# Keng-Lou James Hung, PhD

Assistant Professor, The University of Oklahoma Oklahoma Biological Survey and Oklahoma Natural Heritage Inventory 111 East Chesapeake St., Norman, OK 73019, USA

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#### Education

2010

2017 **PhD, Biology**. University of California, San Diego, La Jolla, CA, USA.

Advisor: Dr. David A. Holway

Thesis: Effects of habitat fragmentation and introduced species on the structure and function of plant-pollinator interactions.

BA, Biology with High Honors, Summa cum Laude. Dartmouth College, Hanover, NH, USA.

Advisors: Dr. Rebecca E. Irwin and Dr. Douglas T. Bolger

Thesis: The effects of habitat fragmentation on bee diversity in southern California.

### **Professional appointments**

2021-Present
2019-2021
Assistant Professor, Oklahoma Biological Survey, University of Oklahoma, Norman, OK, USA.
NSERC Postdoctoral Fellow. University of Toronto, ON, Canada.
Supervisor: Dr. James D. Thomson
2017-2019
Postdoctoral Researcher. The Ohio State University, Columbus, OH, USA.
Supervisor: Dr. Karen Goodell

### Peer-reviewed publications (8 lead-author publications of 24 total)

(Notations: co-lead authorship<sup>◊</sup>; undergraduate\*, Master's<sup>†</sup>, and PhD<sup>‡</sup> students mentored) 2023

- 24. Dorey, J.B., P.R. Chesshire, A. Nava-Bolaños, R. O'Reilly, S. Bossert, S. Collins, E.M. Lichtenberg, E. Tucker, A. Smith-Pardo, A. Falcon-Brindis, D. Guevara, B. Ribeiro, D. de Pedro, E. Fischer, J. Pickering, K.-L.J. Hung, K. Parys, L. McCabe, M. Rogan, R.L. Minckley, S. Velazco, T. Griswold, T. Zarrillo, W. Jetz, Y. Sica, M.C. Orr, L.M. Guzman, J. Ascher, A. Hughes & N. Cobb. 2023. A globally synthesised and flagged bee occurrence dataset and cleaning workflow. *Scientific Data* 10:747.
- 23. **Hung, K.-L.J.**, S.L. Fan\*, C.G. Strang, M.G. Park & J.D. Thomson. 2023. Influence of pollen carryover, pollinator behavior, and orchard layout on the delivery of pollination services in apple orchards. *Ecological Applications* 33:e2917.
- 22. Orr, M.C., K.-L.J. Hung, E.E. Wilson-Rankin, P.M. Simpson, A.Y. Kim, D. Yanega & J.S. Ascher. 2023. First mainland records of an unusual island bee (*Anthophora urbana clementina*) highlight the value of community science for adventive species monitoring. *Apidologie* 54:46.
- 21. Lau, P.W., I.L. Esquivel, K.A. Parys, **K.-LJ. Hung** & P. Chakrabarti. 2023. The nutritional landscape in agroecosystems: a review on how resources and management practices can shape pollinator health in agricultural environments. *Annals of the Entomological Society of America* 116: 261–275. [Issue cover]
- Leclercq, N., L. Marshall, T. Weekers, P. Basu, D. Benda, D. Bevk, R. Bhattacharya, P. Bogusch, A. Bontšutšnaja, L. Bortolotti, N. Cabirol, E. Calderón-Uraga, R. Carvalho, S. Castro, S. Chatterjee, M. De La Cruz Alquicira, J.R. de Miranda, T. Dirilgen, A. Dorchin, K. Dorji, B. Drepper, S. Flaminio, J. Gailis, M. Galloni, H. Gaspar, M.W. Gikungu, B.A. Hatteland, I. Hinojosa-Diaz, L. Hostinská, B.G. Howlett, K.-L.J. Hung, L. Hutchinson, R.O. Jesus, N. Karklina, M.S. Khan, J. Loureiro, X. Men, J.-M. Molenberg, S. Mudri-Stojnić, P. Nikolic, E. Normandin, J. Osterman, F. Ouyang, A.S. Oygarden, L. Ozolina-Pole, N. Ozols, A. Parra Saldivar, R.J. Paxton, T. Pitts-Singer, K. Poveda, K. Prendergast, M. Quaranta, S.F.J. Read, S. Reinhardt, M. Rojas-Oropeza, C. Ruiz, M. Rundlöf, A. Sade, C. Sandberg, F. Sgolastra, S.F. Shah, M.A. Shebl, V. Soon, D.A. Stanley, J. Straka, P. Theodorou, E. Tobajas, J.L. Vaca-Uribe, A. Vera, C.A. Villagra, M.-K. Williams, M. Wolowski, T.J. Wood, Z. Yan, Q. Zhang & N.J. Vereecken. 2023. Global taxonomic, functional, and phylogenetic diversity of bees in apple orchards. Science of The Total Environment 901:165933.
- Chesshire, P.R., E.E Fischer, N. Dowdy, T. Griswold, A.C. Hughes, M.C. Orr, J.S. Ascher, L.M. Guzman, K.-L.J. Hung, N.S. Cobb & L.M. McCabe. 2023. Completeness analysis for over 3000 United States bee species identifies persistent data gap. *Ecography* 5:e06584.

## 202<u>2</u>

- 18. Callaghan, C.T., T. Mesaglio, J.S. Ascher, T.M. Brooks, A.A. Cabras, M. Chandler, W.K. Cornwell, I. Cristóbal Ríos-Málaver, E. Dankowicz, N. Urfi Dhiya'ulhaq, R.A. Fuller, C. Galindo-Leal, F. Grattarola, S. Hewitt, L. Higgins, C. Hitchcock, K.-L.J. Hung, T. Iwane, P. Kahumbu, R. Kendrick, S.R. Kieschnick, G. Kunz, C.C. Lee, C.-T. Lin, S. Loarie, M.N. Medina, M.A. McGrouther, L. Miles, S. Modi, K. Nowak, R. Oktaviani, B.M. Waswala Olewe, J. Pagé, S. Petrovan, c. saari, C.E. Seltzer, A.P. Seregin, J.J. Sullivan, A.P. Sumanapala, A. Takoukam, J. Widness, K. Willmott, W. Wüster & A.N. Young. 2022. The benefits of contributing to the citizen science platform iNaturalist as an identifier. *PLOS Biology* 20:e3001843.
- 17. Nabors, A.J., **K.-L.J. Hung**, L. Corkidi & J. Bethke. 2022. California native perennials attract greater native pollinator abundance and diversity than nonnative, commercially available ornamentals in Southern California. *Environmental Entomology* 51:836–847.
- Lybbert, A.H., S.J. Cusser, K.-L.J. Hung & K. Goodell. 2022. 10-year trends reveal declining quality of seeded pollinator habitat on reclaimed mines regardless of seed mix diversity. *Ecological Applications* 32:e02467.
- 15. Etter, K.J., G. Junquera, J. Horvet, R.A. Alarcón, **K.-L.J. Hung** & D.A. Holway. 2022. Interspecific pollen transport between non-native fennel and an island endemic buckwheat: assessment of the magnet effect. *Biological Invasions* 24:139–155.

### 2021

- 14. Vizza, K.M., D.V. Beresford, **K.-L.J. Hung**, J.A. Schaefer & J.S. MacIvor. 2021. Wild bees (Hymenoptera: Anthophila) from remote surveys in northern Ontario and Akimiski Island, Nunavut including four new records. *Journal of the Entomological Society of Ontario* 152:57–80.
- 13. Bloom, E.H., T.J. Wood, **K.-L.J. Hung**, J.J. Ternest, L. Ingwell, K. Goodell, I. Kaplan & Z. Szendrei. 2021. Synergism between local- and landscape-level pesticides reduces wild bee floral visitation in pollinator-dependent crops. *Journal of Applied Ecology* 58:1187–1198.
- 12. **Hung, K.-L.J.**, S.S. Sandoval<sup>†</sup>, J.S. Ascher & D.A. Holway. 2021. Joint impacts of drought and habitat fragmentation on native bee assemblages in a California biodiversity hotspot. *Insects* 12:135.

