

KBS Resident Faculty, Student of Staff as PI

(26 active in 2008 and beyond; 47 total from 2004 to current)

* = NSF Doctoral Dissertation Improvement Grant (DDIG)

- Conner, J. 2004-2006: Morphological adaptations to individual pollinator taxa in a generalist plant, \$12,000
- Conner J, Shiu, Dworkian, 2006-2009, Adaptive Mechanisms of rapid adaptive evolution in an outbred natural population \$1,009,598
- *Conner, J.K. and M. Duffy. Selective predators and the dynamics of host-parasite interactions. NSF-DEB (Ecology Program); \$10,699.
- Conner, J. 2001-2006. The evolution of tolerance to herbivory among populations of scarlet gilia, *Ipomopsis aggregata*. NSF \$103,199.
- *Conner, J.K. and F. Knapczyk. 2005-2007. DDIG-NSF: Patterns of past and present selection on mating system traits in *Collinsia verna*; NSF; \$12,000.
- Getty, T., Dyer, F., Henderson, J. Ferreira, F., Altmann, E. Hale, and J.A. Oliva. 2003-2008. Sequential decision making as a unifying theme in cognitive science – NSF IGERT; \$2.5M
- Gross, K.L. 2005-2008. Sustaining the vision: A new lecture series at the Kellogg Biological Station; W.K. Kellogg Foundation; \$145,000.
- Gross KL, and GG Mittelbach.. 2002-2008. Differential responses of clonal and non-clonal plants to resource heterogeneity in grasslands. AW Mellon Foundation; \$340,000
- Gross, K.L. 2003-2005. Enhancing linkages between mathematics and ecology. A.W. Mellon Foundation; \$250,000.
- Gross, K.L. and C. Brassil. 2005-2007. Enhancing linkages between mathematics and ecology. A.W. Mellon Foundation; \$480,000.
- Gross, KL, GG Mittelbach, and H. Reynolds. 2002-2008. Collaborative research: Testing the role of resource heterogeneity and clonal integration on plant diversity in grasslands. NSF-DEB (Ecology Program); \$450,000
- Gross, KL, K Plaut, M Hamm. 2007-2010. Rural community revitalization: A capacity building initiative for mainstreaming pasture-based animal products in the food system. WK Kellogg Foundation; \$3.5M
- Hamilton, S.K. 2001-2006. Nitrate uptake and retention in streams: Mechanisms and effects of human disturbances from stream reaches to landscapes. NSF (IRCEB); \$117,000.
- Hamilton, S.K., N.E. Ostrom, M. Turetsky, and J.T. Lennon. 2006-2008. Quantifying biogeochemical processes in through-flow wetlands. MSU Center for Water Sciences, \$145,036.
- Hamilton, S.K. 2006-2009. Role of microbial sulfur oxidation in nitrogen removal by wetlands and streams. NSF-DEB (Ecosystems), \$483,078.
- Hamilton, S.K., J.M. O'Brien, and J.T. Lennon. 2008-2010. Water level fluctuations and internal eutrophication in lakes and wetlands. NSF-DEB (Ecosystems); \$360,000.
- Klausmeier, C. E., Litchman, and L. Bunimovich. 2005-2008. QEIB: Novel approaches to plankton seasonal succession. NSF (Ecology); \$350,000.
- Klausmeier, C.E., and E. Litchman. 2005-2010. Plankton community assembly: theory and practice. James S. McDonnell Foundation; \$499,968.
- Klug, M.J., Robertson, G.P. and J.J. Gallagher. 2000-2005. Secondary science teaching in rural Michigan: a model program for teacher retention and renewal. NSF-EHR (Teacher Retention and Renewal Program); \$1.2M.
- Lau, J. 2007- 2008. Ecological genetics and genomics of adaptation to climate change across a latitudinal gradient. Michigan State University Internal Research Grants Program (MSU IRGP), \$38,967.
- Lau, J. 2008. Effects of diversity and crop rotation on soil rhizobium populations. MSU internal.

