

Sarah L. Lebeis
Michigan State University
Department of Plant, Soil, and Microbial Sciences
Department of Microbiology and Molecular Genetics
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Education:

Emory University, Atlanta, GA, 2003-2008

Doctor of Philosophy, Microbiology and Molecular Genetics, Graduate Division and Biology and Biological Sciences

Michigan State University, East Lansing, MI, 1999-2002

Bachelor of Science, Double major: Lyman Briggs School of Science Residential Program (concentration: Biology) and Microbiology & Molecular Genetics (concentration: Genomics and Molecular Genetics)

Professional Experience:

Assistant Professor: Department of Plant, Soil, and Microbial Sciences, Michigan State University, October 2020 – present

Assistant Professor: Department of Microbiology and Molecular Genetics, Michigan State University, October 2020 - present

Assistant Professor: Plant Resilience Institute, Michigan State University, October 2020 - present

Adjunct Professor: Department of Microbiology, The University of Tennessee, September 2020-present

Assistant Professor: Department of Microbiology, The University of Tennessee, February 2014-September 2020

Adjunct Professor: Genome Science and Technology program, The University of Tennessee, March 2014-September 2020

Adjunct Professor: Department of Biology, North Carolina Central University, January 2013 – May 2013

Postdoctoral Research Associate: Department of Biology, The University of North Carolina at Chapel Hill, January 2009 - January 2014, (research advisor: Dr. Jeffery Dangl)

Undergraduate Research/Laboratory Assistant: Department of Microbiology and Molecular Genetics, Michigan State University, September 2001 – July 2003, (research advisor: Dr. Karen Friderici)

Undergraduate Research/Laboratory Assistant: Department of Plant Pathology, Michigan State University, September 2000 – July 2003, (supervisor: Dr. Mary Hausbeck)

Industry Intern: Ancile Pharmaceutical Inc., June 2001 – July 2001, La Jolla, CA

Funding and Research Awards:

2022:

- *Project GREEN:* Evaluating a Role for the Soybean Root Microbiome in Nutrient Uptake. July 2022-June 2023.

2020:

- *USDA-grant:* Agricultural Microbiomes in Plant Systems and Natural Resources: Identifying plant genes associated with beneficial foliar yeast in *Populus trichocarpa*. September 2020-August 2024.

2019:

- *Science Alliance JDRD:* Harvesting plant and bacterial genetic determinants of microbiome structure and function from GWAVA. March 2019 – July 2020

2018:

- *NSF-grant:* CAREER: Defining colonization mechanisms and functions of *Streptomyces* strains in root microbiome. August 2018-July 2023
- *Science Alliance JDRD:* Mining GWAVA for *Streptomyces* interactions in the plant microbiome. March 2018 – July 2019

2017:

- *Institute for a Secure and Sustainable Environment grant:* Nutrient and microbial community implications associated with the addition of duckweed to wastewater remediation.

2016:

- *JGI-Small scale Community Science Project:* Characterizing functional chemotaxis receptors in different root zones. November 2016-October 2018.
- *NSF grant:* Collaborative Proposal: Dimensions of Biodiversity: The evolution of novel interactions within a network of plant, insect, and microbial biodiversity. September 2016-August 2021.

2015:

- *Quest scholar of the week:* Office of Research and Engagement, Distinction to showcase outstanding faculty, staff, and students at the University of Tennessee, September 2015
- *EMSL-JGI-Community Science Project:* Providing sequencing and facility services for “Uncovering the composition and function of the aquatic microbiome for duckweeds”, October 2014-December 2016.

Prior to 2014:

- *Postdoctoral fellowship:* SPIRE (Seeding Postdoctoral Innovators in Research and Education) postdoctoral training program at The University of North Carolina, Chapel Hill, funded by the NIGMS, 2009-2012.

