

Evan M. Gora

Department of Biology, University of Louisville – Louisville, KY, 40292
Email: evan.gora@louisville.edu Phone: 570.768.1663 Website: evanmgora.net

Education

- 2018 **PhD. Biology**, University of Louisville, Advisor: Dr. Stephen Yanoviak
Guy Stevenson Award – University-wide award to the most outstanding doctorate
Dissertation: *Dead wood and decomposition: vertical patterns, long-term processes, and the role of lightning*
- 2013 **B.S. Biology**, University of Pittsburgh, Advisor: Dr. Walter Carson
Honors Degree in Biology, **Major** in Economics
Thesis: *Patterns of coarse woody debris volume among 18 late-successional and mature forest stands in Pennsylvania*

Professional Positions

- 2018-pres. **Postdoctoral Associate**, University of Louisville
Advisor: Stephen Yanoviak
Investigating the role of lightning in forests as part of international collaboration
- 2017 **NSF Graduate Research Intern**, Smithsonian Tropical Research Institute
Advisor: Helene Muller-Landau
Modeling and analytical approaches to quantify tropical forest dynamics
- 2015-2016 **STRI Fellow**, Smithsonian Tropical Research Institute
Advisor: Joe Wright
Investigating wood carbon dynamics and decomposition
- 2015-2018 **NSF Graduate Research Fellow**, University of Louisville
Advisor: Stephen Yanoviak
Exploring roles of wood necromass and lightning disturbance in carbon cycling
- 2013-2014 **Research Technician**, University of Louisville
PI: Stephen Yanoviak
Field work, personnel management, data analysis, and proposal writing
- 2013 **Research Technician**, University of Pittsburgh
PI: Walter Carson
Field data collection and implementation of a large-scale field experiment

Publications

†Authors contributed equally; Denotes mentored undergraduate author

15. Yanoviak†, S.Y., **E.M. Gora**†, P.M. Bitzer, J.C. Burchfield, H.C. Muller-Landau, M. Detto, S. Paton, and S.P. Hubbell. *In Press*. Lightning is a major cause of large tree mortality in a neotropical forest. *New Phytologist*. (co-first author)
14. Lucas, J.M., **E.M. Gora**, A. Salzberg, and M. Kaspari. *Available Online*. Antibiotics as chemical warfare across multiple taxonomic domains and trophic levels. *Proc. Roy. Soc. B*. (Cover)

