

CHRISTINE CAIRNS FORTUIN, CURRICULUM VITAE

EDUCATION

PhD	University of Georgia D.B. Warnell School of Forestry and Natural Resources	Dec 2020 Athens, GA
MS	Florida International University Environmental Sciences	Dec 2002 Miami, FL
BS	College of Wooster Anthropology	May 1996 Wooster, OH

PROFESSIONAL HISTORY

Assistant Professor August 2022 - present
Mississippi State University, College of Forest Resources, Department of Forestry
Natural Resources Conservation and Management

Postdoctoral Research Associate Dec 2020 – July 2022
University of Georgia, D.B. Warnell School of Forestry and Natural Resources,
Forest Entomology and Forest Biometrics Laboratories
Project: Predictive modeling of wind disturbance in southern forests, and investigation of
invertebrate community reestablishment after windstorm events.

Graduate Research Fellow Sep. 2016 – August 2020
EPA Science to Achieve Results (STAR)
University of Georgia, D.B. Warnell School of Forestry and Natural Resources
Forest Entomology Laboratory
Project: Investigating effects of forest management on native pollinator community ecology,
and effects of systemic pesticides on reproductive success of mason bees (*Osmia lignaria*).

Graduate Research and Teaching Assistant Aug 2015 – Aug. 2016
University of Georgia, D.B. Warnell School of Forestry and Natural Resources,
Forest Entomology Laboratory
Research project: Conducting preliminary analysis of forest cover changes due to southern
pine beetle (*Dendroctonus frontalis*) infestation in twelve counties in Southwest Georgia
over a 15-year period, using satellite data.
Courses taught:

- Field Orientation, Measurements, and Sampling in Forestry and Natural Resources
- Soils and Hydrology

Life Scientist

Sep. 2003 - July 2015

U.S. Environmental Protection Agency, Region 4, Pesticides Section

Program areas: Sustainable agriculture, pollinator protection, agricultural worker safety, pesticide regulatory enforcement, environmental justice, climate change adaptation, endangered species protection, pesticide inspector training, agency liaison to USDA and state pesticide regulatory agencies.

Professional Development Coordinator

Sep. 2002-June 2003

Fairchild Tropical Botanic Garden

Developed courses, labs and teaching materials for middle school science teachers in general botany, ethnobotany, ecology and environmental sciences

Graduate Research Assistant

Sep. 2000-Sep. 2002

Community Tropical Ecosystem Management

Florida International University (FIU)

Project: Examining the effects of invasive Africanized Honeybees (*Apis mellifera scutellata*) on native stingless bee (*Meliponini*) diversity and abundance in communities with varying degrees of anthropogenic forest disturbance in the Yucatan region of Mexico.

PUBLICATIONS

Peer-Reviewed Publications

Favorito, C. M., Barnes, B. F., Briggs, E. L., **Fortuin**, C. C., Greene, D. U., Larsen-Gray, A. L., Martin, J. A., McCarty, E., Gandhi, K. J. K. (2022). Stand age class affects communities of native bees in managed pine forests. *In preparation*.

John Drake, Eric Marty, Kamal J.K. Gandhi, Meredith Welch-Devine, Brian Bledsoe, Marshall Shepherd, Lynne Seymour, Christine C. **Fortuin**, Cristian Montes. (2022). Disasters collide at the intersection of extreme weather and infectious diseases. *Submitted, in review*.

Fortuin, C.C., C. Montes, J. T. Vogt, K. J. K Gandhi. (2022). Stand and tree characteristics influence damage severity after a catastrophic hurricane disturbance. *Submitted, in review*.

McDonald, E., J. Podesta, C. C. **Fortuin**, and K.J.K. Gandhi (2022). Expanded distribution range of eight orchid bee species (Hymenoptera: Apidae: Euglossini) in Costa Rica. *Biodiversity Data Journal*, 10.e81220.

Fortuin, C. C., C. Montes, J. T. Vogt, K. J. K Gandhi. (2022). Predicting risks of severe windstorm damage to southeastern U.S. forests. *Landscape Ecology*, 37, 1905–1919.

Fortuin, C. C. and K. J. K Gandhi. (2021). Functional traits and nesting habitats distinguish the structure of bee communities in clearcut and managed hardwood & pine forests in southeastern U.S.A. *Forest Ecology and Management*, 496 (119351).

Fortuin, C.C. and K. J. K. Gandhi (2021). Mason bees (Hymenoptera: Megachilidae) exhibit no avoidance of imidacloprid-treated soils, *Environmental Entomology*, 50(6), 1438–1445.

Fortuin, C. C., E. McCarty, K. J. K Gandhi. (2020). Acute contact with imidacloprid in soil affects the nesting and survival success of a solitary wild bee, *Osmia lignaria* (Hymenoptera: Megachilidae). *Chemosphere*, 264 (128572).

