

Christian Rabeling

Curriculum Vitae

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Department of Integrative Taxonomy and Biodiversity of Insects crabeling@gmail.com
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EDUCATION

- 2010 Ph.D. in Ecology, Evolution & Behavior, The University of Texas at Austin, Section of Integrative Biology.
- 2004 Diplom in Biology, Eberhard Karls Universität Tübingen, Germany.
- 2000–2001 Study abroad, Universidade de São Paulo, Ribeirão Preto, Brazil.

APPOINTMENTS

- 2022–present Professor of Integrative Taxonomy and Biodiversity of Insects, Institute of Biology, University of Hohenheim.
- 2022–present Adjunct Professor, Social Insect Research Group, School of Life Sciences, Arizona State University.
- 2021–present Research Associate, Department of Entomology, Museum of Comparative Zoology, Harvard University.
- 2020–2022 Associate Professor of Organismal Evolutionary Biology, Social Insect Research Group, School of Life Sciences, Arizona State University.
- 2017–2020 Assistant Professor, School of Life Sciences, Arizona State University.
- 2014–2020 Research Associate, National Museum of Natural History, Smithsonian Institution.
- 2014–2016 Assistant Professor, Department of Biology, University of Rochester.
- 2011–2014 Junior Fellow, Harvard Society of Fellows, Harvard University.
- 2010–2011 Postdoctoral Research Fellow, National Museum of Natural History, Smithsonian Institution.

ACADEMIC AWARDS AND HONORS

- 2019 CAREER Award from the U.S. National Science Foundation
- 2011 Elected Junior Fellow at the Harvard Society of Fellows
<http://www.socfell.fas.harvard.edu/>
- 2010 C. P. Oliver Memorial Endowment for Genetic Research Award
(Awarded annually by the College of Natural Sciences in recognition of best Ph.D. thesis in evolutionary genetics at The University of Texas at Austin)

2009 Michael H. Granof Award for Excellence in Graduate Education

(Awarded annually by the Graduate School of The University of Texas at Austin in recognition of best Ph.D. thesis and commitment to undergraduate teaching across all departments)

2009 George C. Eickwort Student Research Award

(Awarded annually by the International Union for the Study of Social Insects in recognition of best graduate student research); <http://iussi.cyberbee.net/awards/>

RESEARCH FUNDING**a) Current research support**

<u>Dates</u>	<u>Title</u>	<u>Source</u>	<u>Role</u>	<u>Value</u>	<u>Recognition</u>
2022–2024	Evolution, integrative taxonomy and biodiversity of ant social parasites	Carl-Zeiss-Foundation	PI	€250,000	100%
2020–2024	Exploring the patterns and mechanisms of ant social parasite speciation and evolution: integrating teaching and research to foster biodiversity discovery in organismal evolutionary biology	NSF-CAREER Award	PI	\$991,826	100%

b) Completed research support

<u>Dates</u>	<u>Title</u>	<u>Source</u>	<u>Role</u>	<u>Value</u>	<u>Recognition</u>
2017–2021	Speciation patterns and evolutionary history of leaf-cutting ants and their obligate social parasites: an integrative phylogenomic approach	NSF	PI	\$878,885	100%
2015–2019	Unraveling the evolutionary dynamics of high symbiont diversity in the fungus-farming ant genus <i>Apterostigma</i> : a phylogenomic approach	NSF	PI	\$755,300	100%
2018–2019	Cuticular hydrocarbon evolution in carpenter ants	ASU	Co-I	\$8,000	50%

2016	The insect diversity of a Brazilian "hotspot of discovery": A survey of the last Amazonian forest frontier	SI, GGI	Co-I	\$9,430	34%
2014–2016	The evolutionary history of social parasitism in rock ants (genus: <i>Temnothorax</i>)	NSF	Co-I / post-doc sponsor	\$138,000	75%

c) Completed research support as student and postdoctoral researcher (2000–2013)