13. **Gora, E.M.**, and J.M. Lucas. *Available Online*. Dispersal and nutrient limitations of decomposition above the forest floor: evidence from experimental manipulations of epiphytes and macronutrients. *Functional Ecology*.
12. Adams, B.J., **Gora, E.M.**, and S.P. Yanoviak. *Available Online*. Do lianas shape ant communities in an early successional tropical forest? *Biotropica*.
11. **Gora, E.M.**, J.M. Lucas, and S.P. Yanoviak. 2019. Microbial composition and decomposition rates vary with microclimate from the ground to the canopy in a tropical forest. *Ecosystems*. 22(6): 1206-1219. (Cover)
10. **Gora, E.M.**, R.C. Kneale, M. Larjavaara, and H.C. Muller-Landau. 2019. Dead wood necromass in a moist tropical forest: Stocks, fluxes, and spatiotemporal variability. *Ecosystems*. 22(6): 1189-1205.
9. Gripshover, N., S.P. Yanoviak, and **E.M. Gora**. 2018. A functional comparison of swimming behavior in two temperate forest ants (*Camponotus pennsylvanicus* and *Formica subsericea*) (Hymenoptera: Formicidae). *Annals of the Entomological Society of America* 111(6): 319-325. doi: 10.1093/aesa/say026.
8. **Gora, E.M.**, E.J. Sayer, B.L. Turner, and E.V.J. Tanner. 2018. Decomposition of coarse woody debris in a long-term litter manipulation experiment: a focus on nutrient availability. *Functional Ecology* 32(4): 1128-1138. doi: 10.1111/1365-2435.13047.
7. **Gora, E.M.**, P.M. Bitzer, J.C. Burchfield, S.A. Schnitzer, and S.P. Yanoviak. 2017. Effects of lightning on trees: a predictive model based on *in situ* electrical resistivity. *Ecology and Evolution* 7: 8523–8534. doi: 10.1002/ece3.3347.
6. Lucas, J.M., **E.M. Gora**, and A. Alonso. 2017. A view of the global conservation job market and how to succeed in it. *Conservation Biology* 31(6): 1223-1231. doi: 10.1111/cobi.12949.
5. Yanoviak, S.P., **E.M. Gora**, J.M. Burchfield, P.M. Bitzer, and M. Detto. 2017. Quantification and identification of lightning damage in tropical forests. *Ecology and Evolution* 7(14): 5111-5122. doi: 10.1002/ece3.3095.
4. **Gora, E.M.**, N. Gripshover, and S.P. Yanoviak. 2016. Orientation at the water surface by the carpenter ant *Camponotus pennsylvanicus* (De Geer, 1773) (Hymenoptera: Formicidae). *Myrmecological News* 23: 33-39.
3. **Gora, E.M.** and S.P. Yanoviak. 2015. Electrical properties of temperate forest trees: a review and quantitative comparison with vines. *Canadian Journal of Forest Research* 45(3): 236-245, 10.1139/cjfr-2014-0380.
2. Yanoviak, S.P., **E.M. Gora**, J. Fredley, P.M. Bitzer, R.M. Muzika, and W.P. Carson. 2015. Direct effects of lightning in temperate forests: a review and preliminary survey in a hemlock-hardwood forest of the northern United States. *Canadian Journal of Forest Research* 45(10): 1258-1268. doi: 10.1139/cjfr-2015-0081.
1. **Gora, E.M.**, L.L. Battaglia, H. Schumacher, and W.P. Carson. 2014. Patterns of coarse woody debris volume among 18 late-successional and mature forest stands in Pennsylvania. *Journal of the Torrey Botanical Society* 141(2): 151-160. doi: 10.3159/TORREY-D-13-00066.1.

Manuscripts in Review (available on request)

1. **Gora, E.M.**, H.C. Muller-Landau, P.M. Bitzer, J.C. Burchfield, and S.P. Yanoviak. *In Review*. An empirical lightning-risk model for forest trees. *New Phytologist*
2. **Gora, E.M.**, and S.P. Yanoviak. *In Review*. Lightning-caused disturbance in the Peruvian Amazon. *Biotropica*

Manuscripts in Preparation (anticipated submission within 3 months)

2. **Gora, E.M.**, P.M. Bitzer, J.C. Burchfield, and S.P. Yanoviak. *In prep*. The ecological effects of lightning on tropical plants.
1. **Gora, E.M.**, J.C. Burchfield, H.C. Muller-Landau, P.M. Bitzer, and S.P. Yanoviak. *In prep*. Pantropical estimates of lightning-caused disturbance and their implications in forests

Non-refereed Publications

Gora, E.M. 2019. Dead wood in the canopy. *Functional Ecologists*

Grants and Awards

2020-2023	Smithsonian Earl S. Tupper Postdoctoral Fellowship Title: <i>Is resistance futile? Mechanisms of lightning-caused tree death and interspecific differences in survival</i> Advisors: Helene Muller-Landau and Allen Herre	\$202,200
2019-2020	Smithsonian ForestGEO Research Grant (Sole PI) Title: <i>Wood decomposition in species-rich tropical forests</i>	\$12,000
2018	Guy Stevenson Award “to the most outstanding graduating PhD university-wide”	
2018	Clay Memorial Scholarship	\$1,000
2017-2018	Graduate Research Internship, National Science Foundation	\$5,000
2016	Carl C. Cornett Entomological Fund Award	\$2,500
2016	Research Grant, UofL Graduate Network in Arts and Sciences	\$100
2015-2016	Young Explorer’s Grant, National Geographic Society	\$4,750
2015-2016	Short-term Fellowship, Smithsonian Tropical Research Institute	\$8,000
2015-2018	Graduate Research Fellowship, National Science Foundation	\$138,000
2014-2018	University Graduate Fellowship, UofL (Partially Declined)	\$72,000
2015	Beechmont Garden Club Award	\$1000
2015	Research Grant, UofL Graduate Student Council	\$280
2015	Graduate Student Publication Award	\$150
2014	Carl C. Cornett Entomological Fund Award	\$2,500
2013	Honors Degree in Biology, University of Pittsburgh	
	Total funding:	\$449,480

