

Dr. Jonathan B. Koch, Ph.D.

University of Hawai'i, Hilo
Department of Biology & Tropical Conservation
Biology and Environmental Science Graduate Program
200 W. Kāwili Street, Hilo, HI 96720
kochj@hawaii.edu | <http://jonathanbkoch.weebly.com> | 808-825-1463
Google Scholar: <https://goo.gl/esvG3L> | Twitter: @jonbkoch

PROFESSIONAL PREPARATION

Ph.D. Ecology, Utah State University, 2015

Biogeography, population genetics, and community structure of North American bumble bees

M.S. Biology, Utah State University, 2011

The decline and conservation status of North American bumble bees

B.S. Environmental Science, B.A. Geography, University of Hawai'i, Hilo, 2008

Plant-pollinator interactions across an elevation gradient on Mauna Loa Volcano

PROFESSIONAL APPOINTMENTS

- 2019 –** **Honorary Research Associate**, National Museum of the Philippines, Manila, Philippines.
- 2018 –** **Smith Fellow**, Tropical Conservation Biology and Environmental Science Graduate Program, University of Hawai'i, Hilo.
- 2017 –** **Adjunct Assistant Professor**, Tropical Conservation Biology and Environmental Science Graduate Program, University of Hawai'i, Hilo
- 2016 – 2017** **National Science Foundation Postdoctoral Research Fellow**, Department of Biology & Tropical Conservation Biology and Environmental Science Graduate Program, University of Hawai'i, Hilo.
- 2008 – 2015** **Research Assistant**, Department of Biology, Utah State University
- 2008 – 2014** **Biological Science Aid**, USDA-ARS Pollinating Insects Research Unit
- 2007 – 2008** **Research Assistant**, Department of Biology, University of Hawai'i, Hilo

PUBLICATIONS

In Review, Accepted, & Published Refereed Articles (*organized by year, descending order*)

2019

1. **Koch, J.B.**, Dupuis, J., Jardeleza, M., Ouedraogo, N., Geib, S. Follett, P., Price, D. Submitted. Rapid X chromosome evolution despite a lack of genome-wide differentiation during the biological invasion of a global insect pest.

2. Baur, A., Strange J.P., **Koch, J.B.** In Review. Foraging ecology of the Hunt bumble bee, *Bombus huntii*, a viable bumble bee pollinator for commercialization.
3. Martínez-López, O., **Koch, J.**, Martínez-Morales, M.A., Navarrete-Gutiérrez, D., Enríquez, E., Vandame, R. In Review. Potential distribution of bumblebees (Apidae: *Bombus*) in Mesoamerica based on different climate change scenarios: conservation implications.
4. **Koch, J.B.**, Florez, J., Pitts, J., Strange, J.P. In Revision. Müllerian mimicry predicts bumble bee community composition across an elevation gradient in the Sierra Nevada.

2018

5. **Koch, J.B.**, General, D. 2018. A preliminary assessment of bumble bee (Hymenoptera: Apidae, *Bombus*) habitat suitability across protected areas in the Philippines. *Annals of the Entomological Society of America*, doi: <http://dx.doi.org/10.1093/aesa/say046>.
6. **Koch, J.B.**, Rodriguez, J., Pitts, J., Strange, J.P. 2018. Phylogeny and population genetic analyses reveal cryptic speciation in the *Bombus fervidus* species complex (Hymenoptera: Apidae). *PLoS One*, 13(11): e0207080. <https://doi.org/10.1371/journal.pone.0207080>.
7. **Koch J.B.**, Vandame R., Mérida-Rivas J., Sagot P., Strange J. 2018. Quaternary climate instability is correlated with patterns of population genetic variability in *Bombus huntii*. *Ecology & Evolution*, doi: <https://doi.org/10.1002/ece3.4294>: 1–16.
8. Jackson, J. Pimsler, M. Oyen, K., **Koch-Uhuad, J.B.**, Herndon, J., Strange, J., Dillon, M., Lozier, J. 2018. Distance, elevation, and environment as drivers of diversity and divergence in bumble bees across latitude and altitude. *Molecular Ecology*, doi: <https://doi.org/10.1111/mec.14735>: 1 - 44.

2017

9. **Koch, J.B.**, Looney, C., Sheppard, S., Strange, J.P. 2017. Patterns of population genetic diversity and structure across bumble bee communities in the Pacific Northwest. *Conservation Genetics*, doi: 10.1007/s10592-017-0944-8: 1 – 14.

2016

10. Spears, L.R., Looney, C., Ikerd, H., **Koch, J.B.**, Griswold, T., Strange, J.P., Ramirez., R.A. 2016. Pheromone lure and trap color effects on bycatch in an agricultural landscape. *Environmental Entomology*, doi: 10.1093/ee/nvw085: 1 – 8.
11. **Koch, J.B.**, Looney, C., Sheppard W.S., Strange, J.P. 2016. Range extension of two bumble bees (Hymenoptera: Apidae) in Olympic National Park. *Northwest Science*, 90(2): 228 – 234.
12. Rhoades, P., **Koch, J.B.**, Strange, J.P., Waits, L., Eigenbrode, S. 2016. Evidence for *Bombus occidentalis* (Hymenoptera: Apidae) populations in the Olympic Peninsula, the Palouse Prairie, and forests of Northern Idaho. *Journal of Insect Science*, 16(1): 1 – 5.

2015

13. **Koch, J.B.**, Lozier, J., Strange, J., Ikerd, H., Griswold, T., Cordes, N., Solter, L., Stewart, I., Cameron, S. 2015. USBombus, a database of contemporary survey data for North American Bumble Bees (Hymenoptera, Apidae, *Bombus*) distributed in the United States. *Biodiversity Data Journal*, 3: e6833. doi: 10.3897.

