

## CURRICULUM VITAE

David W. Kikuchi

5 May 2022

University of Florida/Gainesville, Florida (visiting)

Universität Bielefeld/Bielefeld, Germany

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*Research Synopsis: My goal is to understand how species' behavioral and morphological adaptations create feedbacks with ecology to produce the patterns of diversity we see in nature.*

### EDUCATION

*University of North Carolina • Chapel Hill, NC*

2013 Ph. D. in Biology

*University of Illinois • Urbana, IL*

2006 BSc *cum laude*: majors in Biology, Chemistry and Creative Writing  
Thesis: High Distinction

### TRAINING AND EMPLOYMENT

*Universität Bielefeld • Bielefeld, Germany*

2020 - Present Postdoctoral Researcher  
and *University of Florida • Gainesville, Florida* as a Visiting Postdoctoral  
Research Associate in Robert D. Holt's lab

*Wissenschaftskolleg zu Berlin (Institute for Advanced Study) • Berlin, Germany*

2019-2020 Research Fellow

*University of Arizona • Tucson, AZ*

2016 – 2019 Postdoctoral Researcher

*Pima Community College • Tucson, AZ*

2017 Visiting faculty as part of Postdoctoral Excellence in Research and  
Teaching (PERT) training

*Carleton University • Ottawa, ON | University of Jyväskylä • Jyväskylä, Finland*

2014 – 2015 NSF Postdoctoral Fellowship

### HONORS AND AWARDS

2019-2020 Fellowship at the Institute for Advanced Study in Berlin

2010-13 NSF Graduate Research Fellowship

2008-13 Caroline H. and Thomas S. Royster, Jr. Fellowship (5 years PhD funding: highly  
selective across incoming UNC graduate students)

2007-08 Fulbright Fellowship – Peru

2006	High Distinction for thesis
2006	Integrative Biology Distinction Award

## RESEARCH FUNDING

2021	Australian Research Council: "Why are warning colours in animals so rare?" CI Marie Herberstein, CI Linda Beaumont, PI Hannah Rowland, PI Johanna Mappes, <b>PI David Kikuchi</b> . (AU\$400,000)
2019-2020	Fellowship at the Institute for Advanced Study in Berlin (€44,000)
2016-2019	Postdoctoral Excellence in Research and Teaching Fellowship funded through NIH (\$203,000)
2017	Center for Insect Science (University of Arizona) Seed Grant for "Integrative Education Advising in Higher Education" (\$10,000; Mays Imad as co-PI)
2014-15	NSF Postdoctoral Fellowship (\$140,000)
2011-13	NSF Doctoral Dissertation Improvement Grant (\$15,000)
2010-13	NSF Graduate Research Fellowship (\$90,000)
2011	SSE Outreach Award (\$800; Segundo Crespo as co-PI)
2010	Sigma Xi Grant-in-Aid-of-Research (\$500)
2009	Theodore Roosevelt Memorial Grant (\$1000)
2007-08	Fulbright Fellowship – Peru (\$14,013.20)
2004-05	Undergraduate Mentoring in Environmental Biology Fellow (\$5000)

## MEDIA

- Work featured on the series "Attack and Defend" (2015) available on Amazon or Paramount: <https://www.smithsonianchannel.com/details/series/attack-and-defend/season-1>
- Research articles covered by **ScienceNow**, **La Recherche**

## PUBLICATIONS

(\* *undergraduate co-author*, \* *graduate student co-author*, † *corresponding author*, ‡ *co-lead authors*, OA = *Open Access*)

- 33. Kikuchi, D. W.** † and M. W. Simon. *in revision*. Socially transmitted innovations in dynamic predator-prey systems. *The American Naturalist*
- 32.** Allen, W. L., K. Arbuckle, T. G. Aubier, S. Baidya, E. S. Briolat, E. R. Burdfield-Steel, K. L. Cheney, K. Daňková\*, M. Elias, L. Hämäläinen, M. E. Herberstein, T. J. Hossie, M. Joron, K. Kunte, B. C. Leavell\*, C. Lindstedt, U. Lorigoux-Chevalier, M. McClure, C. F. McLellan, I. Medina, V. Nawge\*, E. Pérez\*, A. Pal\*, S. Pekár, O. Penacchio, J. Raška, T. Reader, B. Rojas, K. H. Rönkä, D. Rößler, C. Rowe, H. M. Rowland, A. Roy\*, K. A. Schaal\*, T. N.

