

ETHAN BASS

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EDUCATION

Cornell University

PhD, Ecology and Evolutionary Biology, 2017-2024

Advisor: Dr. André Kessler

Committee: Drs. Christophe Duplais, Chelsea Specht, and Jennifer Thaler

University of Chicago

Bachelor of Science in Chemistry (honors), 2013

APPOINTMENTS

University of Chicago

V. Dropkin Postdoctoral Fellow, Nov. 2024-Present

Advisor: Dr. Lauren Carley

PUBLICATIONS

6. **Bass E***, Mutyambai D*, Midega C, Zeyaur KR, Kessler A. Associational effects of *Desmodium* intercropping on maize resistance and secondary metabolism. *Journal of Chemical Ecology*, 2024. <https://doi.org/10.1007/s10886-024-01470-5> (* indicates equal contribution)
5. **Bass E** and Kessler A. “Comment on ‘Information arms race explains plant-herbivore chemical communication in ecological communities.’” *Peer Community Journal* 2 (2022). <https://doi.org/10.24072/pcjournal.102>.
4. Howard M*, **Bass E***, Chautá A, Mutyambai D, Kessler A. Integrating plant-plant communication and rhizosphere microbial dynamics: ecological and evolutionary implications and a call for experimental rigor. *The ISME Journal*, 2022, 16(1):5-9. <https://doi.org/10.1038/s41396-021-01063-0>. (* indicates equal contribution)
3. Whitehead SR, **Bass E**, Corrigan A, Kessler A, Katja P. Interaction diversity explains the maintenance of phytochemical diversity. *Ecology Letters*, 2021, 24(6): 1205-1214. <https://doi.org/10.1111/ele.13736>. (Recommended by Nicole van Dam on Faculty Opinions)
2. Mutyambai DM, **Bass E**, Luttermoser T, Poveda K, Midega CAO, Khan ZR, Kessler A. More Than “Push” and “Pull”? Plant-Soil Feedbacks of Maize Companion Cropping Increase Chemical Plant Defenses Against Herbivores. *Frontiers in Ecology and Evolution*, 2019, 7:217. <https://doi.org/10.3389/fevo.2019.00217>.
1. Jang S, Gornicki P, Marjanovic J, **Bass E**, Iurcotta TP, Rodriguez P, Austin J, Haselkorn R. Activity and structure of human acetyl-CoA carboxylase targeted by a specific inhibitor. *FEBS Letters*, 2018, 592(12):2048–2058. <https://doi.org/10.1002/1873-3468.13097>.

PREPRINTS & INVITED ARTICLES

Bass E. Cutting the defense budget: how allocation costs shape induced resistance in plants. *PLOS Biology*, 2025. <https://doi.org/10.1371/journal.pbio.3003317> (Commentary on <https://doi.org/10.1371/journal.pbio.3003280>).

Bass E. Getting to the root of divergent outcomes in the modulation of plant-soil feedbacks by benzoxazinoids. *New Phytologist*, 2024, 241(6): 2316-2319. <https://doi.org/10.1111/nph.19545>. (Commentary on <https://doi.org/10.1111/nph.19401>).

GRANTS, FELLOWSHIPS & AWARDS (Total: \$21,867)

- 2024 **Outstanding Graduate Teaching Assistant Award**, Cornell Department of Ecology and Evolutionary Biology (for teaching in Chemical Ecology).
- Andrew W Mellon Research Grant** (\$1000) “Root secondary metabolites as mediators of plant-soil feedbacks”.
- Lamont C. Cole Award** (\$200) (Award for an “for an outstanding paper in a particular year by an EEB graduate student”).
- 2023 **Cornell Fellowship** (\$16,247).
- Cornell Sigma Xi Research Grant** (\$1000), “Comparing root morphology and secondary chemistry as drivers of fungal collaboration in a rapid radiation of herbaceous plants (*Solidago spp*)”.
- EEB Graduate Student Research Fund** (\$1000), “Comparing root morphology and secondary chemistry as drivers of fungal collaboration in a rapid radiation of herbaceous plants”.
- Cornell Atkinson Center's Sustainable Biodiversity Fund** (\$4000), “Root secondary metabolites as mediators of plant-soil feedbacks”.
- 2022 **Andrew W. Mellon Student Research Grant** (\$1000), “Integrating the effects of herbivory and plant-soil feedbacks on plant coexistence”.
- Cornell Sigma Xi Research Grant** (\$1000), “Root secondary metabolites as mediators of plant-soil feedbacks”.
- 2021 **Cornell EEB Graduate Student Research Fund** (\$3000), “Contribution of Secondary Metabolism to Disease Resistance and Regulation of the Rhizosphere Microbiome in Lettuce (*Lactuca sativa*)”.
- Cornell Sigma Xi Grant-in-Aid of Research** (\$800), “Contribution of root polyacetylenes to plant soil feedbacks in lettuce (*Lactuca sativa*)”.
- 2020 **Cornell Atkinson Center's Sustainable Biodiversity Fund** (\$7867), “Integrating the effects of herbivory and plant-soil feedbacks on plant coexistence”.
- Andrew W. Mellon Research Grant** (\$1000), “Variation in the composition of polyacetylenes in lettuce (*Lactuca sativa*) and their contribution to resistance against a common fungal pathogen — *Botrytis cinerea*”.