- Lennon, J.T., Aanderud, Z.T., Klausmeier, C. E. 2008-2011. Moisture variability as a master regulator of microbial diversity and soil respiration across an agricultural landscape. USDA-CSREES (NRI). \$324,000
- Lennon, J.T. 2006-2008. Pulsed ecosystem activity: Responses of soil microorganisms to variable water supply. USDA-CSREES (NRI). \$110,000.
- Lennon, J.T., Hamilton, S.K., Schmidt, T.M., Schmidt, King, L., McMahon, K. 2008-2010. Microbial and ecosystem responses to land-water linkages: the importance of terrestrial-derived dissolved organic carbon (DOC) in lakes. MSU Center for Water Sciences; \$142,318
- Lennon, J.T., Schmidt, T.M., Klausmeier, C. E., Hall, E. 2007-2008. Towards a mechanistic framework of how changing temperatures affect aquatic bacterial community structure and function. MSU Center for Water Sciences; \$28,254
- Lennon, J.T. 2007-2010. Microbial responses to soil moisture variability in an agricultural landscape. Michigan Agricultural Experiment Station, Rackham Foundation; \$75,000
- Lennon, J.T., Jones, S.E. 2009-2012. Terrestrial carbon in aquatic ecosystems: experimental tests of the subsidy-stability hypothesis. NSF-DEB (Ecosystems); \$364,000.
- Litchman, E., and C. Klausmeier. 2005-2008. Vertical distribution of phytoplankton. NSF (Ecology); \$350,000.
- Mutch D., 2005-2008. No-till Plus, Rodale Institute, \$30,600
- Mutch D., Ngouagio , M. 2007-2009. No-till Pumpkins with Cover Crops, USDA Sustainable Agriculture Research and Education (SARE); \$131,420
- Mutch D., Delate, K., Moyer, J., Riddle, J., Porter, P., Haar, M. 2008-2012. Developing carbon-positive organic systems through reduced tillage and cover crop-intensive crop rotation schemes, USDA Integrated Organic Program. \$141,845.
- Robertson, G. P. and K Thelan, 2005-2008. Midwest Regional Carbon Sequestration Partnership
- Robertson, G. P., KL Gross, D. Landis, S Swinton, S. Gage, T. Schmidt, S. Snapp. 2004-2010 Long-term ecological research in Agricultural Ecosystems, NSF-LTER \$4,200,000
- Robertson, G.P. and S.H. Gage. 2002-2005. Consortium for agricultural soils mitigation of greenhouse gases. USDA-CSREES; \$1,300,000.
- Robertson, G.P. and S.H. Gage. 2004-2005. Regional partnership for carbon sequestration. DOE-Batelle; \$102,000.
- Robertson, G.P. and A.S. Grandy. 2001-2005. Soil organic matter accumulation and persistence in sustainable farming systems. USDA-CSREES (Sustainable Agriculture Special Project); \$77,000.
- Robertson, G.P. and S.K. Hamilton. 2004-2006. Renovation of laboratory instrumentation at the Kellogg Biological Station. NSF-DEB (FSML Program); \$95,250.
- *Robertson, G.P. and T. Loecke. 2006-2007. Soil resource aggregation and ecosystem function. DDIG-NSF \$9,970.
- Robertson, G.P., and T. Loecke. 2005-2007. Soil organic matter in organic cropping systems: managing for carbon sequestration and nitrogen uptake and retention. USDA-CSREES; \$53,644.
- *Robertson, G.P. and A.S. Grandy. 2003-2005. Soil aggregation and ecosystem function. NSF DDIG-NSF; \$5,700.
- Robertson, G.P. and K.L. Gross. 2007-2010. FSML: A field-based science and education facility at the Kellogg Biological Station. NSF-DBI; \$249,500.
- Robertson, G.P., S. Parr. 2006-2008. Ecosystem services and economic benefits of reduced input agricultural systems. USDA-CSREES, \$50,000.
- Robertson, G.P., R. Gehl, P. Grace, 2007-2010. Reducing nitrous oxide gas emissions in agricultural crop production. EPRI – Electric Power Research Institute, \$680,000.

Robertson, G.P., C.W. Anderson, T.R. Getty, J.K. Conner, and G.G. Mittelbach. 2006-2009. GK-12 Track 1: Ecological literacy in the K-12 classrooms of rural Michigan. NSF-EHR; \$1.6M.

Solomon, D. and D. Long. 2003-2006. Enhancing phosphorus reduction strategies in the Kalamazoo River watershed. USDA. \$485,000.

Wilke, B.J., and S. Snapp. 2006-2008. Effects of disturbance patterns on the co-limitation of nitrogen and water. The Land Institute, Salinas, Kansas. \$3,000.