2014

14. **Koch, J.B.**, Love, B., Klinger, E., Strange, J.P. 2014. The effect of sun exposure on bee (Hymenoptera: Anthophila) setae color and its implications for studying aging and behavior. *Journal of Melittology*, 38: 1-9.
15. Orr, M., **Koch, J.B.**, Griswold, T., Pitts, J.P. 2014. The Re-evaluation of the specific status of a solitary bee, *Anthophora (Heliophila) curta* (Hymenoptera: Apidae). *Zootaxa*, 3846 (3): 411-429.

16. Holden, A.R., **Koch, J.B.**, Erwin, D.M., Griswold, T., Hall, J. 2014. Leafcutter bee nests and pupae from the Rancho La Brea Tar Pits of southern California: Implications for understanding the paleoenvironment of the Late Pleistocene. *PLoS One*, 9(4): e94724.
17. Strange, J., Baur, A., **Koch, J.B.** 2014. A scientific note on *Bombus (Psithyrus) insularis* invasions of bumble bee nests and honey bee hives in the western United States. *Apidologie*, 45: 554 – 556.

2013

18. Lozier, J., Strange, J., **Koch, J.B.** 2013. Landscape heterogeneity predicts gene flow in a widespread polymorphic bumble bee, *Bombus bifarius* (Hymenoptera: Apidae). *Conservation Genetics*, 14(5): 1099 – 1110.

2012

19. **Koch, J.B.**, Sahli, H.F. 2012. Patterns of flower visitation across elevation and succession gradients in Hawai'i. *Pacific Science*, 67(2): 253 – 266.
20. **Koch, J.B.**, Strange, J.P. 2012. The status of *Bombus occidentalis* and *B. moderatus* in Alaska with special focus on *Nosema bombi* incidence. *Northwest Science*, 86(3): 212 – 220.

2011

21. Strange, J.P., **Koch, J.B.**, Gonzalez, V.H., Nemelka, L., Griswold, T. 2011. Global invasion by *Anthidium manicatum* (Linnaeus) (Hymenoptera: Megachilidae): assessing potential distribution in North America and beyond. *Biological Invasions*, 13: 2115 – 2133.
22. Cameron, S., Lozier, J., Strange, J., **Koch, J.B.**, Cordes, N., Solter, L., Griswold, T. 2011. Patterns of widespread decline in North American bumble bees. *Proceedings of the National Academy of Sciences of the United States of America*, 108: 662-667.

2010

23. Gonzalez, V.H., **Koch, J.B.**, Griswold, T.L. 2010. *Anthidium vigintiduopunctatum* Friese (Hymenoptera: Megachilidae): The elusive “dwarf bee” of the Galapagos Archipelago? *Biological Invasions*, 12: 2381 – 2383.

2009

24. **Koch, J.B.**, Strange, J.P. 2009. Constructing a species database and historic range maps for North American bumble bees (*Bombus sensu stricto* Latreille) to inform conservation decisions. *Uludag Bee Journal*, 9(3): 97 – 108.
25. Blue, J.D., Armstrong, M., Brym, Z., Chandler, J., Cheluitte, C., Cooley, C., Farinas, S., **Koch, J.B.** 2009. Synthesis and the Future of Ecology. *Bulletin of the Ecological Society*, 90:283–285.

In Preparation (Drafts available upon request)

26. Tripodi, A., Orr, M., **Koch, J.B.** Irregular incursion: The taxonomic invasion of North America by a non-native Hawaiian bee, *Xylocopa sonorina*. Target Journal: *Annals of the Entomological Society of America*.
27. Newton, K., **Koch, J.B.**, Muller, M., Price, D.K. Spotted Wing Drosophila, *Drosophila suzukii*, invades endemic *Vaccinium reticulatum* berries in Hawaii. Target Journal: *Biological Invasions*.
28. **Koch, J.B.**, Tripodi, A., Strange, J.P. Identity by genotype: The utility of microsatellite loci in identifying cryptic bumble bee species in biodiversity studies. Target Journal: *Conservation Genetics Resources*.
29. Sahli, H., **Koch, J.B.** Evidence for sonication behavior by endemic Hawaiian bees on *Vaccinium reticulatum*. Target Journal: *Apidologie*.

Technical Reports, Proceedings, & Published Outreach

30. Vandame, R., Pineda, E., Sagot, P., Mérida, J., Martínez, O., Vergara, C., Ayala, R., González, I., Duennes, M., Cameron, S., **Koch, J.**, Griswold, T., Williams, P., Gallot, M., Schmid-Hempel, P., Hatfield, R. Diversidad y conservación de los abejorros de Mesoamérica. 2017. Centro de Estudios Conservacionistas Facultad de Ciencias Químicas y Farmacia, Universidad de San Carlos de Guatemala.
31. Villalobos, E., Wright, J., **Koch, J.B.** 2017. The Odd Couples: Pollinators. Online Video Clip, YouTube: <https://youtu.be/eNQQmBrxt9k> (length: 3 minutes) (930 views, 11-08-18). 1st **Runner Up for YouTube Your Entomology Award**, Entomological Society of America Annual Meeting 2017.
32. Strange, J.P., **Koch, J.B.**, Sheppard, W., Looney, C., Lichtenberg, E., Long, J., Hopkins, B. 2014. Bumble bee community composition and population genetic diversity in the North Cascades and Coast Network. 30 p.
33. **Koch, J.B.**, Sadler, E., Weglarz, K. 2014. Utah State University Entomology Club and Insect Tours Webpage. <http://usuinsecttours.wix.com/usuentomologyclub#!about-usu-insect-tours/c1zn5>. (Website established)
34. Burkle, L., Griswold, T., Hernandez, J., Inouye, D., **Koch, J.** 2011. Climate change and range shifts working group. In *North American Bumble Bee Species Conservation Planning Workshop Final Report* (Cameron, S., S. Jepsen, E. Spevak, J. Strange, M. Vaughan, J. Engler, and O. Byers, Editors). IUCN Species Survival Commission, Conservation Breeding Specialist Group: Apple Valley MN, USA.
35. Adams, L.D., **Koch, J.**, Strange, J. 2011. Bumble Bees of the Western United States Poster. Pollinator Partnership, San Francisco CA, USA. (Poster)
36. **Koch, J.**, Colla, S., Inouye, D., Adams, L.D. 2009. Bumble bees are essential: Helping pollinators thrive. Pollinator Partnership, San Francisco CA, USA. (Pamphlet)

Books

37. **Koch, J.B.**, Strange, J.P., Williams, P.H. 2012. Bumble bees of the western United States. USDA Forest Service and the Pollinator Partnership. 144 p. Recognized by the American Library Association as “Notable Government Document of the Year 2012”. Reviewed by *Native Plants Journal* 14(2): 116 – 117.

