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Education

2017–present Dartmouth College
Ph.D. candidate, Graduate Program in Ecology, Evolution, Environment and Society
Advisor: Dr. Hannah ter Hofstede

2017 University of Pittsburgh
B.S., Ecology and Evolution, *magna cum laude*
Honors thesis: Integration of Spatial and Acoustic Information in Frog-Eating Bats.

Publications

2020 Symes, L.B.†, Martinson, S.J.†, **Kernan, C.E.**, and ter Hofstede, H.M. Sheep in wolves' clothing: prey rely on passive defenses when predator and non-predator cues are similar. *Proceedings of the Royal Society B* 287: 20201212. Link.

Geipel, I.†, **Kernan, C.E.**†, Litterer, A.S., Carter, G., Page, R.A.‡, ter Hofstede, H.M.‡ 2020. Predation risks of signaling and searching: bats prefer moving katydids. *Biology Letters* 16: 20190837. Link.

→ Featured in Outside JEB by the Journal of Experimental Biology

submitted **Kernan, C.E.** Observation of a bullet ant (*Paraponera clavata*) foraging on a lizard (*Anolis* sp.). Submitted to *Entomologica Americana*.

Symes, L.B, Robillard, T., Martinson, S.J., Dong, J., **Kernan, C.E.**, Miller, C.R., ter Hofstede, H.M. Signal repetition rate and the duration of sound per signal are negatively related in Neotropical forest katydids. Submitted to *Integrative and Comparative Biology*.

in prep **Kernan, C.E.**, Jones, J.S., Bhushan, A., Symes, L., Rustad, L., ter Hofstede, H.M. Monitoring changes in bat foraging activity after an experimental ice storm.

Kernan, C.E., Jones, J., Robillard, T., ter Hofstede, H.M. Signal efficacy constraints counteract female preferences in a multimodal cricket duet.

†‡Equal authorship contributions

Presentations

Talks

2021 Symes, L. B., Madhusudhana, S., Martinson, S., **Kernan, C.**, and ter Hofstede, H.M. Sexual selection, natural selection, and artificial intelligence. Talk presented by L. Symes at the Society for Integrative and Comparative Biology annual conference.

2020 Geipel, I., **Kernan, C.E.**, Litterer, A.S., Carter, G.G., Page, R.A., and ter Hofstede, H.M. Risky business: courtship movements put katydids in danger. Talk presented by I. Geipel at Animal Behavior Society annual conference.

2019 **Kernan, C.E.**, Ralston, J., ter Hofstede, H.M. How do different conspecific receivers respond to a multicomponent cricket call? Talk at Animal Behavior Society annual conference.

2017 **Kernan, C.E.** Integration of Spatial and Acoustic Information in Frog-Eating Bats. Senior honors thesis presentation at the University of Pittsburgh.

2016 **Kernan, C.E.** Behavioral observations of *Brookesia superciliaris* in Ranomafana National Park. Independent project presentation at Centre ValBio in Madagascar.

Posters

2019 **Kernan, C.E.**, Jones, J. ter Hofstede, H.M. Bat Monitoring at Hubbard Brook Experimental Forest. Poster presented at The Future of the Northern Forest workshop, hosted by Dartmouth College.

Iwan, A.*, **Kernan, C.E.**, Litterer, A.S., ter Hofstede, H.M., and Hamel, J. Studying the functions and contexts of vibrational communication in Neotropical katydids. Poster presented by A. Iwan at Animal Behavior Society annual conference.

Hamel, J., Iwan, A.*, **Kernan, C.E.**, Martinson, S., Symes, L., and ter Hofstede, H.M. A comparative study of vibrational signaling in Neotropical katydids. Poster presented by J. Hamel at Animal Behavior Society annual conference.

Kernan, C.E., Hamel, J., Iwan, A.*, Litterer, A., Martinson, S., Symes, L., and ter Hofstede, H. Flexible signaling strategies in a Neotropical katydid. Poster for the 2019 Smithsonian Tropical Research Institute Fellows' Symposium.

2018 **Kernan, C.E.**, Hamel, J., Iwan, A.*, and ter Hofstede, H.M. Calling, Courtship, and Post-Mating Tremulations in a Neotropical Katydid. Poster / flash talk for the Second International Symposium on Biotremology.

2017 Laing, A.M., Turner, A.H., **Kernan, C.E.**, Werning, S., Smith, N., Irmis, R. and Nesbitt, S.J. A New Shuvosaurid Taxon (Archosauria: Pseudosuchia) from the Late Triassic Hayden Quarry of New Mexico, USA. Poster presented by A. Laing at the Society of Vertebrate Paleontology.

**Undergraduate author*

Grants, Fellowships & Awards

2019 Scholarly Studies Award (as Co-Investigator). Smithsonian Institution.
Graduate Research Fellowship. National Science Foundation.
2018 EEES External Course Award. Dartmouth.
Travel Award. Dartmouth.
Graduate Fellowship. Dartmouth.
2017 Graduate Assistance in Areas of National Need (GAANN) Fellowship. Dartmouth.

