, ACS SYMPOSIUM SERIES: 845, 119-139.
10). **Filley, T.R.,** Freeman, K.H., Wilkin, R.T., et al., (2002) Biogeochemical controls on reaction of sedimentary organic matter and aqueous sulfides in Holocene sediments of Mud Lake, Florida, *Geochimica et Cosmochimica Acta* ,66, 937-954
9). **Filley, T.R.,** Cody, G.D., Goodell, B. et al. (2002) Lignin demethylation and polysaccharide decomposition in spruce sapwood degraded by brown rot fungi. *Organic Geochemistry*, 33, 111-124.
8). **Filley, T.R.,** Blanchette, R.A., Simpson, E., Fogel, M. (2001) Nitrogen cycling by wood decomposing soft-rot fungi in the "King Midas tomb," Gordion, Turkey. *Proceedings of the National Academy of Sciences-USA*, 98, 13346-13350.
7). **Filley, T.R.,** Freeman, K.H., Bianchi, T.S., Hatcher, P., (2001) An isotopic biogeochemical assessment of shifts in organic matter input to Holocene sediments from Mud Lake, Florida *Organic Geochemistry*, 32, 1153-1167
6). Hazen, R.M., **Filley, T.R.,** Goodfriend G.A. (2001) Selective adsorption of L- and D-amino acids on calcite: Implications for biochemical homochirality *Proceedings of the National Academy of Sciences-USA*, 98, 5487-5490.
5). Cody, G.D., Boctor, N.Z., **Filley, T.R.,** et al (2000) Primordial carbonylated iron-sulfur compounds and the synthesis of pyruvate. *Science*. 289, 1337-1340.
4). **Filley, T.R.,** Hatcher, P.G., Shortle, W.C., et al (2000) The application of C-13-labeled tetramethylammonium hydroxide (C-13-TMAH) thermochemolysis to the study of fungal degradation of wood. *Organic Geochemistry*, 31, 181-198.
3). **Filley, T.R.,** Minard, R.D., Hatcher, P.G. (1999) Tetramethylammonium hydroxide (TMAH) thermochemolysis: proposed mechanisms based upon the application of C-13-labeled TMAH to a synthetic model lignin dimer. *Organic Geochemistry*, 30, 607-621.
2). **Filley, T.R.,** Filley, R.M., Eser, S., Freeman, K. (1997) Compound-specific isotope analyses of products from carbonization of a fluid catalytic cracking decant oil doped with C-13-enriched 4-methyldibenzothiophene. *Energy and Fuels*, 11, 637-646
1). **Filley, T.R.,** Freeman, K.H., Hatcher, P.G. (1996) Carbon isotope relationships between sulfide-bound steroids and their proposed sterol precursors in the sediments from Santa Barbara Basin, CA. *Organic Geochemistry,* 25, 367-377.

FUNDING

Discussion of support: Over the past 17 years 23 research projects have been successfully funded from a number of different sources including 5 different federal funding agencies for $3,347,302 dollars directly to Filley's lab. Funding indicated below are funds to the Filley lab or as a fraction of the total funding. Funding can be broken down into 4 broad themes: Instrumentation purchase (**INST**), Environmental Chemistry of Pollutants (**ENV**), Soil and Litter Biogeochemical Cycles (**SLBC**), STEM education with Native American Tribal Colleges (**STEM**) and these are designated as such in the table below.

Current Research Support

1. *Critical Zone Observatory for Intensively Managed Landscapes* (IML-CZO); $492,635/$5,000,000, 8/13-8/18. National Science Foundation. Multi University Grant. (Filley-Purdue PI), with Indrajeet Chaubey (CoPI) in a consortium of 10 universities, Praveen Kumar (Univ of IL, Lead PI), (SLBC)
2. *Collaborative Research: Linking the Chemical Structure of Black Carbon to its Biological Degradation and Transport Dynamics in a Northern Temperate Forest Soil,* 10/11-09/17, National Science Foundation, $406,506, (Filley Purdue PI) with K. Nadelhoffer (PI), J. Bird (PI) (SLBC)

