

2016 Curriculum Vitae



NAME: Kyle Wickings
DEPARTMENT/UNIT: Entomology
TITLE: Assistant Professor
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BACKGROUND

Education

<u>Year</u>	<u>Degree</u>	<u>Institution</u>
2010	Post-doctoral	Department of Natural Resources and the Environment, University of New Hampshire, Durham, NH
2008	Post-doctoral	Department of Crop and Soil Science, Michigan State University, East Lansing, MI
2007	Ph.D., Ecology	Institute of Ecology, University of Georgia, Athens, GA (Advisor: John Ruberson)
2002	B.S., Environmental Studies	University of Buffalo; graduated

Academic ranks

Assistant Professor: 2013 to present

Primary departmental/unit program area

Ecology and management of soil arthropods, turfgrass entomology

Areas of expertise

Soil animal ecology, plant-insect interactions, biological control, microbial ecology and microbe-invertebrate interactions, biogeochemistry, plant litter decomposition

PROFESSIONAL EXPERIENCE

<u>Year</u>	<u>Experience</u>
2013-present	Assistant Professor (60% research, 40% extension), Department of Entomology, Cornell University
2010 – 2013	<u>Postdoctoral research:</u> Impact of topographical heterogeneity on soil microbial processes in low and high intensity agricultural ecosystems.

2008 – 2010 Postdoctoral research: Contribution of soil biological complexity to plant residue decomposition in agricultural ecosystems.
 2003 – 2007 Ph.D. research: Top-down and bottom-up controls on arthropod communities in cotton agroecosystems.

Sabbaticals and study leaves

None

HONORS & AWARDS

2015 - Program Enhancement Funds Recipient – Entomological Society of America, Minneapolis, MN

2007 - Georgia Entomological Society – student presentation award

2006 - D.E. Johnston Award for attendance of the Soil Acarology Summer Program, Ohio State University,

2006 - Foreign Travel Award – University of Georgia Office of Vice President for Research “Soil Ecology: crossing the frontier between below- and above-ground.”

2001 - Graduated summa cum laude. University of Buffalo – B.S.

ACADEMIC RESPONSIBILITIES

Administrative responsibilities

None

Research responsibilities

Current Postdoctoral Associates

Dr. Huijie Gan (January 2014-present)

Dr. Chao Liang (July 2015-present)

Other Current Research Professionals Supervised

Martin Ward, Technician I (October 2014 – Present)

Katelyn Berry, Temporary Service Technician (July 2014 – Present)

Other Past Research Professionals Supervised

Laura Cappio, Temporary Service Technician (2013-2014)

Alison Cole, Temporary Service Technician (2014)

Joshua Neal, Temporary Service Technician (August 2015 – December 2015)

Other Relevant Research Activities, Accomplishments, etc.

Funding

PIs/co-PIs	TOTAL AWARD AND SUPPORTING AGENCY	START-END DATES	TITLE OF PROJECT
Wickings, K.	\$18,084 New York State Turfgrass Association	04/01/14- 03/31/16	Soil Organic Matter as a Tool for Improving Predictions of Root Pest Damage in Turf
Wickings, K.	\$55,232 Federal Formula Funds - Hatch #2014- 15-112	10/01/14 – 09/30/17	Potential of Soil Organic Matter Management as a Tool to Mitigate Root Herbivore Damage in Turf

