

Tsutsui, Neil D.  
Curriculum Vitae

## CURRICULUM VITAE

### NEIL DURIE TSUTSUI

University of California, Berkeley  
Department of Environmental Science,  
Policy & Management  
130 Mulford Hall, #3114  
Berkeley CA 94720-3114

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### EDUCATION

Boston University, September 1994  
B.A. in Biology, specialization in Marine Science, *with honors*.

University of California, San Diego – Department of Biology  
Ph. D. in Biology, September 2000  
Dr. Ted J. Case – Thesis advisor

### PROFESSIONAL APPOINTMENTS

Professor, 2014-present  
Associate Professor, 2009-2014  
Assistant Professor, 2007-2009  
Vice Chair for Instruction, 2010-2012, 2014-2015  
Department of Environmental Science, Policy & Management  
University of California, Berkeley

Faculty Curator, 2007-present  
Essig Museum of Entomology  
University of California, Berkeley

Assistant Professor, 2003-2007  
Department of Ecology and Evolutionary Biology  
University of California, Irvine

Post-doctoral Associate, 2000-2003  
Section of Evolution and Ecology, Center for Population Biology  
University of California, Davis  
Dr. Richard K. Grosberg – Advisor

### PUBLICATIONS

58. Cridland, J., **N. D. Tsutsui**, and S. R. Ramírez. 2017 . The complex demographic history and evolutionary origin of the western honey bee, *Apis mellifera*. GENOME BIOLOGY & EVOLUTION evx009. DOI: <https://doi.org/10.1093/gbe/evx009>
57. Mathis, K. A. and **Tsutsui, N. D.** 2016. Dead ant walking: A myrmecophilous beetle predator uses parasitoid host location cues to selective prey on parasitized ants. PROCEEDINGS OF THE ROYAL SOCIETY OF LONDON, B **283**:20161281.
56. Mathis, K. A. and **Tsutsui, N. D.** 2016. Cuticular hydrocarbon cues are used for host acceptance by *Pseudacteon* spp. phorid flies that attack *Azteca sericeasur* ants. JOURNAL OF CHEMICAL ECOLOGY **42**:286-293.
55. Emery, V. J. and **Tsutsui, N. D.** 2016. Differential sharing of chemical cues by social parasites versus social mutualists in a three-species symbiosis. JOURNAL OF CHEMICAL ECOLOGY **42**:277-285.

54. Torres, C. W. and **Tsutsui, N. D.** 2016. The effect of social parasitism by *Polyergus breviceps* on the nestmate recognition system of its host, *Formica altipetens*. PLOS ONE **11**(2): e0147498.
53. **Tsutsui, N. D.** 2014. Controlling the spread of Argentine ants. VOICE OF THE PCOC. Fall:10-11.
52. Tillberg, C.V, Edmonds, B., Freauff, A., Hanisch, P., Paris, C., Smith, C.R., **Tsutsui, N. D.**, Wills, B.D., Wittman, S.E., and A.V Suarez. 2014. Foraging ecology of the tropical giant hunting ant *Dinoponera australis* (Hymenoptera: Formicidae) – Evaluating mechanisms for high abundance. BIOTROPICA **46**(2):229-237.
51. **Tsutsui, N. D.** 2013. Dissecting ant recognition systems in the age of genomics. BIOLOGY LETTERS **9**:20130416.
50. Lewis V., Moore, S., Tabuchi, R., Sutherland, A., Choe, D.-H. and **N. D. Tsutsui** 2013. Researchers combat the resurgence of bed bug in behavioral studies and monitor trials. CALIFORNIA AGRICULTURE **67**:172-178.
49. Simola, D. F., Wissler, L., Donahue, G., Waterhouse, R.M., Helmkampf, M., Roux, J., Nygaard, S., Glastad, K.M., Hagen, D.E., Viljakainen, L., Reese, J.T., Hunt, B.G., Graur, D., Elhaik, E., Kriventseva, E.V., Wen, J., Parker, B.J., Cash, E., Privman, E., Childers, C.P., Muñoz-Torres, M.C., Boomsma, J.J., Bornberg-Bauer, E., Currie, C., Elsik, C.G., Suen, G., Goodisman, M.A.D., Keller, L., Liebig, J., Rawls, A., Reinberg, D., Smith, C.D., Smith, C.R., **Tsutsui, N.**, Wurm, Y., Zdobnov, E.M., Berger, S.L. and J. Gadau. 2013. Social insect genomes exhibit dramatic evolution in gene composition and regulation while preserving regulatory features linked to sociality. GENOME RESEARCH **23**:1235-1247.
48. Emery, V. J. and **N. D. Tsutsui.** 2013. Recognition in a social symbiosis: Chemical phenotypes and nestmate recognition behaviors of Neotropical parabiotic ants. PLOS ONE **8**(2): e56492.
47. Choe, D.-H., D. B. Villafuerte and **N. D. Tsutsui.** 2012. Trail pheromones of the Argentine ant, *Linepithema humile* (Mayr) (Hymenoptera: Formicidae). PLOS ONE **7**(9):e45016.
46. Johnson, B. R., E. van Wilgenburg, and **N. D. Tsutsui.** 2012. Nestmate recognition in social insects is sometimes more complex than an individual based decision to accept or reject (Commentary). BEHAVIORAL ECOLOGY AND SOCIOBIOLOGY **66**:343-346.
45. Choe, D.-H., S. R. Ramírez and **N. D. Tsutsui.** 2012. A silica gel-based method for extracting insect surface hydrocarbons. JOURNAL OF CHEMICAL ECOLOGY. DOI 10.1007/s10886-012-0074-1.
44. Ramírez, S. R., T. Eltz, M. K. Fujiwara, G. Gerlach, B. Goldman-Huertas, **N. D. Tsutsui** and N. E. Pierce. 2011. Asynchronous diversification in a specialized plant-pollinator mutualism. SCIENCE. **333**: 1742-1746.
43. van Wilgenburg, E., A. Felden, D.-H. Choe, R. Sulc, J. Luo, K. J. Shea, M. A. Elgar and **N. D. Tsutsui.** 2011. Learning and discrimination of cuticular hydrocarbons in a social insect. BIOLOGY LETTERS.
42. Smith, C. R., A. V. Suarez, **N. D. Tsutsui,** S. E. Wittman, B. Edmonds, A. Freauff, and C. V. Tillberg. 2011. Nutritional asymmetries are related to division of labor in a queenless ant. PLOS ONE **6**:e24011.
41. Johnson, B. R. and **N. D. Tsutsui.** 2011. Taxonomically restricted genes are associated with the evolution of sociality in the honey bee. BMC GENETICS **12**:164.
40. Abbot, P. *et al.* 2011. Inclusive fitness theory and eusociality. NATURE **466**:1057-1062. (Brief communications arising).
39. Suen, G., *et al.* 2011. The genome sequence of the leaf-cutter ant, *Atta cephalotes*, reveals insights into its obligate symbiotic lifestyle. PLOS GENETICS **7**:e1002007.

