

CURRICULUM VITAE
ALISON L. SPONGBERG

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Year of appointment to University of Toledo: September 1994 as Assistant Professor
Year of Promotion: 2008

EDUCATION:

May, 1994. Doctorate in Philosophy in Soils and Crop Sciences, Soil Physics, Texas A & M University, College Station, TX.

Dissertation title: Volatilization of Hazardous Compounds During Composting of K061 API Separator Sludge

Research funded by Gulf Coast Hazardous Substance Control Board.

Agronomy honor society. Regents Fellow. Tom Slick Fellow. Minor in Statistics.

May, 1979. Master of Arts in Geology, Temple University, Philadelphia, PA.

Thesis title: Chemistry and Mineralogy of Precambrian Paleosols at Elliot Lake, Ontario, Canada.

June, 1976. Bachelor of Arts in Geology, Ohio Wesleyan University, Delaware, Ohio.

Kappa Delta Pi Honor Society.

WORK EXPERIENCE:

September 1994 – present: Professor, The Department of Environmental Sciences, University of Toledo, Toledo, Ohio.

Currently supervise one grant-funded research technician in my research lab. Developed the current environmental geochemistry research and soil science programs. Designed new courses in Environmental Geochemistry, Biogeochemistry, Soil Science, Hazardous Waste Management, Environmental Analytical Techniques, and Contaminant Hydrogeology. Educational programs developed include distance learning Earth System Science, and hands-on Physical Geology (NOVA) courses.

June, 1980 - August, 1991. Chevron Oil Company / Gulf Oil Company:

Houston Technical Services Center, Houston, Texas

Gulf Exploration and Production Co., Bakersfield, California

Chevron Oil Field Research Company, La Habra, California

Chevron Exploration and Production Company, Houston, Texas

Research Geochemist, Exploration Geologist, Clastic Stratigrapher, Project Coordinator. Responsibilities included Initiation, Design, Quality-control, and Interpretation of projects in Research, Exploration, and Development Geochemistry and Geology. Geochemical exploration for petroleum using surface methods; Fingerprinting petroleum; Reservoir characterization; Pool

separation using organic and inorganic techniques on sediments and fluids; Geochemical response of hydrocarbons to waterflooding; Geochemical consultant and instructor for area field offices; Evaluation of contractor data; Electric log and seismic interpretation. Supervisor of exploration/development group of eight professionals.

March, 1979 - June, 1980. Aero Services Company, Houston, Texas. Geophysicist.

Responsibilities included Geophysical interpretation of aeromagnetic data and scientific computer programming.

PUBLICATIONS:

- Wu, C., Huang, X., Witter, J.D., **Spongberg, A.L.**, Wang, K., Wang, D., Liu, J. 2014 Occurrence of pharmaceuticals and personal care products and associated environmental risks in the central and lower Yangtze River, China. 2014 Ecotoxicity and Environmental Safety 106: 19-26.
- Sridhar, B. B. M., Witter, J. D., Wu, C., **Spongberg, A.L.** and R.K. Vincent. 2014 Effect of Biosolid Amendments on the Metal and Nutrient Uptake and Spectral Characteristics of Five Vegetable Plants. . Water Air Soil Pollution 225:2092-9.
- Gonthier DJ, Dominguez GM, Witter J, **Spongberg AL**, Philpott SM. 2013. Bottom-up effects of soil-quality on a coffee arthropod interaction web. Ecosphere 2: art107.
- Gonthier DJ, GM Dominguez, JD Witter, **AL Spongberg** and SM Philpott. 2013. Bottom-up Effects of Soil Quality on a Coffee-Arthropod Interaction Web. Ecosphere 4(9): 1-15.
- Wu, C, **AL Spongberg**, JD Witter, BBM Sridhar 2012 Transfer of Wastewater Associated Pharmaceutical and Personal Care Products to Crop Plants from Biosolids-Treated Soil. Ecotoxicology and Environmental Safety 85:104-9.
- Spongberg, AL**, JD Witter, J Acuna, J Vargas, M Murillo, G Umana, E Gomez and G Perez, 2011 Reconnaissance of Selected PPCP Compounds in Costa Rican Surface Waters. Water Research 45, 6709-6717.
- Gonthier DJ, JD Witter, **AL Spongberg**, and SM Philpott, 2011. Effect of Nitrogen Fertilization on Caffeine Content in Coffee (*Coffea arabica* L.). Chemoecology, 21:123-130.
- (Invited) **Wu, C, **AL Spongberg** and JD Witter, 2011. The Uptake of Pharmaceuticals and Personal Care Products by Agriculturally Relevant Plant Species. Chimica Oggi/Chemistry Today, 29(2): 54-56.
- Czajkowski, KP, A Ames, B Alam, S Milz, R Vincent, W McNulty, T W Ault, M Bisesi, B Fink, S Khudar, T Benko, J Coss, *D Czajkowski, S Sritharan, K Nedunuri, S Nikolov, JD Witter and **AL Spongberg**, 2010. Application of GIS in Evaluating the Potential Impacts of Land Application of Biosolids on Human Health. Geospatial Technologies and Environment: Applications, Policies and Management edited volume of the Geotechnologies and Environment series. Ed. Nancy Pullen and Mark Patterson, pp 165-186.
- Wu, C, **AL Spongberg**, JD Witter, *M Fang and KP Czajkowski. 2010. Uptake of Pharmaceutical and Personal Care Products by Soybean Plants from Soils Applied with Biosolids and Irrigated with Contaminated Water. Environmental Science and Technology, 44, 6157-6161.
- Kim, A, A Nadarajah, **AL Spongberg** and JM Frantz, 2010. Polyacrylamide Hydrogel Properties for Horticultural Applications. International Journal of Polymer Analysis and Characterization, 15, 307-318.

- Wu, C, **AL Spongberg**, JD Witter, *M Fang, KP Czajkowski and A Ames, 2010. Dissipation and Leaching Potential of Selected Pharmaceutically Active Compounds in Soils Amended with Biosolids. Archives of Environmental Contamination and Toxicology, Published online March 2010.
- Wu, C, **AL Spongberg**, JD Witter, *M Fang, KP Czajkowski and A Ames, 2010. Detection of Pharmaceuticals and Personal Care Products in Agricultural Soils Receiving Biosolids Application. CLEAN- Soil, Air, Water 38: 230-237.
- Holt, L, AE Laursen, LH McCarthy, IV Badin and **AL Spongberg**, 2010 .Effects of Land Application of Municipal Biosolids on Nitrogen-Fixing Bacteria in Agricultural Soil. Biology and Fertility of Soils 46: 407-413.
- Wang X, H Zhu, ME Reding, JC Locke, JE Leland, RC Derksen, **AL Spongberg**, CR Krause. 2009. Delivery of Chemical and Microbial Pesticides Through Drip Irrigation Systems. Applied Engineering in Agriculture 25(6): 883-893.
- Wu, C, JD Witter, **AL Spongberg** and KP Czajkowski. 2009. Occurrence of Selected Pharmaceuticals in an Agricultural Landscape, Western Lake Erie Basin. Water Research 43: 3407-3416.
- Wu, C, **AL Spongberg** and JD Witter. 2009. Adsorption and Degradation of Triclosan and Triclocarban in Soils and Biosolids Amended Soils. Journal of Agricultural and Food Chemistry 57(11): 4900-4905.
- Wu, C, **AL Spongberg** and JD Witter. 2009. Sorption and Biodegradation of Selected Antibiotics in Biosolids. Journal of Environmental Science and Health: Part A. 44: 454-461.
- Maruthi, BBS, RK Vincent, J.D. Witter and **A.L. Spongberg**. 2009. Mapping the Total Phosphorus Concentration of Biosolid Amended Surface Soils Using LANDSAT TM Data. The Science of the Total Environment, 407: 2894-2899.
- (Invited) **Spongberg, A.L.** and JD Witter. 2008. A Review of PCB Concentrations in Tropical Media. Invited paper for the International Journal of Tropical Biology. 56(4): 1-9.
- Derksen, RC, H Zhu, HE Ozkan, RB Hammond, AE Dorrance, and **AL Spongberg**. 2008. Determining the Influence of Spray Quality, Nozzle Type, Spray Volume, and Air-Assisted Application Strategies on Deposition of Pesticides in Soybean Canopy. Transactions of the ASABE. 51(5): 1529-1537.
- Wu, C, **AL Spongberg** and JD Witter. 2008. Use of Solid Phase Extraction and Liquid Chromatography-Tandem Mass Spectrometry for Simultaneous Determination of Various Pharmaceuticals in Surface Water. The International Journal of Environmental Analytical Chemistry 88:14: 1033-1048.
- Wu, C, **AL Spongberg** and JD Witter. 2008. Determination of the Persistence of Pharmaceuticals in Biosolids Using Liquid-Chromatography Tandem Mass Spectrometry. Chemosphere 73: 511-518.
- Spongberg, AL**, L Hartley, D Neher and JD Witter. 2008. Fate of Heavy Metal Contaminants in a Former Sewage Treatment Lagoon, Hancock County, Ohio. Soil and Sediment Contamination, 17:619-629.
- Spongberg, AL** and JD Witter, 2008 Pharmaceutical Compounds in Wastewater Process Stream in Northwest Ohio. The Science of the Total Environment 397: 148-157.
- Spongberg, A.L.** 2007. The Stormy Petrels of Maumee Bay Guide to the Stranahan Arboretum, with Particular Reference to Tress in the 60 Stories (aka “The Canon”) of Sir Arthur Conan Doyle’s Sherlock Holmes and Britain.

