



## Tyler R. Kartzinel

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www.kartzinellab.com

### EDUCATION

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- 2012 Ph.D. Odum School of Ecology, The University of Georgia  
Thesis: *The influence of landscape heterogeneity and species interactions on the distribution of an epiphytic orchid and its genetic variation.*
- 2007 B.A. Biology, Honors, *cum laude*, Rollins College
- 2007 B.A. Environmental Studies, Honors, *cum laude*, Rollins College

### PROFESSIONAL APPOINTMENTS

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- 2020-2017- Peggy & Henry D. Sharpe Assistant Professor of Environmental Studies, Brown University  
Assistant Professor, Department of Ecology, Evolution, and Organismal Biology, Brown University
- 2017- Core Fellow, Institute at Brown for Environment and Society, Brown University
- 2015-2017 NatureNet Fellow, Princeton University & The Nature Conservancy
- 2013-2015 Postdoctoral Research Associate, Princeton University
- 2007-2012 Presidential Fellow, The University of Georgia

### DISCIPLINARY CONCENTRATIONS

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Conservation biology, ecology and evolutionary biology, molecular ecology, population genetics.

### REFEREED JOURNAL ARTICLES

(KARTZINEL LAB POSTDOCS<sup>†</sup>, GRAD STUDENTS<sup>‡</sup>; UNDERGRADUATES<sup>§</sup>; \*INDICATES JOINT FIRST AUTHORSHIP.)

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1. Littleford-Colquhoun BL<sup>†</sup>, Freeman PT<sup>‡</sup>, Sackett VI<sup>§</sup>, Tulloss CV<sup>§</sup>, McGarvey LM, Geremia C, **Kartzinel TR**. 2021. The precautionary principle and dietary DNA metabarcoding: commonly used abundance thresholds change ecological interpretation. Accepted with minor revisions to *Molecular Ecology*.
2. Alston JM, Reed C<sup>‡</sup>, Khasoha L, Brown BRP<sup>‡</sup>, Busenei G, Carlson N, Coverdale TC, Dudenhoeffer M, Dyck M, Ekeno J, Hassan AA, Hohbein R, Jakopak RP, Kimiti B, Kurukura S, Lokeny P, Louthan AM, Musila S, Musili PM, Tindall T, Weiner S, **Kartzinel TR**, Palmer TM, Pringle RM, Goheen JR. 2021. Ecological consequences of large herbivore exclusion in an African savanna: 12 years of data from the UHURU experiment. *Ecology* in press.
3. Coverdale TC, O'Connell RD, Hutchinson MC, Savagian A, **Kartzinel TR**, Palmer TM, Goheen JR, Augustine DJ, Sankaran M, Tarnita CE, Pringle RM. 2021. Large herbivores suppress liana infestation in an African savanna. *Proceedings of the National Academy of Sciences, USA* 118: e2101676118.
  - Cover article.
4. Wells HBM, Crego RD, Opedal ØH, Khasoha LM, Alston JM, Reed CG<sup>‡</sup>, Weiner S, Kurukura S, Hassan AA, Namoni M, Ekadeli J, Kimuyu DM, Young TP, **Kartzinel TR**, Palmer TM, Pringle RM, Goheen JR. 2021. Experimental evidence that effects of megaherbivores on mesoherbivore space use are influenced by species' traits. *Journal of Animal Ecology* 90: 2510-2522.
  - Cover article.

5. Becker JL, Hutchinson MC, Potter AB, Park S, Guyton JA, Abernathy K, Americo V, Conceição A, **Kartzinel TR**, Kuziel L, Leonard NE, Lorenzi E, Martins NC, Pansu J, Scott WL, Stahl MK, Torrens KR, Stalmans ME, Long RA, Pringle RM. 2021. Ecological and behavioral mechanisms of density-dependent habitat expansion in a recovering African ungulate population. *Ecological Monographs* 91: e01476.
  - Cover article.
6. Wang KJ, Huang Y, Majaneva M, Belt ST, Liao S, Novak J, **Kartzinel TR**, Herbert TD, Richter N, Cabedo-Sanz P. 2021. Group 2i Isochrysidales produce characteristic alkenones reflecting sea ice distribution. *Nature Communications* 12: 15.
  - Brown University Press Release.
7. **Kartzinel TR** and Pringle RM. 2020. Multiple dimensions of dietary diversity in large mammalian herbivores. *Journal of Animal Ecology* 89: 1482-1496.
  - Cover article.
8. Guyton JA, Pansu J, Hutchinson MC, **Kartzinel TR**, Potter AB, Coverdale TC, Daskin JH, Gledis da Conceição A, Peel MJS, Stalmans ME, Pringle RM. 2020. Trophic rewilding revives biotic resistance to shrub invasion. *Nature Ecology and Evolution* 4: 712-724.
  - Cover article.
  - *Nature News & Views* Commentary.
9. **Kartzinel TR**, Hsing J, Musili PM, Brown BRP<sup>‡</sup>, Pringle RM. 2019. Covariation of diet and gut microbiome in African megafauna. *Proceedings of the National Academy of Sciences, USA* 116: 23588-23593.
  - Cover article and photograph, *PNAS* Media Highlights.
  - Brown University Homepage Feature and Press Release.
  - Brown University's Division of BioMedicine 'Kudos' Highlighted Publication, October 2019.
10. Reese AT\*, **Kartzinel TR\***, Petrone BL, Turnbaugh PJ, Pringle RM, David LA. 2019. Using DNA metabarcoding to evaluate the plant component of human diets: a proof of concept. *mSystems* 4: e00458-19.
  - *mSystems* Commentary by Frank Maixner. "Molecular reconstruction of the diet in human stool samples." *mSystems* 4: e00634-19 (2019).
  - Editor's pick: Research Article | Clinical Science and Epidemiology.
  - *mSystems* homepage feature; among the all-time most read articles in *mSystems* (Nov. 2019).
11. Pringle RM\*, **Kartzinel TR\***, Palmer TM, Thurman TJ, Fox-Dobbs K, Xu CC, Hutchinson MC, Coverdale TC, Daskin JH, Evangelista D, Gotanda K, Man in 't Veld N, Wegener H, Kolbe JJ, Schoener TW, Spiller DA, Losos JB, Barrett RDH. 2019. Predator-induced collapse of niche structure and coexistence on islands. *Nature* 570: 58-64.
  - Cover article.
  - *Nature News & Views* Commentary by Oswald Schmitz. "Predators affect competitors' coexistence through fear effects." *Nature* 570: 43-44 (2019).
  - Recommended on Faculty of 1000.
  - *Nature* Nature Video. "The lizards rewriting the rules of ecology."
  - Coverage in *PBS NOVA*, *AFP*, *PNAS* Journal Club, and other media.
12. Trapnell DW, Hamrick JL, Smallwood PA, **Kartzinel TR**, Ishibashi CD, Quigley CTC. 2019. Phylogeography of the Neotropical epiphytic orchid, *Brassavola nodosa*: evidence for a secondary contact zone in northwestern Costa Rica. *Heredity* 123: 662-674.
13. Shefferson RP, Bunch W, Cowden CC, Lee Y-I, **Kartzinel TR**, Yukawa T, Downing J, Jiang H. 2019. Does evolutionary history determine specificity in broad ecological interactions? *Journal of Ecology* 107: 1582-1593.
  - Invited contribution to the special feature: *Macroevolution of biotic interactions in plants*.