38. Smith, C. R., *et al.* 2011. A draft genome of the red harvester ant, *Pogonomyrmex barbatus*: a model for reproductive division of labor and social complexity. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, USA **108**:5667-5672.
37. Smith, C. D., *et al.* 2011. The draft genome of the globally widespread and invasive Argentine ant (*Linepithema humile*). PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, USA **108**:5673-5678. \* **N. D. Tsutsui** – corresponding author.
36. Johnson, B. R., E. van Wilgenburg, and **N. D. Tsutsui**. 2011. Nestmate recognition in social insects: overcoming physiological constraints with collective decision making. BEHAVIORAL ECOLOGY AND SOCIOBIOLOGY **65**:935-944.
35. Franks, S. J., P. D. Pratt, and **N. D. Tsutsui**. 2010. The genetic consequences of a demographic bottleneck in an introduced biological control insect. CONSERVATION GENETICS **12**:201-211.
34. Ramírez, S. R., T. Eltz, F. Fritsch, R. Pemberton, E. G. Pringle, and **N. D. Tsutsui**. 2010. Intraspecific geographic variation of fragrances acquired by orchid bees in native and introduced populations. JOURNAL OF CHEMICAL ECOLOGY **36**:873-884.
33. van Wilgenburg, E., R. Sulc, K. J. Shea, and **N. D. Tsutsui**. 2010. Deciphering the chemical basis of nestmate recognition. JOURNAL OF CHEMICAL ECOLOGY **36**:751-758.
32. Marsico, T. D., J. W. Burt, E. K. Espeland, G. Gilchrist, M. A. Jamieson, L. Lindstrom, S. Swope, G. Roderick, M. Szucs and **N. D. Tsutsui**. 2010. Underutilized resources for studying the evolution of invasive species during their introduction, establishment and lag phases. EVOLUTIONARY APPLICATIONS **3**:203-219.
31. Vanderhoeven, S., C. Brown, C. Tepolt, **N. D. Tsutsui**, V. Vanparys, S. Atkinson, G. Mahy and A. Monty. 2010. Linking concepts in invasion biology: Network analysis shows what has been studied most and helps identification of knowledge gaps. EVOLUTIONARY APPLICATIONS **3**:193-202.
30. van Wilgenburg, E., C. W. Torres and **N. D. Tsutsui**. 2010. The global expansion of a single ant supercolony. EVOLUTIONARY APPLICATIONS **3**:136-143.
29. Suarez, A. V., T. McGlynn and **N. D. Tsutsui**. 2010. Biogeographic patterns of invasive species. In: Lach, L., C. Parr, and K. Abbott, eds., ANT ECOLOGY, pp. 233-244 (Peer-reviewed book chapter).
28. van Wilgenburg, E., J. Clémencet and **N. D. Tsutsui**. 2010. Experience influences aggressive behaviour in the Argentine ant. BIOLOGY LETTERS **6**:152-155.
27. Brandt, M., E. van Wilgenburg, R. Sulc, K. J. Shea and **N. D. Tsutsui**. 2009. The scent of supercolonies: The discovery, synthesis and behavioral verification of ant colony recognition cues. BMC BIOLOGY **7**:71.
26. Brandt, M., E. van Wilgenburg, and **N. D. Tsutsui**. 2009. Global-scale analyses of chemical ecology and population genetics in the invasive Argentine ant. MOLECULAR ECOLOGY **18**:997-1005.
25. Cooper, M. L., K. M. Daane, E. H. Nelson, L. G. Varela, M. C. Battany, **N. D. Tsutsui**, and M. K. Rust. 2008. Liquid baits manage Argentine ants in coastal vineyards. CALIFORNIA AGRICULTURE **62**:177-183. (Peer-reviewed extension article).
24. Spagna, J. C., A. I. Vakis, S. N. Patek, X. Zhang, C. Schmidt, **N. D. Tsutsui**, and A. V. Suarez. 2008. Phylogeny, scaling, and the generation of extreme forces in trap-jaw ants. JOURNAL OF EXPERIMENTAL BIOLOGY **211**:2358-2368.
23. Suarez, A. V., D. A. Holway and **N. D. Tsutsui**. 2008. Genetics and behavior of a colonizing species: The invasive Argentine ant. AMERICAN NATURALIST **172**:S72-S84.
22. Calcaterra, L. A., Delgado, A. and **N. D. Tsutsui**. 2008. Activity patterns and parasitism rates of fire ant decapitating flies (Diptera: Phoridae: *Pseudacteon* spp.) in their native Argentina. ANNALS OF THE ENTOMOLOGICAL SOCIETY OF AMERICA **101**:539-550.
21. **Tsutsui, N. D.**, A. V. Suarez, Spagna, J. C. and J. S. Johnston. 2008. The evolution of genome size in ants. BMC EVOLUTIONARY BIOLOGY **8**:64.
20. Suarez, A. V.\* and **N. D. Tsutsui**\*. 2008. The evolutionary consequences of biological invasions. MOLECULAR ECOLOGY **17**:351-360. \*these authors contributed equally.