Cramer Research and Professional Development Funds. Dartmouth.
Honorable mention – Graduate Research Fellowship. National Science Foundation.
2016 Short Term Fellowship. Smithsonian Tropical Research Institute.
2015 Research Experience for Undergraduates. Smithsonian Tropical Research Institute.
First place, Ossip Writing Award. For sensory ecology essay. University of Pittsburgh.

Teaching & Mentoring

Courses

2019 Conservation of Biodiversity – teaching assistant. Dartmouth College.
2018 Ecology – lab instructor. Dartmouth College.
2017 Physiology – lab instructor. Dartmouth College.
2015 Organic chemistry – lab co-instructor. University of Pittsburgh.

2020 Animal communication guest lecture. Dartmouth College.

Past research experience

2015-2016 Acoustic preferences and spatial biases in frog-eating bats
REU intern; Short-term fellow, Rachel Page lab. Smithsonian Tropical Research Institute.
• Conducted flight cage experiments investigating how spatial information influences foraging behavior in predatory bats.

2015-2016 Color vision in jumping spiders
Research assistant, Nate Morehouse lab. University of Pittsburgh.
• Projects included GIS mapping of field sites; spider identification and macrophotography; and improving spiderling survival rates in a lab colony.

2014-2015 Physiological and genetic variation in Arabidopsis populations
Research assistant, Steven Tonsor lab. University of Pittsburgh.
• Helped grow, harvest, and extract DNA from hundreds of plants for SNP genotyping and next-generation sequencing.

2014 Classification of a shuvosaurid
Research assistant, Alan Turner lab. Stony Brook University.
• Described fossils from and scored a phylogenetic matrix for a new specimen of a clade of Triassic crocodylians.

Field courses

2016 Ranomafana National Park, Madagascar
Stony Brook University field course
• Included field methods for studying primates, comparing ecosystem types across Madagascar, and Malagasy language lessons.

2014 Laramie and Rock River, Wyoming
University of Pittsburgh Honors College field course
• Included stream arthropod and sediment sampling, compass mapping, bird mist-netting and banding, plant identification, rock and soil classification, and paleontology.

Outreach

2020 Barro Colorado Island, Panama
• Videochatted with primary school students in N.J. for the "Rainforest Connection" program and 7th grade students in N.H., answering questions about insect hearing and communication.

2019 Barro Colorado Island, Panama
• Answered New Jersey primary school student questions about rainforests and insects via videochat for the "Rainforest Connection" program.

• Top identifier of katydids in Panama on the community science network iNaturalist.
Profile: @greatest_auk

Hanover, N.H., U.S.A.
• Created activities about insects and animal communication and presented them at Dartmouth College "Science Day," an outreach, open-lab event for primary school children.

2018 Hubbard Brook, N.H., U.S.A.
• Wrote a public website feature about the bats species recorded at the Hubbard Brook Experimental Forest. URL: http://multimedia.hubbardbrook.org/the-bats-of-hubbard-brook

2016 Gamboa, Panama
• Led mist-netting demonstrations for field courses and at monthly community Bat Nights.

2016 Pittsburgh, P.A., U.S.A.
• Created animal communication activities for Assemble!, a non-profit that hosts after-school workshops for Pittsburgh primary and secondary public school students.

• Designed a series of *Habronattus* jumping spider button pins for Morehouse Lab outreach at workshops & conferences.

2013 Cold Spring Harbor, N.Y., U.S.A.
• Updated and redesigned exhibits on local historical figures and cetacean evolutionary morphology for the Cold Spring Harbor Whaling Museum.

Professional activities

Journal reviewer

2018 Frontiers of Ecology & Evolution (1)

Current society membership

Entomological Society of America
Animal Behavior Society
Sigma Xi
Phi Beta Kappa

Workshop participant

2018 Responsible stewardship of academic environments: lessons in professional conduct at field sites. Dartmouth College, led by Dr. Katie Hinde and Dr. Robin Nelson.

2018 Sound Recording and Analysis Workshop. Cornell Lab of Ornithology, at San Francisco State University Sierra Nevada Field Campus. Training in wildlife field recording and sound analysis techniques using Raven Pro.

2018 Creating an inclusive learning environment. Dartmouth Center for the Advancement of Learning.

2017 TA training panel. Dartmouth Center for the Advancement of Learning.

Skills

Photography

2020 Cover image for Journal of Orthoptera Research 29(2).

2019 Best in show and first place for "Nature in Panama" - Smithsonian Tropical Research Institute Fellows photo contest.

Sound recording and analysis

Software:	Hardware:
Avisoft SASLab	Avisoft ultrasonic equipment
Audacity	Polytec Laser Doppler Vibrometer
Raven	Pettersen bat detectors
seewave (R package)	...& more!

Other technical skills

R (incl. tidyverse, ggplot2)	JMP Pro	Adobe Illustrator
R Markdown	LaTeX	Adobe Photoshop

Languages

English (native)
Spanish (conversational; ~CEFR B1)