Publications: (* designates graduate student, ** designates undergraduate student, ^ designates equal contribution, # designates corresponding author)

- 1) O'Banion, B.S.* , Kelley, B.R., and **Lebeis, S.L.#** Arabidopsis RBOHD differentially impacts microbially-induced root phenotypes and tissue-specific competitive colonization patterns (In preparation)
- 2) O'Banion, B.S.* , Jones, P.* , Demetros, A.A.* , Kelley, B.R., Wagner, A.S.* , Chen, J.G., Michero, W., Reynolds, T.B., Jacobson, D., and **Lebeis, S.L.#** Plant inositol transport influences bacterial colonization phenotypes (Under Review)
- 3) Gates, A.D.* , French, A.M.** , Demetros, A.A.* , Kelley, B.R., and **Lebeis, S.L.#** A *Streptomyces* consortium contributes distinct microbial interactions during *Arabidopsis thaliana* microbiome assembly (Under Review)
- 4) Moccia, K. and **Lebeis, S.L.#** *Pantoea* spp. genomic landscapes reveal genetic factors important for interactions with plants (Under Review)
- 5) Acosta, K.* , Sorrels, S., Chrisler, W., Huang, W., Gilbert, S., Brinkman, T., Michael, T.P., **Lebeis, S.L.**, and Lam, E. Optimization of molecular methods for detection and quantification of specific duckweed-bacteria interactions. (Accepted)
- 6) Shastry, V.* , Bell, K.L., Buerkle, C.A., Fordyce, J.A., Forister, M.L., Gompert, Z., **Lebeis, S.L.**, Lucas, L.K., Marion, Z.H., and Nice, C.C. (2022) A continental-scale survey of *Wolbachia* infections in blue butterflies reveals evidence of interspecific transfer and invasion dynamics. *G3*. 12(10): jkac213.
- 7) Gompert, Z., Dodson, C., **Lebeis, S.**, Fordyce, J., Lucas, L., Buerkle, A., Forister, M., Saley, T.* , Philbin, C., Yoon, S., Perry, E., Sneck, M., and Harrison, J. (2022) Additive genetic effects in interacting species jointly determine the outcome of caterpillar herbivory. *PNAS*. 119(36): e2206052119.
- 8) Beals, K.K.* , **Lebeis, S.L.**, Bailey, J.K., and Schweitzer, J.A. (2022) Conditionality of soil microbial mediation of Solidago plant phenotype: indicator taxa within complex microbiomes influence some, but not all Solidago traits. *Plant and Soil*. 1-18
- 9) Gilbert, S., Poulev, A., Chrisler, W., Acosta, K.* , Scott, K., Orr, G., **Lebeis, S.L.**, and Lam, E. (2022) Auxin-producing bacteria from duckweeds have different colonization patterns and effects on plant morphology. *Plants* 11(6): 721.
- 10) Forister, M.L., Philbin, C.S., Marion, Z.H., Buerkle, C.A., Dodson, C.D., Fordyce, J.A., Forister, G.W., **Lebeis, S.L.**, Lucas, L.K, Nice, C.C., and Gompert, Z. (2020) Leveraging biological complexity to predict patch occupancy in a recent host range expansion. *Science Advances*. 6(48): eabc6852
- 11) Dickey, J.* , Fordyce, J., and **Lebeis, S.L.#** (2020) Bacterial communities of the rhizosphere explained by spatial structure and sampling grain. *Molecular Ecology*. 80(4): 846-858.
- 12) Moccia, K.* , Papoulis, S.* , Willems, A.** , Fordyce, J.A., and **Lebeis, S.L.#** (2020) Using 18S rRNA amplicon sequencing to explore the eukaryotic members of the *Medicago sativa* microbiome. *Phytobiomes*. PBIOMES-02-20-0022R
- 13) Huang, W., Gilbert, S., Poulev, A., Acosta, K., **Lebeis, S.**, Long, C., and Lam, E. (2020) Host-specific and tissue-dependent orchestration of microbiome community structure in traditional rice paddy ecosystem. *Plant & Soil*. 452: 379-395.