- Witter, J.D., **A.L. Spongberg** and K. Czajkowski. 2007 Diurnal Soil Temperature Effects and Data Representativeness in the GLOBE Program. *Journal of Geography* 106:13-19.
- Roberts, S., J. Gottgens, **A.L. Spongberg**, J. Evans, N. Levine 2007. Integrated Approach to Assessing Potential Dam Removals: An Example from the Ottawa River, NW Ohio. *Environmental Management* 39(1):113-124.
- Spongberg, A.L.** 2006 Evaluation of PCB contaminant load in Sipunculan worms along the west coast of Costa Rica. *Journal of Tropical Biology* 54, Supl. 1: 27-33.
- Spongberg, A.L.** and E. Moebius 2006 Re-evaluation of the muck soils from the Scioto Marsh, Hardin Co., Ohio. *Ohio Journal of Science*, 106: 181-185.
- Spongberg, A.L.** 2004 Characterization of the PCB congeners in sediments of Golfo Dulce, Costa Rica. *Journal of Tropical Biology* 52 (Supl 2), p. 10-18.
- Spongberg, A.L.** 2004 Characterization of the PCB congeners in sediments of Golfo de Nicoya, Costa Rica. *Journal of Tropical Biology* 52 (Supl 2) p. 19-29.
- Spongberg, A.L.** 2004 An Initial Investigation of PCB Contamination in Surface Sediments in the Coastal Waters of Costa Rica. *Journal of Tropical Biology* 52(Supl 2), p. 1-9.
- Spongberg, A.L.**, J. Gottgens and B. Muller. 2003 Pesticide Accumulation Rates in a Northwestern Ohio Marsh. *Water, Air and Soil Pollution* 152: 387-404.
- Blakely, J.K., D.A. Neher and **A.L. Spongberg**. 2002. Microinvertebrate and microbial communities, and decomposition as indicators of polycyclic aromatic hydrocarbon contamination. *Applied Soil Ecology* 21: 71-88.
- Spongberg, A.L.** and G. Lou,. 2000. Pesticide Adsorption in Three Soils from Blue Creek Wetlands, Waterville, Ohio, *Science of Soils*, 5:1.
- Spongberg, A.L.** and P. Becks. 2000. Organic Contamination in Soils Associated with Cemeteries. *Journal of Soil Contamination* 9(2):87-97.
- Spongberg, A.L.** and P. Becks. 2000. Inorganic Soil Contamination from Cemetery Leachate. *Water, Air and Soil Pollution* 117:313-327.
- Spongberg, A.L.** and P. Davis, 1999. Preliminary Investigation of Pesticide Contamination in Golfo Dulce, Costa Rica. *Journal of Tropical Biology* 46 (Suppl.5): 111-124.
- Tevesz, M. J. S., **A. L. Spongberg**, and J. A. Fuller, 1998. Stable Carbon and Oxygen Isotope Record of Central Lake Erie Sediments, *Journal of Paleolimnology* 20 (3): 295-305.
- Spongberg, A. L.** and J.M. Martin-Hayden, 1997. Pesticide stratification in an engineered wetland. *Environmental Science and Technology* 31:3161-3165.
- Spongberg, A. L.**, J.C. Thomas, and K.W. Brown, 1996. Laboratory Scale In-vessel Composter Designed for Volatile Emissions Analysis. *Journal of Environmental Quality* 25:371-3.
- Spongberg, A. L.** and K. W. Brown, 1995. Volatilization of Toxic Organic Compounds During In-vessel Composting of Hazardous Waste. *Hazardous Waste and Hazardous Materials* 12(4):295-307.
- Gay, A. L.**, 1989. Integrated Geologic/Engineering Study of Kurten Field Waterflood Project. *AAPG Bulletin*. 73:357.
- Gay, A. L.** and D. E. Grandstaff, 1979. The Chemistry and Mineralogy of Precambrian Paleosols at Elliot Lake, Ontario, Canada. *Precambrian Research* 12: 349-373.

PROFESSIONAL PRESENTATIONS SINCE 1994: (presenter is in bold type)

- Brothers, Candice**, AL Spongberg, D Dwyer. 2013 Effectiveness of Rice Hull Biochar on the Adsorption of Soluble Phosphorus in a Batch Equilibrium Study. National Geological Society of America Conference, Denver, CO. October 26-30, 2013.
- Maharjan, Renu** and AL Spongberg. Phytooremediation of PPCPs from Surface Waters Using *Azolla caroliniana*. Presented at the 4th Annual Midwest Graduate Research Symposium 4/20/2013
- McCafferty, LM***, ALSpongberg and JD Witter. Uptake of Pharmaceutical and Personal Care Products by Several Common Wetland Macrophytes. Posters at the Capitol, April 2012.
- Brislawn, E*** and AL Spongberg. Transport of PPCPs in Wetland Soils. Geological Society of America Symposium, March 2011.
- McCafferty, LM**, AL Spongberg and JD Witter. The Potential for Uptake of Pharmaceutical and Personal Care Products by Several Common Wetland Macrophytes. University of Toledo Undergraduate Summer Research Symposium, Toledo, OH, August 4th, 2011.
- Hanlon, R**, AL Spongberg, JD Witter and C Wu. Bioconcentration and Distribution of PPCPs in Zebra Mussels (*Dreissens polymorpha*) Along the Northwest Ohio Lake Erie Coastline. Posters at the Capitol, Columbus Ohio, April 6, 2011.
- Gonthier, DJ**, SM Philpott, GH Dominguez, JD Witter and AL Spongberg. Effects of Plant Quality on an Insect Food Web in a Complex Tropical Coffee Agroecosystem. 95th Ecological Society of America Annual Meeting, Pittsburg, PA, August 1-6, 2010.
- Hanlon, R**, AL Spongberg, JD Witter and C Wu. Bioaccumulation of Persistent PPCPs in Zebra and Quagga Mussels. Posters at the Capitol, Columbus Ohio, April 15 2010.
- Swan, KL**, AL Spongberg, C Wu and JD Witter. Adsorption of Monensin A and Lasalocid A to Clay Mineral Constituents of Soil. Geological Society of America North-Central Section Annual Meeting, Branson, MO, April 11-13, 2010.
- Fang, M and AL** Spongberg. Sorption of Selected Hormones onto Wetland Media. Geological Society of American North Central Section Annual Meeting, Branson, MO, April 11-13, 2010.
- Wu, C** and AL Spongberg. Transportation and Degradation of Selected Pharmaceuticals in Soils Applied with Biosolids. 30th Annual Sigma Xi Student Research Symposium, University of Toledo, Toledo, OH, October 24th, 2009.
- Fang, M** and AL Spongberg. Analysis of Natural and Synthetic Hormones in Surface Water by Solid-Phase Extraction and Liquid Chromatography Tandem Mass Spectrometry. 30th Annual Sigma Xi Student Research Symposium, University of Toledo, Toledo, OH, October 24th, 2009.
- Swan, K** and AL Spongberg. Adsorption and Desorption of Carbamazepine to Biosolids Amended Soil. 30th Annual Sigma Xi Student Research Symposium, University of Toledo, Toledo, OH, October 24th, 2009.
- Wu, C**, AL Spongberg and JD Witter. Adsorption and Degradation of Triclosan and Triclocarban in Soils and Biosolids Amended Soils. 2nd International Conference on Occurrence, Fate, Effects and Analysis of Emerging Contaminants in the Environment, Colorado State University, Fort Collins, CO, August 4-7, 2009.
- Wu, C**, AL Spongberg and JD Witter. 2009 Pharmaceutical and Personal Care Products in an Agricultural Landscape, Western Lake Erie Basin. IAGLR, Toledo, Ohio, May 22, 2009.
- Krantz, DE, AN Norton, JI Knapp, AL Spongberg, TG Fisher and JA Fuller**. 2009. Quaternary Stratigraphy and Post-Glacial History of Western Lake Erie. IAGLR, Toledo, Ohio May 20, 2009.