Completed Research Support

3. *Collaborative Research: Investigating the Soil-Earthworm-Litter System Controls on the Stabilization of Organic Matter in Eastern Deciduous Forests*, National Science Foundation, 08/08 to 09/12, $383,000/$680,000, (Filley-Lead PI) with C. Johnston (CoPI), K. Szlavecz (PI), M. McCormick (PI) **(SLBC)**
4. Research Experience for Undergraduates (REU) Supplement to *Investigating the Soil-Earthworm-Litter System Controls on the Stabilization of Organic Matter in Eastern Deciduous Forests* $25,000. National Science Foundation 06/10-05/12 (Filley-Lead PI) **(STEM)**.
5. *Acquisition of a Gas Chromatograph-Quadrupole Mass Spectrometer and Upgrade to an Existing Stable Isotope Mass Spectrometer for Continued Biogeochemical Research.* National Science Foundation. $188,209. (06/09-06/10). (Filley Lead PI) **(INST)**
6. *Lignin as a Facilitator, not a Barrier, during Saccarification by Brown Rot Fungi*, USDA-DOE (Univ MN), 09/08-08/12, $158,000 (Filley-Co-PI) with R. Blanchette (CoPI), J. Schilling (PI) **(SLBC)**
7. Research Experience for Undergraduates (REU) Supplement to *Impacts of Vegetation Change on Stabilization and Microbial Accessibility of Soil Organic Matter* $4,924. National Science Foundation 06/09-05/10 (Filley-PI) **(STEM)**.
8. *Mentoring Native American Students for Success in Geoscience Graduate Programs*, National Science Foundation, 08/06 to 07/10, $500,000 (Filley-Co-PI) with G. Parker (CoPI), P. Welle (CoPI), T. Kroeger (CoPI), S. Zurn-Birkhimer (PI) **(STEM)**
9. *Collaborative Research: Impacts of Vegetation Change on the Stabilization and Microbial Accessibility of Organic Matter: A Microbiological, Isotopic, and Molecular Study,* National Science Foundation, 08/05 to 07/09, $254,00/$454,000(Filey-Lead PI) with T. Boutton (CoPI) **(SLBC)**
10. *Key Role of Nitrogenous Compounds in Soil Organic Matter Stabilization via Interactions with Mineral Surfaces,* United State Department of Agriculture / sub contract through Oregon State University, 08/05 to 07/08, $91,885 (Filley Co-PI) with K. Lajtha (CoPI), B. Caldwell (CoPI), M. Kramer (CoPI), C. Swanston (CoPI), M. Kleber (CoPI), P. Sollins (PI) **(SLBC)**
11. *Nanoscale Initiative Research Teams (NIRT): Response of Aquatic and Terrestrial Microorganisms to Carbon-Based Manufactured Nanoparticles*, National Science Foundation, 07/04 to 06/08, $320,000/$1,600,00 (Filley-Co-PI) with B. Applegate (CoPI), C. Jafvert (CoPI), R. Balanchette (CoPI), L. Nies (CoPI), R. Turco (PI). **(INST, ENV)**
12. *Understanding the survival microorganisms in tile drainage and surface water,* United State Department of Agriculture, 09/04 to 08/06, $110,000 (Co-PI) with R. Turco (PI) **(SLBC)**
13. *Watershed Tracking of Allochthonous Organic Matter and Nutrients to Geist, Eagle, and Morse Reservoirs, Indiana, Sub project 5*, Central Indiana Water Resources Partnership, 10/04 to 01/06, $33,000 (Filley-PI). **(SLBC)**
14. *Repercussion of Carbon Based Manufactured Nanoparticles on Microbial Processes in Environmental Systems*, Environmental Protection Agency, 10/04 to 09/07, $83,750 (Filley Co-PI) with R. Turco (PI) **(ENV)**

