

## **Megan A. Buland**

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### **Education**

- University of Georgia: Athens, GA · Master of Science in Forestry; 3.69 out of 4.0 GPA [July 2019]
  - Warnell School of Forestry and Natural Resources, Villari Lab
  - Teaching assistant
  - Research: the microbial community composition of *Grosmannia* complex fungi associated with three genera of root-feeding beetles and their potential correlation to mortality of loblolly pine in Georgia.
- University of Kentucky: Lexington, KY · Bachelor of Science in Forestry; 3.3 out of 4.0 GPA [May 2012]

### **Technical Skills/Proficiencies**

- Tree and ornamental pest and disease identification
- Working knowledge of R-code [intermediate]
- Strong knowledge base of vascular plant taxonomy & physiology
- Lab & field work in vector entomology, hardwood silviculture, forest ecology & fungal plant pathology
- Tree phenology observation and recording
- Field study design, implementation and sampling techniques in various systems
- Microbiome community composition analyses and metabarcoding design
- Lab based experience in PCR primer design and implementation and PCR troubleshooting
- Lab based experience in microscopy and photography
- Lab based experience in fungal culturing techniques, DNA extraction and purification processes
- Social media management and community engagement in science

### **Professional Certifications**

- International Society of Arboriculture Certified Arborist; ID: KY-0856A

### **Professional Memberships**

- American Phytopathological Society (APS) member
- International Society of Arboriculture (ISA) member

### **Professional Experience**

- University of Kentucky Forest Health Research and Education Center [September 2019 - present]
  - Forest health lab: developing and directing undergraduate research projects, execution of day to day lab needs and activities, communication with collaborators in ongoing projects
  - Content development/educational materials for in-development outreach efforts
  - Conceptualization, coordination and development of citizen science, forest health field days
  - Collaboration on research projects with The American Chestnut Foundation - Kentucky chapter
  - Assist with developing and disseminating Cooperative Extension resources and in-person programming related to forest health and mycology
  - Assist with class and lab curriculum preparation and presentations in forest health and urban forestry
- US Forest Service; Umpqua National Forest, Cottage Grove Ranger District [May – October 2016]
  - Botany technician, GS-4.
  - Native seed collection for native plants propagation
  - Wildlife habitat creation

- o Invasive plant species management and mitigation
- o Rare vascular plant surveys and insect pollinator surveys
- o Plant pathology analysis at Dorena genetic research station, working with white pine blister rust
- o Wildland firefighter (Type 2 handcrew red-card)
  
- Pacific Tree Climbing Institute; Blue River, OR [January - October 2016]  
Educational tree climbing guide for middle and high school aged students, climbing in ecologically sensitive, old growth trees at HJ Andrews Experimental Forest in Blue River, OR.
  
- Sperry Tree Care; Eugene, Oregon [September 2015 - April 2016]
  - o ISA certified arborist
  - o Office manager
  - o Surveyed potential construction sites for species diversity and density
  - o Identified high value trees, advised on preservation & assisted in report generation for both private & public entities
  - o Directed plant pathogen/insect damage analysis
  
- Town Branch Tree Experts; Lexington, KY [October 2013 - July 2015]
  - o ISA certified arborist
  - o Plant health care program development and manager
  - o Primary duties not limited to and including:
    - Setting program standards
    - Compiling manuals of insect pest & disease information
    - Analysis and selection of most effective and environmentally sound treatment options for given situations
    - Time is divided between office management of the plant health care program, client relations, diagnostic work and field application of plant health care.
  
- University of Kentucky Herbarium; Lexington, KY [Aug 2011 – May 2012]
  - o Classification, preservation and mounting of plant specimens
  - o Organized herbarium specimens
  - o Assisted in care and management of facilities.
  
- Woodland Park/University of Kentucky Forestry Dept.; Lexington, KY [March – October 2011]
  - o Surveyed and collected phenological data on changes occurring in individual trees at Woodland Park
  - o Recorded changes in tree characteristic over time
  - o Checked for insect damage or disease
  - o Observed transition of phenological stages
  - o Compiled data for statistical analysis.
  