Sherratt, J. Skelhorn, H. R. Smart<sup>‡</sup>, T. Stankowich, A. M. Stefan<sup>‡</sup>, K. Summers, C. H. Taylor<sup>‡</sup>, R. Thorogood, K. Umbers, A. E. Winters, J. Yeager, **David W. Kikuchi**<sup>†‡</sup>, A. Exnerová<sup>†</sup>. *in review*. The evolution and ecology of multiple antipredator defences. *Journal of Evolutionary Biology*

31. Heerwig, O. T. <sup>‡‡</sup>, S. M. R. Jain-Schlaepfer<sup>‡‡</sup>, T. N. Sherratt, **D. W. Kikuchi**<sup>†</sup>. *in revision*. Effects of prey lethality and innate aversion on mimicry complexes. *Evolutionary Ecology*

## PEER-REVIEWED

30. **Kikuchi, D. W.** <sup>†</sup>, M. Barfield, M. E. Herberstein, J. Mappes, R. D. Holt. 2022. The effect of predator population dynamics on Batesian mimicry complexes. *The American Naturalist* 199:406-419
29. **Kikuchi, D. W.** <sup>†</sup> and K. Reinhold. 2021. Modeling migration in birds: competition's role in maintaining individual variation. *Proceedings of the Royal Society B: Biological Sciences* 288:20210323
28. **Kikuchi, D. W.** <sup>†</sup>, M. E. Herberstein, M. Barfield, R. D. Holt, J. Mappes. 2021. Why aren't warning signals everywhere? On the prevalence of aposematism and mimicry in communities. *Biological Reviews* 96:2446–2460
27. **Kikuchi, D. W.** <sup>†‡</sup>, S. J. Waldron<sup>‡</sup>, J. K. Valkonen, S. Dobler, J. Mappes. 2020. Biased predation promotes convergence yet maintains diversity within Müllerian mimicry rings. *Journal of Evolutionary Biology* 33:887-898 [OA]
26. Russell, A. L., **D. W. Kikuchi**, N. W. Giebink<sup>‡</sup>, D. R. Papaj. 2020. Keeping them honest: constraints on signal detection limit cheating in a system of intersexual floral mimicry. *Philosophical Transactions of the Royal Society B* 375:20190469
25. McLean, J. D. <sup>‡</sup>, G. Cassis, G. Giribet, **D. W. Kikuchi**, M. E. Herberstein. 2019. Insincere flattery? Understanding the evolution of imperfect mimicry. *Quarterly Review of Biology* 94:395-415
24. Akcali, C. K. <sup>‡</sup>, H. A. Pérez Mendoza, **D. W. Kikuchi**, D. W. Pfennig. 2019. The role of multiple models in the evolution of imprecise mimicry: an experimental test. *Proceedings of the Royal Society B* 298:20191519
23. **Kikuchi, D. W.** <sup>†</sup>, A. Dornhaus, V. Gopeechund<sup>\*</sup>, and T. N. Sherratt. 2019. Signal categorization by foraging animals depends on ecological diversity. *eLife* 8:e43965 [OA]
22. Akcali, C. K. <sup>‡</sup>, H. A. Pérez Mendoza, D. Salazar-Valenzuela, **D. W. Kikuchi**, J. M. Guayasamin, D. W. Pfennig. 2019. Evaluating the utility of camera traps in field studies of predation. *PeerJ* 7:e6487 [OA]
21. **Kikuchi, D. W.** <sup>†</sup>, G. H. Kattan, and K. C. Navarro-Vélez<sup>\*</sup>. 2019. A continent-scale test of multiple hypotheses on the abundances of Neotropical birds. *Oikos* 128:235-244
20. **Kikuchi, D. W.** <sup>†</sup> and A. Dornhaus. 2018. How cognitive biases select for imperfect mimicry: a study of asymmetry in learning with bumblebees. *Animal Behaviour* 144:125-134
19. Akcali, C. K. <sup>‡</sup>, **D. W. Kikuchi**, and D. W. Pfennig. 2018. Coevolutionary arms races in Batesian mimicry? A test of the chase-away hypothesis. *Biological Journal of the Linnean Society* 124:668-676 [OA]