- 2013 William F. Milton Fund, Harvard Medical School (\$40,000)
- 2012 Putnam Expedition Grant, Museum of Comparative Zoology, Harvard (\$15,600)
- 2012 Green Fellowship, Harvard University (\$15,000)
- 2011 Junior Fellowship, Harvard Society of Fellows (\$70,000/annum for 3 years)
- 2010 Smithsonian Institution Postdoctoral Research Fellowship (\$45,000/annum)
- 2010 C. P. Oliver Memorial Endowment for Genetic Research Award, UT Austin (\$1,200)
- 2010 Okinawa Institute of Science and Technology Travel Fellowship, Japan (\$5,000)
- 2010 Hartman Research Fellowship, UT Austin (\$1,150)
- 2009 Michael H. Granof Award for Excellence in Graduate Education, UT Austin (\$10,000)
- 2009 George C. Eickwort Student Research Award, IUSI (\$1,000)
- 2009 David & Mary Miller Endowed Univ. Continuing Fellowship, UT Austin (\$27,250)
- 2009 Zoology Scholarship for Excellence, UT Austin (\$2,500)
- 2009 Dorothea Bennett Memorial Graduate Research Fellowship, UT Austin (\$1,240)
- 2009 Frank and Fern Blair Travel Fellowship, UT Austin (\$780)
- 2008 NSF Doctoral Dissertation Improvement Grant (\$11,984)
- 2008 Environmental Science Institute Research Grant, UT Austin (\$7,860)
- 2008 Zoology Scholarship for Excellence, UT Austin (\$2,500)
- 2008 Dorothea Bennett Memorial Graduate Research Fellowship, UT Austin (\$1,105)
- 2008 Ernst Mayr Travel Grant in Animal Systematics, Harvard University (\$1,100)
- 2008 Graduate Dean's Prestigious Fellowship Supplement, UT Austin (\$1,000)
- 2007 Environmental Science Institute Research Grant, UT Austin (\$4,315)
- 2007 Ernst Mayr Travel Grant in Animal Systematics, Harvard University (\$1,500)
- 2007 Hamilton Endowed Graduate Fellowship, UT Austin (\$1,400)
- 2007 Dorothea Bennett Memorial Graduate Research Fellowship, UT Austin (\$1,360)
- 2007 The Explorer's Club Exploration Fund (\$1,200)

- 2007 Lewis and Clark Field Scholar, American Philosophical Society (\$1,000)
- 2007 NSF PRIMES Travel Award (\$250)
- 2006 Green Fellowship, Harvard University (\$3,850)
- 2006 Hartman Research Fellowship, UT Austin (\$2,260)
- 2006 Ernst Mayr Travel Grant in Animal Systematics, Harvard University (\$1,000)
- 2005 Dorothea Bennett Memorial Graduate Research Fellowship, UT Austin (\$1,200)
- 2005 Ernst Mayr Travel Grant in Animal Systematics, Harvard University (\$1,400)
- 2000 Deutscher Akademischer Austauschdienst (DAAD), Scholarship to study abroad at the University of São Paulo, Ribeirão Preto, Brazil (DEM 13,300)

PUBLICATIONS

Google Scholar profile: <https://scholar.google.com/citations?user=RQZcFjIAAAAJ&hl=en>

Undergraduate mentees are underlined; Graduate mentees are double underlined; postdoctoral mentees are marked with an asterisk; corresponding author(s) are marked with a dagger†.*

- 2023 Prebus M*†, Georgiev B, van de Kamp T, Baker I, Rabeling C†. The rediscovery of the putative ant social parasite *Manica parasitica* syn. nov. (Hymenoptera: Formicidae) reveals an unexpected endoparasite syndrome. (*manuscript under peer review*).
- 2023 Bengston S*†, Dornhaus A, Rabeling C. The discovery of mixed colonies in *Temnothorax* ants supports the territoriality hypothesis of dulotic social parasite evolution in myrmicine ants. bioRxiv: <https://doi.org/10.1101/2023.08.08.552493> (*manuscript under peer review*).
- 2023 Mera-Rodríguez LD†, Jourdan H, Ward PS, Shattuck SO, Cover SP, Wilson EO, Rabeling C†. Biogeography and evolution of social parasitism in Australian *Myrmecia* bulldog ants revealed by phylogenomics. *Molecular Phylogenetics and Evolution* 186: 107825.
- 2023 Gray KW†, Rabeling C†. Global biogeography of ant social parasites: exploring patterns and mechanisms of an inverse latitudinal diversity gradient. *Journal of Biogeography* 50: 316–329.
- 2022 Dahan RA†, Rabeling C†. Multi-queen breeding is associated with the origin of inquiline social parasitism in ants. *Scientific Reports* 12: 14680.
- 2022 Romiguier J†, Borowiec M*, Weyna A, Helleu Q, Loire E, La Mendola C, Rabeling C, Fisher BL, Ward PS, Keller L. Ant phylogenomics reveals a natural selection hotspot preceding the origin of advanced eusociality. *Current Biology* 32: 2942–2947.
- 2022 Barros LAC†, Rabeling C, Teixeira GA, Mariano CSF, Delabie JHC, de Aguiar HJAC. Decay of homologous chromosome pairs and discovery of males in the thelytokous fungus-growing ant *Mycocepurus smithii*. *Scientific Reports* 12: 4860.