Significant Datasets

38. **Koch, J.B.**, Lozier, J., Strange, J., Ikerd, H., Griswold, T., Cordes, N., Solter, L., Stewart, I., Cameron, S. 2015. *USBombus*, a database of contemporary survey data for North American Bumble Bees (Hymenoptera, Apidae, *Bombus*) distributed in the United States. <http://www.gbif.org/dataset/c4a2c617-91a7-4d4f-90dd-a78b899f8545> (4,276 downloads, as of 11-08-2018)
39. Cameron, S., Lozier, J., Strange, J., **Koch, J.**, Cordes, N., Solter, L., Griswold, T. 2011. Patterns of widespread decline in North American bumble bees. <http://www.gbif.org/dataset/8c04889e-a0ad-4f39-8623-06aa9cf0131d> (8,306 downloads, as of 11-08-2018)

TEACHING EXPERIENCE

- | | |
|------------------|--|
| Sum. 2018 | Instructor & Consultant , <u>An Introduction to Statistics for Conservation Biology</u> , Pacific Internship Program for Exploring Science, University of Hawai‘i, at Hilo. |
| Spr. 2018 | Instructor , <u>Quantitative Ecology</u> , Tropical Conservation Biology & Environmental Science Graduate Program, University of Hawai‘i, Hilo. (3 credit hours, 1 section, 16 students, CBES677) |

- Fall 2017** **Instructor**, Advanced Insect Taxonomy & Ecology, Tropical Conservation Biology & Environmental Science Graduate Program, University of Hawai‘i, Hilo. (3 credit hours, 1 section, 3 students, CBES699)
- Fall 2017** **Instructor**, General Ecology, Department of Biology, University of Hawai‘i, Hilo. (3 credit hours, 1 section, 36 students, BIOL281)
- Sum. 2017** **Instructor & Consultant**, An Introduction to Statistics for Conservation Biology, Pacific Internship Program for Exploring Science, University of Hawai‘i, at Hilo.
- Spr. 2017** **Instructor**, Tropical Conservation Biology & Environmental Science- Natural Resource Management Seminar, Tropical Conservation Biology & Environmental Science Graduate Program, University of Hawai‘i, Hilo. (16 students, 1 credit hour, 1 section)
- Spr. 2017** **Instructor**, Directed Studies in Biology, Department of Biology, University of Hawai‘i, Hilo. (1 student, 1 credit hour, 1 student, *Spring 2017*)
- Spr. 2017** **Instructor**, Directed Studies in Tropical Conservation Biology & Environmental Science, Tropical Conservation Biology & Environmental Science Graduate Program, University of Hawai‘i, Hilo. (1 student, 1 credit hour, 1 student)
- Fall 2016** **Instructor**, Directed Studies in Biology, Department of Biology, University of Hawai‘i, Hilo. (1 student, 2 credit hours, 1 student)
- Spr. 2015** **Instructor**, Bumble Bee Molecular Ecology Workshop, Utah State University. *Developed curriculum and materials for three 1-hour lectures for workshop participants that included senior faculty, technicians, and graduate students (15 attendees). Lecture 1: Specimen Handling and DNA Extraction; Lecture 2: Heterozygosity and Genetic Diversity; Lecture 3: Introduction to Population Genetics. Supervisor: James P. Strange*
- Fall 2014** **Teaching Assistant**, Insect Systematics & Evolution, Department of Biology, Utah State University. (20 students, 1 credit hour, 1 section)
- Spr. 2014** **Teaching Assistant**, Introduction to Plant Pathology, Department of Biology, Utah State University. (30 students, 1 credit hour, 1 section)
- Spr. 2013** **Teaching Assistant**, General Biology I, Department of Biology, Utah State University (150 students, 1 credit hour, 2 sections)
- Fall 2013** **Teaching Assistant**, General Biology I, Department of Biology, Utah State University (150 students, 1 credit hour, 2 sections)
- Sum. 2012** **Instructor**, The Bumble Bee Workshop, USDA-ARS Pollinating Insects Research Unit. *Developed curriculum and materials for three 30-minute lectures directed to the public and stakeholders invested in bumble bee management for crop pollination (20 attendees). Lecture 1: Bumble Bee Biology and Natural History; Lecture 2: Bumble*

Bee Health and Conservation; Lecture 3: Gardening for Local Bumble Bees.
Supervisor: James Strange

Sum. 2011 **Instructor, All About Bees Workshop**, Utah State University Extension. *Developed curriculum and materials for one 1-hour lecture directed to the stakeholders interested in using bees for pollination services in agricultural and horticultural settings (35 attendees). Lecture 1: Bumble bees and Honey bees. Received Honorarium (\$50.00).*

Fall 2011 **Teaching Assistant, General Microbiology**, Department of Biology, Utah State University. (60 students, 1 credit hour, 2 sections)

PROFESSIONAL SEMINARS, OUTREACH & EXTENSION, & GUEST LECTURES

PS = Professional Seminars, OE = Outreach & Extension, Guest Academic Lecture = AL

2019

1. Rapid X chromosome evolution despite a lack of genome-wide differentiation during the biological invasion of a global insect pest. University of Hawai'i, Hilo, *Biology Seminar* (35 attendees). Invited AL.