14. Gill BA<sup>†</sup>, Musili PM, Kurukura S, Hassan AA, Goheen JR, Kress WJ, Kuzmina M, Pringle RM, **Kartzinel TR**. 2019. Plant DNA barcode library and regional phylogeny for a semi-arid savanna in Kenya. *Molecular Ecology Resources* 19: 838-846.
  - Spotlighted as a recent, notable publication on the *Molecular Ecology* Blog.
15. Pansu J, Guyton JA, Potter A, Atkins J, Daskin J, Wursten B, **Kartzinel TR**, Pringle RM. 2019. Trophic ecology of large herbivores in a reassembling African ecosystem. *Journal of Ecology* 107: 1355-1376.
16. Deagle BE, Thomas AC, McInnes JC, Clarke LJ, Vesterinen EJ, Clare EL, **Kartzinel TR**, Eveson JP. 2019. Counting with DNA in metabarcoding studies: how should we convert sequence reads to dietary data? *Molecular Ecology* 28: 391-406. (2018 *BioRxiv* preprint DOI: 10.1101/303461.)
  - Identified in Web of Science as a Highly Cited Paper.
  - Invited contribution to the special feature: *Species interactions, ecological networks and community dynamics*.
  - Among the most downloaded papers in *Molecular Ecology* for 2018-2020 (even prior to print).
17. Reese AT, Pereira FC, Schintlmeister A, Berry D, Wagner M, Hale LP, Wu A, Jiang S, Durand HK, Zhou X, Premont R, Mae Diehl A, O'Connell TM, Alberts SC, **Kartzinel TR**, Pringle RM, Dunn RR, Wright JP, David LA. 2018. Microbial nitrogen limitation in the mammalian large intestine. *Nature Microbiology* 3: 1441-1450.
18. Goheen JR, Augustine DJ, Veblen KE, Kimuyu DM, Palmer TM, Porensky LM, Pringle RM, Ratnam J, Riginos C, Sankaran M, Ford AT, Hassan AA, Jakopak R, **Kartzinel TR**, Kurukura S, Louthan AM, Odadi WO, Otieno TO, Wambua AM, Young HS, Young TP. 2018. Conservation lessons from large-mammal manipulations in East African savannas: the KLEE, UHURU, and GLADE experiments. *Annals of the New York Academy of Sciences* 1429: 31-49.
  - Invited contribution to the special issue: *The year in ecology and conservation biology*.
19. Budischak SA, Hansen CB, Caudron Q, Garnier R, **Kartzinel TR**, Pelcer I, Cressler C, van Leeuwen A, Graham A. 2018. Feeding immunity: physiological and behavioral responses to infection and resource limitation. *Frontiers in Immunology* 8: 1914.
  - Invited contribution to the special feature: *Wild immunology—the answers are out there*.
20. Pellegrini AFA, Anderegg WRL, Paine CET, Hoffmann WA, **Kartzinel TR**, Rabin SS, Sheil D, Franco AC, Pacala SW. 2017. Convergence of bark investment according to fire and climate structures ecosystem vulnerability to future change. *Ecology Letters* 20: 307-317.
  - *Nature* Highlights, Princeton Homepage Feature, coverage in *Boston Globe* & other media.
21. Coverdale TC, **Kartzinel TR**, Grabowski K, Shriver R, Hassan A, Goheen JR, Palmer TM, Pringle RM. 2016. Elephants in the understory: opposing direct and indirect effects of consumption and ecosystem engineering. *Ecology* 97: 3219-3230.
  - *Ecology* homepage feature.
22. **Kartzinel TR**, Campbell DA, Trapnell DW. 2016. Spatial patterns of haplotype variation in the epiphytic bromeliad *Catopsis nutans*. *Biotropica* 48: 206-217.
23. **Kartzinel TR**, Hamrick JL, Wang C, Bowsher AW, Quigley BGP. 2015. Heterogeneity of clonal patterns among patches of kudzu, *Pueraria montana* var. *lobata*, an invasive plant. *Annals of Botany* 116: 739-750.
24. **Kartzinel TR**, Chen PA, Coverdale TC, Erickson DL, Kress WJ, Kuzmina ML, Rubenstein DI, Wang W, Pringle RM. 2015. DNA metabarcoding illuminates dietary niche partitioning by African large herbivores. *Proceedings of the National Academy of Sciences, USA* 112: 8019-8024.
  - Identified in Web of Science as a Highly Cited Paper.
  - Cover article and photograph.
  - *PNAS* Commentary by David Tilman & Elizabeth Borer. "African mammals, foodwebs, and coexistence." *PNAS* 112, 7890-7891 (2015).
  - *PNAS* "New and Newsworthy" feature; Recommended on Faculty of 1000.