TEACHING

Graduate Teaching Assistant (Cornell University, Ithaca, NY)

Spring 2021, 2022, 2024	Chemical Ecology
Spring 2022, 2023; Fall 2018	Ecology and the Environment
Fall 2021, 2022	Ecology and the Environment (Writing in the Majors*)
Fall 2020	Evolutionary Biology and Diversity
Spring 2020	Comparative Physiology
Spring 2019	Evolutionary Biology and Diversity (Writing in the Majors*)
Fall 2019	Field Ecology
Fall 2017, Spring 2018	Laboratory in Genetics and Genomics

(* These are intensive writing sections, designed and led by a graduate student instructor, that students can opt into in lieu of the standard discussion section).

GreenCorps Youth Instructor (WRD Environmental, Chicago, IL)

June – Aug 2016 Led a crew of 16-19 year old youths in project-based learning about ecology and the environment.

PRESENTATIONS

- 2024 **Bass E**, Kessler A. “Microbial interactions may maintain balancing selection on polyacetylene investment in tall goldenrod (*Solidago altissima*)”. 3rd Joint Congress on Evolutionary Biology (talk).
- 2023 **Bass E**, Kessler A. “Root chemical defenses modulate plant-soil feedbacks in tall goldenrod (*S. altissima*)”. Cornell Department of Ecology and Evolutionary Biology December Symposium (talk).
- Bass E**, Kessler A. “Unraveling the polyacetylene paradox: Reciprocal impacts of multitrophic interactions and chemical defense evolution in tall goldenrod (*Solidago altissima*)”. Entomological Society of America Annual Meeting (invited talk).
- Bass E**, Kessler A. “Chemical defense variation modulates plant-soil feedback in tall goldenrod (*Solidago altissima*)”. Atkinson Center for a Sustainable Future Symposium (talk).
- Bass E**, Goodman A, Kessler A. “Root chemical defenses are structured by mutualism-defense tradeoffs in tall goldenrod (*Solidago altissima*)”. Plant Herbivore Gordon Research Conference (poster).
- 2022 **Bass E**, Kessler A. “Successional changes in soil microbiome influence the outcome of plant competition”. Ecological Society of America CSEE Meeting (talk).
- Bass E**, Anna G., Kessler A. “Root chemical defenses are structured by mutualism-defense tradeoffs: evidence from tall goldenrod”. Cornell Department of Ecology and Evolutionary Biology December Symposium (talk).
- 2021 **Bass E**, Kessler A. “Integrating the effects of plant-soil feedbacks and herbivory on plant coexistence”. Cornell Department of Ecology and Evolutionary Biology December Symposium (talk).

MENTORING EXPERIENCE

- 2022 – 2024 Johannes van Osselaer (Research assistant).
- Summer 2023 Etsub Gezahagne (Boyce Thompson Institute REU mentee).
- Summer 2023 Isabelle Cohen (Boyce Thompson Institute high school REU mentee).
- Summer 2022 Noor Maghaydah (Boyce Thompson Institute high school REU mentee).
- 2021 – 2022 Anna Goodman (**Senior honors thesis mentee**, research assistant on my SBF grant, Cornell CIHMID URE intern).
- Summer 2021 Beatriz Alvarez (Microbial Friends and Foes REU).
- Summer 2019 Eunnuri Yi Research assistant (Research assistant, co-mentored with Mia Howard).

SELECTED SOFTWARE

AUTHOR AND MAINTAINER

Bass, E. chromatographR: Chromatographic Data Analysis Toolset (R package version 0.7.5).
(<https://ethanbass.github.io/chromatographR/>).

Bass, E. chromConverter: Chromatographic File Converter (R package version 0.7.5).
(<https://ethanbass.github.io/chromConverter/>, <https://cran.r-project.org/web/packages/chromConverter/>).

Bass, E. ggtukey: Compact Letter Displays for 'ggplot2' (R package version 0.4.0).
(<https://ethanbass.github.io/ggtukey/>).

Bass, E. mzinspectr: Read and Analyze Mass Spectrometry Alignment Files (R package version 0.4.2).
(<https://github.com/ethanbass/mzinspectr>).

SERVICE & OUTREACH

Reviewer for Arthropod-Plant Interactions (2x), Entomologia Experimentalis et Applicata (1x), Functional Ecology (1x), New Phytologist (6x), Plant and Soil (2x), PLOS Biology (1x), PNAS (1x).

Reviewer for Boyce Thompson Institute REU program (2023).

Richard B. Root Invited Speaker Committee and Departmental Seminar Committees (2018 – 2021)

- Coordinated annual Richard B. Root Invited Speaker seminar and EEB departmental seminar series.

Volunteer [Insectapalooza](#), Cornell Entomology Department, Ithaca, NY (2017 – 2024)

- Ran goldenrod ball gall activity for kids.

Volunteer [Cornell Diversity Preview Weekend](#) (now “Consider Cornell”) (2017-2018)

OTHER PROFESSIONAL AND TRAINING EXPERIENCE

2024 **Consultant**, Tools for AI Inc. dba 'Expert intelligence'

- Provided technical assistance with parsing of chromatography data files.

2023 **Freelance Software Developer**, Veolia Water Technologies and Solutions (Remote)

- Developed Shiny app for converting Lumex Instruments “MDF” files to
ANDI-CDF format.

2019 **Writing in the Majors Teacher Training Seminar**

Knight Institute for Writing in the Disciplines, Cornell University

2014 **Quality Control Chemist**, Cedar Concepts Corporation (Chicago, IL)

- Monitored and adjusted chemical reactions for large batches of soaps
and detergents (up to 50,000 gallons).

Affiliations: Society for the Study of Evolution, Ecological Society of America,
Botanical Society of America, Sigma Xi