- 2022 Dahan RA†, Grove N, Bollazzi ML, Gerstner B, Rabeling C†. Decoupled evolution of multi-queen breeding and multiple mating in *Acromyrmex* leaf-cutting ants. *Behavioral Ecology and Sociobiology* 76: 7.
- 2022 Barrera C, Sosa-Calvo J*, Schultz TR, Rabeling C, Bacci M†. Phylogenomic reconstruction reveals new insights into the evolution and phylogeography of *Atta* leaf-cutting ants (Hymenoptera: Formicidae). *Systematic Entomology* 47: 13–35.
- 2021 Schrader L*†, Pan H, Bollazzi ML, Schiøtt M, Larabee FJ, Bi X, Deng Y, Zhang G, Boomsma JJ†, Rabeling C†. Relaxed selection underlies genome erosion in socially parasitic ant species. *Nature Communications* 12: 2918.
- 2021 Borowiec ML*†, Cover SP, Rabeling C†. The evolution of social parasitism in *Formica* ants revealed by a global phylogeny. *Proceedings of the National Academy of Sciences of the United States of America* 118: e2026029118.
- 2021 Purcell J, Lagunas-Robles G, Rabeling C, Borowiec M*, Brelsford M. The maintenance of polymorphism in an ancient social supergene. *Molecular Ecology* 30: 6246–6258.
- 2021 Van Elst T†, Eriksson TH, Gadau J, Johnson RA, Rabeling C, Taylor JE, Borowiec ML*. Comprehensive phylogeny of *Myrmecocystus* honey ants highlights cryptic diversity and infers evolution during aridification of the American Southwest. *Molecular Phylogenetics and Evolution* 155: 107036.
- 2020 Parker J†, Rabeling C†. Evolution: Shape shifting parasites. *Current Biology* 30: R1049–1051.
- 2020 Mera-Rodríguez D†, Serna F, Sosa-Calvo J, Lattke J, Rabeling C. A checklist of the non-leaf-cutting fungus-growing ants (Hymenoptera, Formicidae) from Colombia, with new biogeographic records. *Check List* 16(5): 1–23.
- 2020 Messer S†, Cover SP, Rabeling C. Two new species of socially parasitic *Nylanderia* ants from the southeastern United States. *ZooKeys* 921: 23–48.
- 2020 Rabeling C. Social Parasitism. In: Starr C. (ed.) *Encyclopedia of Social Insects*. Springer, Cham. https://doi.org/10.1007/978-3-319-90306-4_175-1
- 2020 Borowiec M*†, Moreau CS, Rabeling C†. Ants: Phylogeny and Classification. In: Starr C. (ed.) *Encyclopedia of Social Insects*. Springer, Cham. https://doi.org/10.1007/978-3-319-90306-4_155-1
- 2019 Rabeling C†, Messer S, Bacci Jr M, Nascimento IC, Lacau S, Delabie JHC. *Acromyrmex fowleri*: a new inquiline social parasite species of leaf-cutting ants from tropical South America. *Insectes Sociaux* 66: 435–451.
- 2019 Solomon SE†, Rabeling C†, Sosa-Calvo J*, Lopes CT, Mueller UG, Vasconcelos HL, Bacci M, Schultz TR†. Molecular phylogenies of *Trachymyrmex* ants and their fungal cultivars provide insights into the co-evolutionary history of "higher" ant agriculture. *Systematic Entomology* 44: 939–956.
- 2019 Borowiec ML*†, Rabeling C, Brady SG, Fisher BL, Schultz TR, Ward PS. Compositional heterogeneity and outgroup choice influence the internal phylogeny of the ants. *Molecular Phylogenetics and Evolution* 135: 111–121.