Searle, J./ Wickings, K./ et al.	\$106,053 Atkinson Center for a Sustainable Future	07/01/14 – 08/31/15	Climate Change and Conifer Die-off: Impacts on Biodiversity and Human Health
Kao-Kniffin, J/ Wickings, K./ et al.	\$51,150 New York State Turfgrass Association Environmental Stewardship Fund	04/01/14 - 03/31/15	Examining Soil Biota Associated with Drought Tolerance in Tall Fescue
Abawi, G./ Cox, K./Fuchs, M./Wickings, K.	\$0 Federal Formula Funds Multistate Project NE 1040	10/01/09- 09/30/14	Plant-Parasitic Nematode Management as a Component of Sustainable Soil Health Programs in Horticultural & Field Crop Production Systems
Wicking, K.	\$0 Federal Formula Funds Multistate Project NE-1046	10/01/13- 09/30/16	Management of Annual Bluegrass on Golf Course: Improved Practices for Maintenance, Pest Control and Viable Techniques for Transition to More Desirable Grasses
Wickings, K.	\$70,000 New York Farm Viability Institute	03/01/15 – 02/28/17	Improving White Grub Control in Sod Through Establishment of Persistent Entomopathogenic Nematodes
J. Kao-Kniffin/ K. Wickings/ Grant, J.	\$244,329 USDA NIFA CPPM	02/01/2015- 01/31/2017	Pursuing Child Safe Playing Fields with Repetitive Overseeding: Verifiable IPM for School, Athletic, and Recreational Fields
Wickings, K.	\$17,800 US Golf Course Superintendents of America Association	6/1/2015 – 5/31/2017	Potential for Managing Annual Bluegrass Weevil in Overwintering Habitats Using Entomopathogenic Nematodes and Fungi
Wickings, K./Grant, J./Lampman, J.	\$24,000 New York State Turfgrass Association	7/1/2015 – 6/30/2017	Optimizing Cultural Practices to Improve the Efficacy of Entomopathogenic Nematodes Against Annual Bluegrass Weevil
J. Kao-Kniffin/ K. Wickings	US Golf Assoc.	Not funded	Examining Microbial Enhancement of Drought Tolerance across <i>Lolium arundinaceum</i> Cultivars
Wickings, K./ Kao-Kniffin, J./ Petrovic, A.M./ Rickard, B.	USDA Specialty Crops Research Initiative, Planning Grant	Not funded	Developing Soil Organic Matter Management Practices to Enhance Pest and Pathogen Resistance in Turfgrass Production
Ball, B./ Wickings, K./ Christenson, L.	\$71,824 Arizona State University/ NSF DEB/EAGER	6/1/2015 – 5/31/2017	Pathways and Patterns of Litter Chemistry During Decomposition
Wickings, K./ Linn, C.E./ Nault, B.A.	\$100,000 USDA AFRI, Foundational Program, Exploratory Proposal	6/1/2015 – 5/31/2016	Plants, Microbes And Chemical Signals Involved In Belowground Insect Herbivory: Who's Sending The Message?

Pethybridge, S./ Wickings, K.	Northeast IPM Partnership Grant	Not funded	Tackling Plant Pathogens from the Ground Up: Quantifying Impacts of Soil Arthropods on Sclerotinia
Wickings, K./Gill, H.	Atkinson Center for a Sustainable Future: Postdoctoral Fellowship	Not funded	Do root-feeding insects alter the potential of urban turfgrass soil to sequester carbon?
Wickings, K./ Gan, H.	Atkinson Center for a Sustainable Future: Postdoctoral Fellowship	Not funded	Biodiversity patterns and determinants of root endophytic fungal community

TEACHING AND ADVISING RESPONSIBILITIES

Current Undergraduate Advisees

Joshua Neal, Finger Lakes Community College

Other Relevant Teaching and Advising Activities, Accomplishments, etc.

Guest lectures

PLPA/ENT 4190, Field Plant Pathology/Entomology, Summer 2014. 1 lecture and field day; Turf Insect Pests

PLPA/ENT 4190, Field Plant Pathology/Entomology, Summer 2015. 2 lectures/ 2 field days; 1) Turfgrass Insect Pests; 2) Beneficial Soil Arthropods

ENT 2010/2011, Alien Empire, April 2015. 1 lecture; Bugs in the Black Box: the importance of insects in soil ecosystem processes

ENT 7670, Professional Development of Entomology, September 2015. USDA grant proposal discussion

Undergraduate student mentoring

Katelyn Berry (recent Chemistry graduate from Hobart and William Smith College, Geneva, NY)

- Working on NSF-funded project “Pathways and Patterns of Litter Chemistry During Decomposition”. Funds support Katelyn learning advanced techniques in soil chemical analysis and attendance of 2016 Ecological Society of America annual meeting, Fort Lauderdale, FL.

Louisa Rogers – Whitman Collage, Walla Walla, WA. 2014 Summer Scholars Program.

Bennett Thompson – Swarthmore College, Swarthmore, PA – 2015 Summer Scholars Program.