#### 2019

- 11. **Hung, K.-L.J.**, J.S. Ascher, J.A. Davids<sup>†</sup> & D.A. Holway. 2019. Ecological filtering in scrub fragments restructures the taxonomic and functional composition of native bee assemblages. *Ecology* 100:e02654. [Issue cover]
- 10. **Hung, K.-L.J.**, J.M. Kingston<sup>†</sup>, A. Lee<sup>†</sup>, D.A. Holway & J.R. Kohn. 2019. Non-native honey bees numerically dominate abundant floral resources in a global hotspot of pollinator diversity. *Proceedings of the Royal Society B* 286:20182901.

#### 2018

- 9. **Hung, K.-L.J.**, J.M. Kingston<sup>†</sup>, M. Albrecht, D.A. Holway & J.R. Kohn. 2018. The worldwide importance of honey bees as pollinators in natural habitats. *Proceedings of the Royal Society B* 285:20172140.
- 8. Nabors, A.J.<sup>†</sup>, H.J. Cen<sup>†</sup>, **K.-L.J. Hung**, J.R. Kohn & D.A. Holway. 2018. The effect of removing numerically dominant, non-native honey bees on seed set of a native plant. *Oecologia* 186:281−289.

### <u>2017</u>

 Hung, K.-L.J., J.S. Ascher & D.A. Holway. 2017. Urbanization-induced habitat fragmentation erodes multiple components of temporal diversity in a Southern California native bee assemblage. *PLOS ONE* 12: e0184136.

# <u>2016</u>

5. Schochet, A.B.<sup>†</sup>, **K.-L.J. Hung** & D.A. Holway. 2016. Bumble bee species exhibit divergent responses to urbanization in a Southern California landscape. *Ecological Entomology* 41:685–692.

# <u>2015</u>

- 5. **Hung, K.-L.J.**, J.S. Ascher, J. Gibbs, R.E. Irwin & D.T. Bolger. 2015. Effects of fragmentation on a distinctive coastal sage scrub bee fauna revealed through incidental captures by pitfall traps. *Journal of Insect Conservation* 19:175–179.
- 4. Hanna, C, I. Naughton, C. Boser, R. Alarcón, **K.-L.J. Hung** & D.A. Holway. 2015. Floral visitation by the Argentine ant reduces be evisitation and plant seed set. *Ecology* 96:222–230.

### 2014

3. Rightmyer, M.G., Y. Kono, J.R. Kohn & **K.-L.J. Hung**. 2014. A new species of *Triepeolus* (Hymenoptera: Apidae), with comments on *T. utahensis* (Cockerell) and *T. melanarius* Rightmyer. *Zootaxa* 3872:048-056.

2. LeVan, K.E., **K.-L.J. Hung**, K.R. McCann, J. Ludka & D.A. Holway. 2014. Floral visitation by the Argentine ant reduces pollinator visitation and seed set in the coast barrel cactus, *Ferocactus viridescens*. *Oecologia* 174:163–171.

2010

1. Siepielski, A.M., **K.-L.J. Hung**, E.E.B. Bein & M.A. McPeek. 2010. Experimental evidence for neutral community dynamics governing an insect assemblage. *Ecology* 91:847–857.

## **Manuscripts in review and in preparation**

(Notations: co-lead authorship<sup>◊</sup>; undergraduate\*, Master's<sup>†</sup>, and PhD<sup>‡</sup> students mentored)

- 1. **Hung, K.-L.J.**, J. Ternest, T.J. Wood, E.H. Bloom, L. Ingwell, Z. Szendrei, I. Kaplan & K. Goodell. Plant vs. pollinator protection: Balancing pest management against floral contamination for insecticide use in Midwestern U.S. cucurbits. In review at *J Economic Entomology*.
- 2. **Hung, K.-L.J.**, A. Lee<sup>†</sup>, H.J. Cen<sup>†</sup>, R. Alarcón & D.A. Holway. The structure of plant-pollinator interaction networks is robust to pollinator species loss in a fragmented pollinator diversity hotspot. In preparation. Target journal: *Journal of Pollination Ecology*.
- 3. **Hung, K.-L.J.**, L. Ingwell, I. Kaplan & K. Goodell. Response of wolf spiders (Araneae: Lycosidae) to systemic neonicotinoid insecticides and broad-spectrum foliar pesticides in pumpkin fields. In preparation. Target journal: *Ecotoxicology*.

# Other academic products

- 3. **Hung, K.-L.J.**, M.G. Rightmyer, M. Wall, J. Berrian, J.S. Ascher, D. Yanega, J.A. Davids & D.A. Holway. 2015. An annotated checklist of the bees (Hymenoptera: Anthophila) of San Diego County, California. UC San Diego Library Digital Collections. URL: <a href="http://dx.doi.org/10.6075/J0PN93HK">http://dx.doi.org/10.6075/J0PN93HK</a>
- 2. **Hung, K.-L.J.**, J. Wade-Robinson, D.A. Holway & S. Glenn Lee. 2012. The Urban Pollinator Diversity Project: a hands-on ecological research learning module. High Tech High School, San Diego, CA, USA.
- 1. Dartmouth Studies in Tropical Ecology 2009-2010. Dartmouth College Press, Hanover, NH, USA.

## Research grants (PI total: \$166,111 USD; Co-PI total: \$794,116 USD)

| 2024 (Co-PI) | 30X30 Grant, California Department of Fish and Wildlife. \$485,018.                             |
|--------------|---|
| 2023 (Co-PI) | Research Grant, The Nature Conservancy. \$281,006.  |
| 2023 (PI)    | Research Grant, United States Fish and Wildlife Service. \$52,647.                              |
| 2023 (PI)    | State Wildlife Grant, Oklahoma Department of Wildlife Conservation. \$103,480.                  |
| 2021 (Co-PI) | Grant in Aid of Research, Southern California Research Learning Center, National Park Services. |
|              | \$10,000.   |
| 2015 (Co-PI) | Doctoral Dissertation Improvement Grant, National Science Foundation (DEB-1501566). \$18,092.   |
| 2014 (PI)    | Bloom-Hays Ecological Research Grant, Sea and Sage Audubon. \$500.                              |
| 2014 (PI)    | Grant in Aid of Research, Anza-Borrego Desert Natural History Association. \$2,200.             |
| 2013 (PI)    | Educational Grant, California Native Plant Society. \$600.                                      |
| 2013 (PI)    | Mildred E. Mathias Graduate Student Research Grant, University of California. \$2014.           |
| 2011 (PI)    | Young Explorers Grant, National Geographic Society. \$4884.                                     |
| 2011 (PI)    | Grant In Aid of Research, Sigma Xi Society. \$400.  |
| 2011 (PI)    | Jeanne Marie Messier Memorial Fund Award, University of California, San Diego. \$1000.          |
| 2009 (PI)    | Honors Thesis Grant, Dartmouth College. \$400.  |

### Research and academic fellowships (total: \$151,235 USD)

| 2022 | Junior Faculty Summer Fellowship, Dodge Family College of Arts and Sciences, University of      |
|------|---|
|      | Oklahoma. \$6,860.  |
| 2019 | Postdoctoral Fellowship, Natural Sciences and Engineering Research Council of Canada. \$67,800. |
| 2016 | Institute for the Study of Ecological and Evolutionary Climate Impacts Graduate Fellowship,     |
|      | University of California. \$13,175.   |
| 2016 | Frontiers of Innovation Scholar Fellowship, University of California, San Diego. \$25,000.      |
| 2015 | McElroy Fellowship, University of California San Diego. \$12,000.                               |
| 2011 | UC Academic Senate Bridge Fund Grant, University of California, San Diego. \$25,000.            |
| 2008 | James O. Freedman Presidential Scholarship, Dartmouth College. \$1,400.                         |