- Coverage in *New York Times*, *National Geographic*, NPR, and other media.
  - The paper and supporting data are the basis of a [Howard Hughes Medical Institute BioInteractive Lab](#)—a tool for curricular enhancement of “textbook” high school biology.
25. **Kartzinel TR** and Pringle RM. 2015. Molecular detection of invertebrate prey in vertebrate diets: Trophic ecology of Caribbean island lizards. *Molecular Ecology Resources* 15: 903-914.
26. **Kartzinel TR**, Goheen JR, Charles GK, DeFranco E, Maclean JE, Otieno T, Palmer TM, Pringle RM. 2014. Plant and small-mammal responses to large-herbivore exclusion in an African savanna: five years of the UHURU experiment. *Ecology* 95: 787-787.
- Data paper published with *Ecological Archives* E085-064.
27. **Kartzinel TR**, Shefferson RP, Trapnell DW. 2013. Relative importance of pollen and seed dispersal across a Neotropical mountain landscape for an epiphytic orchid. *Molecular Ecology* 22: 6048-6059.
28. **Kartzinel TR**, Trapnell DW, Shefferson RP. 2013. Highly diverse and spatially heterogeneous mycorrhizal symbiosis in a rare epiphyte is unrelated to broad biogeographic or environmental features. *Molecular Ecology* 22: 5949-5961.
29. **Kartzinel TR**, Trapnell DW, Shefferson RP. 2013. Critical importance of large native trees for conservation of a rare Neotropical epiphyte. *Journal of Ecology* 101: 1429-1438.
- Included in a Virtual Issue of select papers on endangered species by *Journal of Ecology*.
30. Trapnell DW, Hamrick JL, Ishibashi CD, **Kartzinel TR**. 2013. Genetic inference of epiphytic orchid colonization; it may only take one. *Molecular Ecology* 22: 3680-3692.
31. **Kartzinel TR**, Trapnell DW, Glenn TC. 2012. Microsatellite primers for the Neotropical epiphyte *Epidendrum firmum* (Orchidaceae). *American Journal of Botany* 99: e450-452.

## WORKS IN PROGRESS

(KARTZINEL LAB POSTDOCS<sup>†</sup>, GRAD STUDENTS<sup>‡</sup>, UNDERGRADUATES<sup>§</sup>; \*INDICATES JOINT FIRST AUTHORSHIP.)

32. Thurman TJ, Palmer TM, Kolbe JJ, Askary A, Gotanda KM, LaPiedra O, **Kartzinel TR**, Man in't Veld NA, Revell LJ, Wegener J, Schoener TW, Spiller DA, Losos JB, Pringle RM, Barrett RDH. Predicting evolutionary change in response to novel ecological interactions: a field experiment with *Anolis* lizards. In review at *American Naturalist*.
33. Brown BRP<sup>‡</sup>, Goheen JR, Newsome SD, Pringle RM, Palmer TM, Malingati L, **Kartzinel TR**. Host phylogeny and functional traits differentiate gut microbiomes in a diverse natural community of small mammals. In review at *Molecular Ecology*.
34. Daskin JH, Walker RH, Eriksson FA, Buoncore C, Getraer A, Pringle RM, Becker JL, **Kartzinel TR**, Potter AB, Long RA. Allometry of behavior promotes niche differentiation among congeneric African antelopes. In review at *Ecological Monographs*.
35. Titcomb GC, Pansu J, Hutchinson MC, Tombak KJ, Hansen C, Baker CM, **Kartzinel TR**, Young HS, Pringle RM. Large-herbivore nemabiomes: patterns of parasite diversity and sharing. In review at *Journal of Animal Ecology*.
36. Pansu J, Hutchinson MC, Anderson TM, te Beest M, Begg C, Begg KS, Bonin A, Chama L, Chamaille-Jammes S, Coissac E, Cromsigt JPGM, Demmel MY, Donaldson JE, Guyton JA, Hansen C, Imakando CI, Iqbal A, Kalima DF, Kerley GIH, Kurukura S, Landman M, Long RA, Munuo IN, Nutter CM, Parr CL, Potter AB, Siachoono S, Taberlet P, Waiti E, **Kartzinel TR**, Pringle RM. Dietary diversity and resource partitioning in African large-herbivore assemblages. In revision for *PNAS*.
37. Freeman PT<sup>‡</sup>, Ang'ila R<sup>‡</sup>, Kimuyu D, Magid M<sup>§</sup>, Kenfack D, Musili PM, Gill BA<sup>†</sup>, **Kartzinel TR**. Opposing gradients in the abundance and diversity of plants and large herbivores in a semi-arid African savanna. Complete draft.
- Freeman's ScM thesis invited by John Kress for submission to a special feature on “Plant DNA barcodes, community ecology, and species interactions” in *Diversity*.

38. Gill BA<sup>†</sup>, Cerling TE, Wittemeyer G, Musili PM, **Kartzinel TR**. Foraging history of individual elephants using DNA metabarcoding. Complete draft.
39. **Kartzinel TR**, Littleford-Colquhoun BL<sup>†</sup>, McGarvey LM, Geremia C. Dietary DNA metabarcoding: from basic food-species identification to versatile nutritional biomarker. Invited review for *Journal of Applied Animal Nutrition*.
  - Invited review in a “Wildlife Nutrition” special issue after a Comparative Nutrition Society plenary

## SELECTED ABSTRACTS

(FIRST- AND SENIOR-AUTHOR ONLY; KARTZINEL LAB POSTDOCS<sup>†</sup>, GRAD STUDENTS<sup>‡</sup>, UNDERGRAD/POST-BAC<sup>§</sup>)

