

## CURRICULUM VITAE

### **Rochelle Hoey-Chamberlain, MS**

Department of Entomology, University of California  
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### **EDUCATION**

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<b>M.S.</b> , Entomology, University of California Riverside	December 2012
<b>B.S.</b> , Biology, Minor: Chemistry, Eastern Washington University Magna Cum Laude	June 2008

### **LABORATORY SKILLS**

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- **Lab Management:** Equipment and supply acquisition and maintenance; lab safety training and compliance; supervision and training of up to 11 undergraduates workers (specimen sorting, databasing, clerical work, research, etc.); provide assistance for up to six graduate students and one postdoctoral scholar; management of receipt and return insect specimen loans to/from domestic and international institutions; laboratory website maintenance (heteroptera.ucr.edu)
- **Specimen collection:** Litter sifting, Winkler extraction, Pan traps, pitfall traps, baiting, sweep netting, hand collection
- **Live specimen care and maintenance:** Food preparation and cleaning (cockroaches, walking stick insects, arachnids, ant colonies, warm saltwater aquaria)
- **Insect Behavioral and Physiological Studies:** Food preference assays (choice arena preparation measurements (scale), bait development and preparation (industrial food mill)), inter- and intraspecific aggression (video camera, video editing software (MovieMaker), arena development); ant trailing and recruitment; pesticide efficacy testing (arena preparation, mortality counts, data input); survivorship;
- **Statistical Analysis:** R, SAS, SYSTAT, SigmaPlot, (Pearson Chi-square, Kruskal-Wallis, Tukey-HSD, Spearman's Rho, Kaplan-Meier Log-Rank Survival Analysis, Holm-Sidak, Cox Proportional Hazard Regression, Likelihood Ratio test, Friedman's test of rank sums and multiple comparisons, ANOVA, Pearson's correlation coefficient)
- **Specimen Curation:** Sort bulk and residue samples, pin, point-mount, microscopic slide-mount, HMDS preparation, digitization of specimen data (unique specimen identifiers, Arthropod Easy Capture Software, georeferencing with Google Earth and GeoLocate), and identification of insect specimens
- **Morphological techniques:** Dissection microscopes (Nikon), micro/macro imaging (Microptics USA, EOS utility, Leica, LAS v4.1, Zerene Stacker, Combine ZP), SEM (FEI XL30-FEG), confocal microscopy (Zeiss 510, Leica Inverted SP5), image editing (Photoshop, Bitplane); genital dissection: staining; scientific illustration using compound microscope with camera lucida; measurements (using dissecting microscope with a two-axes movable stage and two digital micrometers connected to a Microcode II RS-232 readout)

- **Molecular techniques:** DNA extraction and isolation (for PCR and Anchored Hybrid Enrichment and Ultra Conserved Elements), PCR, gel electrophoresis, sequencing preparation (Sanger), sequence assembly and editing (Sequencher and BioEdit), multiple sequence alignment (MAFFT) and concatenation (Sequence matrix), Library Preparation for NextGen sequencing.
- **Phylogenetic analysis:** RAxML, BEAST, FigTree

## **PROFESSIONAL EXPERIENCE**

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### **Associate Specialist**

July 2022-Present

University of California- Riverside, Riverside, CA

Supervisors: Dr. Christiane Weirauch 951-827-5707

Dr. Erin Wilson-Rankin 951-827-5735

20 hours per week

Conduct taxonomic revision and phylogenetic research on Heteroptera (Schizopteridae and Reduviidae). Acquire and maintain lab equipment. Train new lab members in laboratory procedures and safety. Manage loans of insect species to/from domestic and international institutions. Organize insect collections (sorting, curating, identifying and databasing material - more specifically Heteroptera). Image insect specimens, and manage and process images. Perform DNA extractions, PCR, sequencing, and sequence editing for insect specimens. Maintain laboratory website.

Supervisor: Dr. Erin Wilson-Rankin 951-827-5735

20 hours per week

Conduct PCR and library prep of fecal samples from birds and bats collected in various habitats (e.g. agricultural fields, reserves, etc.) for diet analysis. Conduct statistical analysis of diet data.