- 14) Liu, F.* , Rice, J., Lopes, V., Grewal, P., **Lebeis, S.L.**, Hewezi, T., and Staton, M. (2020) Overexpression of strigolactone-associated genes exerts fine-tuning selection on soybean rhizosphere bacterial and fungal microbiomes. *Phytobiomes*. 4(3): 239-251.
- 15) Acosta, K., Xu, J., Gilbert, S., Brinkman, T., Denison, E.** , **Lebeis, S.L.** and Lam, E. (2020) Duckweed hosts a taxonomically similar bacterial assemblage as the terrestrial leaf microbiome. *PLoS One*. 15(2): e0228560.
- 16) **Lebeis, S.L.**# (2020) mSphere of Influence: Peering through a keyhole into the unseen world. *mSphere*. 5(1): e00980-19. **(Invited)**
- 17) Moccia, K.* , Willems, A.** , Papoulis, S.* , Flores, A., Forister, M.L., Fordyce, J.A., and **Lebeis, S.L.**# (2020) Distinguishing Nutrient-dependent plant driven colonization patterns in alfalfa. *Environmental Microbiology Reports*. 12(1): 70-77.
- 18) O'Banion, B.S.* , O'Neal, L.* , Alexandre, G., and **Lebeis, S.L.**# (2020) Bridging the gap between single-strain and community-level plant-microbe chemical interactions. *Molecular Plant-Microbe Interactions* 33(2): 124-134. **(Invited)**
- 19) Moccia, K.* and **Lebeis, S.L.**# (2019) Microbial Ecology: How to Fight the Establishment. *Current Biology*. 29(24): R1320-R1323. **(Invited)**
- 20) Li, Z., Yao, Q., Guo, X., Crits-Christoph, A., Mayes, M.A., Hervey, W.J., **Lebeis, S.L.**, Banfield, J.F., Hurst, G.B., Hettich, R.L., and Pan, C. (2019) Genome-resolved proteomic stable isotope probing of soil microbial communities using ¹³CO₂ AND ¹³C-methanol. *Frontiers in Microbiology*. 10: 2706.
- 21) Liu, F.* , Hewezi, T., **Lebeis, S.L.**, Pantalone, V., Grewal, P.S., and Staton, M.E. (2019) Soil indigenous microbiome and plant genotypes cooperatively modify soybean rhizosphere microbiome assembly. *BMC microbiology*. 19(1): 1-19.
- 22) Chewning, S.S.^* , Grant, D.L.^* , O'Banion, B.S.* , Kennedy, B.J.* , Campagna, S.R., and **Lebeis, S.L.**# (2019) Root-associated *Streptomyces* harboring *mel* genes demonstrate enhanced plant colonization. *Phytobiomes Journal*. 3(3): 165-176.
- 23) Gilbert, S., Xu, J., Acosta, K., Poulev, A., **Lebeis, S.L.**, and Lam, E. (2018) Bacterial production of indole related compounds reveal their role in association between duckweeds and endophytes. *Frontiers in Chemistry*. 6: 265. doi: 10.3389/fchem.2018.00265.
- 24) Levy, A, Clingenpeel, S., Gonzalez, I., Herrera Paredes, S., Stillman, K., Monteiro, F., Alvarez, B., Lundberg, D., Lu, T.-Y., **Lebeis, S.L.**, Jin, Z., McDonald, M., Feltcher, M., del Rio, T., Grant, S., Doty, S., Ley, R., Pelletier, D., Tringe, S., and Woyke, T. (2017) Genetic determinants of bacterial adaptation to plants. *Nature Genetics*. 50: 138-150. doi: 10.1038/s41588-017-0012-9.
- 25) **Lebeis, S.L.** and Robatzek, S. (2017) Editorial overview: Biotic interactions: Inferring global implications for the molecular interface between plants and their biotic interactions across scales. *Current Opinion in Plant Biology: Biotic Interactions*. 38: v-vii. doi: 10.1016/j.pbi.2017.06001. **(Invited)**
- 26) **Lebeis, S.L.**# (2017) Plant Microbiome Identification and Characterization. *Current Protocols in Plant Biology*. 2: 135-146. doi: 10.1002/cppb/20048. **(Invited)**
- 27) Herrera Paredes, S and **Lebeis, S. L.**# (2016) Giving back to the community: Microbial Mechanisms of plant-soil interactions. *Functional Ecology*. 30: 1043-1052. doi: 10.1111/1365-2435.12684. **(Invited)**