- 2018 Li H, Sosa-Calvo J*, Horn H, Pupo MT, Clardy J, Rabeling C, Schultz TR, Currie CR†. Convergent evolution of complex structures for ant-bacterial defensive symbiosis in fungus-farming ants. *Proceedings of the National Academy of Sciences of the United States of America* 115: 10720–10725. (Cover article)
- 2018 Gray KW†, Cover SP, Johnson RA, Rabeling C†. The dacetine ant *Strumigenys arizonica*, an apparent obligate commensal of the fungus-growing ant *Trachymyrmex arizonensis* in the North American Southwest. *Insectes Sociaux* 65: 401–410.
- 2018 Sosa-Calvo J*†, Schultz TR, Ješovnik A, Dahan RA, Rabeling C†. Evolution, systematics, and natural history of a new genus of cryptobiotic fungus-growing ants. *Systematic Entomology* 43: 549–567.
- 2018 Matos-Maraví P†, Clouse RM, Sarnat EM, Economo EP, LaPolla JS, Borovanska M, Rabeling C, Czekanski-Moir J, Latumahina F, Wilson EO, Janda M. An ant genus-group (*Prenolepis*) illuminates the biogeography and drivers of insect diversification in the Indo-Pacific. *Molecular Phylogenetics and Evolution*. 123: 16–25.
- 2017 Mueller UG†, Ishak HD, Brushi SM, Herman JJ, Smith CC, Solomon SE, Mikheyev AS, Rabeling C, Scott JJ, Cooper M, Rodriguez A, Ortiz A, Brandão CRF, Lattke JE, Pagnocca FC, Rehner SA, Schultz TR, Vasconcelos HL, Adams RMM, Bollazzi M, Clark RM, Himler AG, LaPolla JS, Leal IR, Johnson RA, Roces F, Sosa-Calvo J, Wirth R, Bacci Jr M. Biogeography of mutualistic fungi cultivated by leafcutter ants. *Molecular Ecology* 26: 6921–6937.
- 2017 Sosa-Calvo J*†, Jesovnik A, Lopes CT, Rodrigues A, Rabeling C, Bacci Jr. M, Vasconcelos HL, Schultz TR. Biology of the relict fungus-farming ant *Apterostigma megacephala* Lattke, including descriptions of the male, gyne, and larva. *Insectes Sociaux* 64: 329–346.
- 2016 Rabeling C†, Sosa-Calvo J, O’Connell LA, Coloma LA, Fernández F. *Lenomyrmex hoelldobleri*: a new ant species discovered in the stomach of the dendrobatid poison frog, *Oophaga sylvatica* (Funkhouser). *ZooKeys* 618: 79–95.
- 2016 Nygaard S†, Hu H, Li C, Schiøtt M, Chen Z, Yang Z, Xie Q, Ma C, Deng Y, Dikow RB, Rabeling C, Nash DR, Wcislo WT, Brady SG, Schultz TR, Zhang G, Boomsma JJ. Reciprocal genomic evolution in the ant-fungus agricultural symbiosis. *Nature Communications* 7: 12233.
- 2015 Rabeling C†, Schultz TR, Bacci Jr. M, Bollazzi M. *Acromyrmex charruanus*: a new inquiline social parasite species of leaf-cutting ants. *Insectes Sociaux* 62: 335–349.
- 2015 Economo EP†, Sarnat EM, Janda M, Clouse R, Klimov P, Fischer G, Blanchard BD, Ramirez L, Andersen AN, Berman M, Guénard B, Rabeling C, Wilson EO, Knowles LL. Breaking out of biogeographic modules: range expansion and taxon cycles in Old World *Pheidole*. *Journal of Biogeography* 42: 2253–2460.
- 2014 Rabeling C†, Schultz TR, Pierce NE, Bacci M. A social parasite evolved reproductive isolation from its fungus-growing ant host in sympatry. *Current Biology* 24: 2047–2052.