Teaching Experience

Instructor

- 2019 Advanced Statistical Applications, University of Louisville (BIOL 671)
Full semester course in applied quantitative skills for late-stage PhD students
- 2019 Conservation Biology, University of Louisville (Co-Instructor) (BIOL 567)
Half-semester graduate/undergrad crossover course focusing on global change
- 2019 Intro-to-R Workshop, Smithsonian Tropical Research Institute
An intensive two-day workshop introducing programming in the R environment

Doctoral Student Committees

Aaron Sexton, Department of Biology, University of Louisville, fall 2021 prospective graduation

Kylea Garces, Department of Biology, University of Louisville, fall 2023 prospective graduation

Course Design and Tutoring

- 2015 Course Consultant for R programming, Experimental Design and Analysis
I helped redesign course curriculum in a graduate-level statistics course
- 2012-13 Group and Individual Tutor, University of Pittsburgh Athletic Department
I tutored ten student athletes in statistics, economics, and biology

Teaching Assistantship

- 2019 Tropical Field Biology, Iquitos, Peru (via University of Louisville)
- 2018 STRI R (Statistics) Workshop, Smithsonian Tropical Research Institute
- 2015 Principles of Biology Lab (BIOL 244), University of Louisville

Guest lectures (Graduate-level)

- 2019 *Disturbance in a tropical forest*, Experimental Tropical Biology, Arizona State University (BIO 494)
- 2017 *Disturbances and Lightning*, Organization for Tropical Studies Field Course
- 2017 *Lightning strikes on Barro Colorado Island*, UCSB Smithsonian Scholars
- 2016 *Lightning as an agent of tree mortality*, Organization for Tropical Studies Field Course
- 2015 *R programming within R Studio*, Experimental Design and Analysis, University of Louisville (BIOL 648)
- 2014 *Habitat Degradation and Air Pollution*, Conservation Biology, University of Louisville (BIOL 567)

Mentorship

Undergraduate Mentorship

- 2019 **Brady Parlato** – Beetle colonization of lightning struck trees
Outcomes: Senior thesis, one presentation, and one publication in-prep

- 2014-2018 **Noah Gripshover** – Orientation and kinematics of swimming ants
Outcomes: Two publications, three presentations, multiple awards
- 2015-2018 **Riley Kneale** – Factors that regulate wood decomposition
Outcomes: One publication, two presentations, two monetary awards
- 2013-2015 **Jen Fredley** – The ecological effects of lightning in temperate forests
Outcomes: One publication and poster presentation

Statistical consulting

2016-2019 *Four faculty members, 23 graduate students, and 14 undergraduates*

Professional Presentations

Invited Seminars and Presentations

- 2019 **Gora, E.M.** The shocking importance of lightning in tropical forests. *Tupper Seminar Series, Smithsonian Tropical Research Institute, Panama.*
- 2018 **Gora, E.M.** Take chances, persevere, and identify your ultimate goals. *Commencement Speaker, General Commencement Ceremony, University of Louisville.*
- 2018 **Gora, E.M.** Cherish your accomplishments and leverage your education to improve your community. *Commencement Speaker, Doctoral Hooding Ceremony, University of Louisville.*
- 2018 **Gora, E.M.** S.P. Yanoviak. Wood decomposition in a tropical forest: vertical patterns, microbial colonization, and the role of lightning. *Ecology and Evolutionary Biology Seminar Series, University of Pittsburgh.*
- 2017 **Gora, E.M.**, P.M. Bitzer, J.C. Burchfield, S.P. Yanoviak. Real-time location and quantification of lightning in a neotropical forest. *Invited presentation for the Xishuangbanna Scientific Delegation. Barro Colorado Island, Panama.*
- 2016 **Gora, E.M.**, S.P. Yanoviak. Lightning and its impact in a tropical forest. *Seminar Series, Smithsonian Center for Sustainability and Conservation.*
- 2015 **Gora, E.M.** Effects of lightning in a tropical forest. *Invited presentation for Matt Larsen, the Director of the Smithsonian Tropical Research Institute.*