- 28) **Lebeis, S.L.**^{^#}, Herrera Paredes, S.[^], Lundberg, D.S.[^], Breakfield, N., Gehring, J., McDonald, M., Malfatti, S., Glavina del Rio, T., Jones, C.D., Tringe, S.G., and Dangl, J.L. (2015) A plant defense hormone modulates colonization of the root microbiome by specific bacterial taxa. *Science*. 349: 860-864. PMID 26184915. doi: 10.1126/science.aaa8764.
- 29) Sloan, S.S.* and **Lebeis, S.L.**[#] (2015) Exercising influence: distinct biotic interactions shape root microbiomes. *Current Opinions in Plant Biology*. 26: 32-36. doi: 10.1016/j.pbi.2015.05.026.
- 30) Macquard, S., Garrido-Oter, R., Gonzalez, A., Spaepen, S., Ackermann, G., **Lebeis, S.**, McHardy, A.C., Dangl, J.L., Knight, R., Ley, R., and Schulze-Lefert, P. (2015) Microbiota and Host Nutrition across Plant and Animal Kingdoms. *Cell Host and Microbe*. 17(5): 603-616. doi: 10.1016/j.chom.2015.04.009.
- 31) **Lebeis, S.L.**[#] (2014) Greater than the sum of their parts: characterizing root microbiomes on the community-level. *Current Opinions in Plant Biology*. 24: 82-86. doi: 10.1016/j.pbi.2015.02.004.
- 32) **Lebeis, S.L.**[#] (2014) The potential for give and take in the plant microbiome. *Frontiers in Plant Science*. 5: 287. doi: 10.3389/fpls/2014.00287. **(Invited)**
- 33) **Lebeis, S.L.**, Rott, M., Dangl, J.D., and Schulze-Lefert, P. (2012) Culturing a plant microbiome community at the cross-Rhodes. *New Phytologist*. 196(2): 341-344. doi: 10.1111/j.1469-8137.2012.04336.x.
- 34) Lundberg, D.S.[^], **Lebeis, S.L.**[^], Herrera Paredes, S.[^], Yourstone, S.[^], Gehring, J., Malfatti, S., Tremblay, J., Engelbrekston, A., Kunin, V., Glavina del Rio, R., Edgar, R.C., Eickhorst, T., Ley, R.E., Hugenholtz, P., Tringe, S., and Dangl, J. (2012) Defining the core *Arabidopsis thaliana* root microbiome. *Nature*. 488: 86-90. doi: 10.1038/nature11237. **(Cover story)**
- 35) **Lebeis, S.** and Kalman, D. (2009) Aligning antimicrobial drug discovery with complex and redundant host-pathogen interactions. *Cell Host and Microbe*. 5(2): 114-122. doi: 10.1016/j.chom.2009.01.008.
- 36) **Lebeis, S.L.**, Powell, K.R., Merlin, D., Sherman, M.A., and Kalman, D. (2009) IL-1 receptor signaling protects mice from lethal intestinal damage caused by the attaching and effacing pathogen *C. rodentium*. *Infection and Immunity*. 77(2): 604-614. doi: 10.1128/IAI.00907-08.
- 37) **Lebeis, S.L.**, Sherman, M.A., and Kalman, D. (2008) Protective and destructive effects of the innate immune response to enteropathogenic *Escherichia coli* and related A/E pathogens. *Future Microbiology*. 3: 315-328. doi: 10.2217/17460913.3.3.315.
- 38) **Lebeis, S.L.**, Bommarius, B., Parkos, C.A., Sherman, M.A., and Kalman, D. (2007) TLR signaling mediated by MyD88 is required for a protective innate immune response by neutrophils to *Citrobacter rodentium*. *Journal of Immunology*. 179(1): 566-577. PMID: 17579078.
- 39) Reeves, P.M., Bommarius, B., **Lebeis, S.**, McNulty, S., Christensen, J., Swimm, A., Chahroudi, A., Chavan, R., Feinberg, M.B., Veach, D., Bornmann, W., Sherman, M., and Kalman, D. (2005) Disabling poxvirus pathogenesis by inhibition of Abl-family tyrosine kinases. *Nature Medicine*. 11(7): 731-739. PMID: 15980865.