1. **Kartzinel TR**. 2020. Emerging challenges and opportunities using real-time metabarcoding in foraging ecology. 2<sup>nd</sup> Joint Annual Meeting of the British and French Ecological Societies. Online (invited speaker, organized thematic session: Capturing Ecology Across Scales Using New Technology).
2. Reed CG<sup>‡</sup>, Gomez C<sup>§</sup>, **Kartzinel TR**. 2020. Dik-diks decrease dietary selectivity for thorny *Acacia* after competitive release. 2020 Comparative Nutrition Society (poster presented online due to COVID-19).
  - Winner of the Malcolm Ramsey Memorial Scholarship: Field-based Nutrition Research.
3. Reed CG<sup>‡</sup> and **Kartzinel TR**. 2020. Herbivore behavior shapes food web structure in response to changing resources. 2020 Animal Behavior Society Virtual Meeting (held online due to COVID-19).
4. Lyons A<sup>§</sup>, Bianca BRP<sup>‡</sup>, Kartzinel RY, **Kartzinel TR**. 2020. Genetics of diamondback terrapin (*Malaclemys terrapin*) populations in the northeastern United States. 2020 Northeast Natural History Conference, Stamford, CT, USA; cancelled due to COVID-19.
5. Reed CG<sup>‡</sup>, Goheen JR, Bianca BRP<sup>‡</sup>, Pringle RM, Palmer TM, **Kartzinel TR**. 2019. Climate-mediated rewiring of small mammal trophic networks in response to defaunation on a Kenyan savanna. 99<sup>th</sup> Annual Meeting of the American Society of Mammalogists, Washington, DC, USA.
6. Bianca BRP<sup>‡</sup>, Goheen JR, Malingati L, Palmer TM, **Kartzinel TR**. 2019. Evolutionary history predicts microbiome composition for orders, but not species, of co-occurring mammals. Evolution 2019, Providence, RI, USA (talk); Gordon Research Conference on Animal-Microbiome Symbioses 2019, West Dover, VT, USA (poster).
7. **Kartzinel TR**, Pringle RM, Goheen JR. 2017. Consequences of African large herbivore declines on food webs of small mammals. 102<sup>nd</sup> Annual Meeting of the Ecological Society of America, Portland, OR, USA (invited speaker, organized oral session on large-herbivore ecology).
8. **Kartzinel TR**. 2017. Wildlife diets and microbiota: climate and African megaherbivores shape ecological networks. 54<sup>th</sup> Annual Meeting of the Association for Tropical Biology and Conservation, Merida, Yucatan, Mexico (symposium invited speaker, biotic interactions in the Anthropocene).
9. **Kartzinel TR** and Pringle RM. 2016. DNA metabarcoding reveals fine-scale structure and change in large African herbivore food webs. 101<sup>st</sup> Annual Meeting of the Ecological Society of America, Fort Lauderdale, FL, USA.
10. **Kartzinel TR**. 2016. Predicting changes to the food webs of African large herbivores in the Anthropocene. 53<sup>rd</sup> Annual Meeting of the Association for Tropical Biology and Conservation, Montpellier, France (invited speaker, symposium on tropical plant-animal interactions in the Anthropocene).
11. **Kartzinel TR** and Pringle RM. 2015. DNA metabarcoding illuminates dietary niche partitioning by large herbivores in Africa. *Genome* 5: 236-236.
12. **Kartzinel TR**. 2015. DNA metabarcoding illuminates dietary niche partitioning by large herbivores in Africa. 6<sup>th</sup> International Barcode of Life Conference, University of Guelph, Canada.
13. **Kartzinel TR**, Shefferson RP, Trapnell DW. 2012. Phylogeographic structure of the Neotropical epiphytic orchid *Epidendrum firmum* corresponds to differences in symbiotic fungal communities. 97<sup>th</sup> Annual Meeting of the Ecological Society of America, Portland, OR, USA.

14. **Kartzinel TR**, Bunch WD, Cowden CC, Trapnell DW, Shefferson RP. 2011. Diverse suites of mycorrhizal fungi vary among populations of the rare Neotropical lady's slipper orchid, *Phragmipedium longifolium*. 96<sup>th</sup> Annual Meeting of the Ecological Society of America, Austin, TX, USA (poster).
15. **Kartzinel TR**, Bunch WD, Cowden CC, Trapnell DW, Shefferson RP. 2011. Diverse suites of mycorrhizal fungi vary among populations of the rare Neotropical lady's slipper orchid, *Phragmipedium longifolium*. Southeastern Ecology and Evolution Conference, Auburn, MS, USA.

## INVITED LECTURES

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- 2021 GIBI/ITV-Norway International Meeting 2021 – Biodiversity monitoring and mapping. Online.
- 2021 Plant.ID seminar series: Molecular identification of plants for science and society. Marie-Curie Innovative Training Network: Plant.ID network. Online (keynote speaker).
- 2020 TiBE – Trends in Biodiversity and Evolution Conference, CIBIO/InBIO, Universidade do Porto, Lisboa, Portugal & The Closing Meeting of the ERA Chair Project EnvMetaGen. Online (plenary speaker).
- 2020 Thirteenth Biennial Symposium of the Comparative Nutrition Society, planned for Solitude, UT, USA; held online due to COVID-19 (plenary speaker).
- 2020 University of New Mexico, Albuquerque, NM, USA (departmental seminar); postponed due to COVID-19.
- 2019 Max Planck–Yale Center for Biodiversity Movement and Global Change, New Haven, CT, USA (public symposium).
- 2019 Providence College, Providence, RI, USA (departmental seminar).
- 2018 University of Idaho, Moscow, ID, USA (student-invited speaker, Institute for Bioinformatics & Evolutionary Studies and Bioinformatics & Computational Biology).
- 2018 University of Connecticut, Storrs, CT, USA (departmental seminar).
- 2018 Rhode Island College, Providence, RI, USA (departmental seminar).
- 2018 Iowa State University, Ames, IA, USA (departmental seminar).
- 2018 Mpala Research Centre, Laikipia, Kenya (“Science Friday” seminar).
- 2018 Syracuse University, Syracuse, NY, USA (departmental seminar).
- 2018 National Museums of Kenya, Nairobi, Kenya (departmental seminar).
- 2017 University of Wyoming, Laramie, WY, USA (departmental seminar).
- 2015 Brown University, Providence, RI, USA (departmental seminar).
- 2012 University of Georgia, Athens, GA, USA (Presidential Fellows lecture series).
- 2011 The Explorers Club, Columbia, SC, USA (guest speaker).
- 2011 Symbiofest, Athens, GA, USA (guest speaker).