19. Torres, C. W.\*, M. Brandt and **N. D. Tsutsui**. 2007. The role of cuticular hydrocarbons as chemical cues for nestmate recognition in the invasive Argentine ant (*Linepithema humile*). *INSECTES SOCIAUX* **54**:363-373. \*undergraduate co-author.
18. Calcaterra, L. A., R. Vander Meer, J. P. Pitts, J. P. Livore, and **N. D. Tsutsui**. 2007. Survey of *Solenopsis* fire ants and their parasitoid flies (Diptera: Phoridae: *Pseudacteon*) in central Chile and central western Argentina. *ANNALS OF THE ENTOMOLOGICAL SOCIETY OF AMERICA* **100**:512-521.
17. Thomas, M. L., C. M. Payne-Makrisa, A. V. Suarez, **N. D. Tsutsui**, and D. A. Holway. 2007. Contact between supercolonies elevates aggression in Argentine ants. *INSECTES SOCIAUX* **54**: 225-233.
16. Thomas, M., C. M. Payne-Makrisa, A. V. Suarez, **N. D. Tsutsui**, and D. A. Holway. 2006. When supercolonies collide: Territorial aggression in an invasive and unicolonial social insect. *MOLECULAR ECOLOGY* **15**:4303-4315.
15. The Honeybee Genome Sequencing Consortium. 2006. Insights into social insects from the genome of the honeybee *Apis mellifera*. *NATURE* **443**:931-949.
14. Whitfield, C. W., S. K. Behura, S. H. Berlocher, A. G. Clark, S. Johnston, W. S. Sheppard, D. Smith, A. V. Suarez, D. Weaver, and **N. D. Tsutsui**. 2006. Thrice out of Africa: Ancient and recent expansions of the honey bee, *Apis mellifera*. *SCIENCE* **314**:642-645.
13. Thomas, M., **N. D. Tsutsui**, and D. A. Holway. 2005. Intraspecific competition influences the symmetry and intensity of aggression in the invasive Argentine ant. *BEHAVIORAL ECOLOGY* **16**:672-481.
12. **Tsutsui, N. D.** 2004. Scents of self: The expression component of self/non-self recognition systems. *ANNALES ZOOLOGICI FENNICI* **41**:713-727.
11. Suarez, A. V. and **N. D. Tsutsui**. 2004. The value of museum collections for research and society. *BIOSCIENCE* **54**:66-74.
10. **Tsutsui, N. D.**, S. N. Kauppinen\*, A. F. Oyafuso\*, and R. K. Grosberg. 2003b. The distribution and evolutionary history of *Wolbachia* infection in native and introduced populations of the invasive Argentine ant (*Linepithema humile*). *MOLECULAR ECOLOGY* **12**:3057-3068. \*undergraduate co-author.
9. **Tsutsui, N. D.** and A. V. Suarez. 2003. The colony structure and population biology of invasive ants. *CONSERVATION BIOLOGY* **17**:48-58.
8. **Tsutsui, N. D.**, A. V. Suarez, and R. K. Grosberg. 2003a. Genetic diversity, asymmetrical aggression, and recognition in a widespread invasive species. *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, USA* **100**:1078-1083.
7. Suarez, A. V., D. A. Holway, D. Liang, **N. D. Tsutsui**, and T. J. Case. 2002. Spatio-temporal patterns of intraspecific aggression in the invasive Argentine ant. *ANIMAL BEHAVIOUR* **64**:697-708.
6. Holway, D. A., L. Lach, A. V. Suarez, **N. D. Tsutsui**, and T. J. Case. 2002. The ecological causes and consequences of ant invasions. *ANNUAL REVIEW OF ECOLOGY AND SYSTEMATICS* **33**:181-233.
5. Suarez, A. V., M. Benard, **N. D. Tsutsui**, T. A. Blackledge, K. Copren, E. M. Sarnat, A. L. Wild, W. M. Getz, P. T. Starks, K. Will, P. J. Palsboll, M. E. Hauber, C. Moritz, and A. D. Richman. 2002. Conflicts around a study of Mexican crops. *NATURE* **417**:897. (Correspondence).
4. **Tsutsui, N. D.**, A. V. Suarez, D. A. Holway, and T. J. Case. 2001. Relationships among native and introduced populations of the Argentine ant, *Linepithema humile* and the source of introduced populations. *MOLECULAR ECOLOGY* **10**:2151-2161.
3. **Tsutsui, N. D.** and T. J. Case. 2001. Population genetics and colony structure of the Argentine ant (*Linepithema humile*) in its native and introduced ranges. *EVOLUTION* **55**:976-985.
2. **Tsutsui, N. D.**, A. V. Suarez, D. A. Holway and T. J. Case. 2000. Reduced genetic variation and the success of an invasive species. *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, USA* **97**:5948-5953.