- 40) Rothrock, C.R., Murgia, A., Sartorato, E.L., Leonardi, E., Wei, S., **Lebeis, S.L.**, Yu, L.E., Eifenbein, J.L., Fisher, R.A., and Friderici, K.H. (2003) Connexin 26 35delG does not represent a mutational hotspot. *Human Genetics*. 113(1): 18-23. PMID: 1268473.

Invited Talks and Seminars:

- 2022** November 7th - Division of Biology seminar, Kansas State University, Manhattan, Kansas
 September 30th – Kellogg Biological Station seminar, Hickory Corners, Michigan
 September 16th – Plant Sciences Society Meeting, National Institute for Biology, Ljubljana, Slovenia(Online)
 July 9th - ASPB, Annual Plant Biology Meeting, Portland, Oregon
 May 16th - Great Lakes Bioenergy Research Center, Lake Geneva, Wisconsin
 February 1st - Society for Industrial Microbiology and Biotechnology, San Diego
(Canceled)
 January 14th - Plant Nutrition and Development Symposium, MSU (Online)
- 2021** December 14th - John Lawrence Seminar, Lawrence Berkeley National Laboratory (Online)
- 2020** November 16th – Interdisciplinary Plant Group seminar, University of Missouri (Online)
 October 27th - Plant Pathology Department seminar, University of Wisconsin (Online)
 October 1st - Plant and Microbial Biology Department seminar, University of Zurich (Online) **(International)**
 July 28th - ASM Micro 2020 (Online)
- 2019** July 8th - FEMS Microbiology, Glasgow, Scotland **(International)**
 April 17th - Plant Microbiome Workshop, Banbury Center, Cold Spring Harbor, NY
 April 8th - Biology Department seminar, Vanderbilt University, Nashville, TN
- 2018** December 17th - Evolutionary Biology group seminar, University of Kiel, Kiel, Germany **(International)**
 November 8th - Bacteriology Department, University of Wisconsin, Madison, WI
 October 3rd - Biochemistry and Cellular and Molecular Biology Department seminar, University of Tennessee, Knoxville, TN
 June 21st - 21st Penn State Plant Biology Symposium: Wild and Tamed Phytobiomes, University Park, PA
 March 29th - Plant Sciences Department seminar, University of Arizona, Tucson, AZ
- 2017** December 4th - Microbiology and Molecular Genetics Department seminar, Emory University, Atlanta, GA
 June 27th - American Society of Plant Biologists annual conference, Honolulu, HI
 January 8th - Microbiology Department seminar, University of Georgia, Athens, GA
- 2016** September 10th - The 6th ASM conference on Beneficial Microbes, Seattle, WA
 August 24th - The International Society for Microbial Ecology, Montreal, Canada **(International)**
 July 19th - The International Society for Molecular Plant and Microbe Interactions conference, Portland, OR **(International)**
 May 10th - New Model Systems for Linking Evolution and Ecology, EMBL, Heidelberg, Germany **(International)**
 March 30th - MicroSeminar, Web-based Microbiology Seminar Series

- (online) (microseminar.wordpress.com)
- March 23rd - Joint Genome Institute's Annual User's meeting, Walnut Creek, CA
 - January 31st - Donald Danforth Center seminar, St. Louis, MO
 - 2015** November 6th - Root Biology Workshop, Noble Foundation, Ardmore, OK
 - October 26th - Plant Biology Department seminar, Michigan State University, East Lansing, MI
 - August 3rd - American Phytopathology Society. Pasadena, CA
 - June 30th - Phytobiomes 2015: Designing a New Paradigm for Crop Improvement conference. Washington, D.C.
 - March 18th - Department of Horticulture seminar, University of Kentucky, Lexington, KY
 - 2014** November 12th - Plant-Microbe Interaction group seminar, Oak Ridge National Lab, Oak Ridge, TN
 - September 8th - Entomology and Plant Pathology Department seminar, University of Tennessee, Institute of Agriculture, Knoxville, TN
 - August 28th - Plant Research Center colloquium. Knoxville, TN
 - July 8th - The International Society for Molecular Plant and Microbe Interactions conference, Rhodes, Greece (**International**)
 - January 10th - USDA/DOE Plant Feedstocks Genomics PI/PD meeting, San Diego, CA
 - 2013** December 4th - Plant Genomes and Biotechnology: From Genes to Networks, Cold Spring Harbor, NY
 - 2012** November 29th - Evolution and Development seminar series, Duke University, Durham, NC
 - November 6th - Plant Biology Department seminar, North Carolina State University, Raleigh, NC