# **Honors and awards**

| 2023    | Winner, UC San Diego Library Art of Science Contest 2023: Best science communication via visual |
|---------|---|
|         | art medium, voted by residents of San Diego and the UC San Diego community                      |
| 2016    | Excellence in Teaching Award, UC San Diego: Top 8 graduate instructional assistants each        |
|         | academic year in the Division of Biological Sciences.   |
| 2015    | Best Graduate Student Talk Award, UC San Diego and Salk Institute: Best graduate student        |
|         | dissertation research presentation at annual research retreat of the Division of Biological     |
|         | Sciences and Salk Institute for Biological Studies.   |
| 2015    | Excellence in Teaching Award, UC San Diego: Top 8 graduate instructional assistants each        |
|         | academic year in the Division of Biological Sciences.   |
| 2013    | Excellence in Teaching Award, UC San Diego: Top 8 graduate instructional assistants each        |
|         | academic year in the Division of Biological Sciences.   |
| 2008-10 | Rufus Choate Scholar, Dartmouth College: Top 5% of class year.                                  |
| 2008    | Francis L. Town Scientific Prize, Dartmouth College: Top second-year student in the Division of |
|         | Biological Sciences.  |

# **Teaching**

# University of Oklahoma

2022-23 Fall Instructor of record: General Entomology (BIOL 4073)

# University of California, San Diego

| University of Ca | antornia, San Diego   |
|------------------|---|
| 2016 Winter      | Head Instructional Assistant: Organismic and Evolutionary Biology (BILD 3)            |
| 2015 Fall        | Head Instructional Assistant: Plant Ecology (BIEB 126)                                |
| 2015 Summer      | Head Instructional Assistant: Evolution (BIEB 150)                                    |
| 2015 Summer      | Head Instructional Assistant: Introductory Ecology - Organisms and Habitat (BIEB 102) |
| 2015 Winter      | Instructional Assistant: Animal Behavior and Communication (BIEB 166)                 |
| 2014 Fall        | Head Instructional Assistant: Plant Ecology (BIEB 126)                                |
| 2013 Fall        | Instructional Assistant: Ecology Laboratory (BIEB 121)                                |
| 2012 Fall        | Head Instructional Assistant: Insect Ecology (BIEB 128)                               |
| 2011 Fall        | Instructional Assistant: Plant Ecology (BIEB 126)                                     |
|                  |   |

# **Graduate students mentored**

(Notations: underrepresented minority students\*)

# University of Oklahoma (4 students total)

| 2022-Present | Jackson Wingert, MSc: Importance of mobile sand dunes in arthropod conservation in Oklahoma.    |
|--------------|---|
| 2022-Present | Benjamin Turnley, PhD: Impacts of grazing land management on Oklahoma's native pollinators.     |
| 2022-Present | Samuel O'Dell*, PhD: Native pollinator conservation under changing land-use and climate.        |
| 2022-Present | Lauren Casillas-Rosenfelt, MSc: Ecosystem multifunctionality of pollinator gardens. (Co-advised |
|              | with PI Lara Souza)   |

## University of California, San Diego (8 students total)

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2011-2014 Amanda Schochet, MSc: Bumble bee species exhibit divergent responses to urbanization in a Southern California landscape. (Co-advised with PI David Holway)

#### **Undergraduate students mentored**

(Notations: underrepresented minority students\*, students who went on to STEM careers<sup>(s)</sup>)

#### University of Oklahoma (10 students total)

2023 Israel Lugo\*, Jayden Thomas\*: Contribution of urban pollinator gardens to invertebrate diversity

2022 Alec VanCuren: Effect of pollen carryover on estimates of pollinator effectiveness.

2022 Abbygail Tan: Nest density preferences of cavity-nesting Hymenoptera in central Oklahoma.

2021-Present Brooke Haden: Effect of mowing on blooming phenology and pollinator associations of

Symphyotrichum subulatum *complex*.

2021-2023 Tori Wierzchowski<sup>◊</sup>, Abigail Ren: Contribution of non-native ornamental plants to food resources

of early-spring pollinators.

2021-Present Jenna Howery, Micala Neu, Austin Hill: Diversity of native bees in Oklahoma.

#### **University of Toronto (2 students total)**

2020-2021 Sydney Gram: Evolution of tradeoffs between pollen and nectar rewards.

2019-2021 Sophia Fan<sup>\(\delta\)</sup>: *Pollen carryover of apple orchard pollinators*.

## The Ohio State University (7 students total)

2018 Elliot O'Flynn: *Role of pollen-producing weeds in pumpkin fields*.

2018 Hannah Van Zant<sup>§</sup>: Impact of foliar pesticides on major pumpkin pollinator species.

2017-2018 Taryn Cheney, David Chu<sup>\(\dagger)</sup>, Kendra Harder<sup>\(\dagger)</sup>: Variation in wolf spiders and crop pests in Ohio's

pumpkin fields.

2017-2018 Amber Fredenburg, Erin Custer: *Pollinator communities in ruderal habitats near pumpkin crops*.

#### University of California, San Diego (48 students total)

Blaine Novack-Pilch<sup>\(\gamma\)</sup>: Bee range and body size in response to habitat fragmentation.

2016-17 Victoria Apaldetti\*, Pablo Arroyo\*: Effects of plant density on pollination network structure.

2016 Danila Souza de Barros\*<sup>©</sup>: *Using alarm pheromone to disrupt honey bee foraging*.

2015-2017 Anthony Alonso, Evelyn Brady, Ben Chong, Allison Deogaygay, Stephanie Hadimulia, Aleksandr Harutyunyan<sup>\( \)</sup>, Renz Ignacio, Stephanie Le, Joshua Mihalik, Brianne Nguyen, Kara Powell, Victoria Shi, Danielle Stearns, Kristin Varner, Ziyi Wang<sup>\( \)</sup>, Zhe Wei, Yutong Wu, Emma Zelus:

Victoria Shi, Danielle Stearns, Kristin Varner, Ziyi Wang', Zhe Wei, Yutong Wu, Emma Zelus Linking pollination networks to patterns of conspecific and heterospecific pollen deposition.

2015-2017 Lindsay Rowe\*, Brandy White<sup>\( \)</sup>, Yifei Wang<sup>\( \)</sup>: Effect of severe drought on native bee diversity.

2013-2017 Robin Fong, Breana Garcia\*, Kirk Hutchison, Jessica May, Michael McMahon, Elizabeth Moller,

Yebin Park, Richard Samakapiruk: Linking patterns of pollinator diversity and pollen deposition to plant reproductive output.

aeposition to piant reproductive output.

2013-2014 Kevin Borchers<sup>\(\delta\)</sup>: Patterns of pollinator visitation on experimental plants in fragmented landscapes.

David Dannecker<sup>\( \)</sup>, Alast Eisa, Ama Eisa: *Variation in bee eye color across phylogeny and ecology*.

Jordan Arce\*<sup>\( \)</sup>, Anna Dipaola<sup>\( \)</sup>, Claire Johnson, Haebin Liew, Constance Lin<sup>\( \)</sup>, Stephanie Tsoi,

Winny Wen: Diversity of native bees in San Diego County.

2011-2016 Sunny Fung<sup>\(\frac{1}{2}\)</sup>, Alexander Sinclair<sup>\(\frac{1}{2}\)</sup>: Phenology of native bees and plants in San Diego.

2011-2013 Spencer Huey<sup>©</sup>: Response of pollinators to predators on flowers.

2011-2012 Rachel Graham<sup>\(\dagger)</sup>: San Diego Native Bee Barcoding Project (BOLD Systems).