- See "Dispatch" by Boomsma & Nash, "Evolution: sympatric speciation the eusocial way," *Current Biology* 24: R798–800.
- 2014 Sarnat EM†, Rabeling C, Economo EP, Wilson EO. First record of a species from the *Pheidole flavens*-complex (Hymenoptera: Formicidae) from the southwestern Pacific. *BioInvasions Records* 3: 301–307.
- 2014 Clouse RM†, Janda M, Blanchard B, Sharma P, Hoffman BD, Andersen AN, Czekanski-Moir JE, Krushelnycky P, Rabeling C, Wilson EO, Economo EP, Sarnat EM, Wheeler WC. Molecular phylogeny of a widespread ant group reveals waves of dispersal and colonization into and out of the Pacific. *Cladistics* 31: 424–437.
- 2014 Rabeling C†, Love CN, Lance SL, Jones KL, Pierce NE, Bacci M. Development of twenty-one polymorphic microsatellite markers for the fungus-growing ant, *Mycocepurus goeldii* (Formicidae: Attini), using Illumina paired-end genomic sequencing. *Conservation Genetics Resources* 6: 739–741.
- 2014 Masiulionis VE†, Rabeling C, De Fine Licht HH, Schultz TR, Bacci Jr. M, Santos Bezerra CM, Pagnocca FC. A Brazilian population of the asexual fungus-growing ant *Mycocepurus smithii* (Formicidae, Myrmicinae, Attini) cultivates fungal symbionts with gongylidia-like structures. *PLoS ONE* 9(8): e103800.
- 2014 Rabeling C†, Bollazzi M, Bacci M, Beasley RR, Lance SL, Jones KL, Pierce NE. Development and characterization of twenty-two polymorphic microsatellite markers for the leafcutter ant, *Acromyrmex lundii*, utilizing Illumina sequencing. *Conservation Genetics Resources* 6: 319–322.
- 2013 Rabeling C† & Kronauer DJC†. Thelytokous parthenogenesis in eusocial Hymenoptera. *Annual Review of Entomology* 58: 273–292.
- 2013 Sosa-Calvo J†, Schultz TR†, Brandão CRF, Klingenberg C, Feitosa RM, Rabeling C, Bacci M, Lopes CT, Vasconcelos HL. *Cyatta abscondita*: Taxonomy, evolution, and natural history of a new fungus-farming ant genus from Brazil. *PLoS ONE* 8(11): e80498.
- 2012 Rabeling C†, Verhaagh M, Garcia MVB. Observations on the specialized predatory behavior of the pitchfork-mandibled ponerine ant *Thaumatomyrmex paludis* (Hymenoptera: Formicidae). *Breviora* 533: 1–8.
- 2011 Rabeling C†, Gonzales O, Schultz TR, Bacci M, Garcia MVB, Verhaagh M, Ishak H, Mueller UG. Cryptic sexual populations account for genetic diversity and ecological success in a widely distributed, parthenogenetic fungus-growing ant. *Proceedings of the National Academy of Sciences of the United States of America* 108: 12366–12371. (Cover)
- 2010 Rabeling C. Diversity and evolution of reproductive systems in *Mycocepurus* fungus-gardening ants. *Doctoral Dissertation*, Section of Integrative Biology, The University of Texas at Austin.
- 2010 Rabeling C† & Bacci M. A new workerless inquiline in the Lower Attini (Hymenoptera: Formicidae), with a discussion of social parasitism in fungus-growing ants. *Systematic Entomology* 35: 379–392.

- 2009 Rabeling C†, Lino Neto J, Cappellari SC, Santos IA, Mueller UG, Bacci M. Thelytokous parthenogenesis in the fungus-gardening ant *Mycocepurus smithii* (Hymenoptera: Formicidae). *PLoS ONE* 4(8): e6781.
See dispatch "No Male's Land for an Amazonian Ant," *Curr. Bio.* 19: R738–740.
- 2008 Rabeling C†, Brown JM, Verhaagh M. Newly discovered sister lineage sheds light on early ant evolution. *Proceedings of the National Academy of Sciences of the United States of America* 105: 14913–14917.
- 2008 Mueller UG†, Dash D, Rabeling C, Rodrigues A. Coevolution between attine ants and actinomycete bacteria: a reevaluation. *Evolution* 62: 2894–2912.
- 2008 Mueller UG† & Rabeling C. A breakthrough innovation in animal evolution. *Proceedings of the National Academy of Sciences of the United States of America* 105: 5287–5288.
- 2007 Rabeling C†, Cover SP, Mueller UG, Johnson RA. A review of the North American species of the fungus-gardening ant genus *Trachymyrmex* (Hymenoptera: Formicidae). *Zootaxa* 1664: 1–54.
- 2007 Rabeling C†, Verhaagh M, Engels W. Comparative study of nest architecture and colony structure of the fungus-growing ant species *Mycocepurus goeldii* and *M. smithii* (Formicidae: Attini). *Journal of Insect Science* 7 (40): 1–13.
- 2006 Rabeling C†, Verhaagh M, Mueller UG. Behavioral ecology and natural history of *Blepharidatta brasiliensis* (Formicidae: Blepharidattini). *Insectes Sociaux* 53: 300–307.
- 2004 Rabeling C. Nester, Streueintrag und symbiontische Pilze amazonischer Ameisen der Gruppe ursprünglicher Attini. *Diplomarbeit*, Fakultät für Biologie, Eberhard Karls Universität Tübingen.

CONFERENCE ABSTRACTS (past 5 years)

Undergraduate mentees are underlined; Graduate mentees are double-underlined; Postdoctoral mentees are marked with an asterisk.*

- 2023 Mera-Rodríguez LD, Rabeling C. Evolution of social parasitism in *Myrmecia* bulldog ants. Simposio Iberoamericano de Mirmecología. Bogota, Colombia.
- 2022 Rabeling C. Exploring the origins and evolution of social parasitism in ants. XIV Hymenoptera Meetings, State Museum of Natural History Stuttgart. 15–16 October. Stuttgart, Germany.
- 2022 Prebus M*, Rabeling C. Mito-nuclear discordance in the *Temnothorax longispinosus* species group: testing for hybridization between social parasites and their hosts. XIX Congress of the International Union for the Study of Social Insects. 3–7 July. San Diego, California, USA.
- 2022 Prebus M*, Rabeling C. The rediscovery and taxonomic demise of *Manica parasitica* (Hymenoptera: Formicidae). XIX Congress of the International Union for the Study of Social Insects. 3–7 July. San Diego, California, USA.