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1. Suarez, A. V., **N. D. Tsutsui**, D. A. Holway and T.J. Case. 1999. Behavioral and genetic differentiation between native and introduced populations of the Argentine ant. *BIOLOGICAL INVASIONS* **1**:43-53.

### **GRANT SUPPORT**

- NATIONAL SCIENCE FOUNDATION LONG-TERM RESEARCH IN ENVIRONMENTAL BIOLOGY (LTREB), (co-PI). “LTREB Collaborative Proposal: Large-scale removal of introduced ants as a test of community reassembly”. 4/1/2017-3/31/2022. **\$391,313** (Tsutsui share: **\$177,548**).
- NATIONAL SCIENCE FOUNDATION, IOS-SDS, (B. Fisher, co-PI), “Collaborative Research: Scents of Self: How Trade-offs Shape Self/Non-self Recognition Cues in a Supercolonial Insect” (ranked #1 in panel). February 2016 – January 2020. **\$830,933**.
- UNITED STATES DEPARTMENT OF AGRICULTURE, NIFA-AFRI. “Using Functional Genomics to Link Behavior, Chemical Ecology and Chemoreception in a Widespread and Damaging Agricultural Pest” February 2016 – January 2019. **\$498,083**.
- UC BERKELEY BAKAR FELLOW, “Deploying Insect Pheromones to Control a Widespread and Damaging Insect”, July 2012 – June 2017. **\$250,000**.
- UCMEXUS, (K. Mathis, co-PI), “Host Selection and Successful Parasitism of the Aggressive Arboreal Ant *Azteca instabilis* by Decapitating Phorid Flies (Genus: *Pseudacteon*) in Dynamic Coffee Agroecosystems”, January 2012 – December 2013. **\$11,852**.
- GORDON AND BETTY MOORE FOUNDATION, “Using Genomics, Isotopes and Pollen to Illuminate the Past and Predict the Future of California Bees”, November 2011 – October 2014. **\$379,339**.
- CALIFORNIA STRUCTURAL PEST CONTROL BOARD, DEPARTMENT OF PESTICIDE REGULATION, “Bedbug detection using airborne pheromone cues”. February 2011 – February 2012. **\$116,650**.
- DEFINING WISDOM, sponsored by the University of Chicago Arete Initiative and the John Templeton Foundation. “The Wisdom of the Ant: The Role of Experience in Sociality and Aggression”. October 2008 – September 2010. **\$100,000**.
- UNITED STATES DEPARTMENT OF AGRICULTURE, NRI-CSREES 2008-35302-04680. “An Integrative Analysis of Altered Social Behavior in the Invasive Argentine Ant (*Linepithema humile*)”. (ranked #8 of 83). September 2008 – August 2011. **\$425,000**.
- COMMITTEE ON RESEARCH, FACULTY RESEARCH GRANT (UC-BERKELEY), “A preliminary analysis of candidate genes for aggression in the invasive Argentine ant”. 2007 – 2008. **\$5,000**.
- AUSTRALIAN RESEARCH COUNCIL, “Sociality and a sense of smell: Receptor organ evolution in ants”. (PI: Mark A. Elgar, University of Melbourne). 2008 – 2010. **\$225,000**.
- STRUCTURAL PEST CONTROL BOARD, CALIFORNIA DEPARTMENT OF CONSUMER AFFAIRS, “The Role of Genetics and Cuticular Hydrocarbons in Argentine ant Aggression”. (Co-Investigator: Ken Shea, UC-Irvine, Department of Chemistry). September 2005 – August 2008. **\$312,037**.
- UNITED STATES DEPARTMENT OF AGRICULTURE, NRI-CSREES 2004-35302-14865. “The Genetic and Biochemical Basis of Altered Social Behavior in the Invasive Argentine ant (*Linepithema humile*)” (ranked #2 of 117). September 2004 – August 2007. **\$325,000**.