## RESEARCH GRANTS

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### a. Current Grants:

#### External Awards

- 2021-2026 NSF DEB-2046797. CAREER: Experimental tests of competition and facilitation among migratory large herbivores from Yellowstone National Park. Role: PI. Amount: \$920,515.
- 2021-2023 NSF OIA-2033823. RII Track-4: Collaborative partnerships at the cusp of wildlife ecology and molecular biology. Role: PI. Amount: \$259,569.
- 2020-2025 NSF DEB-2026294. Collaborative Research: LTREB: Experimental determination of trophic dynamics and energy flows in a semiarid habitat in Chile. Role: Co-PI with D. Kelt, S. Newsome, and J. Yeakel. Amount: \$600,000 (\$243,624 to Brown).
- 2020-2022 NSF DEB-1930820. Collaborative Research: Testing predictions of the core-satellite and resource-breadth hypotheses in small mammal communities: field tests of a

macroecological pattern. Role: Co-PI with J.R. Goheen. Amount: \$300,000 (\$150,000 to Brown).

Institutional Awards

2021-2022 Seed Funding. Institute at Brown for Environment and Society. A new CRISPR-based technology for conservation and biomedicine. Role: PI. Amount: \$30,000.

**b. Completed Grants:**

External Awards

2020-2021 RI DEM. Cooperative Agreement: Carrying out a population genetics analysis of diamondback terrapins in Rhode Island and surrounding regions. Role: PI. Amount: \$7,500.

2017 Emerging Frontiers in Tropical Sciences Working Group, Organization for Tropical Studies. Predicting extinction of tropical species under climate change: combining precise data, robust models, and new perspectives. Role: Co-PI with W.J. Kress and C. Garcia-Robledo. Amount: undisclosed.

2011-2012 NSF DEB-1110307. The influence of landscape heterogeneity and mycorrhizal fungi on the distribution of an epiphytic orchid and its genetic variation. Role: Co-PI, Doctoral Dissertation Improvement Grant to T.R. Kartzinel. Amount: \$14,986.

Institutional Awards

2019-2020 Seed Funding. Institute at Brown for Environment and Society. Developing novel molecular tools to reconstruct Arctic sea ice extent. Role: Co-PI with Y. Huang and T. Herbert. Amount: \$30,000.

2019-2020 HHMI-Sheridan Course-based Undergraduate Research Experiences: Conservation in the Genomics Age. Role: PI. Amount: \$24,200.

2018-2021 Seed Funding. Institute at Brown for Environment and Society. Connecting earth observation and ecological networks. Role: PI with J.R. Kellner. Amount: \$80,000.

2013-2015 Development Grand Challenges Program, Princeton Environmental Institute. Ecosystem spatial pattern and development opportunities in African rangelands. Role: Co-PI with R.M. Pringle, R.A. Long, and C.E. Tarnita. Amount: \$200,000.

**c. Current Grant Proposals:**

Pending NIH R01. Using DNA sequencing to assess dietary species richness. Submitted: October 2021. Role: Co-PI with L. David.

Pending NSF DEB/PCE. Collaborative Research: Mapping foraging to fitness: quantifying the causes and consequences of resource selection in a desert rodent community. Submitted: October 2021. Role: Co-PI with S. Newsome, J. Yeakel, and A. Trowbridge.

Pending FONDECYT Chile. Fray Jorge Long-Term Ecological Research (LTER): Trophic niche dynamics in response to extreme climate variability. Submitted: July 2021. Role: International Collaborator with PI M.A. Troncoso Joffre.

**d. Select Fellowships, Grants, and Honors Awarded to Lab Members:**

2021 Bianca Brown, NSF Postdoctoral Research Fellowship in Biology to Yale.  
Camille Tulloss '21, Senior Prize for Academic Excellence in Biological Sciences.  
Courtney Reed, James L. Patton Award from the American Society of Mammalogists;  
COVID-19 Supplementary Funding in support of the 2020 American Philosophical Society's Lewis and Clark Fund for Exploration & Field Research Award.  
Fabiola Meyer Garza '22, Voss Undergraduate Research Fellowship.

- Ezequiel Vanderhoeven, National Scientific and Technical Research Council (CONICET) Postdoctoral Fellowship; Rufford Foundation Conservation Small Grant
- 2020 Elin Videvall, The Foundation for Zoological Research, Uppsala, Sweden.  
Bianca Brown, Ford Foundation Dissertation Completion Fellowship Honorable Mention.  
Colin Donihue, Voss Postdoctoral Fellowship.  
Amanda Lyons, Diamondback Terrapin Working Group Grant; Sophie Danforth Conservation Biology Fund at the Roger Williams Park Zoo/Rhode Island Zoological Society.  
Courtney Reed, American Philosophical Society's Lewis and Clark Fund for Exploration & Field Research; Animal Behavior Society Student Research Grant.
- 2019 Elin Videvall, Swedish Research Council International Postdoctoral Fellowship.  
Ashley Bang '19, Fulbright Scholarship.  
Chrishen Gomez, Merdeka Award Grant.  
Amanda Lyons '20, Voss Undergraduate Research Fellowship; Royce Fellowship (declined).  
Molly Magid '19, Fulbright Scholarship.
- 2018 Ezequiel Vanderhoeven, National Scientific and Technical Research Council (CONICET) Postdoctoral Fellowship (withdrawn due to quarantine associated with COVID-19).  
Ashley Bang '19, Hollings Scholarship.  
Molly Magid '19, Voss Undergraduate Research Fellowship.
- 2017 Bianca Brown, NSF Graduate Research Fellowship.