15. *Hydrologic and land use control on the nature and cycling of allochthonous organic carbon in mixed land use water sheds within Central Indiana*, United States Geological Survey-Indiana Water Resources Research Center, 03/04 to 02/06, $27,000 (Filley PI). **(SLBC)**
16. *Collaborative Research: Orchid-fungal interactions - a system for testing hypothesis about the ecological role and distribution of mycorrhizal fungi in affecting plant distribution*, National Science Foundation, 09/03 to 07/06, $100,000 (Filley Purdue PI) with M. McCormick (CoPI), D. Whigham (PI). **(SLBC)**
17. *Anaerobic Microbial Reductive Debromination of Polybrominated Diphenyl Ethers*, Environmental Protection Agency, 09/02 to 09/06, $94,000 (Filley CoPI) with L. Nies (PI) **(ENV)**
18. *Consortium for Agricultural Soils Mitigation of Greenhouse Gases - Purdue University Tasks 1, 2, 3 and 5*, United State Department of Agriculture, 03/02 to 08/05, $90,000 (Filley CoPI) with R. Turco (Purdue PI) through Kansas State University. **(SLBC)**
19. *Environmental Photochemistry of Polybrominated Diphenylethers*, Environmental Protection Agency, 10/02 to 09/06, $67,000 (Filley CoPI) with C Jafvert (PI) **(ENV)**
20. Role of Fungal Decomposition of Woody Tissue in the Sulfurization of Lignin in Sulfidic Sediments American Chemical Society. 6/02 to 6/04, $35,000 (Filley PI) **(SLBC)**
21. *Wood Modification by Brown Rot Fungi*, United State Department of Agriculture-sub contract to the University of Maine, 11/00 to 11/02, $28,600 (Filley CoPI) with B. Goodall (PI) and J. Jellison (CoPI). **(SLBC)**

GRADUATE STUDENT AND POSTDOCTORAL REEARCHERS ADVISED

Serving/served as major professor or co-major professor

Dr. Karl Dria, post doc, 2004-2005

Dr. Mi-Youn Ahn, post doc, 2005-2006.

Dr. Susan Crow, post doc, 2006-2007.

Dr. Timothy Berry, post doc, 2016-2017.

Mr. Brent Dalzell, PhD 2005.

Ms. Wang Yang, non thesis MS. 2005. Co-advised wth Yuch Ning Shieh.

Mr. Keith Crooker, MS 2006.

Ms. Katie Schreiner, MS 2009,

Ms. Courtney Creamer, PhD 2012.

Ms. Yini Ma, PhD 2013.

Ms. Sara Top, PhD 2013.

MS. Olivia Miller, MS 2014

Mr. Timothy Berry, PhD 2016

Mr. Ruzhen Wang, PhD. 2011-2015. Co-advised with Yong Jiang, Institute of Applied Ecology, Chinese Academy of Sciences.

Ms. Nana Wu PhD. 2010-2014. Co-advised with Prof. Edith Bai (major advisor), Institute of Applied Ecology, Chinese Academy of Sciences.

Ms. Yuanyuan Li. 2011-2015. Co-advised with Prof Dong Shikui (major advisor), Beijing Normal University.

Ms. Christy Gibson, PhD. 2011-present.

Ms. Tingyu Hou, PhD. 2017-present.

Ms. Ming Li. 2014-present. Co-advised with Prof Jingkuan Wang (major advisor), Shenyang Agricultural University.

Ms. Ulyssa Hester, MS, 2015-2017 (Co-advised with Dr. Ron Turco).

VISITING SCIENTISTS HOSTED

Associate Professor Jufeng Zheng, EcoPartnership Visiting Scholar in the IML-CZO, Nanjing Agricultural University, Oct 2015-Oct 2016.

Ms. Ming Li, PhD student and EcoPartnership Visiting Scholar in the IML-CZO, Shenyang Agricultural University, Oct 2015-Oct 2017.

Prof. Ge TiDa, EcoPartnership Visiting Scholar, Institute of Subtropical Agriculture, Chinese Academy of Sciences. March 2015-March 2016.

Prof. Yun Zhang. EcoPartnership Visiting Scholar in the IML-CZO. Shenyang Agricultural University. September 2014 – September 2015.

Prof. Na Yu. EcoPartnership Visiting Scholar in the IML-CZO. Shenyang Agricultural University. September 2014 – September 2015.

Ms. Tingyu Hou. PhD student and EcoPartnership Visiting Scholar in the IML-CZO. Northwest Agriculture and Forestry University. September 2014 – September 2016.

Ms. Nana Wu PhD. PhD student and EcoPartnership Visiting Scholar, Institute of Applied Ecology, Chinese Academy of Sciences. August 2012-August 2013.

Ms. Yuanyuan Li. PhD student and EcoPartnership Visiting Scholar, Department of Environmental Sciences, Beijing Normal University. Sept 2013-Sept 2014.