### **TEACHING EXPERIENCE, AWARDS & MENTORSHIP**

#### **GRADUATE STUDENTS ADVISED:**

Candice Torres (Ph.D.; 2005–2012)	Virginia Emery (Ph.D.; 2009–2013)
Rebecca Sandidge (Ph.D.; 2008–present)	Tara Madsen-Steigmeyer (Ph.D.; 2011–2014)
Kaitlyn Mathis (Ph.D.; 2009–2015)	Maria Tonione (Ph.D.; 2012–present)
Kelsey Scheckel (Ph.D.; 2014–present)	Brian Whyte (Ph.D.; 2015–present)

**POST-DOCTORAL RESEARCHERS ADVISED:**

Dr. Megan McPhee (2003–2005)	Dr. Miriam Brandt (2005–2007)
Dr. Johanna Clemencet (2006–2007)	Dr. Ellen van Wilgenburg (2006–2010)
Dr. Dong-Hwan Choe (2009–2011)	Dr. Brian Johnson (2009–2011)
Dr. Santiago Ramirez (2008–2013)	Dr. Kaustubh Gokhale (2014–2016)
Dr. Jan Buellesbach (2016–present)	Dr. Elizabeth Cash (2016–present)
Dr. Joshua Gibson (2016–present)	

**GRADUATE COMMITTEE MEMBER**

Valerie Foster (UCI; Ph.D.; 2004–2006), Nan Wang (UCI; M.S.; 2005–2006), Jesse Hollister (UCI; Ph.D.; 2006), Steven Lockton (UCI; Ph.D.; 2004–2007), Diane Livio (UCI; M.S.; 2005–2007), Felipe Barreto (UCI; Ph.D.; 2006–2007), Rosemary Byrne (UCI; Ph.D.; 2006–2007), June Gwalthney (UCI; Ph.D.; 2006–2007), Shauna Price (UCLA; Ph.D.; orals committee; 2007), Nicole VanderSal (UCB; Ph.D.; 2007–2008), Michael Branstetter (UCD; Ph.D., orals committee; 2007), Alexandra Harmon-Threatt (UCB; Ph.D.; 2009–2011), Cause Hanna (UCB; Ph.D.; Chair–orals committee; 2007–2012), Caroline Lee (UCB, Integrative Biology; Ph.D; 2008, orals committee), Lisa Fernandez (UCB; Ph.D.; 2008–present), Steven Bayes (UCB; Ph.D.; 2008–2014), Julie Hopper (UCB; Ph.D.; 2008–2015), Joseph Sapp (UCSC; Ph.D.; 2009–present), Misha Leong (UCB; Ph.D.; orals committee), Jeremy Anderson (UCB; Ph.D; 2010–present), Traci Grzymala (UCB; Ph.D.; orals committee), Kelly Schiabor (UCB; Ph.D; Molecular & Cell Biology; 2011–2015), Robert Thistle (UCB; Ph.D; Molecular & Cell Biology; 2011–2014), Sara Emery (UCB; Ph.D.; Chair–orals committee; 2012), Samantha Cheung (UCB; Ph.D; Molecular & Cell Biology; 2012–2016), Anne Murray (UCB; Ph.D.; Chair–orals committee; 2012), Kevi Mace (UCB; Ph.D.; Chair–orals committee; 2012), Carolyn Elya (UCB; Ph.D; Molecular & Cell Biology; 2013–present), Ting-ting “Dana” Lin (UCB, Integrative Biology; Ph.D; 2014, orals committee), Allison Quan (UCB; Ph.D; Molecular & Cell Biology; 2014–present), Celia Del Cid (UCB; Ph.D.; orals committee; 2014–15), Ignacio Escalante (UCB; Ph.D.; guiding committee, Chair–orals committee; 2014–present), Maggi Raboin (UCB; guiding committee, Chair–orals committee; 2015–present).

**UNDERGRADUATES MENTORED:**

~100 since 2003.

**COURSES TAUGHT & TEACHING AWARDS:**

**UC-Berkeley**

**Environmental Science Forum** (ESPM 201C), Spring 2008.

**Insect Behavior** (ESPM150, ESPM142), each Fall 2008-2012; 2015, 2016.

**Genetics and Genomics of Insect Behavior** (ESPM290), Spring 2009.

**Senior Seminar-Conservation & Resource Studies** (ESPM194), Spring 2011 (two classes), Spring 2012.

**Insect Chemoreception and Chemical Ecology** (ESPM290), Spring 2014.

**Advanced Chemical Ecology** (ESPM290), Fall 2014, 2016.

**Molecular Approaches to Environmental Problem Solving** (ESPM 192), Spring 2015, 2016.

**UC-Irvine**

**Graduate Core in Evolution**, Winter 2007.

**Advanced Evolutionary Biology** (BS168), Spring 2004, 2005, 2006.

**Freshman Seminar** (BS2B), “Social behavior of ants”, Spring 2004, 2005, 2006, 2007.

**Faculty Appreciation Award** – Alpha Epsilon Delta (AED) Pre-Medical Honor Society, Spring 2006.

**GUEST LECTURES:**

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**UC-Irvine Graduate Core in Evolution**, “Sociality, symbiosis, and the major evolutionary transitions”, Winter 2004, 2005, 2006.