## SERVICE

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### a. To the University & Department:

- 2021-present Alternate Member, Institutional Animal Care and Use Committee (IACUC), Brown University.
- 2021-present Subcommittee Chair, Departmental Diversity and Inclusion Action Plan Subcommittee on Inclusion, Equity, and Belonging, EEOB, Brown University.
- 2020-present Organizer, Inaugural & Continuing Departmental Diversity and Inclusion Action Plan Committee Invited Speaker series, EEOB, Brown University.
- 2020-2021 2021 Voss Postdoctoral Fellowship Selection Committee, IBES, Brown University.
- 2020-2021 Environmental Studies Curriculum Committee Member, IBES, Brown University.
- 2020-present PI on Brown University's Master Cooperative Agreement with the National Park Service via the Cooperative Ecosystems Studies Unit.
- 2020 Exemplar Field Plan template for OVPR's COVID-19 Resuming Research.
- 2020-2021 Concentration advising, Biology AB/ScB, BioMedicine, Brown University (2 advisees).
- 2020-2021 Concentration advising, Environmental Studies, IBES, Brown University (3 advisees).
- 2019-present Technical Representative to the North Atlantic Coast Cooperative Ecosystems Studies Unit for Brown University.
- 2019-present Committee member, Diversity and Inclusion Action Plan, EEB, Brown University.
- 2019 Cohost of EEB-oSTEM seminars that highlight diverse research identities in biology.
- 2019-2020 Concentration advising, Environmental Studies, IBES, Brown University (2 advisees).
- 2019 Departmental retreat seminar, EEB, Brown University.
- 2018 Biodiversity subject-matter expert, Sustainability Planning Committee, Brown University.
- 2018-2019 Concentration advising, Environmental Studies, IBES, Brown University (2 advisees).
- 2018 Faculty search committee, Professor of Climate and Health, Department of Epidemiology & IBES, Brown University.
- 2018 Lunchtime seminar, IBES, Brown University.



- 2018 Environmental Studies Honors committee, IBES, Brown University.  
 2017 Departmental brown bag seminar, EEB, Brown University.  
 2017 Teatime talk, IBES, Brown University.  
 2011 Faculty search committee. Odum School of Ecology, University of Georgia.  
 2010-2011 Executive committee, Office of the Dean of Ecology, University of Georgia.  
 2010-2011 Graduate student representative, Ecology, University of Georgia.  
 2009-2011 Program committee (chair), Graduate symposium, Ecology, University of Georgia.  
 2008-2010 Undergraduate symposium convener and judge, Center for Undergraduate Research Opportunities, University of Georgia.

**b. To the Profession:**

Workshops, Working Groups, & Symposia Organized

- 2020 “Ecology and conservation of diamondback terrapins in the northeast.” Organized Session at the Northeast Natural History Conference, Stamford, CT, USA (organizer); cancelled due to COVID-19.  
 2018 “DNA barcoding: ecology and systematics in East African ecosystems.” Training and development workshop, National Museums of Kenya, Nairobi, Kenya (organizer).  
 2017 “Tropical biotic interactions in the Anthropocene.” Symposium at the 54<sup>th</sup> annual meeting of the Association for Tropical Biology and Conservation, Merida, Mexico (co-organizer).  
 2017 “Predicting extinction of tropical species under climate change: combining precise data, robust models, and new perspectives.” Emerging Frontiers in Tropical Science Working Group, Organization for Tropical Studies, La Selva Biological Station, Costa Rica (co-organizer).

Workshops, Working Groups, & Symposia Participant

- 2021 “Workshop: Ecological analysis of dietary metabarcoding data.” GIBI/ITV-Norway International meeting 2021 - Biodiversity monitoring and mapping (online; September).  
 2020 “Methods Roundtable.” Thirteenth Biennial Symposium of the Comparative Nutrition Society, originally planned for Solitude, UT, USA; held online due to COVID-19 (invited plenary).  
 2019 “Symposium: Linking individual behavior to community responses in changing landscapes.” Max Planck – Yale Center for Biodiversity Movement and Global Change, New Haven, CT, USA (invited).  
 2019 “State of the Field 2019: The Ancient DNA Revolution in Archaeology.” Panel on alternative sources of ancient DNA. Joukowsky Institute for Archaeology and the Ancient World, Brown University, Providence, RI, USA (invited panel moderator).  
 2019 “CURE Faculty Institute.” HHMI-Sheridan Center workshop to develop and enhance course-based undergraduate research at Brown University, Providence, RI, USA (funded participant).  
 2018 “Giraffe Conservation Science Symposium.” To produce a 2030 conservation framework for giraffe. Smithsonian Conservation Biology Institute, Front Royal, VA, USA (invited).  
 2016 “Enhancing capacity for wildlife conservation in Equatorial Guinea.” Stakeholder meeting, Biodiversity Initiative, Bata, Equatorial Guinea (invited).  
 2016 “Leveraging Prairie Reserves for Conservation Under Climate Change.” Science Solution Space, The Nature Conservancy, Ordway Prairie, South Dakota, USA (invited).  
 2013 “Gorongosa National Park Science-Media Workshop.” Gorongosa Restoration Project, Gregory C. Carr Foundation, Sun Valley, ID, USA (invited).

Ad hoc Reviewing

- Manuscript reviews ( $n = 65$ ): *Acta Oecologica*, *American Journal of Botany*, *American Naturalist*, *Biological Conservation* (“Outstanding Reviewer”), *Biological Journal of the Linnean Society*, *Biotropica*, *Conservation Genetics*, *Diversity and Distributions*, *Ecological Applications*, *Ecology and Evolution*, *Environmental DNA*, *Forest Ecology and Management*, *Heredity*, *Journal of Animal*

*Ecology, Journal of Applied Ecology, Journal of Applied Entomology, Journal of Ecology, Journal of Heredity, Journal of Mammalogy, Marine Ecology Progress Series, Methods in Ecology and Evolution, Molecular Ecology, Molecular Ecology Resources, Nature Communications, Oikos, PeerJ, Plant Molecular Biology Reporter, PLoS ONE, Proceedings of the Royal Society B, Science Advances, Scientific Reports, Wildlife Biology.*

- NSF review panels: 2021 Division of Environmental Biology / Population & Community Ecology.
- Grant reviews: Czech Science Foundation, National Geographic Society, South Africa National Research Foundation, US National Science Foundation.
- Curriculum reviews: Howard Hughes Medical Institute (HHMI) BioInteractive.
- Textbook reviews: Princeton University Press.
- External PhD project proposal reviews: 2021 Wageningen University – Netherlands (Wildlife Ecology and Conservation Group).

