



Tyler R. Kartzinel

Brown University, 85 Waterman Street
Providence, Rhode Island 02912 USA
E-Mail: tyler_kartzinel[at]brown.edu
Telephone: 1-401-863-5851
www.kartzinellab.com

EDUCATION

- 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

- 2020- Peggy & Henry D. Sharpe Assistant Professor of Environmental Studies, Brown University
- 2017- Assistant Professor, Ecology and Evolutionary Biology, Brown University
- 2017- 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

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

REFEREED JOURNAL ARTICLES

(KARTZINEL LAB POSTDOCS[†], GRAD STUDENTS[‡]; *INDICATES JOINT FIRST AUTHORSHIP.)

1. 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.
2. **Kartzinel TR** and Pringle RM. 2020. Multiple dimensions of dietary diversity in large mammalian herbivores. *Journal of Animal Ecology* 89: 1482-1496.
 - Cover article.
3. 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.
4. **Kartzinel TR**, Hsing J, Musili PM, Brown BRP[‡], 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.
5. 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).
6. 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.
 7. 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.
 8. 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*.
 9. Gill BA[†], 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.
 10. 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.
 11. 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 & 2019 (even prior to print).
 12. 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.
 13. 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*.
 14. 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*.

15. 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.
16. 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.
17. **Kartzinel TR**, Campbell DA, Trapnell DW. 2016. Spatial patterns of haplotype variation in the epiphytic bromeliad *Catopsis nutans*. *Biotropica* 48: 206-217.
18. **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.
19. **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 BiInteractive Lab](#)—a tool for curricular enhancement of "textbook" high school biology.
20. **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.
21. **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.
22. **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.
23. **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.
24. **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.
25. 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.
26. **Kartzinel TR**, Trapnell DW, Glenn TC. 2012. Microsatellite primers for the Neotropical epiphyte *Epidendrum firmum* (Orchidaceae). *American Journal of Botany* 99: e450-452.

SELECTED ABSTRACTS

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

1. **Kartzinel TR**. 2020. Emerging challenges and opportunities using real-time metabarcoding in foraging ecology. 2nd 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[‡], Gomez C[§], **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[‡] 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[§], Bianca BRP[‡], 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[‡], Goheen JR, Bianca BRP[‡], Pringle RM, Palmer TM, **Kartzinel TR**. 2019. Climate-mediated rewiring of small mammal trophic networks in response to defaunation on a Kenyan savanna. 99th Annual Meeting of the American Society of Mammalogists, Washington, DC, USA.
6. Bianca BRP[‡], 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. 102nd 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. 54th 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. 101st 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. 53rd 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. 6th 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. 97th 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*. 96th 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

- 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).

WORKS IN PROGRESS

(KARTZINEL LAB POSTDOCS[†], GRAD STUDENTS[‡], UNDERGRADUATES[§]; *INDICATES JOINT FIRST AUTHORSHIP.)

1. 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. Ecological and behavioral mechanisms of density-dependent habitat expansion in a recovering African ungulate population. In review.
2. Pansu J, Hutchinson MC, Anderson TM, Begg C, Begg K, te Beest M, Bonin A, Chama L, Chamaille-Jammes S, Coissac E, Crooms J, Guyton JA, Demmel My, Donaldson J, Hansen C, Imakando C, Iqbal A, Kalima D, 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 review.
3. Brown BRP[‡], Goheen JR, Newsome SD, Malingati L, Pringle RM, Palmer TM, **Kartzinel TR**. Host phylogeny and functional traits contribute to gut microbiome differentiation in a diverse assemblage of small mammals. Complete draft manuscript from Brown’s dissertation to be submitted for review.
4. Bang AHY[§], Russell JM, Kiriithi J, Kimuyu D, **Kartzinel TR**. Scenarios for 2050 climate change impacts on the vegetation of protected areas in Kenya. Bang’s Honors thesis to be submitted for peer review.
5. Littleford-Colquhoun BL[†], Geremia C, Tulloss C[§], Sackett V[§], Freeman PT[‡], **Kartzinel TR**. Precision alters perception: common data transformations change ecological interpretations based on dietary DNA metabarcoding. Reporting data from my course-based undergraduate research program.
6. Gill BA[†], Cerling TE, Wittenmeyer G, **Kartzinel TR**. Foraging history of individual elephants using DNA metabarcoding. Complete draft manuscript based on Gill’s postdoctoral research.
7. Freeman PT[‡], Ang’ila R[‡], Kimuyu D, Magid M[§], Kenfack D, Musili PM, **Kartzinel TR**. Opposing gradients in the abundance and diversity of plants and large herbivores in a semi-arid African savanna. Freeman’s 2020 Brown University ScM thesis to be submitted for peer review.
8. Alston JM, Reed C[‡], Pringle RM, Palmer TM, **Kartzinel TR**, Busenei G, Charles GK, DeFranco E, Dudenhoefter M, Dyck M, Hassan A, Jakopak R, Kurukura S, Maclean JE, Malingati L, Otieno TO,

- Weiner S, Goheen JR. Ecological consequences of large herbivore exclusion in an African savanna: data from years 5-10 of the UHURU experiment. Data paper in preparation for *Ecology*.
9. Wells HBM, Opedal ØH, Khasoha LM, Alston JM, Reed CG[‡], Weiner S, Kimuyu DM, Young TP, **Kartzinel TR**, Goheen JR, Palmer TM, Pringle RM, Crego RD. Climate, species traits, and phylogeny mediate the impacts of megaherbivores on occurrence and habitat use of other wild herbivores. In prep based on long-term data from the UHURU experiment.