Cairns, C. E. [maiden name], R. G. Villanueva, S. Koptur, D. B. Bray (2005). Bee populations, forest disturbance, and Africanization in Mexico. *Biotropica*, 37(4), 686–692.

Published collections data

University of Georgia Collection of Arthropods (2022). McDonald-Podesta-Fortuin-Gandhi Orchid Bee Collection. Occurrence dataset <https://doi.org/10.15468/9f9kgp>, GBIF.org.

HONORS AND AWARDS

Academic Awards and Research Grants

Shirey Forestry and Natural Resources Education Endowment Award
Graduate Scholarship Award, Aug. 2020 – Dec. 2020

Southern Sustainable Agriculture Research and Education Grant
Graduate Student Research Grant, Sep. 2018 – Aug. 2020

Science to Achieve Results (STAR) Research Fellowship
Doctoral Research Fellowship Award, Aug. 2016-Aug. 2020

Ecologic Development Fund, Non-timber Forest Products Program Development
Research and Program Development Grant, Feb. 2002 – April 2002

Professional Awards (EPA)

Bronze Medal Awards (4 total)

U.S. EPA national awards for commendable service and outstanding achievement

- August 2014
- October 2012
- December 2006
- June 2005

Environmental Justice Achievement Award

U.S. EPA Office of Enforcement and Compliance Assurance (OECA) award for outstanding achievement in environmental justice, July 2007

Trudy A. Speciner Award

U.S.EPA national award to honor outstanding non-supervisory professionals who significantly advance the cause of environmental protection, June 2007

Quality Step Increase award

U.S. EPA regional award for outstanding initiative and performance, July 2006

RECENT CONFERENCE PRESENTATIONS

Fortuin, C. C. and Kamal J.K. Gandhi (2022). Effects of Anthropogenic Forest Disturbances on Wild Bee Community Structure in the Southeast U.S. The Wildlife Society annual conference, November 2022. Invited presentation.

Briggs, E. L., D. U. Greene, C. C. **Fortuin**, B. F. Barnes, K. J.K. Gandhi (2022). Effects of Forest Herbicides on Wild Bee Communities in Working Loblolly Pine Stands. The Wildlife Society annual conference, November 2022. Invited presentation.

Favorito, C., B. Barnes, E. Briggs, C. **Fortuin**, D. Greene, A. Larsen-Gray, J. Martin, E. McCarty, K. J.K. Gandhi (2022). Do Stand-Level Characteristics Affect Native Bee Populations and Communities in Working Pine Forests? The Wildlife Society annual conference, November 2022. Invited presentation.

Fortuin, C. C. (2022). Examining soil as an exposure pathway in nesting female solitary bees. The Society of Environmental Toxicology and Chemistry annual meeting, November 2022. Invited presentation.

Briggs, E. L., Greene, D. U., **Fortuin, C. C.**, Barnes, B. F., and Gandhi, K. J. K. 2022. Evaluating the Role of Herbicide Use to Conserve Wild Bee Communities in Working Pine Forests. Southern Forest Insect Work Conference, June 2022. Poster presentation.

Fortuin, C. C., and K.J.K. Gandhi (2022). Wild bees in the Southeast: effects of pesticides and forest management. Rayonier Research Meeting, January 2022. Invited presentation.

Fortuin, C. C., and K.J.K. Gandhi (2021). Effects of Imidacloprid Residue in Soil on Nest Productivity and Survival of Blue Orchard Mason Bees. Orchard Bee Association Annual Conference, December 2021. Invited presentation.

Fortuin, C. C., C. Montes, J. T. Vogt, K. J. K. Gandhi (2021). Evaluating and predicting severe wind damage risks at multiple scales in southern U.S. forests. The Plantation Management Research Cooperative Annual Conference, July 2021. Invited presentation.

Gandhi, K.J.K., B.F. Barnes, C. Bishop, C. **Fortuin**, B. Gochnour, R. Hoyt, K.D. Klepzig, E. McCarty, C. Miller, C. Montes, T.N. Sheehan, S. Spinner, C. Villari, and J.T. Vogt (2021). Multi-faceted forest health and socio-economic threats from catastrophic wind disturbances. North American Forest Insect Work Conference, May 2021. Invited presentation.

Fortuin, C.C. and K.J.K. Gandhi. (2021). Functional traits drive bee community responses to habitat variability in managed southeastern forests. North American Forest Insect Work Conference, May 2021. Oral presentation.

Fortuin, C.C. and K.J.K. Gandhi. (2020). Mason bees do not detect imidacloprid in soil: A new methodology for assessing *Osmia lignaria* (Hymenoptera: Megachilidae) soil choice in controlled laboratory environment. The Entomological Society of America, Annual Symposium, November 2020. Poster presentation.