### **Assistant Specialist**

December 2013-June 2022

University of California- Riverside, Riverside, CA

Supervisor: Dr. Christiane Weirauch 951-827-5707

32 hours per week

Conduct taxonomic revision and phylogenetic research on Heteroptera (Schizopteridae and Reduviidae). Acquire and maintain lab equipment. Train new lab members in laboratory procedures and safety. Manage loans of insect species to/from domestic and international institutions. Organize insect collections (sorting, curating, identifying and databasing material - more specifically Heteroptera). Image insect specimens, and manage and process images. Perform DNA extractions, PCR, sequencing, and sequence editing for insect specimens. Maintain laboratory website.

### **Lab Assistant II**

May-November 2013

University of California, Riverside, CA

Supervisor: Dr. Christiane Weirauch 951-827-5707

40 hours per week

Acquired and maintained lab equipment. Trained new lab members in laboratory procedures and safety. Managed loans of insect species to/from domestic and international institutions. Organized insect collections (sorting, curating, identifying and databasing material - more specifically Heteroptera).

Imaged insect specimens, and managed and processed images. Performed DNA extractions, PCR, sequencing, and sequence editing for insect specimens. Maintained laboratory website.

**Graduate Student Researcher**

September 2009-December 2012

University of California, Riverside, CA

Advisor: Dr. Michael K. Rust 951-827- 5327

20 hours per week

Evaluated the behavior, physiology, and ecology of ants using behavioral, food preference, and survivorship assays, as well as various statistical methods. Collected and maintained ant colonies. Conducted analysis of population genetics using DNA extraction and PCR. Assisted with water collection to test for pesticide run-off around homes.

**Science Laboratory Assistant**

June 2005-September 2009

Spokane Falls Community College, Spokane, WA

Supervisor: Dr. Laurel D. Hansen 509-533-3666

20 hours per week

Assisted with lab experiments testing the efficacy of pesticides on ants. Assisted with weekly inspections and treatments of homes. Explained research to homeowners and pest management professionals. Sorted and curated three ant collections. Conducted two extensive surveys of ants. Maintained insect cultures of 12 species insects and arachnids, and 2 large marine aquaria

**COMMUNITY ENGAGEMENT AND VOLUNTEER EXPERIENCE**

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Riverside BioBlitz (Ameal Moore Nature Center at Sycamore Canyon) - October 17<sup>th</sup>, 2015

—**Leader/Participant** -- Lead Citizen Scientists in collecting insect pan traps and sweep netting to measure species diversity

Joshua Tree BioDiversity Hunt March 2011, 2012, 2013 (2 day event) — **Participant** -- Assisted with collection of insects within the national park to survey the biodiversity of the area

University of California, Riverside, CA (100 hours total) Supervisor: Dr. Alec Gerry 951-827-7054

**Departmental Outreach Coordinator**

October 2010-February 2011

**Outreach Graduate Student Researcher**

September 2010-September 2011

Coordinated and implemented age appropriate outreach modules and activities, resourced materials and volunteers, and participated in outreach events to schools, museums, parks, libraries, etc.

**WORKSHOPS & CONTINUING EDUCATION**

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2020 Esri MOOC Cartography using ArcGIS Pro

2014 **Workshop for permanent slide mounting of Dipsocoromorpha**, University of California, Riverside

2014 **ARTS Dipsocoromorpha Workshop** (in conjunction with the 5th Quadrennial Meeting of the International Heteropterists Society), Washington D.C.- discussed homology of terminology for

head structures, wing venation, genitalia; discussed future taxonomic and phylogenetic projects with project collaborators

- 2011 **The Ant Course**, Southwest Research Station, Portal, AZ; Organized by the California Academy of Sciences and the Museum of Comparative Zoology, Harvard University-- learned collecting methods, taxonomic identification, mounting, curation, as well as, techniques for studying the anatomy, physiology, ecology, etc. of ants

## FIELD EXPERIENCE

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Pacific Northwest USA (Washington, Oregon, Idaho) (3 summers), California (3 years + 2 summers), Arizona (10 days)