Snapp, S. 2005-2008. Understanding linkages between human and biogeochemical processes and agriculture. NSF Biocomplexity; Sub-contract from Cornell University, \$208,465

Snapp S. and B. Wilke. 2006-2009, Development of winter cover crop varieties, USDA Sustainable Agriculture Research and Education (SARE); \$9,882

Tessier, A., C. Cáceres, S. MacIntyre, and M. Huebner. 2003-2007. Physical limnology for the parasite ecologist. NSF-OCE; \$905,500.

MSU (non-KBS) Faculty as PI

(12 active in 2008 and beyond; 32 total from 2004 to current)

Anderson, C.W., M. Wilson, B. Reiser, J. Krajcik. 2005-2008. Developing a research-based learning progression to the carbon cycle: transformations of matter and energy in biogeochemical systems. NSF- EHR (Research on Learning in Education Program); \$1.3M.

Brewer, M.J., D.A. Landis, and C. DiFonzo. 2004-2006. Integrating new natural enemies into soybean aphid biological control. USDA-CSREES (North Central IPM CGP); \$98,000.

Brewer, M., T. Noma, and D. Landis. 2004-2006. Natural control of soybean aphid by parasitoids, predatory flies, and pathogenic fungi and their integration into soybean crop management. MAES (Project Green); \$78,000.

Brewer, M. T. Noma, D. Landis. 2004-2008. Long-term monitoring of soybean aphid and its parasitoids in Michigan soybeans. USDA, NC IPM Program, \$98,000.

Gage, S.H. 2000-2005. Impact of climate and soils on crop selection and management. USDA-CSREES; \$50,000.

Grandy, A.S. 2006-2007. Molecular soil C dynamics following N enrichment: Links to microsites, enzymes, and ecosystems. USDA-NRI (Soil Processes Program); \$124,924.

Grandy, A.S., S. Snapp. 2008-2009. Nitrogen fertilization effects on soil communities and decomposition. NRI, MSU-USDA Sustainable Agriculture, \$75,000.

Leep, R. 2003-2005. Evaluation of clovers and grasses in mixtures. USDA-SARE. \$94,000.

Leep, R., D. Hudson, and S. Buskirk. 2004-2006. Using native grasses in a cool-season grazing system to improve seasonal grass growth and livestock gains. USDA-CSREES. \$55,110.

Kravchenko, A., A.J.M. Smucker, K. Thelen, and G.P. Robertson. 2004-2005. Predicting effects of soil differences on C sequestration potential of diverse management practices and land uses. USDA-CSREES (Sustainable Agriculture Special Project); \$55,472.

Kravchenko, A., A.J.M. Smucker, and K. Thelen. 2005-2006. Estimating field-scale changes in soil C sequestration in organic-based cropping systems. MAES (Project GREEN); \$40,770.

Kravchenko, A., A.J.M. Smucker, and K. Thelen. 2006-2007. How much carbon can be sequestered by organic-based cropping systems in Michigan soils? MAES (Project GREEN); \$42,850.

Kravchenko, A., S. Snapp, R. Gehl, D. Mutch. 2007-2009. Identifying the factors affecting cover crop performance in row crops. MAES (Project GREEN). \$48,200.

Kravchenko, A., A.J.M. Smucker, J. Rose. 2008-2010. Differences in inner-aggregate structures of aggregates from long-term conventional management and undisturbed native vegetation. USDA-NRI, \$260,000.

