

TERRY J. GENTRY

Professor of Soil and Aquatic Microbiology
Dept. of Soil and Crop Sciences, Texas A&M University, College Station, Texas

Education/Training

2003 PhD Microbiology & Immunology, University of Arizona
1999 MS Agronomy, University of Arkansas
1993 BS Agronomy, University of Arkansas

Positions and Employment

2006- Assistant Professor - Professor, Soil and Crop Sciences, Texas A&M University
2003-2005 Postdoctoral Research Associate, Environmental Sciences Division, Oak Ridge National Laboratory
1999-2003 Research Associate; Soil, Water, and Environmental Sciences, University of Arizona,
1995-1999 Research Specialist; Crop, Soil, and Environmental Sciences, University of Arkansas

Program Overview

My research focuses on the development and use of molecular technologies to enhance the detection and remediation of environmental contamination. This includes the detection and identification of microbial pathogens from animal, human, and natural sources; the characterization of microbial populations and communities contributing to applied remediation processes such as the bioremediation of organic and metal contaminants; and the characterization of microbial populations integral to soil security. I currently teach an upper-level undergraduate course in Soil and Water Microbiology (SCSC 405) each Fall and Spring semester and a graduate course in Environmental Microbiology (SCSC 637) every other year.

Significant Accomplishments

Research: Acquired \$9,480,514 of which \$3,032,426 went to my research program. Conducted bacterial source tracking in multiple watersheds across Texas revealing that major cause of bacterial impairments in these watersheds was wildlife. Conducted research on impact of oilseed meals from dedicated biofuel crops on soil microorganisms. Demonstrated that several oilseed meals, especially from brassicaceous species, have the potential to suppress *Fusarium* spp. and the cotton root rot fungus. Furthermore, showed that different isothiocyanates have distinct impacts on various soil microbial populations. Research on lignite mine reclamation indicated that although many soil physical and chemical properties achieved native (pre-mined) conditions shortly after reclamation, microbial activity and populations recovered after 15-20 years, and microbial community composition stabilized into a unique climax community. Authored/co-authored 78 peer-reviewed publications, and research from my program has been cited >4,500 times. Teaching: Instructed Environmental Soil and Water Science (SCSC 455/657), Soil and Water Microbiology, and Environmental Microbiology (SCSC 637). Supervised 9 postdoctoral research associates, 12 PhD students, and 11 MS students. Supervised 8 undergraduate research projects. Co-authored 3rd Edition of Environmental Microbiology textbook.

Publications

Ten most recent publications (78 total)

1. Howard, K.J., E. Martin, T. Gentry, S. Feagley, and R. Karthikeyan. 2017. Effects of dairy manure management practices on *E. coli* concentration and diversity. *Water Air Soil Pollut.* 228:4. DOI 10.1007/s11270-016-3182-7.
2. Iqbal, A., M. Arshad, M.A. Baig, I. Hashmi, R. Karthikeyan, T. Gentry, and A.P. Schwab. 2017. Biodegradation of phenol and benzene by endophytic bacterial strains isolated from refinery wastewater-fed *Cannabis sativa*. *Environ. Technol.* DOI: 10.1080/09593330.2017.1337232.

3. Morrison, D., R. Karthikeyan, C. Munster, J. Jacob, and T. Gentry. 2017. Evaluation of potential *E. coli* transport from onsite sewage facilities in a Texas watershed. *Texas Water J.* 8:18-28.
4. Mushinski, R.M., T.J. Gentry, R.J. Dorosky, and T.W. Boutton. 2017. Forest harvest intensity and soil depth alter inorganic nitrogen pool sizes and ammonia oxidizer community composition. *Soil Biol. Biochem.* 112:216-227.
5. Sullivan, B.A., R. Karthikeyan, T.J. Gentry, and C. Vance. 2017. Effects of chlorination and ultraviolet light on environmental tetracycline-resistant bacteria and *tet(W)* in water. *J. Environ. Chem. Eng.* 5:777-784.
6. Telesford-Checkley, J.M., M.A. Mora, T.J. Gentry, T.J. McDonald, and D.E. Boellstorff. 2017. Impacts of heronries on water quality evaluated with *Escherichia coli* and fecal sterol analyses. *Water Environ. Res.* 89:508-518.
7. Winkler, S., C. Coufal, D. Harmel, E. Martin, J.P. Brooks, S. Popham, and T.J. Gentry. 2017. Within-house spatial distribution of fecal indicator bacteria in poultry litter. *J. Environ. Qual.* 46:1003-1009.
8. Mushinski, R.M., Y. Zhou, T.J. Gentry, and T.W. Boutton. 2018. Bacterial metataxonomic profile and putative functional behavior associated with C and N cycle processes remain altered for decades after forest harvest. *Soil Biol. Biochem.* 119:184-1963.
9. Pampell, R., T. Gentry, D. Smith, C. Hajda, K. Wagner, P. Smith, R. Haney, and K. Higgs. 2018. Vegetated treatment area (VTAs) efficiencies for *E. coli* and nutrient removal on small-scale swine operations. *Int. Soil Water Conserv. Res.* (in press).
10. Ren, G., Y. Ma, D. Guo, T.J. Gentry, P. Hu, E.A. Pierson, and M. Gu. 2018. Soil bacterial community was changed after Brassicaceous seed meal application for suppression of *Fusarium* wilt on pepper. *Front. Microbiol.* 9:185. doi: 10.3389/fmicb.2018.00185.

Awards and Honors

- 2014, Dean's Outstanding Achievement Award for Excellence as a Member of an Interdisciplinary Research Team "Bacterial Source Tracking Team", College of Agriculture and Life Sciences, Texas A&M University.
- 2011, Special Achievement Award for Research, Soil and Crop Sciences Department, Texas A&M University.
- 2008, Special Achievement Award for Teaching, Soil and Crop Sciences Department, Texas A&M University.

Professional Experience

- Advised/co-advised 9 postdoctoral research associates, 12 PhD students, and 11 MS students.
- Authored/co-authored 78 peer-reviewed journal articles, 1 book, 15 book chapters, and 209 scientific abstracts/presentations.
- Acquired \$9,480,514 of which \$3,032,426 went to my research program.
- Courses instructed: Environmental Soil and Water Science (SCSC 455/657), Environmental Microbiology (SCSC 637), Biofuels and the Environment (SCSC 425/625), Soil and Water Microbiology (SCSC 405), and Brazilian Agriculture and Production Systems (SCSC 420/620).