EXTENSION RESPONSIBILITIES

Extension Publications and Presentations (last five years)

	2015	2014	2013	2012	2011	Median
# Extension Publications	2	2	2	N/A	N/A	2
# Extension Presentations	3	2	1	N/A	N/A	2
Total contact hours	223	N/A	N/A	N/A	N/A	223

Program Work Team

Member of the Cornell University Turf Team

Extension Workshops, Conferences, and Webinars:

Turf Insect Diagnostics Workshop

Four hour workshop on basic biology and identification of pest and beneficial arthropods, insect pest damage diagnosis, integrated pest management decision making and management options. Participants receive lecture material and work in small groups to identify preserved specimens. Workshop aimed at master gardeners, lawn care professionals, school/sports turf grounds managers, and golf course superintendents. As of Fall 2014, I have presented the workshop four times in Central NY:

- 2014 New York State Turfgrass Association, Rochester Turf & Grounds Expo. Rochester, NY
- 2015 Horticulture School 30 Hour Pesticide Applicator Training Course, Rochester, NY
- 2016 Horticulture School 30 Hour Pesticide Applicator Training Course, Rochester, NY
- 2016 Andre & Son Turfgrass Workshop, Montrose, PA

Presentations/ Conferences

Gan, H., Wickings, K. 2015 Use of root endophytic fungi to improve turfgrass defense against white grubs. Cornell Research Update. Rochester Turf & Grounds Expo, Rochester, NY

Wickings, K. 2015 Biological control options for soil-dwelling pests in turfgrass: current challenges and new opportunities. CCE and Rochester Nursery and Landscape Association

Wickings, K. 2014 Soil organic matter as a tool for managing insect damage in turf. New York State Turfgrass Association, Western Regional Turf & Grounds Expo. Buffalo, NY

Wickings, K. 2013 Introduction to Cornell's Soil Arthropod Ecology Lab. New York State Turfgrass Association, Rochester Turf & Grounds Expo. Rochester, NY

Wickings, K. 2010 Innovations to build soil to feed sustainable communities - Morgan Composting, Sears, MI.

Wickings, K., Hoang, N., Grandy, A.S., 2010 Soil quality in Michigan potato systems: progress and future directions. Michigan Potato Industry Commission, Annual Meeting.

Webinars

Wickings, K. 2015 Beneficial Soil Microorganism research update. CCE, Cornell Landscape Webinar Series. WebEx.

Wickings, K. 2014 Soil organic matter as a tool for managing insect damage in turf. CCE, Cornell Landscape Webinar Series. WebEx.

- webinar covered potential uses of compost and other soil management tools for improving belowground pest management in turfgrass systems
- attendees from Allegany, Oneida, Putnam, Westchester, and St. Lawrence Co.

Extension Publications

Wickings K. (2013) Asian earthworms invading turfgrass. Cornell ShortCUTT. October, 2013

Wickings K., Grandy A.S. (2008) Springing into action: springtails, mites and other underappreciated soil organisms influence fertility. Potato Newslines (www.mipotato.com)

Ruberson J.R., Wickings, K. (2008) Importance of natural enemies for stink bug control in Georgia. In: Cotton Research-Extension Report 2007 (Grey, T., M. Toews, and C. Perry, Eds.) UGA/CPES Research. Extension Publication No. 6, pp. 111-121.

Other Contributions

2015- present - contribute to weekly Cornell ShortCUTT conference calls

2015 – Oversee annual Turf Bowl student competition, Rochester Turf & Grounds Expo, Rochester, NY

2014, 2015 - Cornell Pest Management Guidelines for Commercial Turfgrass,
- Revised Insect Management chapter
- Updated list of insecticides available for commercial use against turfgrass pests

GRADUATE FIELD MEMBERSHIP

Entomology

Graduate majors

Maxwell Helmberger, Entomology, M.S., anticipated in 2017

Natalie Bray, Entomology, Ph.D., anticipated in 2020

Total Completed To Date - 0

Graduate minors

Current

Grant Thompson, PhD, 2018, Horticulture, Major Advisor: Jenny Kao-Kniffin

Marie Zwetsloot, PhD, 2018, Horticulture, Major Advisor: Taryn Bauerle

Tessa Lessord, M.S., 2016, Entomology, Major Advisor: Art Agnello

Total Completed To Date - 0

Sabbatical visitors - 0

OTHER CURRENT PROFESSIONAL ACTIVITIES

Professional societies

Entomological Society of America (2012-present)