Contributed Presentations

- 2019 **Gora, E.M.**, J.C. Burchfield, H.C. Muller-Landau, P.M. Bitzer, S.P. Yanoviak. Tropical lightning: effects on trees across landscapes and continents. *British Ecological Society Annual Meeting.*
- 2019 **Gora, E.M.**, J.C. Burchfield, H.C. Muller-Landau, P.M. Bitzer, S.P. Yanoviak. Lightning-caused disturbance across landscapes and ecosystems. *Ecological Society of America Annual Meeting.*
- 2018 **Gora, E.M.**, J.M. Lucas, S.P. Yanoviak. From the ground to a tropical forest canopy: Microbial community assembly and microclimate regulate decomposition. *Ecological Society of America Annual Meeting*

- 2018 **Gora, E.M.** Lightning and wood decomposition in a tropical forest. *Smithsonian Tropical Research Institute, Bambi Seminar Series.*
- 2017 **Gora, E.M.**, P.M. Bitzer, J.C. Burchfield, S.P. Yanoviak. Lightning is the primary cause of large tropical tree mortality. *Ecological Society of America Annual Meeting.*
- 2017 **Gora, E.M.**, P.M. Bitzer, J.C. Burchfield, S.P. Yanoviak. 2017. Lightning on BCI: Observations and quantification of effects on trees. *Forest Ecology Talk Series, Smithsonian Tropical Research Institute.*
- 2017 **Gora, E.M.**, P.M. Bitzer, J.C. Burchfield, S.P. Yanoviak. 2017. Lightning-caused tree mortality in a tropical forest. *Ecomunch Seminar Series, University of Oklahoma.*
- 2016 **Gora, E.M.**, P.M. Bitzer, J.C. Burchfield, S.P. Yanoviak. 2016. Why does lightning only kill some trees? A model-based approach. *Ecological Society of America Annual Meeting.*
- 2016 **Gora, E.M.** 2016. Dead wood stocks, fluxes, and patterns of decomposition. *Forest Ecology Talk Series, Smithsonian Tropical Research Institute.*
- 2016 **Gora, E.M.**, P.M. Bitzer, J.C. Burchfield, S.P. Yanoviak. Lightning on Barro Colorado Island: Tree characteristics influence lightning-tree interactions. *Smithsonian Tropical Research Institute, Bambi Seminar Series.*
- 2015 **Gora, E.M.**, N D. Gripshover, S.P. Yanoviak. Orientation at the water surface by the carpenter ant *Camponotus pennsylvanicus*. *Kentucky Academy of Science Annual Meeting.*
- 2015 **Gora, E.M.**, S.P. Yanoviak. Lightning's impact on forest ecology. *Society of Integrative Comparative Biology Annual Meeting.*
- 2014 **Gora, E.M.**, S.P. Yanoviak. Lightning disturbance in forests. *Smithsonian Tropical Research Institute, Bambi Seminar Series.*
- 2014 **Gora, E.M.** S.P. Yanoviak. Lightning ecology and electrical resistivity of trees. *Kentucky Academy of Science Annual Conference.*
- 2014 **Gora, E.M.** S.P. Yanoviak. The Ecology of Lightning in a Northern Forest. *Midwest Ecology and Evolution Conference.*
- 2013 **Gora, E.M.**, S.P. Yanoviak, and M. Feil. Resistivity of trees and vines. *Kentucky Academy of Science Annual Conference.*
- 2013 **Gora, E.M.** Patterns of coarse woody debris volume among 18 late-successional and mature forest stands in Pennsylvania. *University of Pittsburgh, Honors Research Symposium.*