Student Presentations:

(* indicates graduate student, ** indicates undergraduate student)

- 2022** - O'Banion, B.S.* and **Lebeis, S.L.** Plant and bacterial inositol exchange influences root colonization outcomes. International Society for Microbial Ecology, Lausanne, Switzerland (**Oral presentation**)
- O'Banion, B.S.* and **Lebeis, S.L.** Plant and bacterial inositol exchange influences root colonization outcomes. International Phytobiomes Conference, Denver, CO (**Oral presentation**)
- Gates, A.*, Hawkins, A.** , Demetros, A.A.* , Kelley, B., and **Lebeis, S.L.** Untangling salicylic acid driven microbial interactions during root microbiome assembly. American Society for Plant Biology, Portland, OR (**Poster presentation**)
- Hawkins, A.** , Gates, A.* , and **Lebeis, S.L.** Salicylic acid influence on *Arabidopsis thaliana* root microbiomes. University Undergraduate Research and Arts Forum, Michigan State University, East Lansing, MI (**Poster presentation**)
- DeClaire, M.** , Kelley, B.R., and **Lebeis, S.L.** Influence of biological products on soybean drought performance. University Undergraduate Research and Arts Forum, Michigan State University, East Lansing, MI (**Poster presentation**)

- 2021** - Gates, A.* and **Lebeis, S.L.** Generation of enriched bacterial communities to define salicylic acid influence in the root endosphere. IS-MPMI Congress: eSymposia Series, Plant-microbe interactions in the environment. **(Online)**
(Oral presentation)
 - O'Banion, B.* and **Lebeis, S.L.** Plant and bacterial inositol exchange influences root colonization outcomes. IS-MPMI Congress: eSymposia Series, Plant-microbe interactions in the environment. **(Online)** **(Oral presentation)**
- 2019** - Hyde, T.** and **Lebeis, S.L.** 2019. Plant-associated bacteria compete differently on diverse media sources. Poster presented at the Office of Research Undergraduate Research Symposium, University of Tennessee, Knoxville, TN **(Poster presentation)**
 - O'Banion, B.*, O'Neal, L.*, Alexandre, G., and **Lebeis, S.L.** Spatially discrete micro-niches govern root microbiome assembly. Molecular Plant-Microbe Interaction International Symposium, Glasgow, Scotland. **(Oral presentation)**
 - O'Banion, B.*, Hyde, T.,**, O'Neal, L.*, Alexandre, G., and **Lebeis, S.L.** Spatially discrete micro-niches govern root microbiome assembly. FEMS Microbiology Symposium, Glasgow, Scotland. **(Oral presentation)**
 - Moccia, K.*, Willems, A.*, Papoulis, S.*, Fordyce, J., and **Lebeis, S.L.** Distinguishing nutrient-dependent plant driven bacterial colonization patterns in alfalfa. Molecular Plant-Microbe Interactions International Symposium, Glasgow, Scotland **(Poster presentation)**
 - O'Banion, B.*, Jones, P.*, Grant, D.*, Chewning, S.S.*, Jacobson, D., and **Lebeis, S.L.** Mining GWAVA for key factors shaping microbiome structure. Science Alliance JDRD Symposium, Knoxville, TN **(Poster presentation)**
- 2018** - O'Banion, B.*, O'Neal, L.*, Alexandre, G., and **Lebeis, S.L.** 2018. Assessing impact of spatially distinct chemotaxis on overall root-microbiome assembly. The KY and TN Regional ASM Meeting, Lexington, KY. **(Poster presentation)**
 - Moccia, K.*, Willems, A.**, & **Lebeis, S.** From sporadic to consistent: Colonization of microbes can depend on nutrient availability. International Society for Microbial Ecology, Leipzig, Germany. **(Poster presentation)**
 - Chewning, S. S.*, Grant, D.**, O'Banion, B.*, & **Lebeis, S.** Streptomyces employ melanin production to compete and succeed in the root microbiome. Joint Genome Institute Annual User's meeting, Walnut Creek, CA. **(Poster presentation)**
- 2017** - Sloan, S. S.*, Grant, D.**, Whitley, C.** , & **Lebeis, S. L.** Unique metabolic potential of root-associated Streptomyces strains predicts their induced plant phenotypes. Microbial and Plant Systems Modulated by Secondary Metabolites Meeting, July 24-26, Walnut Creek, CA. **(Poster presentation)**
 - Grant, D.**, Sloan, S. S.*, & **Lebeis, S. L.** Identification of Streptomyces isolate-specific secondary metabolites capable of influencing Arabidopsis thaliana root microbiome establishment. EURECA event, April 25, Knoxville, TN. **(Poster presentation)**
- 2016** - Sloan, S. S.*, Massey, J.** , Kackos, C.** , & **Lebeis, S. L.** Streptomyces sculpt the