**UC-Irvine Graduate Core in Ecology**, “The ecology and behavior of invasive species”, Spring 2004, 2005.

**Entomology (BS184)**, “Cooperation and conflict in social insects”, Spring 2004, Fall 2006.

**Insect Ecology (ESPM113)**, “Cooperation, conflict and communication in social insects”, Spring 2008.

**General Entomology (ESPM140)**, “Chemical ecology and genetics of social insects”, Spring 2008.

### **INVITED PRESENTATIONS & PROFESSIONAL MEETINGS**

1999:

**Invited speaker** – Argentine ant symposium, Palo Alto, CA, May.

**Speaker** – Soc. for the Study of Evolution/American Soc. of Naturalists, Madison, WI. July.

**Speaker** – California Population & Evolutionary Genetics meeting (CALPEG), Bodega Bay, CA. December.

2000:

**Seminar speaker** – Center for Population Biology, Department of Evolution and Ecology, UC-Davis. March.

2001:

**Speaker** – Soc. for the Study of Evolution/American Soc. of Naturalists, Knoxville, TN. June.

**Invited symposium speaker** – Soc. for Conservation Biology, Hilo, HI. Symposium on: “Population biology of invasive species”. July.

2002:

**Invited speaker** – Department of Ecology & Evolutionary Biology, UC-Irvine. February.

**Invited symposium speaker** – International Union for the Study of Social Insects (IUSI), Sapporo, Japan. Symposium on: “Population Genetics and Genomics”. July/August.

**Invited speaker** – Molecular & Genetic Approaches in Ecology, UC-Davis, CA. October.

2003:

**Speaker** – Soc. for the Study of Evolution/American Soc. of Naturalists, Chico, CA. June.

**Invited seminar speaker** – Moss Landing Marine Laboratory, CA. November.

**Speaker** – California Population & Evolutionary Genetics (CALPEG), Irvine, CA. Dec.

2004:

**Invited seminar speaker** – Department of Biology, UC-Riverside, Riverside, CA. January.

**Invited symposium speaker** – Ecological Society of America, Portland, OR. Symposium on: “Evolution of invasive species”. August.

2005:

**Invited speaker** – Department of Biological Chemistry, UC-Irvine. January.

**Invited seminar speaker** – Behavior, Evolution & Culture Speaker Series, UC-Los Angeles, Los Angeles, CA. February.

**Invited seminar speaker** – Department of Evolution, Ecology & Organismal Biology, Ohio State University, Ohio. November.

2006:

**Student-Invited speaker** – 19<sup>th</sup> Annual Michael Duke Memorial Seminar Speaker. Department of Entomology, North Carolina State University. April.

**Invited symposium speaker** – International Union for the Study of Social Insects (IUSI), Washington, D.C. Symposium on: “Recognition Systems”. August.

**Invited seminar speaker** – Scripps Institute of Oceanography, UC-San Diego. November.

**Invited seminar speaker** – Department of Environmental Science, Policy & Management, UC-Berkeley. November.

2007:

**Invited speaker** – U.S. Department of Agriculture, Project Directors workshop. February.

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**Invited seminar speaker** – Department of Ecology & Evolutionary Biology, UC–Los Angeles. April.

**Invited seminar speaker** – Department of Ecology & Evolutionary Biology, University of Miami (Florida). April.

**Invited seminar speaker** – Quantitative and Systems Biology, UC–Merced. October.

**Invited symposium speaker** – Entomology Society of America, San Diego, CA. Symposium on “Connecting the Colony: Building Social Complexity through Pheromones”  
December.

**Poster presentation** – U.S. Department of Agriculture, Project Directors workshop.  
December.

2008:

**Invited speaker** – Entomology Society of America, Pacific Branch, Napa, CA. April.

**Student-invited speaker** – Program in Ecology, Evolution and Conservation Biology, University of Illinois, Urbana-Champaign. April.

**Invited speaker** – Defining Wisdom Symposium, John Templeton Foundation/University of Chicago, IL. August.

**Invited seminar speaker** – ESPM Colloquium, Department of Environmental Science, Policy & Management, UC–Berkeley. September.

**Invited seminar speaker** – Department of Entomology, UC–Davis. November.

2009:

**Invited speaker** – California Structural Pest Control Board, Napa, CA. January.

**Invited speaker** – The Past, Present and Future of Ant Genomics workshop and meeting, Tempe, AZ. January.

**Invited speaker** – Synthesis of the Ecology and Evolution of Invasive Species workshop and meeting, Lake Tahoe, CA. March.

**Invited speaker** – Defining Wisdom Symposium, John Templeton Foundation/University of Chicago, IL. June.

**Invited symposium speaker** – American Associate for the Advancement of Science (AAAS), San Francisco, CA. Symposium on “The Evolution of Cooperation”, August.

2010:

**Poster presentation** – U.S. Department of Agriculture, Project Directors workshop.  
Washington, D.C. March.

**Invited seminar speaker** – Department of Entomology, UC–Riverside. May.

**Invited speaker** – Defining Wisdom Symposium, John Templeton Foundation/University of Chicago, IL. June.

**Invited speaker** – Pest Control Operators of California, combined district meeting. July.

**Invited seminar speaker** – Collaborative Learning at the Interface of Mathematics & Biology (CLIMB) program, UC–Davis. Sept.