Fortuin, C.C. ,K. Delaplane, E. McCarty, B. Brosi, B. Barnes, K.J.K. Gandhi. (2019). Effects of imidacloprid soil drench applications on nesting Blue Orchard Mason Bees (*Osmia lignaria*). The Entomological Society of America, Annual Symposium, November 2019. Oral presentation.

Fortuin, C.C., J. Botsch, E. Benton, K. Delaplane, B.Brosi, K.J.K. Gandhi. (2017). Wild bees in managed Southeastern forests: effects of roads and clearcuts on native bee abundance. Southeastern U.S. Forest Health Conference: Building Resilient and Healthy Southern Forests, September 2017. Poster presentation

Fortuin, C.C., J. Botsch, E. Benton, K. Delaplane, B.Brosi, K.J.K. Gandhi. (2017). Wild bees in managed Southeastern forests: effects of roads and clearcuts on native bee abundance and diversity. The 58th Southern Forest Insect Work Conference, July 2017. Oral presentation.

RECENT OUTREACH, SHORT COURSES AND GUEST LECTURES (CAREER TOTAL: ~80)

Vermont Center for Ecostudies, Suds and Science Series, April 2022: *Forest bees: The role of forest resources in wild bee conservation and management.*

University of Georgia, Forest Health Seminar, Jan 2020: *Pollinators and forest management.*

Trees Atlanta, July 2019: *Fostering and Promoting Georgia's Wild Bees.*

Athens Academy, AP biology, April 2019: *Introduction to Agent Based Modeling.*

Athens Academy, honors biology, April 2019: *Pollination Ecology and Invasive Species.*

Northeast Georgia Mountain Beekeepers Association, January 2019: *Conservation and Management of Wild Bees for Pollination.*

Tri-county Beekeepers Association, October 2018: *Conservation and Management of Wild Bees for Pollination.*

Lee Arrendale State Prison, beekeeping class, September 2018: *Conservation and Management of Wild Bees for Pollination.*

Gwinnett County Beekeepers Association, August 2018: *Conservation and Management of Wild Bees for Pollination*.

University of Georgia, Young Harris Beekeeping Institute, May 2018: *Conservation and Management of Wild Bees for Pollination*.

Audubon Society Meeting, Clarke County, GA, March 2018: *An Introduction to the Wild Bees of Georgia*.

Athens Academy Honors and AP Biology classes, Athens, GA, November 2017: *Introduction to Pollination Ecology*.

Oglethorpe County Bee Club, Athens, GA, November 2017: *Beekeeping with Africanized Honeybees and the Native Stingless Bees in Mexico: Challenges and Successes*.

Athens Buzz, Athens, GA, August 2016: *EPA Pesticide Regulation and Honeybee Exposure Risks*.

MEDIA RECOGNITION FOR RESEARCH PROJECTS

Entomology Today. September 17, 2021. *A Tale of Two Pollinators: More Evidence of Neonicotinoids' Effect on Wild Bees*.

Daily Citizen News. Dalton, GA, May 13, 2021. *Growings On: The Benefits of Blue Orchard Mason Bees*.

Fruit Growers News. Sparta, MI, April 7, 2021. *Imidacloprid Residue in the Soil, Including in Orchards, Harms Wild Bees*.

Albany Herald. Albany, GA, April 10, 2021. *Insecticide Residue in the Soil Harms Wild Bees*.

Southern Sustainable Agriculture Research and Education News. Athens, GA, April 2, 2021. *Imidacloprid Residue in the Soil Harms Wild Bees*.

PROFESSIONAL SERVICE

Committee Member

Forestry Department Seminar Committee, College of Forest Resources, Mississippi State University
2022-Present

Workgroup Member

Biological Diversity Working Group, The Wildlife Society
2022-Present

Workgroup Member

Bee Campus Workgroup, UGA Office of Sustainability
2019 – 2022

Administrative Council Member

U.S. Department of Agriculture (USDA), National Institute of Food and Agriculture (NIFA)
Southern Sustainable Agriculture Research and Education (SARE)
Subcommittees: Limited Resource Farmers/Minority Outreach Committee and Grant
Review Committee
2011 -2014

Board Member

Florida Coordinating Council for Mosquito Control
2005 - 2012

Research Advisory Council Member

Florida A & M Public Health Entomology Research and Education Center
2007 - 2010

Grant Reviews

- USDA Southern Region Integrated Pest Management Center
- USDA Southern Region Sustainable Agriculture Research and Education grant program, Graduate Student grant program and Large Systems grant program
- EPA Sustainable Agriculture Initiative (SAI) research grant program
- EPA Diesel Emissions Reduction Act (DERA) Southeast Diesel Collaborative (SEDC) grant program

Peer Review

- Landscape Ecology
- Ecology and Evolution
- Journal of Applied Ecology
- Economic Entomology
- Annals of the Entomological Society of America
- New York State IPM Program, *Wasp and Bee Management*