RESEARCH GRANTS

a. Current Grants:

External Awards

- 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).
- 2020-2021 RI DEM. Cooperative Agreement: Carrying out a population genetics analysis of diamondback terrapins in Rhode Island and surrounding regions. Role: PI. Amount: \$7,500.
- 2019-2021 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

- 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.

b. Completed Grants:

External Awards

- 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

- 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. Proposals Submitted (in review):

- Pending NSF CAREER: Experimental tests of competition and facilitation among migratory large herbivores from Yellowstone National Park. Submitted: August 2020. Role: PI.
- Pending National Institutes of Health. Genomic techniques to assess food intake. Submitted: May 2020. Role: PI of subaward with L. David.

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

- 2020 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.
Elin Videvall, Swedish Research Council International Postdoctoral Fellowship.
- 2019 Ashley Bang '19, Fulbright Scholarship.
Chrishen Gomez, Merdeka Award Grant.
Amanda Lyons '20, Voss Undergraduate Research Fellowship.
Molly Magid '19, Fulbright Scholarship.
Ezequiel Vanderhoeven, National Scientific and Technical Research Council (CONICET)
Postdoctoral Fellowship (withdrawn due to quarantine associated with COVID-19).
- 2018 Ashley Bang '19, Hollings Scholarship.
Molly Magid '19, Voss Undergraduate Research Fellowship.
- 2017 Bianca Brown, NSF Graduate Research Fellowship.

SERVICE

a. To the University & Department:

- 2020 Exemplar Field Plan template for OVPR's COVID-19 Resuming Research.
- 2020-2021 Organizer, Inaugural Departmental Diversity and Inclusion Action Plan Committee
Invited Speaker series, EEB, Brown University.
- 2020-2021 2021 Voss Postdoctoral Fellowship Selection Committee, IBES, Brown University.
- 2020-2021 Environmental Studies Curriculum Committee Member, IBES, Brown University.
- 2020- PI on Brown University's Master Cooperative Agreement with the National Park Service
via the Cooperative Ecosystems Studies Unit.
- 2020-2021 Concentration advising, Biology AB/ScB, BioMedicine, Brown University (2 advisees).
- 2020-2021 Concentration advising, Environmental Studies, IBES, Brown University (3 advisees).
- 2019- Technical Representative to the North Atlantic Coast Cooperative Ecosystems Studies
Unit for Brown University.
- 2019- Committee member, Diversity and Inclusion Action Plan, Department of Ecology and
Evolutionary Biology, 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 54th 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

- 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 ($n = 60$): *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*, *Forest Ecology and Management*, *Heredity*, *Journal of Applied Ecology*, *Journal of Applied Entomology*, *Journal of Ecology*, *Journal of Heredity*, *Marine Ecology Progress Series*, *Methods in Ecology and Evolution*, *Molecular Ecology*, *Molecular Ecology Resources*, *Nature*

Communications, Oikos, Plant Molecular Biology Reporter, PLoS ONE, Proceedings of the Royal Society B, Science Advances, Scientific Reports, Wildlife Biology.

- Grants: National Geographic Society, National Research Foundation of South Africa.
- Curriculum: Howard Hughes Medical Institute (HHMI) BioInteractive.
- Textbooks: Princeton University Press.

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).

Selected Media Coverage of Research and Teaching

- "Diet and gut microbiome of African megafauna," *PNAS* media highlight, 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," Institute at Brown for Environment and Society, 05/2019.
- "2018 Living Planet Report" radio interview, WPRO Providence, 11/2018.
- "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. Available: <https://vimeo.com/114287571>.

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

- 2020 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

a. Courses:

AY 2020-2021

- 2021 Environmental Studies 0490 (spring): Environmental Science in a Changing World (sole instructor; 107 registered).
- 2021 Biology 2440 (spring): Topics in Ecology and Evolutionary Biology (multiple instructors).
- 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

- Elin Videvall (Brown EEB, 2021- ; Swedish Research Council Postdoctoral Fellow).
- Colin Donihue (Brown IBES, 2020- ; Voss Postdoctoral Fellow).
- Bethan Littleford-Colquhoun (Brown EEB, 2020- ; Research Associate).
- Brian Gill (Brown IBES, 2017-2020).

Graduate Student Supervision:

- Amanda Lyons (Brown EEB, MSc, 2020-).
- Courtney Reed (Brown EEB, PhD, 2018- ; advanced to candidacy in 2020).
- Robert Ang'ila (Karatina Environmental Studies, MSc, 2018- ; co-advised by Dr. Duncan Kimuyu).
- Bianca Brown (Brown EEB, PhD, 2017- ; NSF Graduate Research Fellow, advanced to candidacy in 2018).
- Patrick Freeman (Brown EEB, ScM, 2017-2020).

Graduate Student Committee Membership:

- Alberto Bortoni (Brown EEB, 2020-).
- Karen Wang (Brown DEEPS, 2018-).
- Sian Liao (Brown Chemistry, 2018-).
- Lindsay McCulloch (Brown EEB, 2018-).

Undergraduate Research Supervision:

- Camille Tulloss '21 (Brown EEB, 2019-).
- 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).

Undergraduate Honors Thesis Second Reader:

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

Post-baccalaureate Research Supervision

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

Research Assistants:

- Peter Lokeny (Mpala Research Centre, 2017-).

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.