**Brett Lane**

Graduate Research Fellow

Department of Plant Pathology, University of Florida

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EDUCATION

**PhD Plant Pathology**, University of Florida, Gainesville, FLDecember 2021

Major Advisor: Erica Goss, PhD

Dissertation: Impact of the emerging pathogen *Bipolaris gigantea* on invasive *Microstegium vimineum*

**MS Plant Pathology**, Purdue University, West Lafayette, IN August 2017

Major Advisor: Charlie Woloshuk, PhD

Thesis: Environmental effects on the efficacy and microflora of hermetically stored maize

**BA Biochemistry**, Hanover College, Hanover, IN May 2014

PROFESSIONAL EXPERIENCE

**Graduate Research Fellow** August 2017-Present

Department of Plant Pathology

University of Florida, Gainesville, FL

Weekly hours worked: 40

* Sampled, isolated, and conducted Koch’s postulate and host range tests on *Bipolaris*, *Pyricularia*, and other fungi from invasive grass *M. vimineum*
* Identified and renamed fungal pathogen using microscopy and multi-locus sequencing
* Constructed Illumina amplicon libraries to investigate the impact of fungicide application on the endophytic communities of *M. vimineum*
* Analyzed high-throughput sequencing data using vegan, phyloseq, and metacoder
* Designed and conducted field experiments to determine the impact of fungal pathogens on invasive litter decomposition
* Conducted phylogenomic analysis on the *Pleosporales*
* Collaborated with large multidisciplinary team
* Trained undergraduate student in Illumina library preparation
* Mentored undergraduate student on senior honor’s thesis
* Served as student liaison on departmental curriculum committee

**Lab Manager** May 2018 - Present

Goss Lab – BSL2 certified lab

University of Florida, Gainesville, FL

Weekly hours worked: 5

* Ensure lab compliance with health and safety measures
* Maintain lab compliance with BSL2 protocols
* Developed protocols for containment greenhouse operations (BSL3-P)
* Trained 5 undergraduate students in oomycete culture maintenance

**Graduate Research Assistant** January 2015-July 2017

Department of Botany and Plant Pathology

Purdue University, West Lafayette, IN

Weekly hours worked: 40

* Conducted experiment to assess the impact of variable climate conditions on the viability of hermetic maize storage
* Identified insects collected from hermetic and non-hermetic stored maize
* Extracted and quantified mycotoxins from stored maize to determine the impact of hermetic storage on mycotoxin production
* Constructed ion torrent sequencing libraries to determine the impact of hermetic storage on grain microbial communities
* Analyzed high-throughput sequencing data using the QIIME pipeline
* Maintained high-pressure liquid chromatography and other lab equipment
* Assessed industry acquired popcorn samples for grain pathogens

**Undergraduate Researcher** September 2011 – May 2014

Hanover College, Hanover, Indiana

Weekly Hours worked: 5

* Electroporation transformation of *E. coli*
* Maintained *E. coli* cultures
* Purified proteins produced by *E. coli* cultures

**Seasonal Crop Scout** May – August, 2011 & 2012

Wilson Fertilizer, Brook, IN

Weekly hours worked: 40

* Independently scouted fields for insects, weeds, pathogens, and stand quality
* Prepared reports of scouting results for review and delivery to producer
* Interacted directly with producers to address producer concerns.

HONORS & AWARDS

Stella Melugin Coakley Travel Award, APS Foundation 2021

Departmental Travel Award, UF Department of Plant Pathology 2019

Harry E. Wheeler Student Travel Award, APS Foundation 2018

F.A. Wood Memorial Travel Award, UF Department of Plant Pathology 2018

University of Florida, Department of Plant Pathology, Departmental Fellowship 2017

SELECTED PUBLICATIONS

**Lane, B.**, Kendig, A.E., Wojan, C.M., Adhikari, A., Jusino, M.A., Kortessis, N., Simon, M.W., Holt, R.D., Clay, K., Flory, S.L., Harmon, P.F., Goss, E.M. *In preparation*. Repeated perturbation by fungicide application shifts the microbial communities of invasive *Microstegium vimineum*.

**Lane, B.R.**, Wojan, C.M., Kendig, A., Kortessis, N., Holt, R.D., Harmon, P.F., Clay, K., Flory, S.L., Goss, E.M. *In preparation*. Foliar pathogen epidemic alters the decomposition of invasive plant litter.

**Lane B.**, Stricker, K.B., Adhikari, A., Ascunce, M.S., Clay, K., Flory, S.L., Smith, M.E., Goss, E.M., Harmon, P.F. 2020. Large-spored *Drechslera gigantea* is a *Bipolaris* species causing disease on the invasive grass *Microstegium vimineum.* Mycologia 112.5:921-931.

Goss, E.M., Kendig, A.E., Adhikari, A., **Lane, B.**, Kortessis, N., Holt, R.D., Clay, K., Harmon, P.F., Flory, S.L. 2020. Disease in invasive plant populations. Annual Review of Phytopathology. 58:97-117.

Kendig, A.E., Flory, S.L., Goss, E.M., Holt, R.D., Clay, K., Harmon, P.F., **Lane, B.R.**, Adhikari, A., Wojan, C.M. 2020. The role of pathogens in plant invasions. In *Plant invasions: the role of biotic interactions*. CABI. pp. 208-225.