## PUBLICATIONS

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- Hazlehurst, J., **Hoey-Chamberlain, R.**, Clark, C., McFrederick, Q., Rankin, D., Wilson Rankin, E.E. Beyond Nectar: patterns of arthropod foraging by hummingbirds in California. *Molecular Ecology*- **submitted**
- Wilson Rankin, E.E., Knowlton, J.L., Shmerling, A.J., **Hoey-Chamberlain, R.** Diets of two non-native praying mantids (*Tenodera sinensis* and *Mantis religiosa*) show consumption of arthropods across all ecological roles. *Food Webs*. 35: e00280.
- Knyshov, A., Weirauch, C., and **Hoey-Chamberlain, R.** 2020. Phylogenetic relationships and revised classification of the true bug infraorder Dipsocoromorpha (Insecta: Hemiptera: Heteroptera), *Cladistics*. 37(3): 248-275.
- Weirauch, C, **Hoey-Chamberlain, R.**, and Knyshov, A. 2020. Four new genera of Schizopteridae (Hemiptera: Heteroptera) from the Afrotropical and Neotropical regions. *Zootaxa* 4768: 95-111.
- Knyshov, A., **Hoey-Chamberlain, R.**, and Weirauch, C. 2019. Hybrid enrichment of poorly preserved museum specimens refines homology hypotheses in a group of minute litter bugs (Hemiptera: Dipsocoromorpha: Schizopteridae). *Systematic Entomology* 44(4): 985-995.
- Hoey-Chamberlain, R.**, and Weirauch, C. 2019. Taxonomic revision of the New World big-eyed minute litter bug genus *Ommatides* Uhler (Hemiptera: Schizopteridae). *Zootaxa*. 4585(1): 073–099.
- Weirauch, C., **Hoey-Chamberlain, R.**, and Knyshov, A. 2018. Synopsis of Schizopteridae (Hemiptera: Heteroptera: Dipsocoromorpha) from the United States, with description of 7 new species from the US and Mexico. *Zookeys*. 796: 49–82.
- Knyshov, A., **Hoey-Chamberlain, R.** and Weirauch, C. 2018. Comparative morphology of male genitalic structures in the minute litter bugs Dipsocoromorpha (Insecta: Hemiptera: Heteroptera). *Journal of Morphology*. *Journal of Morphology*. 279(10): 1480-1517.
- Troy J. Kieran, Michael Forthman, Eric Gordon, **Rochelle Chamberlain**, R T Kimball, Brant C. Faircloth, Christiane Weirauch, Travis C. Glenn. 2018. Insight from an ultraconserved element bait set designed for hemipteran phylogenetics integrated with genomic resources. *Molecular Phylogenetics and Evolution* 130:297-303. doi: .1016/j.ympev.2018.10.026.
- Weirauch, C., Whorral, K., Knyshov, A., **Hoey-Chamberlain, R.** 2018. Giant among dwarfs: *Meganannus lewisi*, gen. n. and sp. n., a new genus and species of minute litter bugs from Costa Rica (Hemiptera: Schizopteridae). *Zootaxa*. 4370(2): 156–170.