Soil Ecology Society (2013-present)

Ad hoc reviewer

2016: Applied Soil Ecology (2), Biogeochemistry (1), Journal of Animal Ecology (2), Methods in Ecology and Evolution (1)

2015: Axios Review (1), Journal of Environmental Engineering and Landscape Management (1), Journal of Chemical Ecology (3), Nature Scientific Reports (1), Ecology (1), New Phytologist (1), PLOS One (1), Soil Biology and Biochemistry (2), Science of the Total Environment (1)

2014: Acta Oecologia (1), Biogeochemistry (1), Biology Letters (1), Ecological Applications (2), European Journal of Soil Science (1), Applied Soil Ecology (1), Functional Ecology (1), New Phytologist (1), Soil Biology and Biochemistry (2)

2013: NSF proposal reviewer – CAREER Award

Committee assignments

International/National (including federal government agencies):

None

State/Local (including state and local government agencies):

None

Commodity and other Stakeholder:

None

University:

None

College:

2016 – search committee member Greenhouse/Growth Chamber Coordinator, Cornell University, NYSAES, Geneva

2015 – search committee member Greenhouse/Growth Chamber Coordinator, Cornell University, NYSAES, Geneva

2014 - present: Plant Growth Chamber Committee, Cornell University, NYSAES
Geneva

Department:

2013 – present: Extension/Outreach Assistantship Committee

OTHER CURRENT PROFESSIONAL CONTRIBUTIONS

Presentations

Invited (*presenting author)

Wickings, K., Gan, H., 2016 Insect-microbe interactions in the rhizosphere and their effects on plant defense and soil processes. Penn State University, Department of Entomology Seminar Series, State College, PA

Wickings, K., Gan, H. 2015 Root herbivory alters soil microbial processes and carbon cycling. Entomological Society of America, Minneapolis, MN (Oral)

Wickings, K., Gan, H. 2015 Insect-microbe interactions in the rhizosphere and their consequences for plant defense and carbon cycling. Entomological Society of America, Minneapolis, MN (Oral)

Wickings, K. 2014 Identifying drivers of soil arthropod distribution and function to improve soil and plant health, Department of Plant Pathology and Plant and Microbe Biology, Cornell University (Oral)

Wickings, K. 2014 Identifying drivers of soil invertebrate composition and function in managed ecosystems. Department of Plant and Soil Science Symposium, University of Vermont (Oral)

Wickings, K. 2014 Studying interactions between insects and soil organic matter to improve belowground ecosystem services. Department of Entomology Symposium, Cornell University (Oral)

Wickings, K. 2014 The role of arthropods in soil carbon and nitrogen cycling. Biogeochemistry and Ecosystem Studies Seminar Series, Cornell University (Oral)

Wickings, K., Grandy, A.S. 2013 Biological controls on decomposition in agroecosystems. Ecological Society of America Annual Meeting, Minneapolis, MN (Oral)

Wickings, K., Grandy, A.S. 2012 Invertebrate-microbe interactions during plant litter decomposition, Entomological Society of America Annual Meeting, Knoxville, TN (Oral)

Wickings, K., Grandy, A.S. 2010 The influence of oribatid mites on decomposition and nutrient cycling, XIII International Congress of Acarology, Recife, Brazil, *unable to attend*

Wickings, K., Grandy, A.S. 2010 Variation in the composition and activity of soil communities alters litter decomposition, Entomology Department Seminar Series, Michigan State University, *unable to attend*

Wickings, K., Ruberson, J.R. 2008 Relative effects of cotton type, tillage strategy, and cover crops on arthropod communities, University of Vermont, Plant and Soil Science Department, Burlington, VT (Oral)

Wickings, K., Hunter, M.D. 2007 Biotic and abiotic factors affecting arthropod biodiversity in cotton agroecosystems, Soil Ecology Workshop, Wageningen, the Netherlands (Oral)

Contributed

Gan, H., Wickings, K. (presenter) 2015 Fungicides alter soil biota and ecological services in turfgrass. Entomological Society of America, Minneapolis, MN (Oral)