- University of Kentucky's Robinson Forest; Clayhole, KY [June 2010 – July 2010]  
[July 2011 – August 2011]
  - o Served as a field technician for Dr. Jeff Stringer at UK's Robinson Forest
  - o Invasive & native plant species identification
  - o Navigation by topographical map
  - o GPS/GIS work
  - o Data collection, entry, processing and analysis for SMZ (Streamside Management Zone) project
  - o Data collection, entry, processing and analysis for CFI (Continuous Forest Inventory) sites

- University of Kentucky Entomology Department; Lexington, KY [May 2009 – November 2011]
  - Worked as a lab technician in Dr. Stephen Dobson’s mosquito lab at UK entomology department.
  - Run PCR analysis
  - Assist with ELISA testing
  - Maintain mosquito & lab mouse colonies
  - General lab care and cleaning

### *Teaching Experience*

\*Denotes Lead TA

- **Course ID:** FORS 3010 – 3 hours \*
  - **Course Title:** Dendrology (with Dr. Kim Coder)
  - **Course Description:** Identification, classification, silvical characteristics and distribution of trees, shrubs and other plants of importance to the management of forest systems.
  - **Semester Taught:** Spring 2019
  - **Role:** Lead TA
  
- **Course ID:** FORS 4210/6210 – 3 hours, 2 hours lecture and 2 hours lab each week.
  - **Course Title:** Forest Health and Protection (with Drs. Kamal Gandhi & Caterina Villari)
  - **Course Description:** Major insect and disease problems of forests, with an emphasis on their recognition and management. Forest fire detection, suppression, prevention and management.
  - **Semester Taught:** Spring 2018
  - **Role:** Teaching Assistant
  
- **Course ID:** FORS 3010 – 3 hours
  - **Course Title:** Dendrology (with Dr. Scott Merkle)
  - **Course Description:** Identification, classification, silvical characteristics and distribution of trees, shrubs and other plants of importance to the management of forest systems
  - **Semester Taught:** Fall 2017
  - **Role:** Teaching Assistant

### *Awards/Accomplishments*

- APS Student Travel Awardee 2019
- MSA Mentor Student Travel Awardee 2019
- Warnell Exemplary Teaching Assistant Award 2019
- ComSciCon Atlanta Selected Attendee – Sponsored by Harvard/MIT 2019
- Robert Gooding McAlpine Forest Biology Research Scholarship 2018
- Warnell Graduate Student Symposium Oral Presentation – 1<sup>st</sup> Place 2018
- Project(s) WET, WILD and Learning Tree Certification 2017
- Kentucky-Tennessee Society of American Foresters scholarship Spring 2012
- University of Kentucky Student Chapter of SAF Treasurer 2011-2012
- Kentucky Woodland Owner’s Association Scholarship Spring 2011
- Railway Tie Association Scholarship 2010
- University of Kentucky College of Agriculture Dean’s List Fall 2008, Spring 2010

### *Professional Development/Community Involvement*

- APS Forest Pathology Committee Chair 2020-2021
- Kentucky Arboricultural Association board member 2020
- National Junior Horticulture Association - adult advisor for youth officers 2019-present
- University of Kentucky Urban Forest Initiative member 2019-present

- Skype a Scientist program participant 2019-present
- Sandy Creek Women in Science Day (outreach) forest health exhibit 2019
- Warnell Graduate Student Symposium Planning Committee Member 2019
- APS Forest Pathology Committee – Secretary 2018-2019
- APS Art in Phytopathology subcommittee member 2018-2019
- UGA STEMZone (outreach) Mycology table development 2018
- Contributing author and editor – Athens Science Observer 2018-2019
- Warnell Graduate Student Association (WGSA) Secretary 2018-2019
- Warnell Graduate Student Symposium Silent Auction volunteer 2018
- Boy Scouts (BSA) Nature Merit Badge Counselor 2017, 2018
- UGA Plant Center Retreat Undergraduate Mentor 2017, 2018
- Student Mentor: Warnell Mentor-Mentee Program 2017, 2018
- Warnell Honors and Awards Committee student appointee 2017-2018
- NJHA (National Junior Horticultural Association) Alumni President 2015-2016