Presentations by Mentored Students

- 2018 Kneale, R., **E.M. Gora**, S.P. Yanoviak. The role of ground contact in colonization and decomposition of dead wood. *Kentucky Organization of Field Stations Meeting.*

- 2017 Gripshover, N.D., **E.M. Gora**, S.P. Yanoviak. 2017. Swimming mechanisms of temperate forest ants (*Camponotus pennsylvanicus* and *Formica subsericea*). *Posters-at-the-Capitol, Frankfurt, Kentucky*.
- 2016 Kneale, R., **E.M. Gora**, S.P. Yanoviak. Factors influencing colonization of woody debris by saproxylic insects. *Kentucky Academy of Science*.
- 2016 Gripshover, N.D., **E.M. Gora**, S.P. Yanoviak. Biomechanics of water surface locomotion in temperate ants. *Kentucky Academy of Science*.
- 2016 Gripshover, N.D., **E.M. Gora**, S.P. Yanoviak. Biomechanics of water surface locomotion in temperate ants. *Summer Research Opportunity Program Symposium*.

Institutional and Professional Service

Institutional Committees and Service

- 2019 Organizer of an Oral Session at the Ecological Society of America Meeting
- 2018 Researcher Administrative Representative, Smithsonian Tropical Research Institute
- 2018 Invited moderator, Round table on the conservation job market (U. of Pittsburgh)
- 2015-16 Researcher Administrative Representative, Smithsonian Tropical Research Institute
- 2016 Co-founder of the Barro Colorado Island Journal Club
- 2015 Research coordinator hiring committee, Smithsonian Tropical Research Institute
- 2014 Biology Department representative to the Graduate Student Union

Society Membership: Ecological Society of America, British Ecological Society, Kentucky Academy of Science

Manuscript and Proposal Reviews

Journal Reviewer: Global Change Biology, Biogeochemistry, Ecology and Evolution, Plant and Soil, Acta Geochemica

Proposal reviewer: Smithsonian Tropical Research Institute, University of Louisville Biology Graduate Student Association

Community Outreach and Outreach Presentations

- 2019 *Day of Science*, active learning modules about carbon cycling for middle schoolers
- 2018 *Carbon Cycling in a Tropical Forest*, Guides program STRI
- 2017 *Tropical Canopy Ecology*, ACCelerate Creativity and Innovation Festival
- 2016 Judge for the Kentucky State Science Fair competition – Middle School-level
- 2016 *Disturbance in forests*, Guides program Smithsonian Tropical Research Institute
- 2015 Coordination and review of research scholarships for Panamanian undergraduates
- 2015 Field trip organizer for insect collecting trips with the Jefferson County Public Schools
- 2007-14 Habitat for Humanity laborer with Snyder-Union, Pittsburgh, and Louisville chapters

Media Exposure

- 2019 “Lightning Discovered To Be Main Killer Of Tropical Trees” - *Forbes*
- 2019 “Millionen Regenwaldbäume sterben bei Gewittern” - *Deutschlandfunk*
- 2019 “Forest giants are the trees most at risk” – *Science*
--Reproduced in Kuwaiti science outlet *Al Oloom*
- 2018 “A&S student Evan Gora to speak at winter commencement” – *UofL Today*
- 2018 “Not all doom and gloom: Q&A with conservation job market researchers” - *Mongabay*
- 2018 “How Two Land-Dwelling Ant Species Paddle Through Water” – *Entomology Today*
- 2017 “Tallest Tropical Trees Died Mostly from Lightning” – *EOS*
- 2017 “Tallying the Tropical Toll on Trees from Lightning” – *Science*
- 2016 “I Think, Therefore I Explore” – *The Thinker*
- 2015 “Determined to Discover” – *University of Louisville Alumni Magazine*
- 2015 “Where Will Lightning Strike Next?” – *SICB Highlights*