Mr. Li Bo. EcoPartnership Visiting Scholar. PhD student, Institute of Applied Ecology, Chinese Academy of Sciences, Shenyang. March 2013 – March 2014.

Mr. Ruzhen Wang, PhD student and EcoPartnership Visiting Scholar. Institute of Applied Ecology, Chinese Academy of Sciences, Shenyang. May 2012 – August 2013.

Associate Prof. Shenjun Qin, EcoPartnership Visiting Professor. Hebei University of Engineering. March 2013 – February 2014.

Dr. Jennie DeMarco, postdoctoral research associate, Department of Biology at New Mexico State University Summer 2012.

Prof. Anindya Sarkar, Dept. of Geology IIT Kharagpur, India, Sabbatical Stay in Filley Lab -Feb 2010-Sept 2010

Assoc. Prof. Joyanto Routh, Dept of Geology and Geochemistry, Stockholm University Stockholm, Sweden, March 10-April 3, 2009.

Prof Akiko Nagawa-Izumi, Tsukuba University-Sabbatical Stay in Filley Lab, June 2007-March 2008

Prof. Tom Boutton, Texas A&M- Sabbatical Stay in Filley Lab, Aug 2006-Dec 2006.

Dr. David Bielman- Post Doctoral Scientist, University Southern California, Dept. Geography, Summer 2007.

Dr. Klaas Nierop- Research Scientist, University of Amsterdam, Department of Geography, 4/2004
Dr. Katherine Ficken, Research Scientist, University of Wales, Department of Geography, 2/2004

Susan Crow, PhD seeking student, Soils-Oregon State University, Major Advisor Prof. Kate Lajtha**.**

Jennifer Boeckman, Research Scientist, National Soil Tilth Lab, 8/2003

Felicity Ku, Graduate Student, Taiwan National University, Geology, 2002-2003

In addition, scientists from biogeochemistry programs at Open University, UK; New Castle on Tyne, UK; the National Isotope Center, New Zealand; University of Poitiers, France; University of Amsterdam, Netherlands; Tsukuba University, Japan; Colorado State University, CO, have been trained in the application of 13C TMAH thermochemolysis and alkaline CuO oxidation for lignin extraction from litter, soils, and sediment.

TEACHING ACTIVITIES

2016 (Fall)

Terrestrial Biogeochemistry	EAPS 518 12 students (3 credits)

2015 (Fall/Spring)

Natural Hazards: Science and Society	SCI 360, 68 students (3 credits)

2014 (Fall/Spring)

Dynamic Earth (lecture and Lab)	EAPS 109, 49 students (3 credits)
Natural Hazards: Science and Society	SCI 360, 66 students (3 credits)

2013 (Fall/Spring)

Dynamic Earth (lecture and Lab)	EAPS 109, 48 students (3 credits)
Natural Hazards: Science and Society	SCI 360, 64 students (3 credits)

2012 (Fall/Spring)

Terrestrial Biogeochemistry	EAPS 591/AGRY 598, 11 students, (3 credits, with Cliff Johnston)
Dynamic Earth (lecture)	EAPS 109, 52 students (3 credits)
Dynamic Earth (Lab)	EAPS 191, 40 students (1 credits)
Short Course on Soil Biogeochemistry	Beijing Normal University (25 students May 7-21)

2011

Terrestrial Biogeochemistry	EAPS 591/AGRY 598, 11 students, (3 credits, with Cliff Johnston)
Dynamic Earth (lecture)	EAPS 109, 64 students (3 credits)
Dynamic Earth (Lab)	EAPS 191, 52 students (1 credits)

2010

Astrobiology	EAPS 591, 9 students, (3 credits, with Jay Melosh)
Dynamic Earth (lecture)	EAPS 109, 50 students (3 credits)
Dynamic Earth (Lab)	EAPS 191, 33 students (1 credits)
Terrestrial Biogeochemistry	EAPS 591/AGRY 598, 8 students, (3 credits, with Cliff Johnston)
Planet Earth	EAPS 100, 268 students (3 credits, with Eric Riggs)

2009

Dynamic Earth (lecture and Lab)	EAPS 109, 62 students (3 credits)
Terrestrial Biogeochemistry	EAPS 591/AGRY 598, 8 students (3 credits, with Cliff Johnston)