2018

2. What makes a good pollinator? Niu Valley Intermediate School. (100 attendees). Invited OE
3. Nutrient Cycling. University of Hawai'i, Hilo, *Ecology*. Hilo, HI (35 attendees). Invited AL
4. What's a pollinator? Pu'u Wa'awa'a Biocultural Blitz. Pu'uwa'awa'a, HI (120 attendees). Invited OE
5. Dispersal. University of Hawai'i, Hilo, *Biogeography*. Hilo, HI (15 attendees). Invited AL
6. Pathogens & Parasites. University of Hawai'i, Hilo, *Ecology*. Hilo, HI (35 attendees). Invited AL
7. An introduction to Data Management. Pacific Internship Programs for Exploring Sciences: Māhuhua Session. (13 attendees) PS
8. A crash course into R and Statistics. Pacific Internship Programs for Exploring Sciences: Māhuhua Session. (13 attendees) PS
9. An introduction to the Science of Experimental Design. Pacific Internship Programs for Exploring Sciences (35 attendees) PS

2017

10. Genetics & Genomics. BOMBUSS: Building our methods by using sound science Conference, USDA-ARS Pollinating Insects Research Unit, Utah State University. Invited PS
11. An introduction to Data Management. Pacific Internship Programs for Exploring Sciences: Māhuhua Session. (13 attendees) PS
12. A crash course into R and Statistics. Pacific Internship Programs for Exploring Sciences: Māhuhua Session. (13 attendees) PS
13. What is a pollinator? Hilo Public Library. Hilo, HI. (20 attendees) Invited OE
14. Pollinators of Hawai'i: Their value in agriculture and beyond. Hawai'i Island New Farmer Expo. Kamuela, HI. (98 attendees) Invited OE
15. What is the science of insects? Hilo Public Library. Hilo, HI. (20 attendees) Invited OE
16. Getting started as a successful proposal writer. University of Hawai'i, Hilo, Course: TCBES Natural Resource Management Seminar. Hilo, HI (15 attendees). AL
17. The value of natural history collections in biodiversity conservation. University of Hawai'i, Hilo, Course: TCBES Natural Resource Management Seminar. Hilo, HI (15 attendees). AL
18. Research experiences in Hawai'i and abroad. University of Hawai'i, Hilo, *Senior Seminar in Geography*. Hilo, HI (30 attendees) Invited PS

19. Using science to inform policy: bumble bee case study. University of Hawai'i, Hilo, *Conservation Biology*. Hilo, HI (16 attendees). Invited AL

2016

20. Building an inference for climate change: Natural history matters. University of Hawai'i, Hilo, *Climate Fiction*. Hilo, HI (20 attendees). Invited AL
21. Building biogeographic inference with a population genetics framework. University of Hawai'i, Hilo, *Senior Seminar in Biology*. Hilo, HI (35 attendees). Invited AL
22. University of Hawai'i, Hilo STEM Student Seminar (inaugural) - Graduate School Panel Member. Hilo, HI. Invited PS
23. University of Hawai'i, Hilo STEM Student Seminar (inaugural) - Conservation Biology Careers Panel Member. Hilo, HI. Invited PS
24. Planting SEEDS: Opportunities with the Ecological Society of America. University of Hawai'i, Hilo Biology Club Seminar. Hilo, HI. PS
25. Pollinators of Hawai'i. National Pollinator Week Event, Hilo Public Library. Hilo, HI. OE
26. Where the wild bees are. Earth Day Event, Hilo Public Library. Hilo, HI. (15 attendees). OE
27. A career in Geography and Environmental Science: Personal Journey, University of Hawai'i, Hilo, *Senior Seminar in Geography*. Hilo, HI (15 attendees) Invited PS
28. Pollinator diversity and its importance in human food systems. University of Hawai'i, Hilo, *Food & Societies*. Hilo, HI (15 attendees) Invited AL
29. Systematics, taxonomy, and classification in evolutionary analysis. University of Hawai'i, Hilo, *Evolution*. Hilo, HI (20 attendees) Invited AL
30. Why the bad buzz? The decline and conservation status of bumble bee pollinators. University of Hawai'i, Hilo, *TCBES Hilo Natural Resources Seminar*. Hilo, HI (40 attendees) Invited PS

2015

31. Where the wild bees are. University of Florida, Florida Bee Symposium. Gainesville, FL. **Keynote Speaker**. (75 attendees) Invited PS
32. The plight of the pollinator. Utah State University IGNITE Series. Logan, UT. (178 attendees) <https://youtu.be/SQ4IS937TY8>. (984 views, as of 02-22-2017). PS
33. Teaching entomology in Cache Valley. Utah State University Entomology Club. Logan, UT. PS

2014

34. Bumble bee behavior. Utah State University, *Animal Behavior*. Logan, UT. (30 attendees) Invited AL
35. Conservation and diversity of Pacific Northwest bumble bees. MPG Ranch. Missoula, MT. (35 attendees) Invited PS
36. The plight of the pollinator. USGS Pacific Island Ecosystems Research Center. Hawai'i Volcanoes National Park, Volcano, HI. (15 attendees) Invited PS
37. Pacific Northwest bumble bees and climate change. Utah State University Entomology Club. Logan, UT. (10 attendees) PS

2013

38. The would-bee Biologist: Taking advantage of your undergraduate education. Southwestern Oklahoma State University. Weatherford, OK. (50 attendees) Invited PS
39. Pollinator decline and conservation. Society for the Advancement of Chicano/Hispanics and Native American Scientists- Utah State University. Logan, UT. (30 attendees) Invited PS
40. Gardening for Utah bees. Utah State University, *Horticultural Entomology*. Kayesville, UT. (30 attendees) Invited PS
41. Bumble bees of the Pacific Northwest. Olympic National Park. Port Angeles, WA. (10 attendees) PS