18. Archis, J. \*, C. K. Akcali\*, B. L. Stuart, **D. W. Kikuchi**, and A. C. Chunco. 2018. Is the future already here? The impact of climate change on the distribution of the eastern coral snake (*Micrurus fulvius*). *PeerJ* 6:e4647 [OA]
17. **Kikuchi, D. W.** †G. H. Kattan, C. Murcia, and F. Montealegre. 2017. Endless forms most camouflaged: katydid that masquerade as moss. *Ecology* 98:2479-2481 [OA]
16. **Kikuchi, D. W.** †, J. Mappes, T. N. Sherratt, and J. K. Valkonen. 2016. Selection for multicomponent mimicry: equal feature salience and variation in preferred traits. *Behavioral Ecology* 27:1515-1521 [OA]
15. Kattan, G. H., M. C. Muñoz\*, and **D. W. Kikuchi**. 2016. Population densities of curassows, guans, and chachalacas (Cracidae): effects of body size, habitat, season, and hunting. *The Condor: Ornithological Applications* 118:24-32
14. Sherratt, T. N., E. Whissell\*, R. J. Webster, and **D. W. Kikuchi**. 2015. Hierarchical overshadowing of stimuli and its role in mimicry evolution. *Animal Behavior* 108:73-79
13. **Kikuchi, D. W.** † and T. N. Sherratt. 2015. Costs of learning and the evolution of mimetic signals. *American Naturalist* 186:321-332
12. **Kikuchi, D. W.** †, G. Malick\*, R. J. Webster, E. Whissell\*, and T. N. Sherratt. 2015. An empirical test of two-dimensional signal detection theory applied to Batesian mimicry. *Behavioral Ecology* 26:1226-1235
11. Pfennig, D. W., C. K. Akcali\*, and **D. W. Kikuchi**. 2015. Mimicry promotes pre- and post-mating isolation in a snake mimicry complex. *Evolution* 69:1085-1090
10. **Kikuchi, D. W.** †, B. W. Seymoure\*, and D. W. Pfennig. 2014. Mimicry's palette: widespread use of conserved pigments in the aposematic signals of snakes. *Evolution & Development* 16:61-67  
**Cover article**
9. Titcomb, G. C.\*, **D. W. Kikuchi**†, D. W. Pfennig. 2014. More than mimicry? Evaluating scope for flicker-fusion as a defensive strategy in coral snake mimics. *Current Zoology* 60:123-130 [OA]
8. **Kikuchi, D. W.** † and D. W. Pfennig. 2013. Imperfect mimicry and the limits of natural selection. *Quarterly Review of Biology* 88:297-315
7. Pfennig, D. W. and **D. W. Kikuchi**. 2012. Competition and the evolution of imperfect mimicry. *Current Zoology* 58:608-619 [OA]
6. **Kikuchi, D. W.** † and D. W. Pfennig. 2012. A Batesian model and its mimic share color production mechanisms. *Current Zoology* 58:658-667 [OA]
5. **Kikuchi, D. W.** † and D. W. Pfennig. 2012. Mimicry. In Oxford Bibliographies Online: Ecology. Ed. David Gibson. New York: Oxford University Press.
4. **Kikuchi, D. W.** † and D. W. Pfennig. 2010. Predator cognition permits imperfect coral snake mimicry. *American Naturalist* 176:830-834  
**Subject of an article in ScienceNow ("Snakes lie to save their skin")**  
**Subject of an article in La Recherche ("Mentir mais pas trop")**