## Other early-career researchers mentored

#### University of Oklahoma (3 researchers total)

2023-Present Alec VanCuren, Izzy Gonzales (research technician): Distribution and habitat association of

Oklahoma's bumble bee species.

2022-2023 Mary Powley (research technician): *Oklahoma's native bee biodiversity and biogeography*.

# Thesis committees served

#### University of Oklahoma

2022-Present Mariela Encarnacion, PhD.

2022-Present Laura Gatchoff, PhD.

2021 Paul Baumann, Undergraduate Honors Thesis.

#### Lakehead University, Canada

Amber Fredenburg, MSc.

# **Invited academic seminar presentations**

**Hung, K.-L.J.** January 2023. "Pollen carryover, pollinator movement, and spatial context impact the delivery of pollination services." Plant Biology and Conservation Seminar Series, Northwestern University & Chicago Botanic Garden, Glencoe, IL, USA.

**Hung, K.-L.J.**, S.L. Fan, C.G. Strang, M.G. Park & J.D. Thomson. October 2021. "Combining basic natural history observations and computer simulations to measure pollination services in apple orchards." J. D. Maness Seminar Series, Department of Biology, Southwest Oklahoma State University, Weatherford, OK, USA.

## [Remote presentation]

- **Hung, K.-L.J.**, S.L. Fan, C.G. Strang, M.G. Park & J.D. Thomson. April 2021. "Achieving more realistic assessments of pollination service delivery by integrating pollinator movement, ecological context, and pollen carryover." Departmental Seminar, Entomology Department, National Museum of Natural History, Smithsonian Institution, Washington, DC, USA. **[Remote presentation]**
- **Hung, K.-L.J.** January 2020. "Effects of habitat fragmentation and introduced species on the structure and function of plant-pollinator interactions." Departmental Seminar, Department of Ecology and Evolution Biology, University of Toronto St. George Campus, Toronto, ON, Canada.
- **Hung, K.-L.J.** January 2020. "Native pollinator diversity, conservation, and ecological function in a human-modified world." Departmental Seminar, Oklahoma Biological Survey, University of Oklahoma, OK, USA.
- **Hung, K.-L.J.** December 2019. "Effects of habitat fragmentation and introduced species on the structure and function of plant-pollinator interactions." Departmental Seminar, Department of Biology, University of Ottawa, Ottawa, ON, Canada.
- **Hung, K.-L.J.** October 2019. "Effects of habitat fragmentation and introduced species on the structure and function of plant-pollinator interactions." Departmental Seminar, Department of Biological Sciences, University of Toronto Scarborough Campus, Scarborough, ON, Canada.
- **Hung, K.-L.J.** May 2018. "Effects of habitat fragmentation and introduced species on the structure and function of plant-pollinator interactions." Departmental Seminar, Department of Wildlife, Sustainability, and Ecosystem Sciences, Tarleton State University, TX, USA.
- **Hung, K.-L.J.** April 2018. "Effects of habitat fragmentation and introduced species on the structure and function of plant-pollinator interactions." Departmental Seminar, Department of Entomology, The Ohio State University Wooster Campus, Wooster, OH, USA.
- **Hung, K.-L.J.** February 2018. "Native bee biodiversity in a landscape fragmented by urbanization." State of Biodiversity Symposium 2018, San Diego Natural History Museum, San Diego, CA, USA.
- **Hung, K.-L.J.** October 2017. "Effects of habitat fragmentation and introduced species on the structure and function of plant-pollinator interactions." Departmental Seminar, Department of Evolution, Ecology, and Organismal Biology, The Ohio State University Columbus Campus, Columbus, OH, USA.
- **Hung, K.-L.J.** May 2014. "Native Bees of San Diego: biology and conservation status." Geisel Library Lecture Series, University of California San Diego, La Jolla, CA, USA.

### **Academic conference presentations**

(Notations: undergraduate\*, Master's<sup>†</sup>, and PhD<sup>‡</sup> students mentored)

- K.-L.J. Hung, M.E. Powley, L.M. McCabe, P.R. Chesshire, M.S. Arduser, S. O'Dell III<sup>‡</sup>, K.W. Wright, Z.A. Portman, T.M. Onuferko, J. Gibbs, V.H. Gonzalez, A.K. Buthod, N.S. Cobb & J.S. Ascher. November 2023. "The incipient Oklahoma Native Bee Inventory: Lessons from opportunistic surveys in an uncharted U.S. interior state." Invited Symposium Oral Presentation, Entomological Society of America 2023, National Harbor, MD, USA.
- Goodell, K., **K.-L.J. Hung**, J.L. Novotny & A.H. Lybbert. April 2023. "Bee exposure to foliar insecticides and fungicides in pumpkin (*Cucurbita pepo*) pollen and nectar depends on chemical and time since spray." Contributed Poster Presentation, Entomological Society of America Joint North Central / Southwestern Annual Branch Meeting, Oklahoma City, OK, USA. [**Presented by K. Goodell**]