#### Advisory Positions

- 2018-2020 Senior Advisor, New Research Technologies, a laboratory for DNA and stable isotopes analysis at Mpala Research Centre, Kenya (NSF Award #1821088).
- 2013-2017 Department of Scientific Services, Gorongosa Restoration Project, Mozambique.

#### Elected Positions

- 2007-2009 Society for Conservation Biology, Founding member of the State of Georgia & University of Georgia chapters. Vice President & Program Development Chair (2008-2009).

#### Select Media Coverage of Research and Teaching

- “Emerging Victorious,” *Brown Alumni Magazine* feature profiles Bianca Brown’s work in the lab, 6/2021.
- “Diet and gut microbiome of African megafauna,” *PNAS* media highlight, 11/2019.
- “Study of African animals illuminates links between environment, diet, and gut microbiome,” *News from Brown—Featured Headline*, 11/2019.
- “Summary from the authors: Plant DNA-barcode library and community phylogeny for a semi-arid East African savanna,” *Molecular Ecology Blog*, 08/2019.
- “Predators drove a lizard population to extinction without eating them,” *PBS Nova*, 06/2019.
- “IBES students head for Fulbrights,” *News from IBES*, 05/2019.
- “2018 Living Planet Report” radio interview, WPRO Providence, 11/2018.
- “Endangered Species Day 2016 – Plants are endangered too!” *Journal of Ecology Blog*, 05/2016.
- “No food fights for large African herbivores,” *New York Times*, 06/2015.
- “Big African animals are pickier eaters than we imagined,” *Smithsonian Magazine*, 06/2015.
- “Grass gourmands: A herbivore food mystery on the African savanna,” *National Public Radio*, 06/2015.
- “How do African grasslands support so many plant-eaters?” *National Geographic Society*, 06/2015.
- “Gorongosa Field Notes: Going Back in Time Four Decades,” EO Wilson Biodiversity Foundation Film Production, 12/2013.

#### Professional Memberships & Affiliations

Association for Tropical Biology and Conservation, British Ecological Society, Ecological Society of America, Kenya Wildlife Services, Mpala Research Centre, National Museums of Kenya, Sigma Xi (Associate Member), Society for the Study of Evolution.

## **HONORS & AWARDS**

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- 2020-present Peggy & Henry D. Sharpe, Jr. Assistant Professor of Environmental Studies, Brown University
- 2018-2022 Early Career Fellow, Ecological Society of America
- 2015-2017 NatureNet Science Fellowship, The Nature Conservancy

2015	International Barcode of Life Conference Travel Award
2007-2012	Presidential Fellowship, The University of Georgia
2012	Smithsonian Tropical Research Institute Fellowship (declined to pursue a postdoc)
2012	University of Georgia Graduate School Travel Award
2011	University of Georgia Graduate School Travel Award
2011	IDEA WILD
2010	The Explorers Club Exploration Fund
2009	Lewis and Clark Fund for Exploration and Field Research
2009	Eugene P. Odum Small Grant
2009	Sigma Xi Grant in Aid of Research
2009	Tinker Foundation Field Research Award
2009	National Science Foundation Graduate Research Fellowship Honorable Mention
2009	University of Georgia Costa Rica Ecology Program
2009	Bosque de Paz Biological Reserve, Costa Rica
2008	University of Georgia Graduate School Travel Award
2006	Morris K. Udall Scholarship
2006	Honors thesis award, Rollins College
2006	Sustainable Development International Scholar, Singapore & Vietnam
2005	Sustainable Development International Scholar, Costa Rica
2004	Archer D. Midland Scholarship, Galápagos National Park, Ecuador
2004	Service-learning Scholarship, Dominican Republic
2004	National Society of Collegiate Scholars

## TEACHING

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### a. Courses:

#### AY 2021-2022

- 2022 Environmental Studies 0490 (spring): Environmental Science in a Changing World (sole instructor; 92 pre-registered).
- 2021 Environmental Studies 1970 (fall): Independent Study (supervising Thomas Patti, class of '22; Skyler Chong, class of '22; Logan Torres, class of '24).
- 2021 Biology 1950 (fall): Independent Study (supervising Fabiola Meyer Garza, class of '22; supervising Andy Luo, class of '23).

#### AY 2020-2021

- 2021 Environmental Studies 0490 (spring): Environmental Science in a Changing World (sole instructor; 119 enrolled, 2 auditing).
- 2021 Biology 2440 (spring): Topics in Ecology and Evolutionary Biology (multiple instructors; 9 enrolled).
- 2020 Biology 1515/2015 (fall): Conservation in the Genomics Age (sole instructor; 24 enrolled; online inquiry-based & engaged-learning lab co-developed with HHMI-Sheridan postdoc).
- 2020 Biology 1950 (fall): Independent Study (supervising Camille Tulloss, class of '21).

#### AY 2019-2020

- 2020 Environmental Studies 0490 (spring): Environmental Science in a Changing World (sole instructor; 97 enrolled).
- 2020 Environmental Studies 1971 (spring): Independent Study (supervising Catherine Porter, class of '20).
- 2020 Biology 1960 (spring): Independent Study (supervising Amanda Lyons, class of '20; Violet Sackett, class of '20).

- 2019 Biology 2430 (fall): Graduate Seminar in Species Interactions (sole instructor; 10 enrolled).  
2019 Biology 1950 (fall): Independent Study (supervising Amanda Lyons, class of '20; Violet Sackett, class of '20; Camille Tulloss, class of '21).  
2019 Environmental Studies 1970 (fall): Independent Study (supervising Catherine Porter, class of '20).