42. Bumble bees of the Pacific Northwest. North Cascades National Park. Sedro Wooley, WA. PS
43. Bumble bees of the Pacific Northwest. Rainier National Park. Ashford, WA. (10 attendees) PS

2011

44. First annual Bee-A-Thon. The plight of the bumble bee. Global Online Event (> 500 attendees) Invited OE
45. North American pollinator decline. Weber Public Library. Huntsville, UT. (20 attendees) Invited OE

CONTRIBUTED PRESENTATIONS (*undergraduate student, §graduate student)

2019

1. Strange, J.P., **Koch, J.B.**, Rhode, A. Understanding the scope and causes of Western Bumble Bee (*Bombus occidentalis*) declines. Entomological Society of America, Pacific Branch. San Diego, CA.

2018

2. Montoya-Aiona, K., **Koch-Uhuad, J.B.** A revised dichotomous key for adventive bees in Hawai'i, with special focus on a recent invader: *Megachile policularis* (Megachilidae). Tropical Conservation Biology & Environmental Science Symposium. Hilo, HI.
3. **Koch-Uhuad, J.B.**, King, C., Sutton, J.T. Introducing the nalo meli 'āpa'akuma project: Using genomic data to inform Yellow-faced bee management and conservation. Hawai'i Conservation Conference. Honolulu, HI.

2017

4. Vandame, R., Pineda, E., Sagot, P., Mérida, J., Martínez, O, Vergara, C., Ayala, R., González, I., Duennes, M., Cameron, S., **Koch, J.**, Griswold, T., Williams, P., Gallot, M., Schmid-Hempel, P., Hatfield, R. Diversidad y conservación de los abejorros de Mesoamérica. Mesoamerican Congress of Native Bees. Antigua, Guatemala.
5. Jardeleza, M*. **Koch, J.B.** Seasonal changes in body size of the Spotted Wing *Drosophila Suzukii* on the Big Island of Hawai'i. Society for Advancement of Chicanos and Native Americans in Science. Salt Lake City, UT.
6. **Koch, J.B.**, Price, D. Rapid adaptation of a global economic pest in Hawai'i. Hawai'i Ecosystems Meeting. Hilo, HI.
7. Hamamoto, Q.* , Ouedraogo, N.* , **Koch, J.B.** Phenology of size variation in spotted wing *Drosophila (Drosophila suzukii)* on Hawai'i Island. Tropical Conservation Biology & Environmental Science Symposium. Hilo, HI.

2016

8. **Koch, J.B.** The value of natural history collections in bee conservation. Western Apicultural Society Annual Meeting. Honolulu, HI. Invited
9. **Koch, J.B.**, Meiners, J., Tripodi, A. Digitizing natural history collections to investigate the future of species conservation. International Congress of Entomology. Orlando, FL. Invited
10. Meiners, J., **Koch, J.B.**, Tripodi, A. Digitizing natural history collections to investigate the future of species conservation. Ecological Society of America. Ft. Lauderdale, FL. Invited
11. Ouedraogo, N.* , **Koch, J.B.** The invasion biology of *Drosophila suzukii* in Hawai'i. Pacific Internship Programs for Exploring Sciences Research Symposium. Hilo, HI.
12. Newton, K. § , **Koch, J.B.**, Price, D. The native Hawaiian 'Ōhelo berry as a potential host for the Spotted Wing *Drosophila (Drosophila suzukii)*. Tropical Conservation Biology & Environmental Science Symposium. Hilo, HI. **Awarded 1st place for Graduate Student Poster Presentation.**

13. Newton, K.[§], **Koch, J.B.**, Price, D. The native Hawaiian ‘Ōhelo berry as a potential host for the Spotted Wing Drosophila (*Drosophila suzukii*). Entomological Society of America, Pacific Branch. Honolulu, HI. **Awarded 1st place for Graduate Student (M.S.) Poster Presentation.**
14. **Koch, J.B.**, Strange J.P. Patterns of population genetic diversity of *Bombus huntii* in western North America. Entomological Society of America, Pacific Branch. Honolulu, HI.
15. **Koch, J.B.**, Mourad, T. Expanding the diversity narrative in science. Entomological Society of America, Pacific Branch. Honolulu, HI.

2015

16. **Koch, J.B.** Maximizing natural history collections for biodiversity conservation. Ecological Society of America IGNITE Series. Baltimore, MD. (50 attendees)
17. Strange, J.P., **Koch, J.B.** Variable responses in population genetic structure to climate change within bumble bee communities in the Pacific Northwest. Entomological Society of America. Minneapolis, MN. Invited
18. **Koch, J.B.**, Vandame, R. Strange, J.P. Population genetic diversity of wild *Bombus huntii* in North America, a viable pollinator for commercialization. Florida Bee Research Symposium, Gainesville, Florida.
19. Tripodi, A., Orr, M., **Koch, J.B.**, Judd, H., Kopit, A., Andrikoupoulos, C., Meiners, J., Burrows, S., Pitts-Singer, T., Strange, J., Droege, S., Griswold, T. Invasion of the bee girls. Entomological Society of America, Pacific Branch. Coeur d’Alene, ID.
20. Strange, J.P., **Koch, J.B.**, Ikerd, H., Griswold, T. *Anthidium manicatum* (Hymenoptera: Apidae), the wool carder bee, is a new invasive species in western North America. Entomological Society of America, Pacific Branch. Coeur d’Alene, ID. Invited
21. **Koch, J.B.**, Pitts, J., Strange, J.P. Genetic diversity of a cryptic bumble bee species, *Bombus californicus* in western North America. Entomological Society of America, Pacific Branch. Coeur d’Alene ID, USA. Invited
22. **Koch, J.B.** Orr, M., Sadler, E. Is this Real? Exploring Insect Biodiversity with local communities. Entomological Society of America, Pacific Branch. Coeur d’Alene, ID. Invited
23. Orr, M., **Koch, J.B.** Building an Arthropod Zoo. Entomological Society of America, Pacific Branch. Coeur d’Alene, ID. Invited
24. **Koch, J.B.**, Strange, J.P.* Population genetic diversity of alpine bumble bees in western North America. Entomological Society of America, Pacific Branch. Coeur d’Alene, ID. *Presenting Author
25. Kleinhesselink, A., Long, L., **Koch, J.**, Compagnoni A. Who will manage sagebrush habitats in the future of rapid climate change? Society for Range Management. Sacramento, CA.