- Landis, D.A., D.W. Schemske, A.S. Davis. 2005-2007. Using demographic models to assess biocontrol of an invasive plant. USDA-NRI (Biology of Weedy and Invasive Plants Program); \$325,000.
- Landis, D.A., C.D. DiFonzo, M.J. Brewer, S.M. Swinton. 2005-2008. Soybean aphid in the North Central Region: Implementing IPM at the landscape scale. USDA-CSREES (RAMP); \$1,505,050.
- Landis, D.A. M. Brewer, A. Costamagna and G. Heimpel. 2005-2006. Does intraguild predation limit soybean aphid parasitoid impacts? USDA-NRI (Integrative Biology of Arthropods and Nematodes Program). \$205,000.
- Levine, U. and T.M. Schmidt. Uri Levine Research. 2004-2007. Effect of land use on global warming: characterization of methane oxidizing populations in soils exhibiting high and low methane consumption rates. EPA-STAR. \$108,464.
- Li, H., B. Teppen, J. Tiedje, C. Johnston. 2007-2010. Geochemical controls on the expression of bacterial antibiotic resistance in soil. USDA, NRI, \$367,000.
- Mulholland, P., R. Hall, S. Hamilton, J. Tank, B. Peterson. 2002-2007. Nitrate uptake and retention in streams: mechanisms and effects of human disturbance. NSF-DEB (Integrated Challenges in Environmental Biology Program); \$3.0M.
- Ostrom, N., P. Ostrom, G.P. Robertson. 2003-2007. Seasonal variation in microbial nitrous oxide production: Continuing applications of isotopes and isotopomers. NSF-Ecosystems, \$600,000.
- Rodrigues, D.F. and J.M. Tiedje. 2007-2012. Biodiversity and Biogeography of *Exiguobacterium* sp. and *Psychrobacter* sp. NASA Astrobiology Institute. \$5,382,972.
- Sarnelle, O. and S. Hamilton. 2005-2007. Complex interactions between harmful phytoplankton and grazers: variation in zebra mussel effects across nutrient gradients. ECOHAB (EPA/NOAA/NSF/ONR/NASA); \$454,779.
- Schmidt, T.M. 2004-2007. Testing fundamental tradeoffs between power and efficiency in the translational machinery of bacteria. NSF-CMB. \$192,287.
- Schmidt, T.M. and J. Rodriguez. 2005-2007. Ecological and evolutionary interrogation of a verrucomicrobium genome. DOE. (provides support for sequencing the genome at the Joint Genome Institute)
- Schmidt, T.M., U. Levine, Z. Lee, D. Reznik, C. Waldron, R. Sloup, A. Killinger. 2007-2010. Genomics of terrestrial microbial communities associated with the production and consumption of greenhouse gases. NSF/USDA-CSREES Microbial Genome Sequencing Program; \$1,695,188.
- Skole, D., S.H. Gage, J. Qi, and others. 2004-2009. Global change, earth observations, and coupled human-natural systems. State of Michigan Research Excellence Fund (REF); \$3,703,485.
- Swinton, S.M., F. Lupi, and G.P. Robertson. 2005-2008. AOC: Ecosystem services from low-input cropping systems: Incentive to produce them and value of consuming them. NSF (Agents of Change Program). \$400,000.
- Thelen, K.D. and others. 2004-2005. Carbon sequestration dynamics in corn. Corn Marketing Program of Michigan; \$34,880.
- Thelen, K.D. and others. 2004-2005. Carbon sequestration in soybean as affected by cover crops, manure, and compost. Michigan Soybean Promotion Committee. \$35,257.
- Thomashow, M., L. Sepulveda, J. Tiedje, D. Lubman, S. Kathariou, J. McGrath, D. Gilichinsky, R. Goldstein, E. Branscomb. 2007-2012. Biodiversity and biogeography of *Exiguobacterium* sp. and *Psychrobacter* sp. NASA Astrobiology Institute, \$5,382,972.
- Wickings, K., A.S. Grandy. 2007-2009. Agricultural management effects on soil organic matter turnover: Integrating biological, physical and chemical mechanisms. MSU Intramural Research Grant Program, \$40,000.

Lead PI is Not MSU Faculty

(13 active in 2008 and beyond; 29 total from 2004 to current)

