

## ETHAN BASS

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## EDUCATION

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### 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

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### University of Chicago

V. Dropkin Postdoctoral Fellow, Nov. 2024-Present

Advisor: Dr. Lauren Carley

## PUBLICATIONS

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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

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- 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)

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- 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

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### Graduate Teaching Assistant (Cornell University, Ithaca, NY)

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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).

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### GreenCorps Youth Instructor (WRD Environmental, Chicago, IL)

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

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### PRESENTATIONS

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- 2025      **Bass E**, Carley L. “Selection, constraint, and the evolution of plant defense in *Boechera stricta*”. 2025 Ecological Society of America Annual Meeting (poster).
- 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**, Goodman A., 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).

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### MENTORING EXPERIENCE

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- 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

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### AUTHOR AND MAINTAINER

**Bass, E.** chromatographR: Chromatographic Data Analysis Toolset (R package version 0.7.4).  
(<https://ethanbass.github.io/chromatographR>).

**Bass, E.** chromConverter: Chromatographic File Converter (R package version 0.8.0).  
(<https://ethanbass.github.io/chromConverter>, <https://cran.r-project.org/web/packages/chromConverter>).

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

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

## SERVICE & OUTREACH

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**Reviewer** for Arthropod-Plant Interactions (2x), Entomologia Experimentalis et Applicata (1x), Functional Ecology (1x), New Phytologist (6x), Plant and Soil (3x), 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

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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