- Wierzchowski, V.M.\*, A. Ren\*, B.L. Haden\* & **K.-L.J. Hung**. April 2023. "Urban ornamental plants support early-spring pollinators." Contributed Oral Presentation, Entomological Society of America Joint North Central / Southwestern Annual Branch Meeting, Oklahoma City, OK, USA.
- **Hung, K.-L.J.**, P.R. Chesshire, M.C. Orr, A.C. Hughes, J.L. Mullins, K.A. Parys, P. Simpson, L.M. McCabe, N.S. Cobb & J.S. Ascher. March 2023. "A primer on iNaturalist bee data." Invited Symposium Oral Presentation, National Native Bee Monitoring Network, Data Management Online Workshop. [Remote presentation]
- **Hung, K.-L.J.**, P.R. Chesshire, M.C. Orr, A.C. Hughes, J.L. Mullins, K.A. Parys, P. Simpson, L.M. McCabe, N.S. Cobb & J.S. Ascher. November 2022. "Community science data fill biodiversity knowledge gaps for assessing the status of bees globally." Contributed Oral Presentation, Entomological Society of America 2022, Vancouver, BC, Canada.
- Mullins, J.L., K.-L.J. Hung, J.S. Ascher & D.A. Holway. November 2022. "Range-restricted bee species are more vulnerable to extirpation in fragmented habitats." Contributed Poster Presentation, Entomological Society of America 2022, Vancouver, BC, Canada. [Presented by J.L. Mullins]
- **Hung, K.-L.J.**, J.M. Kingston<sup>†</sup>, A. Lee<sup>†</sup>, M. Albrecht, A.J. Nabors, D.A. Holway & J.R. Kohn. July 2022. "Global, community-and species-level impacts of introduced honey bees on plant-pollinator mutualisms." Organized Symposium Oral Presentation, IUSSI 2022, San Diego, CA, USA.
- **Hung, K.-L.J.** March 2022. "Solve Climate by 2030: a case study in community science." Invited Panel Presentation, Solve Climate by 2030 Conference, University of Oklahoma, Norman, OK, USA.
- **Hung, K.-L.J.**, S.L. Fan, C.G. Strang, M.G. Park & J.D. Thomson. April 2021. "Influence of pollen carryover, pollinator behavior, and orchard layout on the delivery of pollination services in apple orchards." Contributed Oral Presentation, Atwood Colloquium 2021, University of Toronto, Toronto, ON, Canada.
- **Hung, K.-L.J.**, S.L. Fan\*, C.G. Strang & J.D. Thomson. October 2020. "Modeling pollinator foraging behavior and pollen carryover causes rank inversions in estimated pollinator importance." Contributed Oral Presentation, BeeCon 2020, Toronto, ON, Canada.
- **Hung, K.-L.J.**, L. Ingwell, I. Kaplan & K. Goodell. November 2019. "Response of wolf spiders (Araneae: Lycosidae) to systemic neonicotinoid insecticides and broad-spectrum foliar pesticides in pumpkin fields." Contributed Oral Presentation, Entomological Society of America 2019, St. Louise, MO, USA.
- Bloom, E.H., T.J. Wood, **K.-L.J. Hung**, J.J. Ternest, L. Ingwell, K. Goodell, I. Kaplan & Z. Szendrei. November 2019. "Do pesticides disrupt pollination by wild and managed bees?" Contributed Oral Presentation, Entomological Society of America 2019, St. Louise, MO, USA.
- Nabors, A.J.<sup>†</sup>, L. Corkidi, **K.-L.J. Hung** & J.A. Bethke. October 2019. "Pollinator attractiveness of native and non-native ornamental plants of southern California." Contributed Poster Presentation, Protecting Pollinators in Urban Landscapes 2019, Cincinnati, OH, USA. [Presented by L. Corkidi]
- **Hung, K.-L.J.**, J.M. Kingston<sup>†</sup>, A. Lee<sup>†</sup>, M. Albrecht, D.A. Holway & J.R. Kohn. August 2019. "Global- and local-scale impacts of the western honey bee (*Apis mellifera*) on plant-pollinator mutualisms in natural habitats." Contributed Oral Presentation, BeeCon 2019, Toronto, ON, Canada.
- Hung, K.-L.J., L. Ingwell, I. Kaplan & K. Goodell. November 2018. "Relative roles of pesticide management and landscape context in determining pest pressure, predator abundance, and pollinator visitation in pumpkin fields." Member Symposium Oral Presentation, Entomological Society of America 2018, Vancouver, BC, Canada.
- **Hung, K.-L.J.**, J.M. Kingston, D.A. Holway & J.R. Kohn. August 2018. "Dynamics of honey bee use of native floral resources in San Diego County, CA, USA." Contributed Oral Presentation, Ecological Society of America 2018, New Orleans, LA, USA. [Presented by J.R. Kohn]
- **Hung, K.-L.J.**, J.S. Ascher, J.A. Davids<sup>†</sup> & D.A. Holway. August 2018. "Ecological filtering in scrub fragments reduces taxonomic and functional diversity of native bees, but does not homogenize bee assemblages." Contributed Oral Presentation, Ecological Society of America 2018, New Orleans, LA, USA.
- **Hung, K.-L.J.**, H.J. Cen<sup>†</sup>, A. Lee<sup>†</sup> & D.A. Holway. August 2017. "Plant-pollinator interaction networks in fragmented habitats retain structural robustness in spite of pollinator diversity loss." Contributed Oral Presentation, Ecological Society of America 2017, Portland, OR, USA.
- Nabors, A.J.<sup>†</sup>, H.J. Cen<sup>†</sup>, **K.-L.J. Hung**, J.R. Kohn & D.A. Holway. August 2017. "The effect of removing numerically dominant, non-native honey bees on seed set of a native plant." Contributed Oral Presentation, Ecological Society of America 2017, Portland, OR, USA. [Presented by D.A. Holway]
- Sandoval, S.S.<sup>†</sup>, **K.-L.J. Hung** & D.A. Holway. November 2016. "Impact of drought and habitat fragmentation on native bee assemblages." Contributed Poster Presentation, Southern California Conferences for Undergraduate Research, University of California, Riverside, CA, USA. [Presented by S.S. Sandoval]

- Davids, J.A.<sup>†</sup>, **K.-L.J. Hung** & D.A. Holway. November 2016. "The San Diego Bee Diversity Project." Contributed Poster Presentation, Colorado Desert Natural History Research Symposium, Borrego Springs, CA, USA. [Presented by J.A. Davids]
- **Hung, K.-L.J.**, J.M. Kingston<sup>†</sup>, M. Albrecht, D.A. Holway & J.R. Kohn. October 2016. "A meta-analysis of the role of the western honey bee (*Apis mellifera*) in plant-pollinator interaction networks worldwide." Contributed Oral Presentation, International Congress of Entomology 2016, Orlando, FL, USA.
- **Hung, K.-L.J.**, J.M. Kingston<sup>†</sup>, M. Albrecht, D.A. Holway & J.R. Kohn. August 2016. "A meta-analysis of the role of the western honey bee (*Apis mellifera*) in plant-pollinator interaction networks worldwide." Contributed Oral Presentation, Ecological Society of America 2016, Fort Lauderdale, FL, USA.
- Schochet, A.B.<sup>†</sup>, **K.-L.J. Hung**, C.J. Fariss & D.A. Holway. August 2014. "Correlates of bumble bee persistence in an urbanized Southern California landscape." Contributed Poster Presentation, Ecological Society of America 2014, Sacramento, CA, USA. [Presented by A.B. Schochet]
- **Hung, K.-L.J.** & D.A. Holway. March 2014. "Effects of habitat fragmentation on native bee assemblages and pollination services in a Southern California scrub ecosystem." Contributed Oral Presentation, Mathias Scholars Symposium 2014, University of California Natural Reserves System, Bodega Bay, CA, USA.
- **Hung, K.-L.J.** & D.A. Holway. August 2013. "Habitat fragmentation reduces bee taxon richness and temporal beta-diversity in a hotspot of bee biodiversity." Contributed Poster Presentation, Ecological Society of America 2013, Minneapolis, MN, USA.
- **Hung, K.-L.J.**, J.S. Ascher, J. Gibbs, R.E. Irwin, D.T. Bolger & D.A. Holway. August 2012. "Examining the effects of habitat fragmentation on a southern California native bee assemblage." Contributed Poster Presentation, Ecological Society of America 2012, Portland, OR, USA.

#### **Invited educational seminar presentations and outreach events**

- **Hung, K.-L.J.** September 2023. "Harnessing the power of community to monitor pollinator health and fill key knowledge gaps." Tribal Alliance for Pollinators Conference, Bixby, OK, USA.
- J.A. Davids, H.-S.S. Chen, and K.-L.J. Hung. September 2023. "Face the Bees: a glance into the diversity and natural history of San Diego's native bees." Nat at Night: Celebration of Art of Science Contest Winners, San Diego Natural History Museum, San Diego, CA, USA. [Presented by J.A. Davids]
- **Hung, K.-L.J.** August 2023. "A plant's best friend needs a hand: Biology, ecological role, and conservation of Oklahoma's native bees." Oklahoma Native Plants Society Central Chapter, Oklahoma City, OK, USA.
- Hung, K.-L.J. June 2023. "Pollinator Week bee walk." City of Norman Pollinator Week 2023, Norman, OK, USA.
- **Hung, K.-L.J.** May 2023. "How to be a bee biologist in your spare time." Yard by Yard Spring Workshops, Oklahoma City, OK, USA.
- **Hung, K.-L.J.** April 2023. "Fantastic bees and how to save them." Tribal Alliance for Pollinators Conference, Bixby, OK, USA.
- **Hung, K.-L.J.** & J.M. Mullins. February 2023. "Status assessment and next steps of the Torrey Pines Bee Monitoring Project." Invited Workshop Presentation, Torrey Pines Docents Society, Del Mar, CA, USA.
- **Hung, K.-L.J.** February 2023. "The birds, and now the bees: How field naturalists are shaping our understanding of native bee conservation." Invited Keynote Address, San Diego Bird Festival, San Diego, CA, USA.
- **Hung, K.-L.J.** July 2022. "Native bee Q&A." San Diego Zoo Wildlife Alliance Native Biodiversity Corps, San Diego, CA, USA. [Remote presentation]
- Hung, K.-L.J. June 2022. "Pollinator Week bee walk." City of Norman Pollinator Week 2022, Norman, OK, USA.
- **Hung, K.-L.J.** June 2022. "Fantastic bees and how to save them." City of Norman Pollinator Week 2022, Norman, OK, USA. [Remote presentation]
- **Hung, K.-L.J.** & M.E. Powley. May 2022. "How to be a bee biologist in your spare time." Tribal Alliance for Pollinators Workshops, Bixby, OK, USA.
- **Hung, K.-L.J.** & E. Garvin. May 2022. "Let's talk about the environment: *The Music of Bees* book discussion." Spark A Change, Noble Public Library, Noble, OK, USA.
- **Hung, K.-L.J.** April 2022. "Native Bees 101: A crash course on native bee natural history, diversity, and conservation." University of Oklahoma Green Week Lecture, Norman, OK, USA.
- **Hung, K.-L.J.** April 2022. "Diversity and conservation of Southern California's native bees." Sea and Sage Audubon Society, Irvine, CA, USA. [Remote presentation]
- **Hung, K.-L.J.** March 2022. "How to be a bee biologist in your spare time." Tribal Alliance for Pollinators Workshops, Bixby, OK, USA. **[Remote presentation]**