- *Cáceres, C. and Sigrid Smith. 2007-2010. Existence and controls of alternate stable states in pond producer communities. NSF-DEB (Ecology Program); \$11,550.
- Caceres, Carla. 2005. Causes and consequences of recombination. NSF. University of Illinois.
- Chu, X. and others. 2007-2012. CAREER: Microtopography-controlled puddle-filling to puddle-merging (P2P) overland flow mechanism: discontinuity, variability, and hierarchy. NSF-GEO. \$519,413.
- Byers, Diane. 2005. Life history variation in *Arabidopsis thaliana*. Illinois State University.
- DeMott, William. 2004-2006. Collaborative Research: Adaptation of Daphniid to digestion resistant resources. NSF. Indiana-Purdue University, Ft. Wayne.
- Downing, A. 2005. Compensatory vs. amplifying effect of community structure on ecological systems in response to environmental fluctuations. Ohio Wesleyan University.
- Donohue, T., K. Keegstra, B. Dale, R. Amasino, R. Landick, J. Ohlrogge, G.P. Robertson, M. Sussman, and 50 co-I's. 2007-2012. Great Lakes Bioenergy Research Center. DOE Office of Science (GTL Program); \$125M. (KBS LTER hosts the sustainability thrust area, 1 of 5; ca. \$20M).
- Drinkwater, L. and S. Snapp. 2005-2008. Understanding linkages between human and biogeochemical processes in agricultural landscapes. NSF-Biocomplexity; \$1,380,000 (KBS portion \$223,000).
- Duffy, M. 2008-2009. The role of competition among parasites in driving patterns of disease. NSF-DEB (Ecology Program) \$50,000.
- Hall, S.R. and C. Cáceres. 2006-2009. Community ecology of disease: control of epidemics by species interactions. NSF-DEB (Ecology Program); \$450,000.
- Holben, W.E. 2004-2007. Unraveling complexity: Towards a comprehensive survey of soil bacterial populations through analysis of fractionated community DNA. USDA-CSREES (Soil Biology Program) \$390,947.
- Jin, L. 2005-2006. Residence time measurement of fluids in Michigan soils by tracers. Student Research Grant from Geological Society of America. \$2,000.
- *Leibold, M.A. and J.G. Howeth. 2005-2007. Impacts of migration on pond food web structure: insights from metacommunity biology and implications for multi-scale diversity. NSF-DEB (Ecology Program); \$9,721.
- *Leibold, M.A. and J. Pantel. 2007-2009. The effects of local adaptation on community composition and species interactions. NSF-DEB (Ecology Program); \$12,000.
- Leibold, M.A. and A. Downing. 2003-2006. Compensatory vs amplifying effects of community structure on ecological systems in response to environmental fluctuations. NSF-DEB (Ecology Program); \$413,000.
- Leibold, M.A. 2007-2010. Evolution of pond metacommunities. NSF-DEB (Ecology Program); \$479,699.
- Lupold, S. 2005. Sperm quality and reproductive success in red-winged blackbirds (*Agelaius phoeniceus*). University of Sheffield (UK).
- Masiello, C. 2005-2006, Measuring the oxidative ratio of the terrestrial biosphere. NSF-DEB (Ecosystems Program); \$100,000.
- Miller, W.R., B. Adams, C. Johansson, P. Morris. 2007-2011 Tardigrades of the LTER sites: A framework for the distribution and phylogeny of North American Tardigrada. NSF, \$600,000
- Morris, J. 2003-2004. Role of plant physiology and land-use history in evaluating C sink capacity flowing anthropogenic disturbance. Graduate Student Assistant Sponsored Project, Bradley University. \$14,220.

- Morris, S.J., K.D. McConnaughay, J. Gehring, B.A. Frase. 2001-2005. Multiscale research on the effects of anthropogenic disturbance on carbon and nitrogen dynamics: Major research instrumentation for enhancing research and research training. (NSF) \$367,481. REU supplement, \$10,000.
- Paul, E.A, S.J. Morris, and R. Conant. 2004-2007. Ecosystem controls on C and N sequestration following afforestation of agricultural lands. DOE; \$619,201.
- Radosevich, M., S. Pfiffner, E. Wommack, and S. Williamson. 2007-2011. Microbial Observatory for phage in soil: Influence of land management practices on virus-host interactions. NSF/USDA Microbial Observatories \$1,351,370.
- Ricklefs, R. 2003-2005. The life history-physiology nexus - constraints on the evolutionary diversification of avian life histories. University of Missouri, St. Louis.
- Thorn, R.G. 2001-2005. Evolution and ecology of soil- and litter-inhabiting fungi, particularly litter-decomposing Basidiomycota. Canada NSERC (Discovery Grants Program). \$41,500.
- Thorn, R.G. 2006-2007. Ecology and systematics of fungi inhabiting soil and litter. Natural Sciences and Engineering Research Council of Canada (Discovery Grants Program); \$22,000.
- Triplett, E., N. Fierer, D. Arp, R. Knight. 2008-2012. How are archaeal diversity, abundance, and function regulated in soil? USDA-CSREES, \$1.5 M.
- Whitman, W.B. 2006-2008. Impact of agricultural land management practices on the composition of the soil prokaryotic community. USDA.
- Zhou, J., W. Liyou, K. Sanghoon, H, Jiang. 2008-2011. GeoChip analysis of responses of microbial communities to plant diversity, nutrient addition. USDA, Oklahoma, \$800,000.