2014

26. **Koch, J.B.**, Strange J.P. Population genetic diversity patterns of bumble bee (*Bombus*) communities in the wild lands of the Pacific Northwest. Entomological Society of America. Portland, OR.
27. Orr, M., **Koch, J.B.**, Pitts, J.P., Griswold T.L. Taxonomic utility of environmental niche models for species delineation: a case study in *Anthophora* (Hymenoptera: Apidae). Entomological Society of America. Portland, OR.
28. Griswold, T.L, **Koch, J.B.**, Strange J.P. The bumble bee fauna of Yosemite National Park: Patterns across a large altitudinal gradient. Entomological Society of America. Portland, OR.
29. **Koch, J.B.**, Strange J.P. Bumble bee population genetic structure and diversity in the context of global climate change. North American Congress for Conservation Biology. Missoula, MT.
30. Strange, J.P., **Koch, J.B.** Identity by genotype: using microsatellites for taxonomic determination of bumble bee (*Bombus*) species identification in cryptic species complexes. North American Congress for Conservation Biology. Missoula, MT. (Poster)

31. Orr, M., **Koch, J.B.**, Pitts, J., Griswold, T. Some like it hot: Biology of the xerophilous *Anthophora (Heliophila)*. Entomological Society of America. Tucson, AZ. (Poster)
32. Strange, J.P., **Koch, J.B.**, Ikerd, H., Griswold, T. The promise and peril of retroactive data capture from museum specimens. Entomological Society of America. Tucson, AZ.

2013

33. **Koch, J.B.**, Orr, M. The Buzz on Bee Biodiversity in Utah, Maps on the Hill. Salt Lake City, UT.
34. **Koch, J.B.**, Strange J.P. Conservation-minded approaches to surveying bumble bees. North American Pollinator Protection Campaign. Washington, D.C.
35. Strange, J.P., Ghazi, A., **Koch, J.B.** Differential *Nosema bombi* (Microsporidia: Nosemidae) incidence in colonies of *Bombus occidentalis* and *Bombus huntii* (Hymenoptera: Apidae). Society for Invertebrate Pathology. Pittsburgh, PA.
36. **Koch, J.B.**, Strange, J.P. Environmental diversity and genetic structure of North American Bumble Bees. Intermountain Graduate Research Symposium. Logan, UT. **Awarded 1st place for Graduate Student Presentation.**
37. **Koch, J.B.**, Strange, J.P. Environmental diversity and genetic diversity of North American *Pyrobombus*. Entomological Society of America- Pacific Branch. Stateline, NV. **Awarded 1st place for Graduate Student Presentation.**
38. **Koch, J.B.**, Love, B., Klinger, E., Strange, J.P. Revisiting the utility of morphometric measurements in assessing senescence across Apoidea. Entomological Society of America-Pacific Branch. Stateline, NV.

2012

39. **Koch, J.B.**, Strange, J.P. Investigating the species concept of North American *Fervidobombus*. Intermountain Graduate Research Symposium. Logan, UT.
40. **Koch, J.B.**, Strange, J.P. Investigating the species concept of North American *Fervidobombus*. Entomological Society of America- Pacific Branch. Portland, OR. **Awarded 1st place for Graduate Student Presentation.**

2011

41. **Koch, J.B.**, Strange, J.P. The conservation status of *Bombus moderatus* and *B. occidentalis* in Alaska, USA. Entomological Society of America. Reno, NV. **Awarded 1st place for Graduate Student Presentation.**
42. **Koch, J.B.**, Strange, J.P. The conservation status of North American bumble bees. Intermountain Graduate Research Symposium. Logan, UT. **Awarded 2nd place for Graduate Student Presentation.**

2010

43. **Koch, J.B.**, Strange, J.P. Revisiting the subspecies conundrum of the bumble bee *Bombus bifarius* Cresson (Hymenoptera: Apidae) in North America. Entomological Society of America. San Diego, CA.
44. **Koch, J.B.**, Strange, J.P., Lozier, J.D., Griswold, T.L., Cameron, S.A., Thorp, R.W. The conservation status of nine bumble bee species in North America. Entomological Society of America. San Diego, CA.
45. **Koch, J.B.**, Strange, J.P., Ikerd, H., Griswold, T.L. The importance of entomological collections in assessing the conservation status of the western bumble bee, *Bombus occidentalis* Greene. Entomological Society of America, Pacific Branch. Boise, ID. (Invited)

46. Waichert, C., **Koch, J.**, Gobbi, F.T., Furieri, K.S. Comparative diversity of parasitoids families of Hymenoptera in four areas in Atlantic Forest in Espirito Santo, Brazil. In: *Anais do XXVIII Congresso Brasileiro de Zoologia*, Belem. p. 1004. Espirito Santo, Brazil. (Poster)

2008

47. Strange, J.P., **Koch, J.B.** Using historic data to inform collection efforts of rare bumble bees. Entomological Society of America. Reno, NV.
48. Strange, J.P., Cordes, N., **Koch, J.B.**, Lozier, J.D., Griswold, T.L., Solter, L.F., Cameron, S.A. Current status and potential causes of population decline in wild bumble bee pollinators. Entomological Society of America. Reno, NV.
49. **Koch, J.B.**, Sahli, H.F. Pollination webs across elevation and succession in Hawai'i. Ecological Society of America. Milwaukee, WI.
50. **Koch, J.B.**, Sahli, H.F. Pollination webs across elevation and succession in Hawai'i. EPSCOR Meeting. Waikoloa, HI.