- 2022 Gray KW, Rabeling C. Global biogeography of ant social parasites. XIX Congress of the International Union for the Study of Social Insects. 3–7 July. San Diego, California, USA.
- 2022 Gray KW, Rabeling C. First insights into the ant biodiversity of Vanuatu. XIX Congress of the International Union for the Study of Social Insects. 3–7 July. San Diego, California, USA.
- 2022 Mera-Rodríguez LD, Rabeling C. Phylogeny of Myrmecia bulldog ants reveals new insights into their biogeographic history and the evolution of social parasitism. XIX Congress of the International Union for the Study of Social Insects. 3–7 July. San Diego, California, USA.
- 2022 Zoppas de Albuquerque E*, Sosa-Calvo J*, Rabeling C, Schultz TR. Detecting the invisible: how the use of UCEs has helped delimiting cryptic species in *Cyphomyrmex* ants (Formicidae: Myrmicinae). XIX Congress of the International Union for the Study of Social Insects. 3–7 July. San Diego, California, USA.
- 2022 Messer S, Prebus M*, Rabeling C. Evolution of social parasitism in *Nylanderia* crazy ants. XIX Congress of the International Union for the Study of Social Insects. 3–7 July. San Diego, California, USA.
- 2022 Sosa-Calvo J*, Schultz TR, Rabeling C. The *Apterostigma auriculatum* species group: Phylogenomic species delimitation and taxonomy. XXVI International Congress of Entomology, Helsinki, Finland.
- 2020 Rabeling C. Phylogenetics and the evolution of social parasitism in ants. Entomological Society of America. Orlando, Florida, USA.
- 2020 Sosa-Calvo J*, Schultz TR, Rodrigues A, Sanchez BL, Lopes C, Mera YA, Vasconcelos HL, Billen J, Rabeling C. Beauty and the yeast: A social insect cultivates a dense coat of symbiotic fungus on its body. Entomological Society of America. Orlando, Florida, USA.
- 2020 Mera-Rodríguez LD, Rabeling C. Species delimitation of the leaf-cutting ants in the *Acromyrmex octospinosus* species complex. Simposio Iberoamericano de Mirmecología. Bogota, Colombia.
- 2019 Rabeling C. Sympatric versus allopatric speciation: Exploring the origins and evolution of social parasitism in ant. XXIV Simpósio de Mirmecologia. An International Meeting. Belo Horizonte, Minas Gerais, Brazil.
- 2019 Albuquerque EZ*, Sosa-Calvo J*, Schultz TR, Rabeling C. Evolutionary history of yeast agriculture in fungus-growing ants: a phylogenomic approach. XXIV Simpósio de Mirmecologia. An International Meeting. Belo Horizonte, Minas Gerais, Brazil.
- 2019 Barrera CA, Rabeling C, Sosa-Calvo J*, Bacci Jr. M. Revealing the phylogenetic and phylogeographic history of the leaf-cutting ant genus *Atta* Fabricius, 1804 (Formicidae: Attini) using ultra-conserved Elements (UCEs). XXIV Simpósio de Mirmecologia. An International Meeting. Belo Horizonte, Minas Gerais, Brazil.

- 2019 Rabeling C. Sympatric Speciation in Ant Social Parasites – an Emerging System for Comparative Study. Gordon Research Conference: Speciation. 10–15 March. Venture, California, USA.
- 2019 Schrader L*, Zhang G, Boomsma JJ, Rabeling C. Genome evolution and speciation of inquiline social parasites. European Section of the International Union for the Study of Social Insects. 19–21 March. Vienna, Austria.