3. **Kikuchi, D. W.** † and D. W. Pfennig. 2010. High model abundance may permit the gradual evolution of Batesian mimicry: an experimental test. *Proceedings of the Royal Society B* 277:1041-1048 [OA]
2. **Kikuchi, D. W.** † 2009. Terrestrial and understory insectivorous birds of a Peruvian cloud forest: species richness, abundance, density, territory size and biomass. *Journal of Tropical Ecology* 25:523-529
1. **Kikuchi, D. W.** †, E. Lasso, J. W. Dalling, and N. Nur. 2007. Pollinators and pollen dispersal of *Piper dilatatum* (Piperaceae) on Barro Colorado Island, Panama. *Journal of Tropical Ecology* 23:603-606

## OTHER PUBLICATIONS

- Kikuchi, D. W.** 2020. Eyes in the dark. *Aeon*: <https://aeon.co/essays/how-communication-between-predator-and-prey-shapes-evolution>
- Pfennig, D. W. and **D. W. Kikuchi**. 2012. Life imperfectly imitates life. *Nature* 483:410-411  
**Invited News & Views article**
- Kikuchi, D. W.** 2007. Population trends from counts of migrating raptors at Bake Oven Knob, Pennsylvania, 1992-2005. *American Hawkwatcher* 32:8-15

## MENTORSHIP

### MASTERS STUDENTS (PRIMARY ADVISOR)

Oliver Heerwig (MSc. from University of Bielefeld, Germany 2021)

### DOCTORAL DISSERTATION COMMITTEES

Christopher Akcali (Ph. D. from UNC-Chapel Hill 2019)

### EXTERNAL THESIS EXAMINATION

Donald James McLean (MSc. from Macquarie University, Australia 2018)

### UNDERGRADUATE STUDENTS

§ denotes Honors student

Kimberly Navarro-Vélez	2015-current – Now a Fulbright Fellow at Cornell University
Jak Kearsley	2018-2021
Andrea Mason	2016-19 – Now a PhD student at Brown University
Mohammad Safdar	2019
Tristan Meyer Owens	2019
Steven Hsu	2016-17
Maddie Birr	2016
Shannon McGlaughlin	2016
Sofia Jain-Schlaepfer §	2015 – MSc from James Cook University
Yinmin Ou §	2015

Bradley Allf §	2012-2013 – Now a graduate student at NCSU
Georgia Titcomb §	2012-2013 – PhD from UC Santa Barbara
Townsend Haynes	2012
Antonio Serrato	2011 – Now a postdoc at Harvard
Saige Clark	2009-2010
Allison Bailey	2010
Wendell Juliantius	2010
Elizabeth Christenson	2009
Yong Choi	2009
Rebecca Searles	2009
Ge Zhang	2009

## TEACHING

### *New Instructional Materials*

- 2021 Critical Thinking Module: Part of “Teaching Critical Thinking & Logical Reasoning in Undergraduate STEM Courses” (funded by NSF RCN-UBE #2018270 to Mays Imad)

### *Visiting Faculty as part of PERT training program*

- 2017 Bio 100: Introductory Biology for Non-majors (Pima Community College)

### *Guest Lectures*

- 2016 Ecol 487/587: Animal Behavior (University of Arizona)  
 2014 BIOL 3612: Computational Methods in Ecology & Evolution (Carleton University)  
 BIOL 3609: Evolutionary Concepts (Carleton University)  
 2013 BIOL 514: Evolution and Development (UNC-Chapel Hill)