RESEARCH GRANTS

Grants Awarded to Date (02-22-2018): \$370,791

- 2018** **Serrapilheira** (\$22,058) Submitted Dec. 2018. PI: Cecilia Waichert (Universidade Vila Velha), Collaborators: Jonathan B. Koch, Juanita Rodriguez (Australian National Insect Collection, CSIRO), Rodrigo Barbosa Ferreira (Universidade Vila Velha). "Contemporary patterns of tropical insect diversity in the Neotropical Region: Are we on the precipice of an Ecological Armageddon in Brazil?"
- National Geographic Exploration Grant** (\$25,847) Submitted Dec. 2018. PI: Jonathan B. Koch. Collaborators: David Emmanuel General (University of the Philippines, Los Baños), Perry Archival Buenavente (Philippine National Museum of Natural History), Juanita Rodriguez (Australian National Insect Collection, CSIRO). "The conservation status of the forgotten *bubuyog* in the Philippines"
- David H. Smith Conservation Research Fellowship** (\$228,791) Awarded Jan. 2018. PI: Jonathan B. Koch, Mentors: Jolene Sutton (University of Hawai'i, Hilo), Cynthia King (Department of Land and Natural Resources). "The nalo meli 'āpa'akuma project: Characterizing population genomic diversity of imperiled Hawaiian *Hylaeus* bees to inform stakeholders on *in situ* breeding and habitat management strategies"
- 2016** **National Science Foundation Postdoctoral Fellowship** (\$138,000) Awarded Jan. 2016. PI: Jonathan B. Koch, Mentors: Donald Price (University of Hawai'i, Hilo), Peter Follett (USDA-ARS). "Invasion biology, population genomics, and adaptive evolution of *Drosophila suzukii*"
- 2014** **Utah State University Ecology Center Graduate Research Grant** (\$4,000) Awarded May 2014. PI: Jonathan B. Koch. Mentors: James Strange (USDA-ARS Pollinating Insects Research Unit) and James Pitts (Utah State University). "Landscape genetics of Pacific Northwest bumble bees."

SIGNIFICANT ACCOMPLISHMENTS AND AWARDS

1. 2018, Awarded David H. Smith Fellowship (see Research Grants)
2. 2017, 1st Runner Up for “The Odd Couples”, YouTube your Entomology (\$100)
3. 2017, Hau‘oli Mau Loa Travel Award (\$500)
4. 2017, BOMBUSS Travel Award (\$500)
5. 2016, iDigBio Travel Award (\$700)
6. 2016, International Congress of Entomology PEF Travel & Registration Award (\$650)
7. 2016, Awarded National Science Foundation Postdoctoral Fellowship (see Research Grants)
8. 2015, Ecological Society of America SEEDS Grad. Student Travel Award (\$800)
9. 2015, Graduate Student Travel Award, Utah State University (\$300)
10. 2014, Graduate Enhancement Award, Utah State University (\$4,000)
11. 2014, MacMahon Endowed Ecology Graduate Student Research Award (\$1,000)
12. 2014, Graduate Student Travel Award, Utah State University (\$300)
13. 2013, 1st place Paper, Entomological Society of America, Pacific Branch (\$100)
14. 2013, 1st place Paper, Intermountain Graduate Student Research Symposium (\$300)
15. 2012, 1st place Paper, Entomological Society of America, Pacific Branch (\$150)
16. 2012, 1st place Paper, Entomological Society of America Annual Meeting (\$150)
17. 2012. 2nd place Paper, Intermountain Graduate Student Research Symposium (\$50)
18. 2012, Notable Government Document of the Year, American Library of Congress GODORT Award for *Bumble bees of the Western US*
19. 2011, Graduate Researcher of the Year, Utah State University College of Sci. (\$100)
20. 2009, 2010, 2011, USDA-ARS PIRU, On-the-Spot Award (\$50 each)
21. 2007, Student Employee of the Year, University of Hawai‘i, Hilo (\$2,000)
22. 2008, Environmental Science Student of the Year, Univ. of Hawai‘i, Hilo (\$100)
23. 2007, NSF REU Intern, University of Hawai‘i, Hilo (\$4,000)
24. 2008, Ecological Society of America SEEDS Travel Award (\$3,000)
25. 2003 – 2008, Dean’s List, University of Hawai‘i, Hilo
26. 2003 – 2008, University of Hawai‘i, Hilo Chancellor Scholar (4-yr tuition waiver)

PROFESSIONAL SERVICE AND LEADERSHIP

Ad hoc Review

2019	<i>Entomologia Experimentalis et Applicata, Scientific Reports, Zootaxa</i>
2018	<i>Biological Invasions, Apidologie</i>
2017	<i>Apidologie, Journal of Apicultural Research, Journal of Melittology, Journal of Economic Entomology, PeerJ, Environmental Entomology</i>
2016	<i>Apidologie, Journal of Melittology, Pacific Science, PLoS One, Conservation Genetics, Annals of Entomology, Environmental Entomology</i>
2015	<i>Journal of Melittology, Journal of Economic Entomology</i>
2014	<i>Environmental Entomology, Checklist Journal</i>
2013	<i>Caldasia</i>
2012	<i>Oecologia, Journal of Melittology</i>

Grant Proposal Review

2018	BARD US-Israel Binational Agricultural Research and Development Fund
2017	BARD US-Israel Binational Agricultural Research and Development Fund