Lessord, T., Agnello, A., Shields, E.J., Wickings, K. 2015 Evaluation of native New York entomopathogenic nematodes for biocontrol of plum curculio (*Conotrachelus nenuphar*) in apple orchards. Entomological Society of America, Minneapolis, MN (Oral)

Gan, H., Wickings, K. 2015 Endophytic fungi and herbivore interactions in the rhizosphere: consequence on plant protection and soil C dynamics. Soil Ecology Society, Colorado Springs, CO (Oral)

Wickings, K., Gan, H. 2015 Fungicides alter soil biotic communities and suppress belowground ecological services. Soil Ecology Society, Colorado Springs, CO (Poster)

Gan, H., Wickings, K., Rogers, L. 2014 The effects of golf course fungicides on community structure and function of soil organisms. Entomological Society of America, Portland, OR (Poster)

Wickings, K., Grandy, A.S. 2013 Drivers of arthropod community structure in litter decomposing under different management intensities. Biennial Meeting of the Soil Ecology Society, Camden, NJ. (Oral)

Grandy, A.S., McDaniel, M.D., Tiemann, L.K., Kallenbach, C.M., Wickings, K. 2013 One plant, two plants, three plants, four: in agricultural soils does it really matter if

- we increase diversity by one plant more? Biennial Meeting of the Soil Ecology Society, Camden, NJ. (Oral)
- Daly, A.B., Wickings, K., Grandy, A.S. 2013 Enzyme activities of mesofaunal endosymbionts across host taxon and ecosystem. Biennial Meeting of the Soil Ecology Society, Camden, NJ. (Oral)
- Wickings, K., Grandy, A.S., Reed, S.C., Cleveland, C.C. 2012 The origins of chemical complexity during plant litter decomposition. Ecological Society of America Annual Meeting, Portland, OR (Oral)
- Wickings, K., Grandy, A.S., Reed, S.C., Cleveland, C.C. 2011 Litter quality constrains the effect of management on decomposers and litter chemistry. Ecological Society of America Annual Meeting, Austin, TX (Oral)
- Wickings, K., Grandy, A.S., Reed, S.C., Cleveland, C.C. 2010 Changes in litter chemistry via biological pathways. Ecological Society of America Annual Meeting, Pittsburgh, PA (Oral)
- Wickings, K., Grandy, A.S., Fierer, N. 2009 The effects of nitrogen fertilization on decomposition dynamics in no-till ecosystems, USDA/CSREES NRI Soil Processes Project Directors Meeting, Michigan State University, East Lansing, MI (Oral)
- Wickings, K., Grandy, A.S. 2009 Microbial-invertebrate interactions and their role in residue decomposition in a Michigan agroecosystem, Kellogg Biological Station, Long-Term Ecological Research site meeting, Hickory Corners, MI (Poster)
- Wickings, K., Ruberson, J.R. 2007 The impact of the red imported fire ant on detrital food webs, Soil Ecology Society, Moab, UT (Oral)
- Wickings, K., Ruberson, J.R. 2007 Impact of the red imported fire ant (*Solenopsis invicta*) on soil fauna in a cotton agroecosystem, Georgia Entomological Society, Athens, GA (Poster)
- Wickings, K., Ruberson, J.R. 2006 Relative effects on arthropod communities: cotton type, tillage strategy, and cover crop identity, Entomological Society of America Annual Meeting, Indianapolis, IN (Oral)
- Wickings, K., Hunter, M.D., Coleman, D.C. 2005 Tillage, cover crops and cotton residue: relative effects on arthropod communities, Dave Coleman retirement symposium, Athens GA (Poster)
- Wickings, K., Hunter, M.D., Coleman, D.C. 2005 The relative effects of Bt cotton on above and belowground arthropod communities, Institute of Ecology Graduate Student Symposium, University of Georgia, Athens, GA (Oral)

Meetings organized

None

Research and extension grant review panels

2015: USDA review panel, Climate and Microbial Processes in Agroecosystems

Consulting

None

Resource for media (i.e., called upon as an expert for electronic or print media)

Wickings, K. (2014) Grub sightings: first assess, then address. *In* How to fix the 5 most common lawn problems: make your lawn the envy of the block with Consumer Reports' expert advice. Consumer Reports.org. April 2014