### *Teaching Assistantships*

- 2010 BIO 471: Evolutionary Mechanisms (UNC-Chapel Hill)  
 2009 BIO 201: Introduction to Evolution and Ecology (UNC-Chapel Hill)

## PEDAGOGICAL TRAINING

- 2021 “Teaching Critical Thinking in STEM” (Virtual Conference)  
 “Lessons from Online Teaching and Learning Animal Behavior” (ABS Education Committee Workshop)  
 2018 “Designing Classroom Environments that Facilitate Student Learning and the Development of Discipline Fluency” workshop (University of Arizona)  
 2018 “Addressing Implicit Bias in the Academy” workshop (University of Arizona)  
 2017 PERT Pedagogy Workshop on Active Learning in the Classroom

- 2017 Institutional Research and Academic Career Development Awards Conference 2017, Birmingham, AL
- 2016 Institutional Research and Academic Career Development Awards Conference 2016, Tucson, AZ
- 2014 “Experiencing Evolution” professional development workshop at Evolution 2014, Raleigh, NC
- 2012 Completed course, “Entering Advising Curriculum” to train academics in mentorship. Sponsored by WPST and HHMI

## PROFESSIONAL SERVICE

### EDITORIAL WORK

- 2022 Guest editor at *Journal of Evolutionary Biology* for special issue on “Evolution of multiple prey defences”

### SYMPOSIA ORGANIZED

- 2021 Aug 23-27 ESEB Satellite Symposium, “Evolution of Multiple Prey Defences”, with Alice Exnerová (Charles University, Prague)

### GRANT REVIEW

- Czech Science Foundation (2020)
- Swiss National Science Foundation (2020)
- US Student Fulbright applications at University of Illinois (2020)
- ABS Student Research Grants (2015, 2016, 2017, 2018)

### PEER REVIEW OF MANUSCRIPTS

Reviewer for *Acta Herpetologica*, *The American Naturalist*, *Animal Behavior*, *Behavioral Ecology*, *Behavioral Ecology and Sociobiology*, *Biological Journal of the Linnean Society*, *Biotropica*, *BMC Zoology*, *Current Zoology*, *Ecology*, *Ecology Letters*, *Ecology and Evolution*, *eLife*, *Ethology*, *Evolution*, *Evolutionary Ecology*, *Functional Ecology*, *Global Ecology and Biogeography*, *Journal of Evolutionary Biology*, *Journal of Experimental Biology*, *Journal of Animal Ecology*, *Journal of Herpetology*, *Journal of Natural History*, *Journal of Zoology*, *Marine Ecology Progress Series*, *Nature Communications*, *Oecologia*, *Organisms Diversity and Evolution*, *PeerJ*, *Phyllomedusa*, *PLoS Computational Biology*, *PLoS One*, *Proceedings of the Royal Society-B*, *Scientific Reports*, *The Southwestern Naturalist*, *Tropical Conservation Science*

## MEETINGS, TALKS, AND PRESENTATIONS

### INVITED RESEARCH SEMINARS

- 2021 Noon Seminar Series, Department of Biology. Indiana University, Bloomington, Indiana
- 2021 Institute of Zoology. University of Veterinary Medicine Hanover. Hanover, Germany
- 2020 Online Research Seminar. University of Florida, Gainesville, Florida
- 2020 Behavior and Evolution Seminar Series. Universität Bielefeld. Bielefeld, Germany
- 2020 Biology Department. Universität Hamburg. Hamburg, Germany
- 2019 Neurobiology and Behavior. Cornell University. Ithaca, New York
- 2019 Ecology, Evolution, and Marine Biology. University of California-Santa Barbara, Santa Barbara, California
- 2017 Department of Biology. Universidad Javeriana. Cali, Colombia (in Spanish)
- 2017 Introductory Statistics: Department of Biology. Universidad Javeriana. Cali, Colombia (in Spanish)
- 2013 North Carolina Congress of Herpetology. Asheboro, North Carolina
- 2011 UNC Biology Department Symposium. Chapel Hill, North Carolina (Speaker elected by the graduate student body to represent the department)
- 2010 Behavioral, Population, and Community Ecology Seminar, Ecology Program, Duke University. Durham, North Carolina
- 2010 Research in Progress Seminar, Department of Biology, East Carolina University. Greenville, North Carolina