2008

Terrestrial Biogeochemistry	EAPS 591/AGRY 598, 10 students (3 credits, with Cliff Johnston)
Dynamic Earth (lecture and Lab)	EAPS 109, 68 students (3 credits)

2007

Dynamic Earth (lecture and Lab)	EAPS 109, 54 students (3 credits)

2006

Dynamic Earth (lecture and Lab)	EAPS 109, 50 students (3 credits)
Methods in Environmental Geochemistry	EAPS 591S, 12 students (3 credits)

2005

Dynamic Earth (lecture and Lab)	EAPS 109, 59 students (3 credits)
Methods in Environmental Geochemistry	EAPS 591S, 10 students (3 credits)

2004

Dynamic Earth (lecture and Lab)	EAPS 109, 54 students (3 credits)
Methods in Environmental Geochemistry	EAPS 591S, 12 students (3 credits)
Introduction to Biogeochemistry	EAPS 591C, 5 students (3 credits)

2003

Dynamic Earth (lecture and Lab)	EAPS 109, 61 students (3 credits)

2002

Introduction to Biogeochemistry	EAPS 591R, 5 students (3 credits)
Dynamic Earth (lecture and Lab)	EAPS 109, 73 students (3 credits)
Methods in Environmental Geochemistry	EAPS 591A, 12 students (3 credits)

2001

Introduction to Biogeochemistry	EAPS 591F, 11 students (3 credits)
Introduction to Biogeochemistry	EAPS 591A, 4 students (3 credits)

PROFESSIONAL ORGANIZATIONS

Soil Science Society of America
American Chemical Society
American Geophyscial Union
Ecological Society of America

SERVICE

Professional Organizations

Facilitated the coordination of the joint meeting between The Geochemistry Division of the American Chemical Society and The Clay Minerals Society, New Orleans, LA (2007).

Elected National Chair and Program Chair -Geochemistry Division of the American Chemical Society (2007-2008)

Member of Editorial Board for Geochemical Transactions, Official Journal of the ACS Division of Geochemistry (2008-2011)

Purdue University

A. Discovery Park and Cross College Service

Purdue Center for the Environment Executive Committee (2013 – 2017)

Purdue Director of the US-China EcoPartnership for Environmental Sustainability (January 2012-present).

ESE governance committee (2008-2010)

Purdue Climate Change Research Center Executive Committee (2004 – 2012)

Served on four faculty search committees for the Purdue Climate Change Research Center COALESCE hires.

B. Department of Earth Atmospheric and Planetary Sciences

Chaired three EAPS faculty search committees and served on two additional searches

2004, 2009, 2013 EAS Strategic Planning Committee

Chair of EAPS Department Diversity Committee. 2011-2012

2009 EAS representative to the CIC Department Heads Meeting

EAS Associate head 2007-2010

EAS Department Leadership team, 2007-2010

EAS Graduate Committee Chair 2007-2010

EAS graduate committee 2004-2010

Outreach to educators: Volunteer participant in the Fall Purdue University Standards-Based Inquiry Workshop for grade 5-12 teachers (2003-2005)

C. College of Science

CoS Faculty Council (2011-2012)

CoS Faculty Diversity Committee (2012)

College of Science COALESCE Committee (2003) to review, cull, and merge 56 new focus area white papers.

Co-Authored Climate Change hiring initiative and the formation of the Purdue Climate Change Research Center.

Faculty representative (2003) to the College of Science Dean's Advisory Comm.

College of Science Dean's Diversity Committee (2005)

Scientific Community

Organizing Co-Chair, Conference and Workshop on Critical Zone Science, Sustainability, and Services in a Changing World. *Jointly organized by* the U.S.-China EcoPartnership for Environmental Sustainability and the & Cross CZO Working Group on Organic Matter Dynamics. Purdue University, West Lafayette, IN, Oct 23-25, 2015

Co-organizer of a CUAHSU hands-on short course on "the role of runoff and erosion on soil carbon stocks: from soilscapes to landscapes" Purdue University, Oct 21-22, 2015.

Invited Participant, Sino-U.S. CZO Workshop in Guiyang, China, Oct. 6-7, 2015

Scientific Committee. International Conferences on Biochar and Green Agriculture. April 14-18, 2015.

Co-Organizer, The China-US 2014 Joint Ecopartnership Symposium on Land Use, Ecosystem Services, and Sustainable Development, HeFei China, Nov 16-18.