- Weirauch, C., Knyshev, A., **Hoey-Chamberlain, R.** 2017. *Machadonannus brailovskyi* n. sp., a new species of Schizopteridae (Hemiptera: Heteroptera) from the Afrotropical Region. *Dugesiana*. 24(2):279-286.
- Hoey-Chamberlain, R.** and Weirauch, C. 2016. Two new genera of big-eyed minute litter bugs (Hemiptera: Schizopteridae: Hypselosomatinae) from Brazil and Cuba. *Zookeys*, 640: 79-102.
- Knyshev, A., Leon, S., **Hoey-Chamberlain, R.** and Weirauch, C. 2016. Pegs, Pouches and Spines: systematics and comparative morphology of the New World litter bug genus *Chinannus* Wygodzinsky, 1948. *Thomas Say Monographs*, Entomological Society of America, Annapolis, MD, 112 pp.
- Hoey-Chamberlain, R.**, M.K. Rust, S. Ghosh. 2014. The Survivorship and Water Loss of *Liometopum luctuosum* and *L. occidentale* (Hymenoptera: Formicidae) Exposed to Different Temperatures and Relative Humidity. *J. Insect Sci.*, 14(249): 1-5.
- Weirauch, C., Berenger, J.M., Berniker, L., Forero, D., Forthman, M., Frankenberg, S., Freedman, A., Gordon, E., **Hoey-Chamberlain, R.**, Hwang, W.S., Michael, A., Udah, O., Watson, C., Zhang, G., Zhang, J. 2014. An illustrated identification key to assassin bug subfamilies and tribes (except Emesinae). *Can. J. Arthropod Ident*, 26: 1-115.
- Hoey-Chamberlain, R.**, M.K. Rust. 2014. Food and Bait preference *Liometopum occidentale*. *Journal of Entomological Science*, 49(1): 30-43.
- Hoey-Chamberlain, R.**, M.K. Rust, and J.H. Klotz. 2013. A Review of the Biology, Ecology and Behavior of Velvety Tree Ants of North America. *Sociobiology*. 60(1): 1-10.
- Hoey-Chamberlain R.V.**, L.D. Hansen, J.H. Klotz and C. McNeeley. 2010. A survey of the ants of Washington and surrounding areas in Idaho and Oregon focusing on disturbed sites (Hymenoptera: Formicidae). *Sociobiology*, 56(1):195-208.

## **PRESENTATIONS**

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- Knyshev, A., Du, S., **Hoey-Chamberlain, R.**, Frankenberg, S., Rodriguez, J., and C. Weirauch. Evolutionary history of minute litter bugs (Hemiptera: Dipsocoromorpha) based on morphological and molecular data. Entomology 2017.
- Frankenberg, S., Knyshev, A., **Hoey-Chamberlain, R.**, Leon, S., & Weirauch, C. From Soup to Systematics: Residue Sample Sorting Accelerates Taxonomic and Phylogenetic Research on Dipsocoromorpha (Hemiptera). Entomological Collections Network. 2017
- Weirauch, C., **Hoey-Chamberlain, R.**, Knyshev, A., Leon, S., & Frankenberg, S.. Unraveling phylogenetic relationships in the least-studied heteropteran infraorder (Insecta: Hemiptera: Dipsocoromorpha) using molecular and morphological data. Willi Hennig Society | XXXVI – Annual Meeting 2017.
- Knyshev, A., **Hoey-Chamberlain, R.**, and C. Weirauch. Blunt labium, acute problem: taxonomic mess in the *Corixidea* genus group (Heteroptera: Schizopteridae). International Congress of Entomology. 2016.
- Weirauch, C., **Hoey-Chamberlain, R.**, Knyshev, A., Leon, S., & Frankenberg, S.. From leaf litter to canopy: uncovering the biodiversity of Dipsocoromorpha. International Congress of Entomology. 2016
- Hoey-Chamberlain, R.**, and C. Weirauch. 2014. Investigating the “Big Eyed Bugs”: A Preliminary Phylogeny of the Hypselosomatinae (Hemiptera: Schizopteridae) and Taxonomic Revision of

- Williamsocoris* Carpintero & Dellapé. 5<sup>th</sup> Quadrennial Meeting of the International Heteropterists' Society. Smithsonian. Washington D.C.
- Knyshev, A., **R. Hoey-Chamberlain**, S. Leon, and C. Weirauch. 2014. Biodiversity, "Wing Organs," and Sexual Dimorphism: Systematics of *Chinannus* Wygodzinsky (Hemiptera: Schizopteridae) and the Ogeriinae. 5<sup>th</sup> Quadrennial Meeting of the International Heteropterists' Society. Smithsonian. Washington D.C.
- Weirauch, C., and **R. Hoey-Chamberlain**. 2013. Exploring litter bug diversity: the challenges of collecting and curating some of the smallest Heteroptera. Entomological Society of America Annual meeting.
- Hoey-Chamberlain, R.**, and M.K. Rust. 2012. A Tale of Two Ants: A Comparative Study of the Survivorship of *Liometopum occidentale* and *L. luctuosum*. University of California-Riverside Department of Entomology Student Seminar Day.
- Hoey-Chamberlain, R.**, and M.K. Rust. 2011. The Biology, Ecology, and Behavior of Velvety Tree Ants (*Liometopum* spp.). Pacific Branch Entomological Society of America Annual Meeting.
- Hoey-Chamberlain, R.**, and M.K. Rust. 2010. The Biology, Ecology, and Behavior of Velvety Tree Ants (*Liometopum* spp.). UC Riverside Department of Entomology Student Seminar Day.
- Hoey-Chamberlain, R.**, and L.D. Hansen. 2010. Pacific Northwest Ant Survey. National Conference of Urban Entomology. Portland, Oregon.
- Hoey-Chamberlain, R.**, and L.D. Hansen. 2008. Survey of the Ants of Washington with an Emphasis on Disturbed Sites. 11th Annual EWU Student Research and Creative Works Symposium, Cheney, WA.