**Invited speaker** – Meeting of the American Philosophical Society, Philadelphia, PA. Nov.

**Poster presentation** – U.S. Department of Agriculture, Project Directors workshop. San Diego, CA. Dec.

2011:

**Invited speaker** – Plant and Animal Genomes, San Diego, CA. Jan.

**Invited speaker** – Science@Cal, Dept. of Astronomy, UC Berkeley, CA. May.

**Invited speaker** – ESPM Colloquium, UC Berkeley, CA. November.

2012:

**Invited speaker** – California Structural Pest Control Board, Sacramento, CA. April.

**Invited symposium speaker** – Entomology Society of America, Knoxville TN, November.

**Poster presentation** – Entomology Society of America, Knoxville TN, November.

2013:

**Invited speaker** – California Structural Pest Control Board, Sacramento, CA. January.

**Invited speaker** – Entomology Society of America, Pacific Branch, Lake Tahoe, NV. April.

**Invited seminar speaker** – Department of Entomology, Texas A&M University, April.



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**Invited conference speaker** – Adapting to Global Change in the Mediterranean Hotspot, Seville, Spain. September.

**Invited conference speaker** –National Pest Management Association, Pestworld 2013. October.

2014:

**Invited seminar speaker** – Department of Entomology, UC–Davis. January.

**Invited seminar speaker** –Essig Brunch, Essig Museum of Entomology, UC Berkeley, April.

**Invited speaker** – Target Speciality Products, San Jose, CA. June.

**Invited speaker** – Target Speciality Products, Sacramento, CA. June.

**Keynote speaker** – PCOC Expo, Las Vegas, NV. June.

**Invited speaker** – Invasion Genetics: The Baker and Stebbins Legacy, Asilomar, CA. August.

**Invited symposium speaker** – Entomology Society of America, Portland, OR, November.

2015:

**Invited speaker/panelist** – Center for Population Biology mini-conference, UC–Davis. February.

**Invited seminar speaker** – PERT Program/Center for Insect Science, U of Arizona. March.

**Invited speaker** – Evolution of Organismality, St. Louis, MO. May.

**Invited speaker** – Target Speciality Products, Sante Fe Springs, CA. June.

**Invited speaker** – Target Speciality Products, San Marcos, CA. June.

2016:

**Plenary speaker.** American Association of IPM Entomologists, Monterey, CA. “The behavior and social structure of ants”, February.

**Invited symposium speaker** – International Congress of Entomology, Orlando, FL, September.

## **SERVICE**

### **PANEL MEMBER:**

NATIONAL SCIENCE FOUNDATION – IOB Behavioral Systems. 2011, 2013.

NATIONAL SCIENCE FOUNDATION – DEB Phylobiogeography. 2008.

NATIONAL SCIENCE FOUNDATION – Doctoral Dissertation Improvement Grants. 2007.

U.S. DEPARTMENT OF AGRICULTURE – Arthropod & Nematode Biology: Organismal & Population Biology. 2007, 2009.

U.S. DEPARTMENT OF AGRICULTURE – ARS, OSQR: Ants and Termites. 2009.

### **EDITORIAL BOARDS:**

AUSTRALIAN JOURNAL OF ZOOLOGY. Associate Editor, 2007–2012.

BMC ECOLOGY. Associate Editor, 2011–present.

BIOLOGICAL INVASIONS. Associate Editor, 2011–present.

PLoS GENETICS. Guest Editor, 2013.

### **COMMITTEE MEMBER:**

NATIONAL ECOLOGICAL OBSERVATORY NETWORK (NEON) DESIGN CONSORTIUM, Invasive Species subcommittee. 2004–2005.

### **REVIEWER** (manuscripts and grant proposals, excluding panel service above):

>150 total from July 2003–present

Journals, including: *The American Naturalist*, *Animal Behaviour*, *Annals of the Entomological Society of America*, *Behavioral Ecology*, *Behavioral Ecology & Sociobiology*, *Biology Letters*, *BMC Ecology*, *Conservation Biology*, *Diversity & Distributions*, *Ecology*, *Ecology Letters*, *Evolution*, *Evolutionary Applications*, *Evolutionary Ecology Research*, *Genetics*, *Insectes Sociaux*, *Journal Chemical of Ecology*, *Naturwissenschaften*, *Molecular Ecology*, *Oecologia*, *PLoS One*, *Proceedings of the National Academy of Sciences*.

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Funding agencies, including: *The National Science Foundation, US Department of Agriculture, National Institute for Climate Change Research (US Dept of Energy), Natural Environment Research Council.*

**SERVICE TO UC SYSTEM:**

Member – Faculty advisory committee, UC Education Abroad Program (UCEAP). 2013–present.

**SERVICE TO CAMPUS:**

Member – Committee on Courses of Instruction (COCI). 2014–present.

- Sciences subcommittee. 2014–2015.
- Variances subcommittee. 2015–2016.
- Student Information Systems (SIS) advisory committee. 2016–present.

Member – Berkeley Institute for Global Change Biology. 2010–present.

Member – *Ad hoc* campus tenure review committee – 2010, 2014.

Member – Ecological Preserve and Open Space committee. 2006–2007 (UCI).