AY 2018-2019

- 2019 Biology 2440 (spring): Topics in Ecology and Evolutionary Biology (multiple instructors; 8 enrolled).  
2019 Biology 1960 (spring): Independent Study (supervising Molly Magid, class of '19).  
2018 Biology 1515/2015 (fall): Conservation in the Genomics Age (sole instructor of course with inquiry-based & engaged-learning lab; 14 enrolled, 1 auditing).  
2018 Biology 1950 (fall): Independent Study (supervising Molly Magid, class of '19; Ashley Bang, class of '19).

AY 2017-2018

- 2018 Biology 1950 (spring): Independent Study (supervising Molly Magid, class of '19).

AY 2016-2017

- 2017 Field Ecology: Skills for Science and Beyond, Organization for Tropical Studies Graduate Program, Costa Rica (resource faculty).

**b. Guest Lectures:**

- 2019 Conservation Biology (BIOL1470, Brown University).  
2018 Living Biology at Brown and Beyond (BIOL0100, Brown University).  
2016 Savanna Ecology (Makerere University, Uganda; Presented at Mpala Research Centre, Kenya).  
2015 Ecology: Species interactions, biodiversity, and society (EEB321, Princeton University).  
2012 Evolutionary Ecology (ECOL4500/6500, University of Georgia).  
2011 Evolutionary Ecology (ECOL4500/6500, University of Georgia).  
2011 Universidad Técnica Nacional, San Luis, Costa Rica (given in English and Spanish).

**c. Mentoring & Supervision:**

Postdoctoral Supervision

- Ezequiel Vanderhoeven, DVM, PhD (Brown EEOB, 2021-present; Argentina National Scientific and Technical Research Council International Postdoctoral Fellow).
- Elin Videvall, PhD (Brown EEOB, 2021-present; Swedish Research Council International Postdoctoral Fellow).
- Colin Donihue, PhD (Brown IBES, 2020-present; Voss Postdoctoral Fellow).
- Bethan Littleford-Colquhoun, PhD (Brown EEOB, 2020-present; Postdoctoral Research Associate).
- Brian Gill, PhD (Brown IBES, 2017-2020; Current: Postdoc, University of Arizona).

Graduate Student Supervision:

- Courtney Reed (Brown EEOB, PhD, 2018-present; advanced to candidacy in 2020).
- Robert Ang'ila (Karatina Environmental Studies, MSc, 2018-present; co-advised by Dr. Duncan Kimuyu).
- Amanda Lyons (Brown EEB, MSc, 2020-2021; Current: Research Associate, Wetlands Institute).
- Bianca Brown (Brown EEOB, PhD, 2017-2021; NSF GRF; Current: NSF Postdoctoral Research Fellowship in Biology, Yale University).

- Patrick Freeman (Brown EEB, ScM, 2017-2020; Current: Staff Scientist, Conservation Science Partners, Inc).

Graduate Student Committee Membership:

- Amy Rutter (Brown EEOB, PhD, 2021-present).
- Alberto Bortoni (Brown EEOB, PhD, 2020-present).
- Karen Wang (Brown DEEPS, PhD, 2018-present).
- Sian Liao (Brown Chemistry, PhD, 2018-present).
- Lindsay McCulloch (Brown EEB, PhD, 2018-2021).

External Thesis Examiner:

- Runé van der Merwe (University of the Free State, South Africa, MSc, 2021).

Brown Undergraduate Research Supervision:

- Skyler Chong '22 (Brown IBES, 2021-present).
- Thomas Patti '22 (Brown IBES, 2021-present).
- Logan Torres '24 (Brown Presidential Scholars Program, 2021-present).
- Andy Luo '23 (Brown EEOB, 2021-present).
- Caroline Dressler '22 (Brown EEOB & Music, 2021-present).
- Fabiola Meyer Garza '22 (Brown EEOB & Anthropology, 2021-present; 2021 Voss Environmental Fellow).
- Camille Tulloss '21 (Brown EEB, 2019-2021; Honors; Senior Prize in Biological Sciences).
- Violet Sackett '20 (Brown EEB, 2019-2020).
- Catherine Porter '20 (Brown IBES, 2019-2020).
- Amanda Lyons '20 (Brown EEB, 2018-2020; Honors, 2019 Voss Environmental Fellow).
- Ashley Bang '19 (Brown DEEPS, 2018-2019; Honors, 2018 Hollings Scholar, 2019 Fulbright Scholar).
- Molly Magid '19 (Brown EEB, 2017-2019; Honors, 2018 Voss Environmental Fellow, 2019 Fulbright Scholar).

Brown Undergraduate Honors Thesis Second Reader:

- Sophia Sordilla '22 (Brown EEOB, 2021-present).
- Marisa Agarwal '21 (Brown EEB, 2020-2021).
- Bria Metzger '20 (Brown EEB, 2019-2020).
- Fiona Beltram '18 (Brown EEB, 2017-2018).

Brown University Leadership Alliance Summer Research-Early Identification Program

- Camela Moore, Southern Illinois University-Carbondale (Brown IBES, 2021).

Post-baccalaureate Research Supervision

- Chrishen Gomez (Brown EEB Visiting Research Associate, 2020; 2019 Merdeka Award Grant Recipient, Bornean Carnivore Program, Malaysia).

Research Assistants:

- Ian Maywar (Brown IBES, 2021-present).
- Peter Lokeny (Mpala Research Centre, 2017-present).

Research Visitors:

- Edmund Basham (PhD student, University of Florida, 2018).

*Mentorship & Supervision as a Postdoctoral Fellow (Princeton University):*

Ph.D. students (3), undergraduate thesis students and interns (4), laboratory managers (3).

- Mentee accomplishments include coauthoring publications, winning scholarships of \$1000-\$7390, and presenting research talks and theses.

*Mentorship & Supervision as a Graduate Student (University of Georgia):*

Ph.D. students (3), M.S. students (1), undergraduate students (5), research technicians (1), and undergraduate research assistants (10).

- Mentee accomplishments include coauthoring publications, giving talks at international meetings, and winning symposia research awards.