Significant Leadership Roles

2017	Proposed State Proclamation for “Hawai‘i Pollinator Week” (mid-June)
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- 2016 Symposium Co-organizer, Pacific Branch Entomological Society of America, *Celebrating Diversity a mixed-plate in the Pacific Branch: Fostering diversity in Science*, Honolulu, HI.
- 2016 Symposium Co-organizer, Pacific Branch Entomological Society of America, *Celebrating North America's Iconic Bumble Bee Pollinator*, Honolulu, HI.
- 2016 Co-Advisor, University of Hawai'i, Graduate Student Committee, Hilo, HI.
- 2016 Co-Chair, Celebrating National Pollinator Week with the USDA-ARS at the Cache Valley Gardener's Market, Logan, UT.
- 2015 Member, IUCN Species Survival Comm., Southeast Asia Bumble Bee Group
- 2015 Member, Ecological Society of America SEEDS Travel Award Committee
- 2015 SEEDS Alumni mentor, Ecological Society of America Annual Meeting
- 2015 Organizing Committee Member/Lecturer, USDA-ARS Bumble Bee Molecular Ecology Workshop
- 2014 Symposium Co-organizer, Pacific Branch Entomological Society of America, *Discovering Patterns and Process of Insect Biodiversity in the American West*, Coeur d'Alene, ID.
- 2014 Moderator, North American Conservation Biology Congress, Missoula MT.
- 2014 Member, Biology Graduate Student Academic Committee, Utah State University
- 2013 – 15 Regional Administrator, Bumble Bee Watch, Xerces Society
- 2012 – 13 Science Outreach Coordinator, USU Insect Tours & Entomology Club
- 2012 Organizing Committee Member/Lecturer, USDA-ARS Bumble Bee Workshop
- 2011 Co-Chair, NAPPC Bumble Bee Task Force
- 2010 – 15 Member, IUCN Species Survival Comm., N. America Bumble Bee Group
- 2010 – 15 Ally, GLBTQA student services, Allies on Campus Program, Utah State University
- 2010 GLBTQA office volunteer, Utah State University
- 2009 – 11 Biology Seminar Committee, Utah State University
- 2009 – 10 Co-chair, Ecology Center Steering Committee, Utah State University
- 2008 – 15 Member, NAPPC Bumble Bee Task Force
- 2008 – 15 Entomology Club Tour Guide, USU Entomology Club
- 2008 – 14 Proposed State Proclamation for "Utah Pollinator Week" (mid-June)
- 2008 – 09 Participant, North American Bumble Bee Species Conservation Strategy Workshop
- 2008 Chair, USDA-ARS National Pollinator Week Community Event
- 2008 – 15 Committee Member, USDA-ARS National Pollinator Week Community Event
- 2008 Vice President, Biology Graduate Student Association, Utah State University
- 2008 Member, Ecology Center Seminar Committee, Utah State University
- 2008 Entomology Leader, Antelope Island Bioblitz, Utah State Parks
- 2008 Member, Smithsonian Institute Bumble Bee Task Force
- 2008 Attendee, Ecological Society of America SEEDS Leadership Meeting

MENTORSHIP AND COMMITTEE SERVICE

High School Students

- 2017 – 18 Shinnosuke Lockhart, Waiakea High School

Undergraduate Students

- 2018 Qindasi Silva, Major: Agriculture, Tuskegee University; NSF-REU Intern, currently a DVM candidate at Tuskegee University
- 2017 Marcel Jardeleza, Major: Biology, University of Guam; NSF-REU Intern, currently a M.S. candidate at CSU-Boulder

2017 Amy Durham, Major: Biology, University of Hawai‘i, Hilo
2016 – 17 Daniel Martinez, Major: Neuroscience, University of Hawai‘i, Hilo
Quinn Hamamoto, Major: English, University of Hawai‘i, Hilo, currently a MLS
2016 candidate
Nadiatou Ouedraogo, Major: Biology, State University of New York-New Paltz;
2015 NSF-REU Intern, currently a Research Analyst at Next Steps Research
2015 Nicole Bittner, Major: Biology, Brigham Young University
2015 Hattie Cadreact, Major: Biology, Utah State University
2015 Taylor Peacock, Major: Biology, Utah State University
2013 – 14 Cody Darrington, Major: Biology, Utah State University
2013 Abby Baur, Major: Wildlife Science, Utah State University
2013 Amir Ghazi, Major: Biology, Utah State University

Graduate Students

2019 - Marcel Jardeleza, Ph.D. candidate, Colorado State University, Boulder, Colorado,
2018 – USA (Mentor)
Maya Munstermann, M.S. Candidate, University of Hawai‘i, Hilo, Hawaii, USA
2017 – 18 (Committee)
Oscar Martinez, M.S, El Colegio de la Frontera Sur, San Cristobal de las Casas,
2016 – Chiapas, Mexico (Committee)
Keena Newton, M.S. Candidate, University of Hawai‘i, Hilo, Hawaii, USA
 (Committee)

SOCIETY MEMBERSHIPS

Entomological Society of America (10-year member)
 Ecological Society of America
 The Hawaiian Entomological Society
 Society for Conservation Biology (Life Member)
 Society for Conservation Biology – Hawai‘i Chapter (Member)

MEDIA COVERAGE OF RESEARCH AND OUTREACH

Hawaii Tribune Herald, USDA Agricultural Research Magazine, Huffington Post, The Utah Statesman, Deseret News, USA Today, MSNBC, AOL News, Daily Kos, Science News, CBC, National Geographic, EurekAlert, Science Magazine, Smithsonian, Weather.com, Phys.org, Science Newsline, Science Daily, LiveScience, Christian Science Monitor, Headline and Global News, IFLS, University Herald, Science World Report, Examiner, Scientific American, Delhi Daily News, News Tonight Africa, Austrian Tribune, French Tribune, Saigon, Perfect Integro, News Now UK, Native Bee Research, Beyond Bee, Aljazeera, Discover Magazine, PloS Ecology Blog