Member – Phi Beta Kappa nominating committee. 2004–2007 (UCI).

**SERVICE TO SCHOOL/COLLEGE:**

Faculty Judge – College of Natural Resources Gradfest Symposium. 2011.

Faculty Judge – College of Natural Resources Honor Symposium. 2010, 2015.

Member – Biological Sciences Executive Committee. Elected by department; 2006–2008 (UCI).

Member – Crystal Cove Research Cottage committee. 2005–2006 (UCI).

**SERVICE TO THE DEPARTMENT:**

Member – Race, Culture, and Environment search committee. 2016.

Vice Chair for Instruction. 2010–2012, 2014–2015.

Chair – Undergraduate Programs Committee. 2010–2012, 2014–2015.

Chair – *Ad hoc* personnel action committee. 2012, 2016.

Member – ESPM Departmental Vision committee. 2012.

Member – Molecular Environmental Biology undergraduate advising committee. 2008–present.

Member – Graduate student advising committee. 2008–present.

Member – Global Change Organismal Biology search committee. 2010.

Member – Environmental Science undergraduate major committee. 2008–2010.

Member – Environmental Science undergraduate major transition committee. 2010–2011.

Chair – ESPM Safety Committee. 2009.

Member – Graduate admissions committee. 2009–2010.

Member – *Ad hoc* tenure and merit review committees – 2 times since 2007.

Chair – Graduate student awards committee. 2007–2008.

Chair – Molecular Analytical Facility Steering committee. 2006–2007. (UCI)

Member – Ecology search committee. 2 positions; 2005–2006. (UCI)

Member – Departmental web-page committee. 2003–2007. (UCI)

Member – *Ad hoc* personnel merit review committee – 5 times since 2003. (UCI)

**MEETING CO-ORGANIZER**

California Population & Evolutionary Genetics meeting (CALPEG), December 2003.

## **OUTREACH**

**INVITED SCIENTIST:**

Congressional Education Day on Invasive Species, Washington, D.C. May 2010.

**SPEAKER:**

UC–Irvine Minority Biomedical Research Support program. February 2004.

California Alliance for Minority Participation (CAMP) Summer Science Academy (lab tour). July 2004, July 2005.

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UC–Irvine, Teacher Professional Development program on Science Fair Projects as Tools for Investigation & Experimentation, School of Biological Sciences Outreach Program. August 2004.

UC–Irvine, Minority Graduate Research Conference in Biomedical Sciences. November 2005.

UC–Irvine, Minority Science Program, Theory & Research Seminar Series. May 2006, May 2007.

Girls, Inc., Eureka Day, UC–Irvine. July 2006.

NIH-Bridges to the Baccalaureate, UC–Irvine Minority Science Program, "Careers in Biomedical Sciences" (Santa Ana College). Faculty panel. October 2006.

UC President’s Post-doctoral Fellowship Program. Led workshop on “Grant writing in the sciences”. October 2009.

**FACULTY MENTOR:**

UC–Irvine, High School Science Fair Initiative, School of Biological Sciences Outreach Program (2004–2005).

**REVIEWER:**

Southern California Junior Science and Humanities Symposium. 2004, 2006.

UC–Irvine, Excellence in Research, Biological Sciences Symposium. 2004–2005.

**VOLUNTEER:**

Ask a Scientist Night, Irvine Unified School District, Oct. 2003.

**PRESS:**

**Magazine:** Nature–News and Views (**405**:519-520), Science–Editor’s Choice (288:1549), New Scientist (**166**:9), Science News (**157**:346; **161**:245), California Wild (**55**:4-5), California Agriculture (**56**:4), Conservation (Jan-Mar 2010), Discover Magazine (March 18, 2014), Wired Magazine (April 10, 2014), many others.

**Newspaper:** The New York Times (1 August 2000, Science Times p. D1), The Los Angeles Times (16 May 2000, p. A1; 15 Sept. 2006, p. B1), The San Francisco Chronicle (15 Sept. 2006; 28 October 2009), The Washington Post, National Geographic News (22 Sept. 2006), The Orange County Register (May 2000; 15 Sept. 2006), The San Diego Union-Tribune (10 Feb. 2003), The Sacramento Bee (26 June 2003, p. A3), Sacramento News and Review (27 Feb. 2003), many others.

**Television:** CNN Headline News, local affiliates of NBC, ABC, and FOX; KQED-Quest, KQED-Deep Look.

**Radio:** National Public Radio (“Radiolab”, “All Things Considered”), BBC World Service (“Science in Action”), Canadian Broadcasting Corporation (“Quirks and Quarks; As It Happens”), Earthwatch Radio, This Week in Science (KVDS).

**Internet:** Reddit (front page), Ars Technica, National Geographic News, Discovery on-line, The Environmental News Network, many others.

**MEMBERSHIPS**

**MEMBER:**

Phi Beta Kappa Honor Society. 1994–present.

Society for the Study of Evolution. 1997–2005.

American Society of Ichthyologists and Herpetologists. 1998–2000.

UC-Irvine, Institute for Genomics and Bioinformatics. 2003–2007.

Sigma Xi Honor Society. 2005–present.

Entomology Society of America. 2007–present.

American Association for the Advancement of Science. 2016-present.