PUBLICATIONS

Papers Submitted in 2015/2016 (unless noted, paper is still in review)

Wu, P., Zhang, H., Ciu, L., **Wickings, K.** Alpine wetland degradation modifies the composition, diversity and trophic structure of soil nematodes in Qinghai-Tibetan Plateau. Submitted to *Ecosystems* – November 2015

Gan, H., Churchill, A., **Wickings, K.** Species-specific effect of fungal endophytes on plant defense against root feeding by a generalist insect. Submitted to *Functional Ecology* – May 2016

Ciu, L., Liang, C., Duncan, D., Bao, X., **Wickings, K.**, Zhang, X., Chen, F. Distribution of neutral sugars in forest soils: Control by vegetation type and climatic zone and implications for soil organic carbon turnover. Submitted to *Soil Biology and Biochemistry* – September 2015 (rejected)

Castle, S.C., Nemergut, D.R., Grandy, A.S., Leff, J.W., Graham, E.B., Hood, E., Schmidt, S.K., **Wickings, K.**, Cleveland, C.C. Successional processes drive global convergence of soil microbial communities. *Soil Biology and Biochemistry* – June 2016

Grandy, A.S., Wieder, W.R., **Wickings, K.**, Kyker-Snowman, E. Beyond microbe: are food webs the next frontier in soil biogeochemical models? *Soil Biology and Biochemistry* – June 2016

Refereed Papers

19. Rinkes, Z.L., Bertrand, I., Amin, B.A.Z., Grandy, A.S., **Wickings, K.**, Weintraub, M.N. (2016) Nitrogen alters microbial enzyme dynamics but not lignin chemistry during maize decomposition. *Biogeochemistry*
18. **Wickings, K.**, Ruberson, J. (2016) The red imported fire ant, *Solenopsis invicta*, modifies predation rates at the soil surface and in cotton foliage. *Annals of Applied Biology* – *in press*
17. **Wickings, K.**, Grandy, A.S., Kravchenko, A.N. (2016) Going with the flow: Landscape position drives differences in microbial biomass and activity in conventional, low input, and organic agricultural systems in the Midwestern U.S. *Agriculture, Ecosystems & Environment*. 218: 1-10.
16. Frey, S.D., Ollinger, S., Nadelhoffer, K., Bowden, R., Brzostek, E., Burton, A., Caldwell, B.A., Crow, S., Goodale, C.L., Grandy, A.S., Finzi, A., Kramer, M.G.,

- Lajtha, K., LeMoine, J., Martin, M., McDowell, W.H., Minocha, R., Sadowsky, J.J., Templer, P.H., **Wickings, K.** (2014) Chronic nitrogen additions suppress decomposition and sequester soil carbon in temperate forests. *Biogeochemistry*. 121: 305-316.
15. Thai Hoang, N., Grandy, A.S., **Wickings, K.**, Snapp, S.S., Kirk, W., Hao, J. (2014) Organic amendment effects on potato productivity and quality are related to soil microbial activity. *Plant and Soil*. DOI: 10.1007/s11104-014-2223-5.
 14. Lennon, J.T., S.K. Hamilton, S.K., Muscarella, M.E., Grandy, A.S., **Wickings, K.**, Jones, S.E. (2013) A source of terrestrial organic carbon to investigate the browning of aquatic ecosystems. *PloS One*. 8: #e75771
 13. Heckman, K.A., Grandy, A.S., Xiaodong, G., Keiluweit, M., **Wickings, K.**, Carpenter, K., Chorover, J., Rasmussen, C. (2013) Sorptive fractionation of organic matter and formation of organohydroxy-aluminum complexes during litter biodegradation in the presence of gibbsite. *Geochimica et Cosmochimica Acta*. 31: 667-683.
 12. Grandy, A.S., Salam, D.S., **Wickings, K.**, McDaniel, M., Culman, S.W., Snapp, S.S. (2013) Soil respiration and litter decomposition responses to nitrogen fertilization rate in no-till corn systems, *Agriculture, Ecosystems, and Environment*. 179: 35-40.
 11. Shevtsov, J., **Wickings, K.**, Patten, B. (2013) Evaluating the role of biotic interactions in structuring communities using a gradient analysis of multiple interacting guilds. *Oikos*. 122: 1594-1605.
 10. **Wickings, K.**, Grandy, A.S. (2013) Management intensity interacts with litter chemistry and climate to drive temporal patterns in arthropod communities during decomposition. *Pedobiologia*. 56: 105-112.
 9. **Wickings K.**, Grandy A.S., Reed S.C., Cleveland, C.C. (2012) The origin of litter chemical complexity during decomposition. *Ecology Letters*. 15: 1180-1188.
 8. Phillips, R.P., Meier, I.C., Bernhardt, E.S., Grandy, A.S., **Wickings, K.**, Finzi, A.C. (2012) Roots and fungi accelerate carbon and nitrogen cycling in forests exposed to elevated CO₂. *Ecology Letters*. 15: 1042-1049.
 7. Leff, J.W., Nemergut, D.R., Grandy, A.S., O'Neill, S.P., **Wickings, K.**, Townsend, A.R., Cleveland, C.C. (2012) The effects of soil bacterial community structure on decomposition in a tropical rain forest. *Ecosystems*. 15: 284-298.
 6. Strickland, M.S., **Wickings, K.**, Bradford, M.A. (2012) The fate of glucose, a low molecular weight compound of root exudates, in the belowground foodweb of forests and pastures. *Soil Biology & Biochemistry*. 49: 23-29.
 5. **Wickings K.**, Grandy A.S., Reed S.C., Cleveland, C.C. (2011) Management intensity alters decomposition via biological pathways. *Biogeochemistry*. 104: 365-379.