Utah-Qinghai Ecopartnership External Advisory Board (2014-present)

NSF Proposal Panel Member, 2014, 2009, 2008, Low Temperature Geochemistry and Geobiology.

Co-organized symposium at 246th American Chemical Society National Meetings in Sept of 2013 entitled "Environmental Fate and Reactivity of Highly Condensed Aromatic Carbon". With Cliff Johnston and Chad Jafvert.

Organized an international workshop and symposium on "Opportunities and Challenges in US-China Intellectual Property Agreements" at the 246th National Meeting of the American-Chemical-Society (ACS) Location: Indianapolis, IN Date: SEP 08-12, 2013.

NSF Proposal Panel Member, 2012, 2013, Ecosystems (Division of Environmental Biology)

Co-Organizer The China-US 2013 Joint Ecopartnership Symposium on Land Use, Ecosystem Services, and Sustainable Development, Gatlinburg, TN, Nov 16-18.

Co-Organizer a Fall American Geophysical Union symposium on Dryland Biogeochemistry. December 2012, San Francisco, CA.

Co-Organizer The China-US 2012 Joint Ecopartnership Symposium on Land Use, Ecosystem Services, and Sustainable Development, Shenyang China, Sep 7 17-20, 2012.

Co-organized and co-taught with Prof. Greg Michalski two short courses in Beijing, China 1) Using traditional, normal and mass independent isotope effects to understand biogeochemistry in modern and ancient system-at China Geosciences University and 2) Soil organic matter dynamics-at Beijing Normal University. May 7-21, 2012.

Invited workshop participant on the biogeochemical applications of moving wire 14C AMS technology. Lawrence Livermore National Lab. Feb 8-10, 2012.

Invited participant in the European Cooperation in Science and Technology (COST) workshop on Stable Isotopes in Biosphere-Atmosphere-Earth System Research (SIBAE). Working group III. June 21-22, 2012.

Editor: Chicago Wilderness Climate Action plan (Sept 2011)

NSF Workshop: Committee to outline future research initiatives for the NSF Geobiology and Low Temperature Geochemistry Program (G&G). (8/2010)

Rotary Club World Congress (March 2008), Climate Change Lecture and Discussion.

NSF Carbon and Water Proposal Panel Member, 2007,

Guest editor (with Tom Boutton) a special issue of *Soil Biology and Biochemistry* "Ecosystems in Flux: Molecular and Isotopic Indicators of Soil Organic Matter Dynamics" Vol 38, 2006.

Co-organizer of an international conference on the "Mechanisms of Organic Matter Stabilization and Destabilization in Soils". Held October 9-13, 2005 at the Asilomar Conference Center in Monterey, California.

Invited participant in the development of the Great Lakes and Central States Ecological Session Organizer-fall American Geophysical Union Fall Meeting (2004). Co-organized (with Tom Boutton, Texas A&M) and chaired a session on "Ecosystems in Flux: Molecular and Isotopic Indicators of Soil Organic Matter Dynamics".

Observatory (GLACEO). The planning meeting for this NEON Infrastructure was October 15-17, 2004. Presented a discussion/talk on the needs associated with "o*rganic compound-specific stable isotope analysis in NEON"*.

Rapateur, NCAR Biogeosciences Workshop 15-17 November, 2003 "Development of a Science Plan for Integrated Studies of Coupled Biosphere-Atmosphere Carbon and Nitrogen Cycles".

Session Organizer-American Chemical Society National Meeting in San Diego (2001) -- Co-organized (with John Hedges, University of Washington) and chaired session on Terrestrial Biogeochemistry.

NASA proposal panel: Astrobiology Institutes Round (2001).

Diversity-Related Activities
Chair of EAPS Department Diversity Committee. 2011-2012
Co-Chair of EAPS Department Recruitment and Outreach Committee. 2015-present

Member Purdue College of Sciences Faculty Diversity Committee (2012-2012)

CoPI of NSF STEM education related grant "Mentoring Native American Students for Success in Geoscience Graduate Programs" in which Filley and CoPIs mentored and taught through field-based learning Native American tribal college students soil ecological/chemical principles.

Funded NSF REU supplements to grants to engage both African American and Native American students in STEM discipline summer lab and field education.