- **Hung, K.-L.J.** March 2022. "Keeping a pulse on our native bees: how you can help monitor our most important pollinators." Torrey Pines Docents Society Monthly Meeting, Del Mar, CA, USA. [Remote presentation]
- **Hung, K.-L.J.** February 2022. "How native bees live their lives and why they need your help." Tribal Alliance for Pollinators Conference, Bixby, OK, USA. [Remote presentation]
- **Hung, K.-L.J.** November 2021. "Native Bees 101: A crash course on native bee natural history, diversity, and conservation." University of Oklahoma Beekeepers' Association, Norman, OK, USA.
- **Hung, K.-L.J.** September 2021. "How native bees live their lives and why they need your help." Tribal Alliance for Pollinators Conference, Bixby, OK, USA.
- **Hung, K.-L.J.** August 2021. "The Torrey Pines Bee Inventory and Monitoring Project." Torrey Pines Docents Society Monthly Meeting, Del Mar, CA, USA. [Remote presentation]
- **Hung, K.-L.J.** May 2021. "Fantastic bees and how to save them." NAT Talk Series, San Diego Natural History Museum, San Diego, CA, USA. [Remote presentation]
- **Hung, K.-L.J.** April 2021. "Diversity, natural history, and conservation of San Diego's native bees." Naturally Speaking Virtual Talk, Cabrillo National Monument Foundation, San Diego, CA, USA. [Remote presentation]
- **Hung, K.-L.J.** October 2020. "Effects of habitat fragmentation, climate change, and introduced species on native pollinators in a biodiversity hotspot." Staff and Volunteers Brown Bag Lunch-And-Learn, San Diego Natural History Museum, San Diego, CA, USA. [Remote presentation]
- **Hung, K.-L.J.** January 2020. "Know your bees: an introduction to the ecology of honey bees and native bees." Ecology and Activism: We Speak for the Bees, University of Toronto, Toronto, ON, Canada.
- **Hung, K.-L.J.** March 2018. "Natural history and conservation of native bees." Wildlife Symposium 2018, Muskingum Soil and Water Conservation District, Zanesville, OH, USA.
- **Hung, K.-L.J.** November 2016. "Patterns and consequences of pollinator diversity loss in San Diego's scrub ecosystems." Ecology, Behavior, and Evolution Club Monthly Meeting, UC San Diego, La Jolla, CA, USA.
- **Hung, K.-L.J.** August 2016. "Diversity and conservation needs of bees in San Diego County." Summer Seminar Series, San Diego Zoo Institute for Conservation Research, Escondido, CA, USA.
- **Hung, K.-L.J.** May 2016. "Diversity and natural history of San Diego's native bees." Cabrillo BioBlitz and Biodiversity Festival, Cabrillo National Monument, San Diego, CA, USA.
- **Hung, K.-L.J.** August 2015. "The not-so-secret life of bees: ecology and conservation of San Diego's native bees." Special Lecture Series, Cabrillo National Monument, San Diego, CA, USA.
- **Hung, K.-L.J.** March 2015. "Native bees of San Diego County: biology, diversity, and conservation." 43<sup>rd</sup> Desert Lecture Series, The Anza-Borrego Desert Natural History Association, Borrego Springs, CA, USA.
- **Hung, K.-L.J.** November 2014. "Pollen, pollination, and pollinators: a look at San Diego's native bees." Educational Lecture, The Anza-Borrego Desert Natural History Association, Borrego Springs, CA, USA.
- **Hung, K.-L.J.** November 2014. "Native bee diversity and conservation in San Diego community gardens." Roger's Community Garden, La Jolla, CA, USA.
- **Hung, K.-L.J.** August 2014. "The life of pollinating insects." Faith Community Church, Annual Children's Science Camp, San Diego, CA, USA.
- **Hung, K.-L.J.** July 2014. "Native bee research in San Diego: rationale, progress, and frontiers." Inaugural Monthly Meeting, San Diego Arthropod Scientists Group, San Diego, CA, USA.
- **Hung, K.-L.J.** June 2014. "Biology of native bees of San Diego." Elfin Forest Reserve Educational Lectures, Escondido, CA, USA.
- **Hung, K.-L.J.** March 2014. "Ecological importance and conservation of native bees in Southern California." Monthly Meeting, San Diego Chapter of the California Native Plant Society, San Diego, CA, USA.
- **Hung, K.-L.J.** March 2014. "Pollen, pollination, and pollinators: an introduction to plant reproduction and the important ecological role of bees." Educational Lecture, Torrey Pines State Reserve Docents Society, Del Mar, CA, USA.
- **Hung, K.-L.J.** October 2013. "Diversity, biology, and conservation of native bees in San Diego." Educational Lecture, San Diego Natural History Museum Canyoneers, San Diego, CA, USA.
- **Hung, K.-L.J.** September 2013. "Diversity, biology, and conservation of native bees in San Diego." Educational Lecture, Mission Trails Regional Park Trail Guides, San Diego, CA, USA.
- **Hung, K.-L.J.** October 2013. "Pollen, pollination, and pollinators: an introduction to plant reproduction and the important ecological role of bees." Annual Botany Festival Natural History Lecture, The Anza-Borrego Foundation, Borrego Springs, CA, USA.
- Hung, K.-L.J. August 2013. "Introduction to the insects." Boys' Club: Faith Community Church, San Diego, CA, USA.

- **Hung, K.-L.J.** June 2013. "Diversity and natural history of San Diego bee species." National Pollinator Week hike at San Diego National Wildlife Refuge, Otay-Sweetwater Unit, Spring Valley, CA, USA.
- **Hung, K.-L.J.** May 2013. "Diversity and natural history of bee species with a focus on San Diego." Saturday Speaker Series, Tijuana River National Estuarine Research Reserve, Imperial Beach, CA, USA.

#### **Invited extension presentations**

- **Hung, K.-L.J.** May 2023. "Wielding a double-edged sword: responsible beekeeping in a changing environment." Noble Beekeepers Association, Noble, OK, USA.
- **Hung, K.-L.J.** November 2022. "Exploring the impacts of honey bees on native pollinators: balancing pollinator management with biodiversity conservation." Colorado Pollinator Summit 2022, Denver, CO, USA.