- Swan, KL** and AL Spongberg. Adsorption and Desorption Characteristics of Carbamazepine on Biosolids Treated Agricultural Soil. Posters at the Capitol: Undergraduate Research in Northwest Ohio. Columbus, OH, April 2009.
- Wu, C**, AL Spongberg and JD Witter. Sorption of the Antibacterial Agents Triclosan and Triclocarban in Soils. Sigma Xi Research Symposium, University of Toledo, Toledo, OH, November 1st, 2008.
- Nelson, DE** and AL Spongberg. Polycyclic Aromatic Hydrocarbons (PAH) in Sediments of Recreational Boating Marinas, Western Basin Lake Erie, USA. Sigma Xi Research Symposium, University of Toledo, Toledo, OH, November 1, 2008.
- Swan, KL**, L Carpenter and AL Spongberg. Investigation of the Occurrence of Pharmaceutical and Personal Care Products (PPCPs) in The Ottawa River and Swan Creek, Lucas County, OH. Sigma Xi Research Symposium, University of Toledo, Toledo, OH, November 1, 2008.
- Wang, X**, H Zhu, ME Reding, JC Locke, JE Leland, AL Spongberg, RC Derksen and CR Krause. 2008 . Uniformity of Agri-Chemicals and Bio-Compounds Applied through Drip Irrigation System. ASABE Annual International Meeting. Paper 084084, July 1, 2008.
- (Invited) **Spongberg, AL**. Chemical Analysis of PPCP for Aqueous Samples. University of Costa Rica Chemistry Department Symposium November 2008, San Jose, CR.
- (Invited) **Spongberg, AL**. Distribution of PPCP Compounds from Input at the Wastewater Treatment Plant, Through Their Migration into the Environment. University of Costa Rica Biology Department Symposium, November 2008, San Jose, CR.
- Swan, KL**, L Carpenter and AL Spongberg. Investigation of the Occurrence of Pharmaceutical and Personal Care Products (PPCPs) in Two Maumee River Confluent Tributaries. 25th Annual OVC SETAC Meeting. Indiana University, Bloomington, IN, October 3, 2008.
- Wu, C**, AL Spongberg and JD Witter. Monitoring Pharmaceutical and Personal Care Products in an Agricultural Landscape, Western Basin, Lake Erie. 25th Annual OVC SETAC Meeting. Indiana University, Bloomington, IN, October 3rd, 2008.
- Oyewumi, O.** and AL Spongberg. Comparative Study of Cadmium, Copper and Nickel Adsorption in Three Brownfield Sites, Northwest, Ohio. Geological Society of America, North-Central Section, Evansville, IN April, 2008.
- Spongberg, AL and **C Wu**, Determination of the Persistence of Pharmaceuticals in Biosolids using Liquid Chromatography – Tandem Mass Spectrometry. Ohio Academy of Science, April, 2008.
- Spongberg, AL and **O Oyewumi**. Adsorption Characteristics of Brownfield Sites in Northwest, Ohio. Ohio Academy of Science, April 2008.
- Norton, A.N.**, A.L. Spongberg and D. Krantz. 2007 Post Glacial Stratigraphy and Sand Resources in the Western Basin of Lake Erie, 2007 Geological Society of America Annual Meeting, Denver, CO, October 28-31.
- Holt, L.M.** A. E. Laursen, L. H. McCarthy, I. V. Bostan and A. L. Spongberg. Changes to microbial nitrogen-fixation, respiration, and community structure following land-application of municipal biosolids. Moving Forward: Wastewater Biosolids Sustainability: Technical, Managerial, and Public Synergy Conference. Moncton, New Brunswick, Canada, June 24-27, 2007.
- Norton, A.N.**, A.L. Spongberg, D. Krantz, J.A. Fuller. Preliminary Geophysical Investigation in Western Lake Erie. Geological Society of America, Joint South-Central and North-Central Sections 41st Annual Meeting, Kansas City, Kansas, April 2007.

- Shirk, G., J. Struble, A. Spongberg, V. Brown** (panel) Professors Analyzing their Teaching. Northwest Symposium of Science, Mathematics and Technology. November 3-4, 2006. Toledo, Ohio
- Spongberg, A.L.** and J.D. Witter Pharmaceutical and Personal Care Products - Mass Balance through the waste water treatment process in Oregon, Ohio. GSA National Conference, Philadelphia, PA October 2006.
- Gottgens, J.F.**, S.J. Roberts, J.E. Evans, A.L. Spongberg and N.S. Levine. Assessing Potential Removal of Low-Head Dams in Urban Settings: A Case-Study from the Ottawa River, NW Ohio. 2006 IAGLR Annual Conference, Windsor, Ontario, Canada May 2006.
- Spongberg, A.L.**, K.P. Czajkowski, J. Rader, D. Czajkowski, J.D. Witter. Sewage Sludge Application Effects on Northwest Ohio Farmlands, (including preliminary data on Pharmaceuticals) 2005 ASA-CSSA-SSSA International Annual Meetings (November 6-10, 2005), Salt Lake City, UT.
- Bobak, D.** and A.L. Spongberg. Forensic Evaluation of PAHs in Otter Creek Watershed. 2005 ASA-CSSA-SSSA International Annual Meetings (November 6-10, 2005), Salt Lake City, UT.
- Rader, J.**, A.L. Spongberg, K.P. Czajkowski, J. Witter, D. Czajkowski. Northwest Ohio Study on Consequences of Sewage Sludge Application to Agricultural Lands. 21st Annual International Conference on Soils, Sediments and Water, Amherst, MA October 17-21, 2005
- Bobak, D.** and A.L. Spongberg Geochemical Forensics Evaluation of Otter Creek Watershed. 21st Annual International Conference on Soils, Sediments and Water, Amherst, MA October 17-21, 2005. **Won Best Student Platform Award.**
- Czajkowski, K. P.**, A.L. Spongberg, T. Benko, T. Ault, J. Witter, T. Bragg. Temperature and soil temperature protocols: observations, partnerships, science. AGI Annual Conference, San Francisco, CA Dec 5-9, 2005.
- Muller, B.E.**, Johan F. Gottgens, Alison L. Spongberg. Effects of Long-term Non-point Agricultural Runoff on Phosphorus Retention by a Lake Erie Marsh. The WETPOL (International Symposium on Wetland Pollutant Dynamics and Control) conference, Ghent, Belgium, September 4-8, 2005.
- Czajkowski, K. P.**, A.L. Spongberg, T. Benko, T. Ault, J. Witter, T. Bragg Surface Temperature and Soil Temperature Protocols: Observations, Partnerships, Science. Presented at the Annual GLOBE conference, Prague, Czech Republic, July 2005.
- Spongberg, A.L.** My Story: How an Education-Oriented Scientist was Educated. Presented at SciMaTec Dialogues Across College Barriers Series, March 25, 2005.
- Buchanan, C. and **A.L. Spongberg**. Feasibility Study to Determine the Use of Toledo Harbor Dredge Material for Mitigation of Heavy Metals. International Conference on Great Lakes Research, Ann Arbor, MI May 23-27, 2005.
- Bobak, D.** and A.L. Spongberg. Polycyclic Aromatic Hydrocarbon Characterization from Point and Non-point Sources in Otter Creek, Northwest, Ohio. International Conference on Great Lakes Research, Ann Arbor, MI May 23-27, 2005.
- Witter, J.D.** and A.L. Spongberg Soil Temperature Characterization and Calculation of Soil Heat Flux in the Oak Openings Region Near the Western Basin of Lake Erie. International Conference on Great Lakes Research, Ann Arbor, MI May 23-27, 2005.
- Spongberg, A.L.**, K.P. Czajkowski, J. Rader, D. Czajkowski. Effects of Biosludge Application to a Farm Field in Northwest Ohio on Nutrient, Organic Carbon and Heavy Metal Levels. International Conference on Great Lakes Research, Ann Arbor, MI May 23-27, 2005.