Adhikari, A., Wang, X., **Lane, B.**, Harmon, P.F., Goss, E. 2020. First report of *Bipolaris yamadae* leaf spot disease on Guinea grass (*Panicum maximum*) in Florida. Plant Disease 105:1208

**Lane B.**, Sharma, S., Niu, C., Maina, A.W., Wagacha, J.M., Bluhm, B.H., Woloshuk, C.P. 2018. Changes in the fungal microbiome of maize during hermetic storage in the United States and Kenya. Frontiers in Microbiology 9:2336.

**Lane B.** and Woloshuk, C.P. 2017. Impact of storage environment on the efficacy of hermetic storage bags. Journal of Stored Products Research 72:83-89.

CONTRIBUTED TALKS

**Lane, B.**, Kendig, A.E., Wojan, C.M., Adhikari, A., Jusino, M.A., Kortessis, N., Simon, M.W., Holt, R.D., Clay, K., Flory, S.L., Harmon, P.F., Goss, E.M. 2021. Changes in the fungal microbial community on an invasive grass after foliar fungicide application. Plant Health 2021. August 2021.

**Lane, B.R.**, Wojan, C.M., Kendig, A., Heiss, N.J., Holt, R.D., Harmon, P.F., Clay, K., Flory, S.L., Goss, E.M. 2021. Emerging pathogens inhibit early season invasive grass litter decomposition. Ecological Society of America 2021. August 2021.

**Lane, B.**, Kendig, A.E., Wojan, C.M., Adhikari, A., Jusino, M.A., Kortessis, N., Simon, M.W., Holt, R.D., Clay, K., Flory, S.L., Harmon, P.F., Goss, E.M. 2021. Foliar fungicide application is associated with changes in the mycobiome on invasive grass. Florida Phytopathological Society Biennial Meeting. May 2021.

**Lane, B.R.**, Hernandez, K., Adhikari, A., Goss, E.M., Harmon, P.F. 2019.Emergence of a novel *Pyricularia* on invasive grass in Southern Indiana. Florida Phytopathological Society Biennial Meeting. April 2019. Lake Alfred, FL.

CONTRIBUTED ABSTRACTS

**Lane, B.R.**, Kendig, A., Wojan, C., Stricker, K.B., Adhikari, A., Ascunce, M., Smith, M.E., Clay, K., Flory, S.L., Harmon, P.F., Goss, E.M. 2020. Ecological implications of an emerging pathogen on the invasive grass *Microstegium vimineum*. Plant Health 2020 Online. August 10-14.

Kendig, A., Adhikari, A., Barfield, M., Clay, K., Goss, E.M., Harmon, P.F., Holt, R.D., Kortessis, N., **Lane, B.R.**, Wojan, C.M., Flory, S.L. 2020. Generalist fungal pathogens can reduce the impacts of an invasive understory grass on native grasses. 2020 ESA Annual Meeting. August 3-6.

Kendig, A., Wojan, C.M., Benitez, L., Adhikari, A., **Lane, B.R.**, Barfield, M., Holt, R.D., Harmon, P.F., Clay, K., Goss, E.M., Flory, S.L. 2019. Effects of pathogen accumulation on native-invasive plant interactions. 2019 Ecological Society of America. August 11-16.

**Lane, B.R.**, Hernandez, K., Adhikari, A., Goss, E.M., Harmon, P.F. 2019. A novel *Pyricularia-*like species on *Microstegium vimineum* in Indiana. 2019 American Phytopathological Society. August 3-7.

**Lane, B.**, Adhikari, A., Harmon, P.F., Goss, E.M. 2018. Brn1 as a novel barcode for culture-independent identification of *Bipolaris* species. 2018 International Congress of Plant Pathology. July 29- August 3, 2018.

Adhikari, A., **Lane, B.**, Harmon, P.F., Goss, E.M. 2018. Suppression of *Bipolaris* spp. by the saprophytic fungi *Cladosporium pseudocladosporioides*. 2018 International Congress of Plant Pathology (ICPP). July 29- August 3, 2018.

**Lane, B.** and Woloshuk, C.P.2016. Efficacy of Hermetic Storage Bags to Reduce Maize Spoilage Under Different Environmental Conditions. 2016 International Congress of Entomology. September 25-30, 2016.

**Lane, B.** and Woloshuk, C.P. 2016. Assessment of Hermetic Storage of Maize Under Different Environmental Conditions. 2016 American Phytopathological Society Annual Meeting (APS). July 30 - August 3, 2016.

SKILLS

* Phylogenetic Analysis
* Genome assembly
* Genome annotation
* Identification of homologous genes
* Amplicon library preparation
* High-performance computing
* Microbial community analysis
* Perl
* R
* Unix
* HPLC
* Thin layer chromatography
* Sonication
* Protein purification

TEACHING AND OUTREACH EXPERIENCE

University of Florida, Gainesville, FL

Fundamentals of Plant Pathology, PLP 3002C, Teaching Assistant Fall 2019

Field Plant Pathology, PLP 6905, Teaching Assistant Spring 2019

CALS Tailgator, Plant Pathology Outreach Booth 2017-2019

Plant Pathology Middle/High School Teacher Workshop 2018-2019

Seed School in a Day, Seedborne Diseases 2018-2019

PROFESSIONAL AFFILIATIONS

American Phytopathological Society 2015-Present

* Evolutionary Genomics and Genetics Committee
* Graduate Student Committee
* Mycotoxicology Committee

University of Florida Plant Pathology Graduate Student Organization 2017-Present

* Vice President, 2018-2019
* Social Committee, Chair 2018-2019
* Outreach Committee