## **FELLOWSHIPS & AWARDS**

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- 2015 Outstanding Staff Award Presented by UCR Entomology Graduate Student Association
- 2012 The Carl Strom/Western Exterminator Company Scholarship in Urban Entomology, University of California, Riverside, \$1800
- 2011 The Carl Strom/Western Exterminator Company Scholarship in Urban Entomology, University of California, Riverside, \$2500
- 2010 The Carl Strom/Western Exterminator Company Scholarship in Urban Entomology, University of California, Riverside, \$2500
- 2009 Graduate Division Fellowship, University of California, Riverside, \$160,563

## **ORGANIZATIONAL MEMBERSHIPS & LEADERSHIP**

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- 2006–2012 Entomological Society of America (ESA)
- 2009–2012 Entomology Graduate Student Association, University of California Riverside, **Vice President** (2011–2012), **Secretary** (2010–2011), **Social Committee Co-Chair** (2011–2012)
- 2013–Present Friends of the Entomology Research Museum (FERM), University of California-Riverside, **Vice President** (2013–present)
- 2014–Present International Heteropterists' Society
- 2017–Present Society of Creative Anachronism
- 2021–Present UCR Entomology Department Outreach Committee member

## MEETING & SYMPOSIUM ORGANIZATION

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2014 **ARTS Dipsocoromorpha Workshop** (in conjunction with the 5th Quadrennial Meeting of the International Heteropterists Society), Co-organizer, Washington D.C.

## COLLECTION MANAGEMENT EXPERIENCE

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- 2013–Present **Heteroptera Systematics Lab**, University of California, Riverside — manage of receipt and return of loans to/from domestic and international institutions, image, and identify dry and ethanol preserved Heteroptera specimens
- 2015 **Entomology Research Museum**, University of California, Riverside — curated Cicadellidae collection via updating taxonomic names, updating digitized specimen data, re-organizing insect drawers, and re-mounting specimens
- 2007-2009 **Spokane Falls Community College** — sorted, identified, mounted, labelled and prepared ant specimens

## TEACHING & MENTORING EXPERIENCE

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- 2015 **Coordinator**, Advance Digitization of Biological Collections Tri-Trophic Thematic Collection Network, University of California, Riverside — trained databasers (e.g., slide imaging, georeferencing, specimen data entry), quality checked specimen data entries, supplied specimens and unique specimen identifier labels, and refined workflow to increase efficiency and quality productivity
- 2010 **Teaching Assistant**, Undergraduate Introduction to Entomology (1 quarter; 2 lab sections), University of California, Riverside — wrote syllabus, lectured on insect morphology and taxonomy, created and graded quizzes and tests, gathered supplies and set-up all labs and tests

## REFERENCES

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- Dr. Christiane Weirauch, Professor of Entomology 951-827-5707  
christiane.weirauch@ucr.edu
- Dr. Laurel D. Hansen, Instructor 509-533-3666  
Laurel.hansen@sfcc.spokane.edu
- Dr. Erin Wilson Rankin, Assistant Professor, 951-827-5735  
erin.rankin@ucr.edu
- Dr. Michael K. Rust, Distinguished Professor of Entomology, Emeritus 951-827-5327  
michael.rust@ucr.edu