### [Remote presentation]

- **Hung, K.-L.J.** October 2022. "Status update on pollinator conservation in Oklahoma." Environmental Federation of Oklahoma 2022, Midwest City, OK, USA.
- **Hung, K.-L.J.** September 2022. "The Oklahoma Biological Survey and our role in pollinator conservation." Oklahoma Association of Conservation Districts CARE Program Field Day, Slaughterville, OK, USA.
- **Hung, K.-L.J.** May 2019. "Global and local ecology of honey bees." California Master Beekeepers Program, University of California Cooperative Extensions, Davis, CA, USA. [Remote presentation]
- **Hung, K.-L.J.** March 2019. "Ecology of honey bees and native bees in San Diego." San Diego Chapter of the California Master Beekeepers Program, University of California Cooperative Extensions, San Diego, CA, USA.
- **Hung, K.-L.J.** & K. Goodell. January 2019. "Ohio pumpkins: cucumber beetle control and pollinator management." The Ohio Produce Network, the Ohio Produce Growers & Marketers Association, Dublin, OH, USA. [Poster presentation]
- Bergefurd, B. & K.-L.J. Hung. January 2018. "Pumpkin production and cultivar evaluations, and updates from the Ohio SCRI pumpkin project." The Ohio Produce Network, the Ohio Produce Growers & Marketers Association, San Dusky, OH, USA.
- **Hung, K.-L.J.**, J.S. Ascher & D.A. Holway. October 2015. "Habitat fragmentation erodes multiple components of diversity in a Southern California native bee assemblage." Monthly Coordination Meeting and Seminar, San Diego Management and Monitoring Program, San Diego, CA, USA.
- **Hung, K.-L.J.** November 2014. "Native bee in San Diego: natural history and conservation research." Educational Seminar, Helix Environmental Planning Inc., La Mesa, CA, USA.
- **Hung, K.-L.J.** July 2014. "Connectivity strategic plan: native bees of San Diego." US Geological Survey, Connectivity Strategic Plan for Western San Diego County. San Diego, CA, USA.
- **Hung, K.-L.J.** June 2012. "Diversity, importance, and conservation of native bee species." San Diego Beekeeping Society, San Diego, CA, USA.

# Extension workshops led

**Hung, K.-L.J.,** A.J. Nabors, L.M. Taylor & L. Corkidi. February 2018. "Pollinator ecology and identification." University of California Cooperative Extensions, San Marcos, CA, USA.

### Academic conference symposia organized

**Hung, K.-L.J.**, D.M. Thomson, D.A. Holway & J.R. Kohn. July 2022. "Impacts of introduced honey bee populations on plant-pollinator mutualisms in non-managed ecosystems." 19th Congress of the International Union for the Study of Social Insects, San Diego, CA, USA.

#### **Invited guest lectures for graduate and undergraduate courses**

- **Hung, K.-L.J.** October 2023. "How to form partnerships outside of academia." Advanced Ecology and Evolutionary Biology (BIOL 5453): University of Oklahoma, Norman, OK, USA.
- **Hung, K.-L.J.** September 2023. "Habitat design with arthropods in mind." Design III Crafting Place (ARCH 2356): University of Oklahoma, Norman, OK, USA.
- **Hung, K.-L.J.** June 2023. "How to be a bee biologist in your spare time." Field Studies in Biological Conservation (BIOL 4970): University of Oklahoma, Norman, OK, USA.
- **Hung, K.-L.J.** February 2023. "Collaborating with stakeholders outside of academia." Seminar in Ecology and Evolutionary Biology (BIOL 5471): University of Oklahoma, Norman, OK, USA.

- **Hung, K.-L.J.** December 2018. "Global and community-level impacts of non-native western honey bees on plant-pollinator mutualisms." Biology: Plant Evolution and Reproduction (BIOL 326): Denison University, Granville, OH, USA.
- **Hung, K.-L.J.** November 2017. "How genes work." Biological Sciences: Energy Transfer and Development (BIO 1113): The Ohio State University, Columbus, OH, USA.
- **Hung, K.-L.J.** November 2012. "Plant-insect interactions: mutualisms." Insect Ecology (BIEB 128): University of California, San Diego, CA, USA.
- **Hung, K.-L.J.** & B.R. Park. November 2011. "Pollination ecology: bees." Plant Ecology (BIEB 126): University of California, San Diego, CA, USA.

### Invited guest lectures for primary and secondary school courses

- Hung, K.-L.J. April 2023. "Let's learn about bees!" St. Sophia Academy, Norman, OK, USA.
- Hung, K.-L.J. May 2022. "Let's learn about bees!" Cleveland Elementary School, Norman, OK, USA.
- **Hung, K.-L.J.** May 2021. "World Bee Day: let's learn about bees together." Churchill Public School, North York, ON, Canada. **[Remote presentation]**
- **Hung, K.-L.J.** May 2020. "Insect vision: how insects see the world." Churchill Public School, North York, ON, Canada. [Remote presentation]
- **Hung, K.-L.J.** May 2020. "World Bee Day: let's learn about bees together." Churchill Public School, North York, ON, Canada. [Remote presentation]
- **Hung, K.-L.J.** February 2016. "Native bees of San Diego and the Urban Pollinator Diversity Project." High Tech Middle School, Chula Vista, CA, USA.
- **Hung, K.-L.J.** February 2016. "Native bees of San Diego and the Urban Pollinator Diversity Project." High Tech Elementary School, San Marcos, CA, USA.
- Hung, K.-L.J. & C. Eutizi. July 2015. "The Living Lab: plot study." Eutizi Homeschool Group, San Diego, CA, USA.
  Hung, K.-L.J. June 2015. "Native bees: ecology, diversity, and conservation." University City High School, San Diego, CA, USA.
- **Hung, K.-L.J.** and S. Glenn Lee. May 2014. "Science, bees, and the Schoolyard Biodiversity Project." Rincon Middle School, Escondido, CA, USA.
- **Hung, K.-L.J.**, J. Wade-Robinson, M. Schultz & S. Glenn Lee. January 2013. "Pollinator declines and the Urban Pollinator Diversity Project." High Tech High School, San Diego, CA, USA.
- **Hung, K.-L.J.** May 2012. "Diversity, life cycle, and importance of native bee species." Faith Community Elementary School, San Diego, CA, USA.
- **Hung, K.-L.J.** October 2011. "Diversity, importance, and conservation of native bee species." Serra High School, San Diego, CA, USA.

### Other academic presentations

- **Hung, K.-L.J.,** February 2023. "Improving the evaluation of pollination effectiveness by accounting for outcross pollen transfer." Dodge Family College of Arts and Sciences Research Fellows Symposium, University of Oklahoma, Norman, OK, USA.
- **Hung, K.-L.J.,** A.T. Suresh, D.A. Holway & A. Orlitsky. October 2016. "Elucidating patterns of biodiversity using information theory: Getting the most out of finite ecological data." Frontiers of Innovation Scholars Program 2<sup>nd</sup> Annual Research Symposium, UC San Diego, La Jolla, CA, USA.
- Kingston, J.M., K.-L.J. Hung, D.A. Holway & J.R. Kohn. June 2016. "How important are honey bees as pollinators to natural plants?" UC San Diego Division of Biological Sciences Student Research Symposium, La Jolla, CA, USA. [Presented by J.M. Kingston]
- Sandoval, S.S., **K.-L.J. Hung** & D.A. Holway. May 2016. "Impact of drought and habitat fragmentation on native bee assemblages." UC San Diego Faculty Mentorship Program Research Symposium, La Jolla, CA, USA. [Presented by S.S. Sandoval]
- **Hung, K.-L.J.**, J.S. Ascher & D.A. Holway. September 2015. "Habitat fragmentation erodes multiple components of diversity in a Southern California native bee assemblage." UC San Diego Division of Biological Sciences and Salk Institute Retreat, Lake Arrowhead, CA, USA. [Winner of Best Graduate Student Talk Award]
- **Hung, K.-L.J.** & D.A. Holway. May 2015. "Effects of habitat fragmentation on a diverse coastal sage scrub bee assemblage." UCSD Natural Reserves System 50th Anniversary Research Symposium, La Jolla, CA, USA.