- Mileyeva-Biebesheimer, O.,** Wang, Q, Spongberg, A., and Gruden, C. “Accelerating PCB Dechlorination in Freshwater Sediments” Battelle In-Situ and On-Site Bioremediation Symposium, Baltimore, MD. June 2005
- Czajkowski, D,** K. P. Czajkowski, A.L. Spongberg, J. E. Rader, K. Gerwin. Investigation of potential environmental impact of biosolid sludge application on agricultural fields. East Lakes Division of the Association of American Geographers, October 15-16, 2004.
- Witter, J.D.** and A.L. Spongberg. Soil temperature with depth: reassessing the GLOBE soil temperature protocol. AAPG regional meeting, Columbus, OH October 3-6, 2004.
Received Section Award for Best Poster
- Spongberg, A.L.** Student Remote Response Units: Is Better Learning a Few Clicks Away? Center for Teaching and Learning, University of Toledo September 8, 2004.
- Witter, J.D.** and A.L. Spongberg. Soil Temperature at Depth Protocol. GLOBE Teacher Workshop, Toledo, Ohio September, 2004.
- Witter, J.D.** and A.L. Spongberg Creating Methodology and A Dataset in Order to Assess Soil and Surface Temperatures with Regards to a Global Energy Budget Protocol: A GLOBE Study. GLOBE Teacher Workshop, July 2004.
- (Invited) Struble, J.,** A.L. Spongberg and K.P. Czajkowski ESSEA for middle school teachers. The annual ESSEA summer workshop, Woods Hole, MA July, 2004.
- (Invited) Spongberg, A.L.** and K.P. Czajkowski. An analysis of soil temperature with depth. The 8th Annual GLOBE conference. Boulder, CO, July 25-30, 2004
- (Invited) Czajkowski, K.P.,** T. Ault, T. Benko, A. Spongberg, J. Struble, M. Templin, J. Kane. Engaging K-12 Students in Science: Validating Satellite Imagery with GLOBE Observations The 8th Annual GLOBE conference. Boulder, CO, July 25-30, 2004
- (Invited) Spongberg, A.L.,** K.P. Czajkowski, and J. Struble. Problems and Pitfalls from a Professor’s Perspective: Earth System Science Education Alliance. Annual AGU Conference, San Francisco, December, 2003.
- Czajkowski, K P,** A. L. Spongberg, J. Struble, T. Benko, M. Templin. Validating the MODIS snow product with GLOBE student observations. Annual AGU Conference, San Francisco, December, 2003.
- Struble, J.,** A.L.Spongberg, and K. Czajkowski, Using Inquiry-based Kits in College Science Content Courses. NSTA, Philadelphia, PA. March 2003
- Ernest DuBrul,** A. Spongberg, K. Czajkowski, J. Struble, C. Czerniak, Cyber Science Faculty: Challenges and Opportunities of Teaching Inquiry Science On-line. AETS, 2003
- Czajkowski, K. P., Spongberg, A.L. and Struble, J.** Distance Learning and Teachers: Experiences from the Earth System Science Education Alliance, American Geophysical Union, San Francisco. December 2002.
- Spongberg, A.L.,** L. Hartley, and C. Sager. Adsorption Rates for Heavy Metal Contaminants at the Fostoria, Ohio Phytoremediation Site. International Conference on Contaminated Soils, October, 2002 Amherst, MA
- (invited) Spongberg, A.L.** Evaluation of Pollutants (Pesticides, Hydrocarbons, and PCBs) in Sediments of Four Coastal Sites in Costa Rica. University of Costa Rica, September 4, 2002.
- (invited) Spongberg, A.L.** Evaluation of Pollutants in sediments in Papagayo Bay, Costa Rica. Presented to representatives of local interests in Bahia de Culebra September 2, 2002.
- Spongberg, A.L.,** Fuller, J.A., Tevesz, M.J.S. and Jicha, B.R., Lake Erie’s Detroit delta or River Raisin fan/delta or both? North-Central Section (36th) and Southeastern Section (51st), GSA Joint Annual Meeting (April 3-5, 2002).

- Czajkowski, K.P.** and A.L. Spongberg. Research Experience for Undergraduates (REU) at the University of Toledo's Lake Erie Center: Environmental Studies of Lake Erie and its Watershed. Fall 2001 AGU
- Neher, D.A.**, A.L. Spongberg, and D.L. Moorhead, Phytoremediation of Heavy Metal Contaminated Soils in Ohio. Ohio Biotechnology Consortium Workshop, September 2001.
- Spongberg, A.L.** Organic and Inorganic Contamination Associated with Cemeteries in Ohio. North-Central Section of the Geological Society of America. Indianapolis, IN April, 2000.
- Marlow, B.M.** and Spongberg, A.L. Pesticide Retention in Tropical Soils (Ultisols) and Temperate Soils (Alfisols) North-Central Section of the Geological Society of America. Indianapolis, IN April, 2000.
- Lynn, C.J.** and Spongberg, A.L. Heavy Metal Content of Biota, Water and Sediment along the Rouge River, Michigan. North-Central Section of the Geological Society of America. Indianapolis, IN April, 2000.
- (invited) Gottgens, J.F.**, B.E. Muller, and A.L. Spongberg. Longterm Nonpoint Pollution Abatement by a Lake Erie Marsh and its Implication for Wetland Restoration Policies. Annual Ohio Lake Erie Conference, Huron, Ohio. September 1, 1999.
- Muller, B. E.**, J. F. Gottgens, A. L. Spongberg and N. Kusina. The Effects of Long-term Nonpoint-Source Nutrient Loading in Two Impounded Lake Erie Marshes, Proceedings of the Society of Wetland Scientists 20th Annual Meeting, Norfolk, Virginia. June, 1999.
- Spongberg, A.L.** J. F. Gottgens, and B. E. Muller. Heavy Metal and Pesticide Accumulation Rates at Winous Point Marshes, Sandusky Bay, Ohio. 42nd International Conference on Great Lakes Research, Cleveland, OH, May, 1999.
- Blakely, J.K.**, Neher, D.A. and Spongberg, A.L. 1999. Effect of Polycyclic Aromatic Hydrocarbon Concentrations on Nematode Communities and Decomposition. Soil Ecology Society, Chicago, Illinois, May, 1999.
- Blakely, J.K.**, Neher, D.A. and Spongberg, A.L. 1999. Effect of Creosote on Nematode Community Composition and Decomposition. Ecological Society of America annual meeting, Spokane, Washington. August, 1999.
- Niekamp, S.**, and A.L. Spongberg, Pesticide Transport at a North Central Ohio Golf Course. National Conference for Undergraduate Research, Syracuse, New York, April 23, 1999.
- Kusina, N.** and A.L. Spongberg, Metal Content and Core Dating of the Winous Point Marshes, Sandusky Bay, Ohio. 21st Midwest Environmental Chemistry Workshop, University of Michigan, October 16-18, 1998.
- Marlow B. S.** and A. L. Spongberg, Plant Oxidation Rates and Products for Angiosperms, Gymnosperms and Ambrosia Under Aerobic Conditions. 21st Midwest Environmental Chemistry Workshop, University of Michigan, October 16-18, 1998.
- Gottgens, J.F.**, B.E. Muller, A.L. Spongberg and D.H. Davis, 100-year Records of the Accumulation of Sediment, Nutrients, Pesticides, and Trace Metals in a Lake Erie Marsh Impacted by Agriculture and a Reference Marsh. 19th Annual meeting of the Society of Wetland Scientists, Anchorage, AK, June 8-12, 1998.
- Marlow, B. S.**, A.L. Spongberg, D. Neher, J.A. Fuller, and M.J.S. Tevesz, The Feasibility of Using Lignins as Climatic Biomarkers for Lake Erie Basin Sediments. International Conference on Great Lakes Research, 41st Conference, McMaster University, Hamilton, Ontario, May 18-22, 1998. p146.