root microbiome of *Arabidopsis thaliana*. 16th International Symposium on Microbial Ecology, August 21-26, Montreal, Quebec, Canada.
(Poster presentation)

- McGuire, K. G.** , Basso, J.* , Harvey, M. L.** , & **Lebeis, S. L.** Duckweed Dynasty: Characterization of microbes associated with duckweed. EURECA event, April 26, Knoxville, TN. **(Poster presentation)**

2015 - Sloan, S. S.* , & **Lebeis, S. L.** Soil-resident Streptomycetaceae influence phenotypic characteristics of *Arabidopsis thaliana*. 27th Annual Plant Molecular Biology Consortium, September 18-20, Asheville, NC. **(Poster presentation)**

Teaching experience:

Courses taught at Michigan State University:

Academic Session	Course Title	# Students
Spring 2023	PLB 865: Plant Omics	10
Spring 2023	MMG 499: Undergraduate Research	1
Spring 2023	CSS460: Plant-Microbe Interactions	14
Spring 2022	PLB 865: Plant Omics	10
Spring 2022	MMG 499: Undergraduate Research	1
Spring 2022	CSS491: Plant-Microbe Interactions	14
Fall 2021	MMG 499: Undergraduate Research	1

Courses taught at the University of Tennessee:

Academic Session	Course Title	# Students
Spring 2020	MICR 606: Microbial Ecology Journal Club	12
Fall 2019	MICR 330: Immunology	120
Spring 2019	MICR 431: Advanced Immunology	23
Fall 2018	BIOL 220: General Microbiology	91
Spring 2018	MICR 650: Molecular Biology Topics	7
Fall 2017	MICR 330: Immunology	137
Spring 2017	MICR 431: Advanced Immunology	22
Fall 2016	BIOL 220: General Microbiology	101
Spring 2016	MICR 630: Immunology Topics	7

Fall 2015	MICR 330: Immunology	115
Spring 2015	MICR 310: General Microbiology	83

Courses taught at North Carolina Central University:

Academic Session	Course Title	# Students
Spring 2013	Introduction to Microbiology	25
Fall 2012	Host-Microbe Relationships	17
Spring 2012	Introduction to Microbiology	25

Teaching Awards:

- 2019 *College of Arts and Sciences, University of Tennessee: Undergraduate Teaching*
 2018 *University of Tennessee, University of Tennessee: Chancellor's Excellence in Teaching*
 2017 *Department of Microbiology, University of Tennessee: Outstanding Undergraduate Teaching*

Academic Mentoring and Service:

Current MSU PhD Student:

Leah Knor – Connecting plant root exudate components with root colonization outcomes
 Expected graduation: Spring 2027

Imani Pascoe (co-mentored with Greg Bonito) – Defining metabolic exchange between switchgrass its fungal and bacterial microbiome members
 Expected graduation: Spring 2026

Kevin Santiago-Morales – Identification and characterization of phosphate nutrient status during plant microbiome assembly
 Expected graduation: Spring 2025