TEACHING EXPERIENCE AND MENTORING

Course Instructor

- 2023 Phylogenetics and Evolutionary Biology. Laboratory course for advanced undergraduate and graduate students. University of Hohenheim. Fall semester.
- 2023 Integrative Taxonomy of Insects. Laboratory course for advanced undergraduate and graduate students. University of Hohenheim. Fall semester.
- 2023 Ecology & Evolutionary Biology. Lecture course for undergraduate students. University of Hohenheim. Spring semester.
- 2023 Biodiversity of Mediterranean Ecosystems. Zoology field class for undergraduate and graduate students. University of Hohenheim. Spring semester.
- 2023 Organismal Biology for Agricultural Biologists. Laboratory course for undergraduate students. University of Hohenheim. Spring semester.
- 2022 Speciation and the Origin of Biodiversity. Seminar course for undergraduate and graduate students. University of Hohenheim. Fall semester.
- 2022 Evolution (BIO 345). Lecture course for 267 undergraduate students. Arizona State University. Spring semester.
- 2021 Evolution (BIO 345). Lecture course for 373 undergraduate students. Arizona State University. Spring semester.
- 2020 The Evolutionary Biology of Species (BIO 591). Seminar course for graduate students. Arizona State University. Fall semester.
- 2020 Evolution (BIO 345). Lecture course for 304 undergraduate students. Arizona State University. Spring semester.
- 2019 Evolution (BIO 345). Lecture course for 308 undergraduate students. Arizona State University. Spring semester.
- 2018 Evolution (BIO 345). Lecture course for 335 undergraduate students. Arizona State University. Spring semester.
- 2016 Introduction to Organismal Evolutionary Biology (BIO 115). Lecture course for undergraduate students. University of Rochester. Spring semester.
- 2014 Topics in Evolutionary Biology (BIO 471). Lecture course & seminar for graduate students. University of Rochester. Fall semester.

- 2013 Evolutionary Ecology of Fungus-Growing Ants and their Symbionts. Field course taught at the Center for the Study of Social Insects, São Paulo State University, Rio Claro, Brazil (10–13 July).
- 2012 Evolutionary Ecology of Fungus-Growing Ants and their Symbionts. Field course taught at the Center for the Study of Social Insects, São Paulo State University, Rio Claro, Brazil (20–23 March).
- 2011 Evolutionary Ecology of Fungus-Growing Ants and their Symbionts. Field course taught at the Center for the Study of Social Insects, São Paulo State University, Rio Claro, Brazil (12–15 July).
- 2011 The Ant Course. Interdisciplinary course teaching ant biology and systematics; sponsored by Harvard University & California Academy of Sciences. South Western Research Station, Portal, Arizona (04–14 August).
- 2008 The Ant Course. Interdisciplinary course teaching ant biology and systematics; sponsored by Harvard University & California Academy of Sciences. Henri Pittier National Park, Maracay, Venezuela (08–19 August).
- 2002 Field Class in Geo-Ecology sponsored by the Eberhard Karls Universität Tübingen, Germany. Porto Alegre, Brazil (01–21 April).

STUDENT AND POSTDOCTORAL ADVISEES

Postdoctoral Advisees: Current

- Dr. Matthew Prebus. Postdoctoral researcher, Arizona State University & University of Hohenheim. Project: "Comparative genomics and molecular evolution of ant social parasites." August 2018–present.
- Dr. Dietrich Gotzek. Postdoctoral researcher, University of Hohenheim. Project: "Molecular evolution and comparative genomics of *Solenopsis* fire ants." July 2022–present.
- Dr. Kyle W. Gray. Postdoctoral researcher, University of Hohenheim. Project: "Biodiversity, biogeography, and evolution of ants on the South Pacific archipelago Vanuatu." July 2023–present.

Postdoctoral Advisees: Past

- Dr. Emília Albuquerque. National Science Foundation project funded postdoctoral research fellow. "Co-evolutionary dynamics between *Cyphomyrmex* fungus-growing ants and their mutualistic fungi." August 2018–December 2022. Current position: Postdoctoral Researcher at the National Museum of Natural History, Smithsonian Institution, Washington, DC.
- Dr. Jeffrey Sosa-Calvo. National Science Foundation project funded postdoctoral researcher. "Unraveling the evolutionary dynamics of high symbiont diversity in the fungus-farming ant genus *Apterostigma*: A phylogenomic approach." January

2015–December 2019. Current position: Postdoctoral Researcher at the National Museum of Natural History, Smithsonian Institution, Washington, DC.

Dr. Marek Borowiec. ASU postdoctoral research fellow. "Mode and tempo of speciation in the highly diverse *Formica* ants and their convergently evolved social parasites." July 2016–December 2018. Current position: Assistant Professor at Colorado State University.

Dr. Sarah E. Bengston. National Science Foundation Postdoctoral Research Fellow. "Describing the evolutionary history of a newly discovered social parasite system." July 2015–December 2016. Huxley Faculty Fellow at Rice University, Houston, Texas from 2017 to 2018. Current position: Assistant Professor at the City University of New York.

Graduate Advisees: Current

Samyuktha Senthil, B.S., M.S., Doctoral student, University of Hohenheim. August 2022–present.

Laura Daniela Mera-Rodríguez, B.S., M.S. Doctoral student, University of Hohenheim & Arizona State University. August 2018–present.