- Marlow, Brian** and Alison L. Spongberg, 1998 Lignin Degradation Rates and Products in Angiosperms and Gymnosperms of Different Ages, National Conference for Undergraduate Research, Salisbury State University, Salisbury MY, April 24, 1998, p55.
- Spera, Shelley** and A.L. Spongberg. Metal and Pesticide Preservation in Winous Point Marshes, Geological Society of America North-Central Section. Columbus, Ohio, March 19-20, 1998, Vol 30, No 2, p72.
- Marlow, Brian** and Alison L. Spongberg. Lignin Degradation Rates and Products in Angiosperms and Gymnosperms of Different Ages, Geological Society of America North-Central Section. Columbus, Ohio, March 19-20, 1998, Vol 30, No.2, p58-59.
- Ganliang, L.** and A.L. Spongberg. An Approach of Effect of Soil Type and Solution Media on Atrazine and Metolachlor Distribution Coefficient. Geological Society of America North-Central Section. Columbus, Ohio, March 19-20, 1998, Vol 30, No 2, p57.
- Spongberg, A. L.**, M.J.S. Tevesz, and J. A. Fuller. Organic Geochemical Evidence for the History of the Infilling of the Sandusky Subbasin, Lake Erie. International Association for Great Lakes Research, 40th Conference, Buffalo, NY. June, 1997, p127.
- Fuller, J. A.**, M.J.S. Tevesz, and A. L. Spongberg. Infilling History of the Sandusky Subbasin, Lake Erie: Sedimentological and Isotopic Evidence. International Association for Great Lakes Research, 40th Conference, Buffalo, NY. June, 1997, p120.
- Spongberg, A. L.** and J.M. Martin-Hayden. Pesticide Stratification in an Engineered Wetland Delta.. 19th MidWest Environmental Chemistry Workshop, Purdue U., IN, October, 1996.
- Davis P.** and A. L. Spongberg. A Geochemical Investigation of the Golfo Dulce Sediments, Costa Rica. 19th MidWest Environmental Chemistry Workshop, Purdue U., IN, October, 1996.
- Becks, P. M.** and A. L. Spongberg. Soil and Groundwater Contamination from Cemetery Leachate. 19th MidWest Environmental Chemistry Workshop, Purdue U., IN, October, 1996.
- Leticariu, M.** and A. L. Spongberg. Hydrogeochemical sStudy of the Dunkirk Aquifer, Hardin County, Ohio. 19th MidWest Environmental Chemistry Workshop, Purdue U., IN, October, 1996.
- Brown, L.C.**, M.T. Batte, N.R. Fausey, H.W. Belcher, J.D. Eigel and A.L. Spongberg. Water Table Management to Balance Environmental and Economic Goals in the Central Great Lakes Region of the United States 6th ICID Drainage Workshop: Drainage and Environment. Ljubljana, Slovenia, April 21-28, 1996.
- Spongberg, A. L.** and J.M. Martin-Hayden. The Use of Geochemical Stratigraphy to Characterize Pesticide Input Functions. National Ground Water Association 47th Annual Convention and Exposition, Indianapolis, IN October, 1995.
- Brown, L.C.**, M. T. Batte, N. R. Fausey, H.W. Belcher, J. D. Eigel and A. L. Spongberg, Basis for a Comprehensive Agricultural Water Management Guide for the Central Great Lakes Region. The Ohio Academy of Science, 1995.
- El-Gharbawy, A.** and A. L. Spongberg. Microbial and Photodegradation of Pesticides in a Local Northwestern Ohio Soil. 18th Midwest Environmental Chemistry Workshop, Ohio State University, October 7-8, 1995.
- Spongberg, A. L.** Volatilization of Toxic Organic Compounds during In-vessel Composting of Hazardous Waste. 18th Midwest Environmental Chemistry Workshop, Ohio State University, October 7-8, 1995.

- Brown, K.W. and **A. L. Spongberg**, 1994. The Use of In-vessel Composting as a Means of Hazardous Waste Minimization (abstract) Proceedings of 1994 GCHSCB annual meeting. Beaumont, TX, March 2-4, 1994.
- Spongberg, A. L.** and K.W. Brown, 1992. Volatilization of Hazardous Compounds during In-vessel Composting (abstract) Proceedings of 1992 Soil Science Society of America annual convention, Minneapolis MN, Nov. 2-6, 1992.

RESEARCH GRANT APPLICATIONS:

GRANTED:

Agencies:

- Czerniak, C (PI), S. Molitor, J. Kaderaver, B. Mendenhall. Collaborator: Spongberg. Continuation: Networking Urban Resources with Teachers and University to enrich Early Childhood Science. NSF – K-3. 2017-2020.
- Czerniak, C (PI), S. Molitor, J. Kaderaver, B. Mendenhall. Collaborator: Spongberg. Networking Urban Resources with Teachers and University to enrich Early Childhood Science. NSF – K-3 \$10,000,000. 2012-2016.
- Czajkowski, K., A. Spongberg, D. Dwyer and W.V. Sigler . Prevention of Surface Water Contamination from Biosolids Application. 9/2010-8/2012, GLRI-USEPA, \$550,228.
- Czajkowski, K., A. Spongberg, D. Dwyer and W.V. Sigler. Agricultural Sludge V. 8/15/08 – 8/14/11. USDA-CSREES, \$836,503.
- K. Czajkowski, Co-PIs: A. Spongberg, R. Vincent and S. Milz Monitoring Agricultural Sewage Sludge, 7/2010 - 06/2011. USDA-CSREES.. \$468,000.
- Czajkowski, K., A. Spongberg, D. Dwyer. Monitoring the Health Effects of Agricultural Sewage Sludge. 09/2009-12/2012 USDA-CSREES. \$785,304
- Czajkowski, K., A. Spongberg, D. Dwyer and W.V. Sigler. Agricultural Sludge IV. 7/1/08 – 6/30/09. USDA-CSREES, \$226,370.
- Dwyer, D., W.V. Sigler, A. Spongberg, D. Apul. Phytoremediation and Plant Research, OH: Wetlands. 8/25/08 – 8/24/11. USDA-CSREES \$537,221.
- Czajkowski, K.P., A.L. Spongberg, D. Dwyer and W.V. Sigler, Monitoring Agricultural Sewage Sludge III. 7/1/ 2007 – 6/30/08. USDA-CSREES \$845,017.
- Dwyer, D, D. Krantz, T. Fisher, K. Egan, A. Spongberg. Phytoremediation – Design of Treatment Wetlands. 10/1/07 – 9/30/10 USDA–NRCS \$511,475
- Spongberg, A.L. Degradation of Polyacrylamide Hydrogels in Greenhouse Soils II. 6/11/07 - 6/10/08 USDA-ARS \$52,966.
- Moorhead, D., C. Stepien, J. Chen, A. Spongberg, and 11 others. Integrating Environmental and Public Health of Urban Ecosystems. Programs in Academic Excellence. \$15,000 (less).
- Czajkowski, K.P., A.L. Spongberg, D. Dwyer and W.V. Sigler, Monitoring Agricultural Sewage Sludge II. 7/1/09 – 6/30/09. USDA-CSREES \$1,192,586.
- Czajkowski, K., A. Spongberg, V. Sigler, D. Dwyer. Monitoring Agricultural Sewage Sludge. 07/2005 – 03/2010 USDA-CSREES. \$1,194,995.
- Spongberg, A.L. Fate of Agrochemicals in the Greenhouse. 7/2007 – 7/2010 USDA-ARS. \$26,011.00
- Duran, E., K. Rhoda, E. DuBrul, and A.L. Spongberg. Project DETAILS. Ohio Board of Regents, October 31, 2005. \$136,123. 1/26/06 – 5/31/07.