Moss Le – Influence of nutrition and foliar yeasts on plant disease resilience
 Expected graduation: Spring 2026

Current UTK PhD Students:

Bridget O'Banion – Defining the influence of chemotaxis to specific root niches in microbiome assembly and functioning
 Expected graduation: Spring 2023

Alexandra Gates – Distinguishing a role for *Streptomyces* strains during plant root microbiome assembly

Expected graduation: Fall 2023

Former UTK MS Student:

David Grant – Investigating *Streptomyces* genes and secondary metabolites involved in plant root colonization

Current position: Project Coordinator, Assured Bio Labs

Former PhD Student:

Katherine Moccia, PhD – More than the sum of their parts: Building a framework for understanding host-microbe interactions in *Medicago sativa*

Graduation: Fall 2020

Current position: Assistant Professor, Biology Department, Wagner College

Sarah Stuart Chewning, PhD. – Microbial partners in health: Broadening our understanding of microbiome-host relationships

Graduation: Fall 2018

Current position: Technical Sales Specialist, Thermo Fisher Scientific

Current graduate committees: 6 PhD students (4 at MSU and 2 at UTK)

University Service Award:

2017 *College of Arts and Sciences:* Undergraduate Academic Advising

2017 *College of Arts and Sciences:* Undergraduate Research Mentor of the Year,
Natural Sciences division

Professional society memberships and contributions:

American Society for Microbiology (ASM) and American Phytopathological Society (APS)

Academic Service:

Co-editor: Current Opinions in Plant Biology: Biotic Interactions, volume 38, August 2017

Editorial board: Applied Environmental Microbiology

Reviewed manuscripts for: Applied Environmental Microbiology, Cell Host and Microbe, eLife, Frontiers in Microbiology, Frontiers in Plant Science, ISME Journal, Microbial Ecology, Molecular Plant-Microbe Interactions, Molecular Plant Pathology, New Phytologist, Plant Molecular Biology, PLoS One, Proceedings of the National Academy of Sciences USA, and Vaccine

Ad hoc grant reviewer and panelist for: Department of Energy, Joint Genome Institute, National Science and Engineering Research Council of Canada, National Science Foundation, Swiss National Science Foundation, and U.S. Department of Agriculture.

Conference session chair:

- 2017 American Society for Plant Biologists, Honolulu, HI
- 2016 The International Society for Molecular Plant and Microbe Interactions conference, Portland, OR
- 2016 New Model Systems for Linking Evolution and Ecology, EMBL, Heidelberg, Germany

Community outreach:

- October 2022 *EcoTek student mentor:* Lab hosts EcoTek high school students
- June 2019 *Designer/Instructor:* Living soil, K-12 teacher workshop, Oak Ridge, TN
- March 2017 *Proctor:* Science Olympiad State Tournament competition, Science Olympiad, Knoxville, TN
- February 2016 *Judge:* Tennessee Junior Science and Humanities Symposium, Tennessee Junior Science and Humanities Symposium, Knoxville, TN.

Popular press/Interviews:

Fang, Janet. "Plant Defense Hormones Build Healthy Microbiomes for Roots"
<https://www.iflscience.com/plants-and-animals/plant-defense-hormones-build-healthy-microbiome-roots/>
(July 16, 2015)

Lawrence Berkeley National Laboratory. "Unearthing cornerstones in root microbiomes". ScienceDaily.
www.sciencedaily.com/releases/2015/07/150716141939.htm

Manke, Kara. "Underground Immunity". The Scientist
<http://www.the-scientist.com/?articles.view/articleNo/43530/title/Underground-Immunity/> (July 16, 2015)

Howard Hughes Medical Institute. "Defenses Up: Hormone Helps Plants Determine Friend from Foe"
<http://www.sciencenewline.com/articles/2015071714540027.html> (July 16, 2015)

Ledford, Heidi. "Plant dwellers take the limelight: Researchers seek holistic view of botanic ecosystems". *Nature*. 523: 137-138. <http://www.nature.com/news/plant-denizens-get-the-big-science-treatment-1.17920>
(July 9, 2015)