# **Journal Editorial Board**

2023-Present Review Editor, Frontiers in Insect Science

## Journal peer review (Reviewer profile at webofscience.com/wos/author/record/H-6043-2019)

99 reviews for 42 journals: Agriculture (MDPI); Agriculture, Ecosystem and Environment; Alınteri Journal of Agricultural Sciences; American Journal of Botany; Apidologie; Australian Journal of Botany; Behavioral Ecology and Sociobiology; Biological Invasions; Biology Letters; Botany Letters; Cogent Environmental Science; Diversity and Distributions; Ecological Entomology; Ecological Monographs; Ecological Solutions and Evidence; Ecology; Ecology and Evolution; Ecosphere; Entomologia Experimentalis et Applicata; European Journal of Entomology; Frontiers in Ecology and Evolution; Functional Ecology; Global Change Biology; Insect Conservation and Diversity; Insects (MDPI); International Journal of Biodiversity and Conservation; Journal of Animal Ecology; Journal of Applied Ecology; Journal of Ecology; Journal of Insect Conservation; Journal of Pollination Ecology; Journal of the Kansas Entomological Society; Oecologia; PeerJ; Plant Ecology and Diversity; Plants (MDPI); PLOS ONE; Proceedings of the Royal Society B; Scientific Reports; Sustainability (MDPI); The Open Agriculture Journal; Western North American Naturalist.

**Broader impacts and professional service** 

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|--------------|--|
| 2023         | Taskforce Chair ("Champion"), USFWS Pollinator Action Plan   |
| 2023         | Scientific Consultant, KQED Deep Look  |
| 2023         | Scientific Consultant, Team Bee, Technovation Girls  |
| 2023         | Scientific Consultant, Day's Edge Productions  |
| 2022-Present | Senior Coordinator, Torrey Pines State Natural Reserve Native Bee Monitoring Project               |
| 2022         | Grant reviewer, The Ohio State University  |
| 2022         | Grant reviewer, Swiss National Science Foundation  |
| 2022         | Conference Technical Facilitator, International Union for the Study of Social Insects              |
| 2021-Present | Scientific Consultant, Tribal Alliance for Pollinators   |
| 2021         | Professional Biologist Member, Time to Restore – Oklahoma Chapter                                  |
| 2021-Present | Scientific Consultant, Oklahoma City Zoo   |
| 2021-Present | Senior Coordinator, Cabrillo National Monument Biodiversity Internship                             |
| 2021         | Scientific Consultant, San Diego Zoo   |
| 2020-Present | Scientific Mentor, BeeSip  |
| 2018-2019    | Scientific Consultant, San Diego Pollinator Alliance   |
| 2017-2022    | Team Member, Nationwide Collaborative Research Project: Protecting Pollinators with                |
|              | Economically Feasible and Environmentally Sound Ornamental Horticulture - San Diego                |
|              | Chapter  |
| 2017         | Student Research Competition Judge, The Ohio Valley Entomological Association                      |
| 2017         | Professional Scientist, Wittenburg University Bioblitz at George Rogers Clark Park                 |
| 2016-2017    | Scientific Consultant, Bee Habitat Restoration Project, The Species Restoration Project, San Diego |
| 2016         | Team Leader, National Parks BioBlitz at Cabrillo National Monument                                 |
| 2015-Present | Project Co-Manager, Bees of San Diego County Project, iNaturalist.org                              |
| 2014-2017    | Contributor, San Diego Management and Monitoring Program   |
| 2014-2016    | Scientific Consultant, Anza-Borrego Desert Natural History Association                             |
| 2014         | Team Leader, San Diego BioBlitz at Lake Hodges   |
| 2012-Present | Contributing Editor, Bugguide.net  |
| 2011-2017    | Contributor and Volunteer Entomologist, San Diego Natural History Museum                           |
| 2011-2017    | Educator and Project Coordinator, UCSD Educational Outreach Program at High Tech High School       |
| 2011-2016    | Scientific Consultant, San Diego County Department of Agriculture, Weights & Measures              |
| 2010-2017    | Contributor, American Museum of Natural History  |
|              |  |

### **University service**

| 2023 | Panel Member, Dodge Family College of Arts and Science Faculty and Graduate Student       |
|------|---|
|      | Fellowship Applications Review Panel, University of Oklahoma                              |
| 2023 | Faculty Member, Oklahoma Biological Survey Strategic Plan Review Committee, University of |
|      | Oklahoma  |

| 2023<br>2022<br>2022<br>2022-Present | Faculty Representative, Department of Biology Graduate Recruitment, University of Oklahoma<br>Guest Panelist, Academic Job Search Series, Graduate Student Life, University of Oklahoma<br>Guest Panelist, BIOL 5453 (Advanced Ecology and Evolutionary Biology), University of Oklahoma<br>Faculty Member, School of Biological Sciences Director Search Committee, University of<br>Oklahoma |
|--------------------------------------|--|
| 2022-Present                         | Faculty Sponsor, OU Beekeepers' Association, University of Oklahoma  |
| 2021                                 | Guest Panelist, Academic Job Search Series, Graduate Student Life, University of Oklahoma  |
| 2021-Present                         | Faculty Member, Website Committee, Oklahoma Biological Survey, University of Oklahoma  |
| 2020                                 | Student Grant Proposal Reviewer, EEB Department, University of Toronto   |
| 2017-2018                            | Student Grant Proposal Reviewer, Sigma-Xi Society, Ohio State University   |
| 2015-2017                            | Research Mentor, McNair Scholars Program, UC San Diego   |
| 2015                                 | Guest Lab Instructor, Summer STEM Academy, UC San Diego  |
| 2014-2015                            | EBE Section Coordinator, Graduate Student Seminar Series, UC San Diego   |
| 2014                                 | Research Competition Judge, Student Symposium of Environmental Systems Major, UC San Diego   |
| 2013-2016                            | Senior Coordinator, Community Gardens at Mesa Student Housing Complex, UC San Diego  |
| 2012-2015                            | EBE Section Representative Graduate Teaching Assistant Assignment Committee, UC San Diego  |
| 2012-2013                            | EBE Section Representative, Graduate Admissions Committee, UC San Diego  |
| 2012                                 | Student Representative, EBE Section Faculty Search Committee, UC San Diego   |
| 2011-2014                            | Peer Mentor, Biology Graduate Students Peer Mentorship Program, UC San Diego   |
| 2011-2012                            | Host, EBE Section Weekly Breakfast Discussion, UC San Diego  |
| 2010-2012                            | Section Representative, Graduate Recruitment Committee, UC San Diego   |

# **Professional and academic affiliations**

| 1 Totessional and academic alimations |   |
|---------------------------------------|---|
| 2021-Present                          | Member, US National Native Bee Monitoring Research Coordination Network |
| 2018-2019                             | Member, The Ohio Produce Network  |
| 2017-2018                             | Member, The Ohio Valley Entomological Association                       |
| 2015-Present                          | Member, Entomological Society of America                                |
| 2014-2017                             | Founding Member, San Diego Arthropod Society                            |
| 2014-2017                             | Member, Sea and Sage Audubon Society Chapter                            |
| 2014-2017                             | Member, Anza-Borrego Desert Natural History Association                 |
| 2014-2017                             | Member, California Native Plant Society                                 |
| 2012                                  | Contributor, Barcode of Life Data Systems                               |
| 2011-2018                             | Member, Ecological Society of America                                   |
| 2010-Present                          | Member, Phi Beta Kappa Society  |

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### **Relevant skills**

Sampling, curation, and species-level identification of arthropods, especially bees (Hymenoptera: Anthophila)

Manipulating plant floral structures for estimating plant reproductive fitness

Designing and optimizing of research equipment and methodology

Collaborating with farmers to perform basic and applied ecological research on commercial farms

Constructing analytical and simulation models using program R

Manipulating, managing, and extracting data using Excel, VBA, and ArcGIS

Mentoring and supervising students pursuing undergraduate- and graduate-level research

Experience with basic molecular biology and biochemistry methods (e.g., PCR, gel electrophoresis, QuEChERS)

#### **Professional references**

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