### *Presentations*

- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C; “*Elucidating the phoretic fungal community of root-feeding beetles in the Georgia Piedmont*”; Mycological Society of America (oral presentation); August 13<sup>th</sup>, 2019
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C; “*Elucidating the phoretic blue-stain fungal community of root-feeding beetles in Georgia using a metabarcoding approach*”; American Phytopathological Society (oral presentation); August 5<sup>th</sup>, 2019
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; “*Species composition of Leptographium and Grosmannia blue-stain fungi in Georgia loblolly pine stands*”; Warnell Graduate Student Symposium (oral presentation); February 8<sup>th</sup>, 2019
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C; “*Metabarcoding elucidation of the fungal community in loblolly pine roots in Georgia*”; University of Georgia Plant Center Retreat (poster); September 27<sup>th</sup>, 2018
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C; “*Root-feeding beetles and Leptographium and Grosmannia blue-stain fungi in loblolly pine stands with differing management practices*”; International Congress of Plant Pathology (poster); July 31<sup>st</sup>, 2018
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; “*Elucidating the fungal community associated with root-feeding beetles using a metabarcoding approach*”; Southern Forest Insect Work Conference (poster); July 18<sup>th</sup>, 2018
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; “*Species composition of Leptographium and Grosmannia blue-stain fungi in Georgia loblolly pine stands*” Southern Appalachian Forest Entomology and Pathology Seminar (oral presentation); March 15<sup>th</sup>, 2018
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; “*Species composition of Leptographium and Grosmannia blue-stain fungi in Georgia loblolly pine stands*”; Warnell Graduate Student Symposium (oral presentation); February 1<sup>st</sup>, 2018
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; “*Species composition of root-feeding beetle associated Leptographium and Grosmannia blue-stain fungi with potential implications for loblolly pine stands in Georgia*”; University of Georgia Plant Center Retreat (poster); October 26<sup>th</sup> – 27<sup>th</sup>, 2017.
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; “*Species diversity of root-feeding beetle associated blue-stain fungi in loblolly pine stands*”; UGA Institute of Bioinformatics Symposium (poster); September 25<sup>th</sup>, 2017
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; “*Species diversity of Leptographium and Grosmannia blue-stain fungi associated with root-feeding beetles in loblolly pine stands*”; American Phytopathological Society National Meeting (poster); August 5<sup>th</sup> – 9<sup>th</sup>, 2017
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; “*Species composition of root-feeding beetle associated Leptographium and Grosmannia blue-stain fungi in loblolly pine stands in Georgia*”; Mycological Society of American National Meeting (poster); July 16<sup>th</sup> – 19<sup>th</sup>, 2017
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; “*Diversity and Composition of Leptographium*

*species associated with root feeding beetles in loblolly pine stands*"; Southern Appalachian Forest Entomology and Pathology Seminar (poster); March 2<sup>nd</sup>, 2017

- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; "*Etiology of Root-feeding Beetles and Blue-Stain Fungi in Managed Loblolly Pine Stands*"; Warnell Graduate Student Symposium (poster); February 8<sup>th</sup>, 2017

#### *Abstract Publications*

- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; "*Elucidating the phoretic fungal community of root-feeding beetles in the Georgia Piedmont*"; Mycological Society of America (oral presentation); August 13<sup>th</sup>, 2019
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; "*Elucidating the phoretic blue-stain fungal community of root-feeding beetles in Georgia using a metabarcoding approach*"; American Phytopathological Society (oral presentation); August 5<sup>th</sup>, 2019
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; "*Root-feeding beetles and Leptographium and Grosmannia blue-stain fungi in loblolly pine stands with differing management practices*"; International Congress of Plant Pathology (abstract); July 31<sup>st</sup>, 2018
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; "*Elucidating the fungal community associated with root-feeding beetles using a metabarcoding approach*"; Southern Forest Insect Work Conference (abstract); July 18<sup>th</sup>, 2018
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; "*Species diversity of Leptographium and Grosmannia blue-stain fungi associated with root-feeding beetles in loblolly pine stands*"; American Phytopathological Society National Meeting Program Book (abstract); August 5<sup>th</sup> – 9<sup>th</sup>, 2017
- Buland M., Barnes B., Klepzig K., Gandhi K. and Villari, C.; "*Species diversity of root-feeding beetle associated blue-stain fungi in loblolly pine stands*"; UGA Institute of Bioinformatics Symposium – Parsing the Microbiome, Abstract Book (abstract); September 25<sup>th</sup>, 2017

#### *Science Communication Publications*

- "[\*Lost in Translation\*](#)"; Athens Science Observer; Megan Buland; May 31<sup>st</sup>, 2019
- "[\*When Wild Avocados Roamed the Earth\*](#)"; Athens Science Observer; Megan Buland; April 21<sup>st</sup>, 2019
- "[\*Life on the Edge\*](#)"; Athens Science Observer; Megan Buland; October 30<sup>th</sup>, 2018
- "[\*The Power of Pollinators – More Than Just Honey\*](#)"; Athens Science Observer; Megan Buland; August 26<sup>th</sup>, 2018