Graduate Advisees: Past

Dr. Kyle W. Gray. School of Life Sciences, Arizona State University. Doctoral dissertation: "Biodiversity and biogeography of myrmecosymbioses and Vanuatuan ants." August 2017–June 2023. Current position: postdoctoral researcher in the Department of Integrative Taxonomy and Biodiversity of Insects at the University of Hohenheim.

Dr. Laís Leal Lopes. Department of Genetics and Molecular Biology, Universidade Estadual de Santa Cruz, Ilhéus, Bahia, Brazil. Graduate co-advisor with Dr. Janisete Gomes da Silva Miller. August 2017–December 2022. Current position: postdoctoral researcher & lecturer at the Universidade Estadual de Santa Cruz, Ilhéus, Bahia, Brazil.

Dr. Romain Dahan. School of Life Sciences, Arizona State University. Doctoral dissertation: "Social structure, mating biology, and the evolution of reproductive conflict in ants." August 2014–August 2021. Current position: postdoctoral researcher & lecturer at the City University of New York.

Dr. Corina A. Barrera. Center for the Study of Social Insects, Universidade Estadual de São Paulo, Rio Claro, São Paulo, Brazil. Doctoral dissertation: "Phylogeny and phylogeography of the genus *Atta* Fabricius 1804 (Formicidae: Attini) based on ultra-conserved elements (UCEs: evidence of recent and rapid speciation." Graduate co-advisor with Dr. Maurício Bacci Jr. August 2016–March 2021.

Undergraduate Advisees and Interns (since 2014)

Iyla Baker. High School Intern. Iyla developed her senior natural science project in our lab and worked with us for 10 weeks during the 2022 spring semester. January–March 2022.

Nhi Nguyen. Undergraduate research Assistant. Arizona State University. Learning morphological and molecular genetic techniques to study ant social parasites. August 2021– December 2022.

Sofia Reiland. Undergraduate research Assistant. Arizona State University. Learning genomic techniques to investigate the evolution of ant biodiversity in the South Pacific. May 2021– December 2022.

Mackenzie Cashen. Undergraduate research Assistant. Arizona State University. Learning morphological and molecular genetic techniques to study ant social parasites. August 2019–December 2021.

Riley McKenna. Undergraduate research Assistant. Arizona State University. Learning molecular genetic methods to investigate ant evolution and biogeography. January 2020–December 2021.

Dominick Christmas. Undergraduate research Assistant. Arizona State University. Learning behavioral biology and molecular genetic methods to investigate the socially parasitic ant *Temnothorax minutissimus*. April 2019–December 2021.

Cameron Ward. Undergraduate research Assistant. Arizona State University. Learning morphological and molecular genetic methods to investigate socially parasitic ants. April 2019–December 2021.

Nathan Ramsey. Undergraduate research Assistant. Arizona State University. Learning molecular genetic methods to investigate the sociogenetic structure and mating biology of leaf-cutting ants. August 2018–December 2021.

Anna Bishop. Undergraduate research assistant. Arizona State University, Social Insect Biodiversity Repository. January 2018–December 2021.

Cody Tipp. Undergraduate research assistant. Arizona State University, Social Insect Biodiversity Repository. October 2017–December 2018.

David Arnold. Undergraduate research assistant. Arizona State University. "Capstone project". September 2017–May 2018.

Aaron Hulseman. Undergraduate research assistant. Arizona State University. "Capstone project". September 2017–May 2018.

Sadai Sarmiento. Undergraduate research assistant. Arizona State University. "Capstone project". September 2017–May 2018.

Francisco Bencomo. Undergraduate research assistant. Arizona State University. "Capstone project". September 2017–May 2018.

Larry Preuett. Undergraduate research assistant. Arizona State University. "Capstone project". September 2017–May 2018.

María Camila Tocora Alonso. Visiting undergraduate student. National University of Colombia, Bogotá. December 2017.

Laura Daniela Mera Rodriguez. Visiting undergraduate student. National University of Colombia, Bogotá. January–March 2018.

Benjamin Gerstner. Undergraduate research assistant. University of Rochester, Department of Biology. August 2014–December 2016.

Recipient of the 2015 McNair Summer Research Fellowship. Current position: Doctoral student at the University of New Mexico, Albuquerque.

Cara Breslin. Undergraduate research assistant. University of Rochester, Department of Biology. May 2016–December 2016.

Ethan Gyllenhaal. Undergraduate research assistant. University of Rochester, Department of Biology. August 2015–December 2016.

Hallie Kirschner. Undergraduate research assistant. University of Rochester, Department of Biology. August 2014–May 2015.

Fredrick Goodkind. Undergraduate research assistant. University of Rochester, Department of Biology. August 2014–May 2015.