Spongberg, A.L. and C. Mayer. REU Site: Integrated Assessment of Physical, Ecological, and Socio-economic Aspects of a Watershed System May 2005 – April 2007. National Science Foundation \$258,909.

Spongberg, A.L. Funds for Distinguished Lecturer, Gail Ashley, American Association of Women Geoscientists. \$720. April 2006.

Spongberg, A.L. Degradation of Polyacrylamide Hydrogels in Greenhouse Soils. USDA-ARS 9/1/05 - 6/10/07 \$10,610.

Czajkowski, K.P., A.L. Spongberg, W.V. Sigler, D. F. Dwyer. Monitoring Agricultural Sewage Sludge. USDA Special Grant Program 7/15/05 – 7/14/08, \$1,194,995.

Dwyer, D., A.L. Spongberg, W.V. Sigler, and D. Krantz. Phytoremediation Plant Research III USDA Special Grant Program. 9/15/04-9/14/06, \$532,233.

Czajkowski, K.P., A.L. Spongberg, W.V. Sigler, D. F. Dwyer. Monitoring Agricultural Sewage Sludge Application, OH. USDA Special Grant Program 6/15/04-6/14/07, \$1,004,916.

Spongberg, A.L. and K.P. Czajkowski. Distance Learning Earth System Science Course for In-service Teachers. Submitted to OBOR Improving Teacher Quality Program 6/1/04 - 5/31/05. \$60,626.

Dwyer, D., A. Spongberg, D. Krantz and V. Sigler. Phytoremediation Plant Research II. USDA Special Research Grant Program/2002-06143. \$595,146. 9/15/03 – 9/14/05.

Czajkowski, K. P. and A. L. Spongberg. An Integrated Assessment of Physical, Ecological, and Socio-economic Aspects of a Watershed System. National Science Foundation Research Experience for Undergraduates \$186,713, 5/02-4/05.

Spongberg, A.L. and K.P. Czajkowski, Earth System and Space Science Concepts Distance Learning Course for In-service Teachers, submitted to the Ohio Board of Regents, Improving Teacher Quality Professional Development Program. 6/1/03 – 5/31/04 \$79,206.

Dwyer, D., D. Neher, and A. Spongberg. Phytoremediation Plant Research. USDA Special Research Grant Program/2002-06143. 8/1/02-7/31/05 \$282,020.

Vargas J.A., Spongberg, A.L. et al. Contaminacion ambiental y su impacto en sistemas endocrinos de organismos marinos. CRUSA 1/15/03-1/14/05. 140,771,062.00 colones (~\$400,000.00 U.S.)

Czajkowski, K., A. Spongberg, M. Templin. Energy and Earth Systems: GLOBE Protocol Research and Outreach. NSF, \$381,282 9/15/02 – 1/31/06.

Gottgens, J.F., A.L. Spongberg. Dam removal in the Ottawa River, Ohio: A feasibility study needed for comprehensive regional planning. Ohio Coastal Management Assistance Grants Program, \$82,696,7/01/02-6/30/03.

Czajkowski, K., Spongberg, A., and Struble, J. Implementation of In-service Earth System Science Distance Learning. Eisenhower Foundation. 9/01/01-8/31/02, \$36,480.

Spongberg, A.L., K. Czajkowski and J. Struble, Initiating Inquiry-Based Learning at the University of Toledo. NASA Opportunities for Visionaries (NOVA). \$25,995, 9/01/01-8/31/02.

Czajkowski, K., Spongberg, A., and Struble, J. Implementation of the Earth System Science Alliance in the Great Lakes Region. Institute for Global Environmental Strategies, ESSEA. 6/2001-5/2004, \$44,992.

Neher, D.A., A.L. Spongberg, D.L. Moorhead, S.L. Goldman. S.M. Leisner, and J. Gray. Biotechnology for phytoremediation of Heavy Metal Contaminated Soils in Ohio. Ohio Plant Biotechnology Consortium. 7/2000-6/2001, \$47,000.

- Czajkowi, K. P, Spongberg, A.L. et al. Research Experience for Undergraduates: An Integrated Assessment of Physical, Ecological, and Socio-economic Aspects of a Watershed System. National Science Foundation. 5/2000-4/2002, \$49,515.
- Vargas, J. A., J. Acuña, C. Jiménez, A. Spongberg, and H. Dean, Centro de Investigación en Ciencias del Mar y Limnología Proyecto en Costa Rica. CRUSA (Costa Rica – USA Foundation) 6/1999. 46.418.000 colones (~\$166,972.00)
- Spongberg, A.L. Characterization of Old Wood Sample from Lake Erie. Lake Erie Protection Fund Small Grant Program, 7/10/98, \$4125.
- Gottgens, J.F., A. L. Spongberg, and D. Davis. Long-term Non-point Pollution Abatement by a Lake Erie Marsh and its Implications for Wetland Restoration . Lake Erie Protection Fund. \$120,901. 7/24/96
- Spongberg, A. L. and J.M. Martin-Hayden. Analysis of Pesticide Transport Pathways and Degradation in Engineered Wetlands. USDA Competitive Grants Program. \$80,000. 9/01/95 through 8/31/97.
- Martin-Hayden, J.M. and A. L. Spongberg. Pesticide Transport, Water Balance, and Geochemical Characterization of the Blue Creek Watershed. Ohio Board of Regents \$22018. 7/1/96
- Marlow, B. S. and A. L. Spongberg. Fate of Organic Contaminants in Frozen Soils. Northeast Section of the Geological Society of America. 3/96 \$300.
- Spongberg, A. L., J.F. Gottgens, S.M. Leisner, J.M. Martin-Hayden, and R.L. Sinsabaugh. Viral Pathogen and Herbicide Fate and Transport in Agricultural Soil and Runoff. USDA Special Grants Program \$158,757. University contribution \$72,298, Total \$231,055. 7/01/95 through 6/30/97.

University:

- Spongberg, Krantz and Camp. Transformation of EEES 1010, Summer 2015.
- McCafferty and Spongberg, USR-CAP, \$3250. 6/1/11-8/15/11.
- Spongberg, A.L. Kohler International Research Grant. \$540. March 2009.
- Spongberg, A.L. Faculty Development Funds. \$240. December 2006.
- Spongberg, A.L. Travel funds for Sabbatical Trip to Costa Rica. Foy and Phyllis Penn Kohler Fund for International Studies. \$200.00 April 11, 2005
- Spongberg, A.L. Travel funds for Costa Rica Sample Collection Kohler International Travel Fund, \$300 8/04.
- Spongberg, A.L. Request for funds to attend Fall 2003 American Geophysical Union conference, San Francisco, CA. \$300. 12/03.
- Spongberg, A.L. Request for funds to attend International Conference on Contaminated Soils, Amherst, MA. University of Toledo Faculty Development Funds. \$400. 11/02.
- Spongberg, A.L. \$5000 Summer Research Fellowship and Research Grant, U.T.
- Spongberg, A.L. Request for funds to attend National GSA. University of Toledo Faculty Development Funds. \$275. 11/19/00
- Spongberg, A.L. and B. McDonald. Preliminary Fractured Clay Test Pit Site Investigation. 1999 Lake Erie Center Summer Fellowship, 5/1999 \$10,000.
- Spongberg, A.L. Column Flow Study for Pesticide Fate and Transport at Blue Creek. 1999 University Research Fellowship Program. 5/1999, \$9000.