4. **Wickings K.**, Grandy A.S. (2011) The oribatid mite *Scheloribates moestus* (Acari: Oribatida) alters litter chemistry and nutrient cycling during decomposition. *Soil Biology and Biochemistry*. 43: 351-358.
3. **Wickings K.G.**, Ruberson, J.R. (2011) Impact of the red imported fire ant, *Solenopsis invicta* (Hymenoptera: Formicidae), on epigeic arthropods of cotton agroecosystems. *Annals of the Entomological Society of America*. 104: 171-179.
2. Hamilton H.C., Strickland M.S., **Wickings K.**, Bradford M.A., Fierer N. (2009) Surveying soil faunal communities using a direct molecular approach. *Soil Biology and Biochemistry*. 41: 1311-1314.
1. Coleman D., Hunter M., Hendrix P., Crossley Jr. D., Simmons B., **Wickings K.** (2006) Long-term consequences of biochemical and biogeochemical changes in the Horseshoe Bend agroecosystem, Athens, GA. *European Journal of Soil Biology*. 42: S79-S84.

Publications - book chapters

Strickland, M.S., **Wickings, K.** (2015) Carrion effects on soil biogeochemistry. *In* Carrion Ecology, Evolution, and Their Applications (eds. Benbow, M.E., Tomberlin, J.K., Tarone, A.M.). CRC Press, Taylor & Francis Group, LLC, Boca Raton, FL.

Coleman D., Hunter M., Hendrix P., Crossley Jr. D., Arce-Flores S., Simmons B., **Wickings K.** (2009) Long-term consequences of biological and biogeochemical changes in the Horseshoe Bend long-term agroecosystem project. *In* Sustainable Agroecosystem Management: Integrating Ecology, Economics, and Society (eds. Bohlen P.J. and House G.) pp. 195-209. CRC Press, Taylor & Francis Group, LLC, Boca Raton, FL.

PROFESSIONAL OVERVIEW AND OBJECTIVES

My research focuses on the ecology and management of soil-dwelling arthropods. The goals of my research program are to advance knowledge of the biology and ecology of soil arthropods, and to improve and develop practices for the sustainable management of soil-dwelling arthropod pests in turfgrass ecosystems. We study turfgrass first because of my lab's involvement with applied issues in the turfgrass industry. Secondly, due to its high belowground biomass, and diverse rhizosphere, grass systems also serve as an excellent model system for studying basic soil ecology. My current research program has four pillars; 1) impact of root-associated microbes on plant defense, 2) belowground biological control, 3) developing soil management practices to enhance belowground ecosystem services, 4) arthropod contributions to soil C cycling.