### TALKS OR POSTERS AT MAJOR SOCIETY MEETINGS

\* indicates an international society meeting, other meetings are national-level

**bold** indicates that a talk was given when there was competition for slots

- 2019 ABS 2019, Chicago, IL
- 2019 \* ESEB 2019, Turku, Finland**
- 2018 \* ISBE 2018, Minneapolis, MN**
- 2018 ABS 2018, Milwaukee, WI
- 2017 Evolution 2017, Portland, OR
- 2016 Evolution 2016, Austin, TX
- 2016 ABS 2016, Columbia, MO
- 2015 \* Evolution 2015, Guarujá, Brazil



- 2014 ABS 2014, Princeton, New Jersey
- 2014 \* ISBE 2014, New York, New York
- 2014 Evolution 2014, Raleigh, North Carolina
- 2013 \* IEC 2013, Newcastle, England
- 2012 \* Evolution 2012, Ottawa, Canada
- 2012 SICB 2012, Charleston, South Carolina
- 2011 \* ESEB 2011, Tübingen, Germany
- 2010 Evolution 2010, Portland, Oregon
- 2008 VII Congreso Nacional de Ornitología, Piura, Peru
- 2008 ESA 2008, Milwaukee, WI

#### OTHER TALKS GIVEN (ONLY TALKS SINCE 2019 LISTED)

- 2021 Research Seminar. CRC NC<sup>3</sup> (Niche Choice, Niche Conformance, Niche Construction) Retreat, Helgoland, Germany
- 2021 Online Research Seminar. CRC NC<sup>3</sup> Seminar Series, Bielefeld, Germany
- 2021 Research Seminar. FSPM<sup>2</sup> (Mathematical Modeling) Meeting, Bielefeld, Germany
- 2020 “Sokal Revisited: The Grievance Studies Affair.” Fruitful Frictions Seminar. Institute for Advanced Study, Berlin
- 2019 Fellow’s Colloquium. Institute for Advanced Study, Berlin, Germany
- 2019 Research Seminar. University of Arizona, Tucson, AZ

#### OUTREACH

- 2018 Tour for Arizona Science, Engineering, and Math Scholars (a program for underrepresented minority undergraduates at University of Arizona)
- 2018 Volunteer at Science Night, Desert Shadows Middle School, Nogales, AZ
- 2016 Ecology and Evolutionary Biology Dept. Wikipedia Edit-a-thon, 2<sup>nd</sup> Place Prize for editing pages in the category “Evolutionary Biology” (\$50)
- 2016 Volunteer for University of Arizona “Insect Fest” outreach event
- 2012 Outreach presentation at North Carolina State Museum for Darwin Day
- 2012 Poster contributed to UNC “Life as Art” festival
- 2011 Developed and implemented the outreach workshop, “Biodiversity and the Dry Forest,” for secondary school students in Peru (with Segundo Israel Crespo More)

## SOCIETY MEMBERSHIPS

American Society of Naturalists (ASN; member since 2018)

Animal Behavior Society (ABS; since 2009)

European Society for the Study of Evolutionary Biology (ESEB; since 2021)

International Society for Behavioral Ecology (ISBE; since 2020)

Society for the Study of Evolution (SSE; since 2010)

Society for Integrative and Comparative Biology (SICB; since 2009)

## LANGUAGES

Spanish (advanced spoken and written)

German (intermediate spoken and written)