Spongberg, A. L. Pesticide Sorption Analysis of Golfo Dulce sediments. Kohler Faculty Travel Grant \$1300, 5/99.

Spongberg, A.L., Sample Collection Trip to Costa Rica to Expand Research. Small Faculty Grant. 4/14/99, \$500.00

Spongberg, A.L. Research in Costa Rica. Faculty Development Funds, 1/19/99, \$460.00.

Niekamp, S. and A.L. Spongberg. Study of Contaminant Runoff Associated with Golf Course Maintenance. Honors Undergraduate Summer Research and Creative Activities Fellowship, University of Toledo, 5/98, \$2250.

Spongberg, A. L. Pesticide Stratification within the Blue Creek Wetland Delta. University Summer Research Fellowships and Research Grant Program. \$8418. 5/97

Marlow, B. S., Spongberg, A. L. and D. Neher. Characterization of Lignin in Fresh and Degraded Conifers and Deciduous Wood. Undergraduate Student Research Fellowship, University of Toledo. \$2250. 5/97.

Spongberg, A. L. Pesticide Accumulation within Golfo Dulce sediments. Kohler Faculty Travel Grant \$500, 3/97.

Homsher, M., A. L. Spongberg, J. Gottgens, and D. Neher. Comparison of a Novel Sampling Technique, Semipermeable Membrane Devices to a Great Lakes Biomonitor: *Dreissena polymorpha*. Lake Erie Center Summer Fellowship. \$10,000. 5/97.

Spongberg, A. L. Hydrology and Contaminant Plume Identification at Pelee Island Landfill. University Small Grant \$500. 7/96

Homsher, M., J. Gottgens, and A. L. Spongberg. The Silence of the Sentinels: An Investigation of Wetland Contaminant Cycles and Trophic Impact. Lake Erie Center 1996 Summer Fellowship Program. \$10,000 5/96.

Spongberg, A. L. Preliminary Investigation of Metals and Organic Contamination in Golfo Dulce, Costa Rica. Kohler International Travel Funds. \$1000. 1/96.

Hugg, J.L. and A. L. Spongberg. Blue Creek Wetlands Soil Survey. Honors Undergraduate Summer Research and Creative Activities Fellowship. 1/96 \$2250.

Marlow, B. S. and A. L. Spongberg. Fate of Organic Contaminants in Frozen Soils. Undergraduate Summer Research Fellowship Program. 1/96 \$2250.

Gottgens, J.F. and A. L. Spongberg. Long-term Assimilation of Agricultural Chemicals by a Lake Erie Marsh. Lake Erie Research Center \$3000. 8/95.

Spongberg, A. L. Preliminary Investigation of Metals and Organic Contamination in Golfo Dulce, Costa Rica. Small Grants Fund for Research Support. \$400 8/29/95.

Spongberg, A. L. Analysis of Pesticide Degradation in Aerobic and Anaerobic Sediments Associated with Wetlands. University Research Awards and Fellowship Program \$8000. 6/95 through 8/95.

Hugg, J.L. and A. L. Spongberg Pesticide Transport in Wetland Sediment. Honors Undergraduate Summer Research and Creative Activities Fellowship. 1/95 \$1250

In review:

Dwyer DF, Spongberg AL, and Rofkar JR. Effects of Arsenic on Lipid Accumulation and Wastewater Remediation by Extremophilic Microalgae. 5/2014–4/2016. National Science Foundation. \$179,692. Submitted 11/13.

Student Awards (beginning 2010)

Hanlon, Robert, Sigma Xi Grants in Aid, \$400. 1/2010

Swan, Kathie, Sigma Xi Grants in Aid, \$1000, 1/2010

COURSES TAUGHT AT UNIVERSITY OF TOLEDO:

EEES 4450/5450 Hazardous Waste
Management (3 hours)

NOVA-Inquiry-Based Earth Science

EEES 6200-995 Earth and Space Science
Concepts (distance learning)

EEES 4980/5980 Soil Science (3 hours)

EEES 4220/5220 Environmental
Geochemistry (3 hours)

EEES 6440 Contaminant Hydrogeology
(team taught, 3 hours)

EEES 6120 Environmental Analytical
Techniques (Lab, 2 hours)

EEES 6990-003 Environmental Research
(2 hours)

EEES 1030 Geologic Hazards (3 hours)

EEES 1010 Physical Geology (3 hours)

COURSES TAUGHT AT CHEVRON OIL FIELD RESEARCH COMPANY:

Geochemistry for the Exploration Geologist

Geology Field Trip of West Texas Oil Fields

PH.D. DISSERTATIONS DIRECTED:

Note, the Department does not grant Ph.D.s in Geology. These degrees are co-advised through Ecology, but research is conducted in A.Spongberg's lab, under her supervision.

- Wu, Chenxi (2010). Indicative Bacteria in Stored Biosolids and Wastewater Associated Pharmaceuticals in the Environment (co-advised with W.V. Sigler)
- Homsher, M. (1999). A Novel Sampling Technique for PCB analysis, Semipermeable Membrane Devices (co-advised with J. Gottgens)

MASTER OF SCIENCE THESES DIRECTED:

With the exception of some co-advised theses all thesis topics were developed by me and represent my personal research interests.

Completed:

Brothers, Candice (2013) Phosphorus Remediation Project in Maumee Bay

Maharjan, Renu (2013) Response of PPCP to Plant Growth (co-advise with S. Heckathorn)

Swan, Kathy (2012) Mobility and Fate of Monensin and Lasolocid in Soil: Sorption
Characteristics

Fang, Min (2010) Removal of natural and synthetic steroid hormones through constructed
wetland microcosms.

Bobak, Deanna (2010) PAH Characterization in Otter Creek.

Nelson Jr., Donald E. (2009) Polycyclic aromatic hydrocarbons in sediment of marinas, Western
Basin Lake Erie, U.S.A.

- Olewumi, O. (2008) Sorption characteristics of soils for heavy metals uptake.
- Norton, Abby N. (2008) Post-glacial stratigraphy and sand resources in Western Basin of Lake Erie
- Witter, Jason D. (2008) Diurnal Soil Temperature Effects Within the GLOBE® Program Dataset” and “Pharmaceutical Compounds in the Wastewater Process Stream in Northwest Ohio”
- Hartley, Lindy (2004) Characterization of a Heavy Metal Contaminated Soil in Ohio for a Phytoremediation Project.
- Spera, Shelley (2004) Pesticide and Metal Contaminant Variations Through the Past 100 Years in the Winous Point Marsh Sediments.
- Vagen, Jennifer (2003) The Influence of Groundwater on Bluff Erosion at Bill Stanton Community Park, Lake County, OH.
- Oros, Daniel (2002) Analysis of Fractures in Tills of Northwestern Ohio.
- Taylor, Greg (2001) Organic Contamination Delineation at the Defiance Cemetery
- Kusina, Nicholas (1999) Metal Content and Core Dating of the Winous Point Marshes, Sandusky Bay.
- Ganliang, Lou (1998) Determination and Comparison of Koc Values Experimentally and Mathematically for the Different Blue Creek Soil Types
- El-Gharbawy, Abeer, (1998) Degradation of two Pesticides, Alachlor and Atrazine, in Wetland Soils
- Epstein, Paul, (1997) Bioremediation of Creosote Contaminated Soils.
- Lefticariu, Mihai (1997) Geochemical Characterization of the Dunkirk Aquifer.
- Yeager, Kevin (1997) Transport of Pesticide Through the Blue Creek Agricultural Soils.
- Catalano, Chris, (1997) Hydrology and Geochemistry of Leachate from an Active Landfill, Pelee Island, Ontario, Canada.
- Becks, Paul (1997) Soil and Water Contamination Associated with Graveyards.
- Davis, Penny, (1997) Distribution and Geochemistry of Contaminants in a Pristine and a Contaminated Gulf, Costa Rica.
- Lesniak, Greg V. (1995) The Hydrogeology and Geochemistry of the Toledo Tie Site, Toledo, Ohio. Co-advised with Dr. W. Kneller.

In progress:

- Brislawn, Emily (began 8/2010) Sorption, degradation and transport of PPCPs in agricultural mesocosms
- Bensman, Kelly (began 5/99) Column Flow Studies in Three Soils from Blue Creek Wetlands.
- Lynn, Christopher (began 12/98) Phytoremediation of Metal Contaminants in the Rouge River, Michigan
- Marlow, Brian (began 9/98) The Use of Lignin as an Environmental Indicator.
- Gensler, David (began 5/98) The Search of Contaminants in Leachate from a Cemetery Built in Sandy Soil.

UNDERGRADUATE RESEARCH ADVISEES:

Wright, Robert (2011) An Assessment of an Alternative Cap Cover for the King Road Landfill (Ph.D.)

Hamilton, Lauren (2011) PPCP analyses of agricultural fields.

McCafferty, Lauren (2011) *University of Toledo undergraduate research funding*. Uptake of selected PPCPs by aquatic plant species.

Smith, Madelyn (2010) Adsorption of Diphenhydramine.

Wagner, Dean (2009) Developing Carbon Action Plans

Rock, Heather (2009) Sorption characteristics of diphenhydramine on biosolids amended soils.

Hanlon, Robert (2009-2011) *Undergraduate Researchh Mentorship program* Bioconcentration of PPCPs in Zebra mussels.

Swan, Kathie (2008-2009) PPCP Concentrations in Ottawa River and Swan Creek, Adsorption of Carbamazepine on Agricultural Soils.

Carpenter, Lora (2007) Occurrence of PPCPs in the Ottawa River and Swan Creek, Toledo, OH.

Bernstein, Elyce (2007) Heavy metal concentrations in plant materials associated with biosolids application.

Orosz, Chris (2006) Heavy metal concentrations in soils associated with biosolids application.

Weller, Matthew (2005-2006) Degradation of Ibuprofen in soils under varying environmental conditions.

Pittenger, Alycia (2005-2006) Trends in Nitrate dispersal in a sludge applied agricultural setting.

Pittenger, Alycia (REU 2004) Temperature, pH, and soil texture interrelationships.

Ronau, E. (2004) Temperature variation with depth with season at the Stranahan Arboretum

Belknap, S. (2004) Soil moisture, temperature and pH correlation at the Stranahan Arboretum.

Lanza, Kate (2002) Detailed field investigation of the Fostoria Waste Water Treatment Plant Disposal Site.

Haluka, (2002) Detailed field investigation of the Fostoria Waste Water Treatment Plant.

Sager, C. (2002) Lead sorption characteristic for sediment at the Fostoria Wastewater Treatment Facility.

Drake, E. (2002) Use of GIS in the Creation of a Soils Map for the Wegerzen Garden Center Site in Dayton, Ohio.

Gottschalk, Natalie (2000) A laboratory study to determine copper uptake by Blackberry plants.

Buchanan, Catherine (2000) A laboratory study to determine copper uptake by Ragweed

Niekamp, S. (1999) Study of Contaminant Runoff Associated with Golf Course Maintenance. Honors

Marlow, B. S. (1998) Characterization of Lignin in Fresh and Degraded Conifers and Deciduous Wood.

Gotch, Edward (1996) Evaluation of a Contaminated Site in Toledo. Honors

Hugg, J.L. (1996) Blue Creek Wetlands Soil Survey. Honors

Marlow, B. S. (1996) Fate of Organic Contaminants in Frozen Soils.

Fuggett, Susan (1996) PCB and organic contaminant analysis of Ottawa River. Honors.

Hugg, J.L. (1995) Pesticide Transport in Wetland Sediment. Honors.

RESEARCH INTERESTS:

Environmental geochemistry of sediments and water:

GC-MS and LC-ESI-MS-MS analyses of pesticide residues and pharmaceutical and personal care products
Biosolids and their environmental fate and effects
Soil/leachate chemical interaction
Characterization of contaminants in Costa Rica
Pesticide degradation in wetland settings
Geochemical markers in marshland cores
Hydrogeologic evaluation of Blue Creek artificial wetlands
Non-point pesticide pollution in relation to application technique
Hazardous waste characterization and soil science:
Identify hazardous waste contaminants and their degradation products
Quantify chemical degradation half-lives in different media
Identify the fate and transport of hazardous chemicals in different soil environments
The interaction of waste chemicals with soil clay minerals and organic matter
Phytoremediation

EDUCATIONAL INTERESTS:

Director of the Summer Research Experience for Undergraduates at the University of Toledo (2006-current, co-director since 2001). NSF funded.
Scientist for NWO Teams Educational program in Northwest Ohio. OBOR funded.
Support Scientist and instructor for TAPESTRIES 1996-2001. NSF funded.
Conduct Geology Department tour and activities
GLOBE scientist and trainer
ESSEA instructor
To promote hands-on activities.
NASA NOVA instructor

SKILLS:

LC-ESI-MS/MS analyses of complex compounds (pesticides, pharmaceuticals)
Gas chromatographic (MS, FID, ECD) analysis
Degradation studies of pesticides and hydrocarbons
Half-life determinations for contaminants in soil, water, compost
Soil classification
Stratigraphic and depositional environment analysis
Electric log evaluation
Paleoenvironmental reconstruction
Petroleum exploration and production
Reservoir continuity studies
Seismic and potential field data interpretation

PROFESSIONAL AFFILIATIONS:

American Chemical Society
International Association of Great Lakes Research
Geological Society of America
Society for Exploration Geophysicists, Pacific Coast Section
Treasurer 1985-1987
Vice-President 1984
Stormy Petrels of Maumee Bay (2001 – present)
Minister Without Portfolio (2005 – present)

OTHER AREAS OF PROFESSIONAL SERVICE:

Undergraduate advisor in Department (current)
Lab inspector for OSHA compliance for the EEES Department
University Committee on Diversity (Chair in 2003-4) – 2003-current
University Committee on Undergraduate Research (Chair 2006-8) – 2006-current
Board member for the Instrumentation Center – 2000-current
Faculty Senate 2005-2008
Arts and Sciences Council, 1994-1996.
Part time appointment to the Lake Erie Research and Education Center
Ad hoc Graduate Degrees Committee member
Graduate Affairs Committee
Undergraduate Affairs Committee
Student Awards Committee
Active on the committees of the following organizations:
Toledo Area Council of Governments (TMACOG) Dumps and Landfills
TMACOG Agricultural Runoff
TMACOG Blue Creek Wetland Project and Management Team
Speaker at Lourdes College Women in Science, November, 1994
Presenter at the Governor's Gifted Summer Institute, July 1995
Northwest Ohio Science Fair Judge yearly since 1995
Appeared on a three-part television news story on water quality (1999).
Geological consultant for the City of Oregon
Participated in the TAPESTRIES program, 1998-2003 through the Departments of Education at
BGSU and UT (Haney and Czerniak)
Participated in an Eisenhower Teaching Grant, 6/1998, through the College of Engineering, UT
(Abraham)
Presented at numerous seminars at Universities.

Graduate committee:

Brenda Leady (Ph.D. 2013): Historic patterns of deposition and biomagnification of mercury in selected wetland systems.