CURRICULUM VITAE

Sean O'Donnell, Ph.D.

Interim Department Head and Professor of Biology

Professor of Biodiversity, Earth & Environmental Science

Drexel University, Philadelphia, PA
Office Phone: (215) 571-4177 Email: so356 “at” drexel.edu

RESEARCH INTERESTS

Brain/behavior relationships; evolution and development of brain investment

Thermal physiology and thermal ecology

Social behavior: Behavioral, genetic and physiological regulation of division of labor

Interspecific group dynamics; avian behavioral ecology

PROFESSIONAL EXPERIENCE

ADMINISTRATIVE POSITIONS

July 2019-present Interim Department Head, Biology, Drexel University

2012-2016 Associate Department Head, Biodiversity, Earth & Environmental Science and Biology, Drexel University

2007-2008 Program Officer, Behavioral Systems Cluster, National Science Foundation

2006-2007 Area Head, Animal Behavior (Psychology), University of Washington

FACULTY AND RESEARCH POSITIONS

2011-present Professor of Biodiversity, Earth & Environmental Science *and* Biology, Drexel University, Philadelphia, PA

2014-present Research Associate, Academy of Natural Sciences of Philadelphia

2011-2014 Affiliate Professor, Department of Psychology, University of Washington-Seattle

2010-2011 Professor of Psychology (Animal Behavior); Adjunct Professor of Biology; Graduate Program in Neurobiology and Behavior, Univ. of Washington

2002-2010 Associate Professor of Psychology (Animal Behavior), Univ. of Washington
1996-2002 Assistant Professor of Psychology (Animal Behavior), Univ. of Washington

SPECIAL SKILLS/TRAINING

Red Cross certified CPR, AED and First Aid (valid until 3/14/2021)

Fluent in Spanish

CONSULTING, GUIDING, AND TECHNICIAN POSITIONS

1993, 1994 Tropical biology guide, Amazon River in Loreto Province, Peru

1984-1986 Analytical technician: mass spectroscopy/chromatography, Uniroyal Chemical Co.

POSTDOCTORAL TRAINING

Postdoctoral Fellow: National Science Foundation Division of Environmental Biology (DEB-9303244). Laboratory of Robert E. Page, Jr., University of California-Davis, September 1994 to August 1996

Postdoctoral Fellow: University of California-Davis NSF Animal Behavior Research Training Grant. Laboratories of Hugh Dingle and Robert E. Page, Jr., September 1993 to August 1994

GRADUATE TRAINING

Ph.D. in Zoology and Entomology (joint major, advisors Robert Jeanne and Jack Hailman), University of Wisconsin-Madison, January 1990 to May 1993. Ph.D. Thesis: Patterns and regulation of division of labor in the eusocial wasp *Polybia occidentalis* Olivier (Hymenoptera: Vespidae).

MS in Entomology, University of Wisconsin-Madison, December 1989. MS Thesis: Forager specialization and the control of nest repair in *Polybia occidentalis* (Hymenoptera: Vespidae).

University of Costa Rica/Organization for Tropical Studies; Tropical Biology: An Ecological Approach, Course #88-3, summer 1988

UNDERGRADUATE EDUCATION

BS in Biology Cum Laude, Saint Joseph's University (Philadelphia PA), May 1986

Graduate research assistantships

USDA Hatch Grant 3544 (R.L. Jeanne, PI): Behavior and ecology of foraging in yellow jackets (*Vespula* spp.). June to August 1992; January to May 1993

NSF Grant BNS-8517519 (R.L. Jeanne, PI): Regulation of Nest Repair Behavior in *Polybia occidentalis*. September 1987 to June 1992

Graduate and undergraduate teaching assistantships held

BIOCORE (Biology Core Curriculum) Honors Program, Organismal Biology, Fall 1992
Minority Student Science Enrichment Program, University of Wisconsin, Summer 1991-1992
General Entomology, University of Wisconsin, Spring 1989
General Biology, University of Miami, Fall 1986, Spring and Summer 1987
Electron Microscopy, Ecology, and Ethology, St. Joseph's University, 1985 and 1986

Academic honors

Who's Who in Science and Engineering 1993
University of Wisconsin Vilas Fellow 1990-1991
Honorable Mention, National Science Foundation Predoctoral Fellowship 1987 and 1988
Sigma Xi National Research Honor Society, elected 1986
Outstanding Young Men of America, 1986
Dean's list 5 semesters, St. Joseph's University

Academic scholarships and awards

Summer Field Biology Scholarship, University of Wisconsin Graduate School 1988
Dorsey Memorial Scholarship (Mountain Lake Biological Station) University of Virginia 1987
Field Course Award, University of Miami 1987
St. Joseph's University Scholarship 1982-86
National Merit Scholarship 1982-86

FIELD RESEARCH EXPERIENCE

Tropical montane (cloud) forest

Monteverde, Costa Rica: 1993, 1994, 1995, 1996, 1997, 2000, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2012, 2013, 2014, 2015, 2016, 2017
Las Cruces Station, San Vito, Costa Rica: 2009, 2012, 2017

Mindo, Ecuador: 2003

Tropical lowland wet forest
Tapiche River basin, Peru: 2019
La Gamba and Baru, Costa Rica: 2012
La Selva Biological Station, Costa Rica: 2009, 2010, 2012, 2017
Tiputini Biodiversity Station, Ecuador: 2003, 2007, 2011, 2014, 2018
Yasuni National Park, Napo Province, Ecuador: 1994, 1995, 2007
Iquitos area, Loreto Province, Peru: 1993, 1994
Smithsonian Tropical Research Institute, Panama: 1990, 1998
Cuzco Amazonico lodge, Madre de Dios Province, Peru: 1989

Tropical dry forest
Kenting National Park, Taiwan: 2014
Santa Rosa sector, Guanacaste Conservation Area, Costa Rica: 2008
Centro Ecológico la Pacífica, Guanacaste Province, Costa Rica: 1988, 1989, 1991, 1992, 1997, 1998, 1999, 2001, 2005
Hato Masaguaral, Llanos, Venezuela: 1991, 1992

Desert
Negev Desert, Sede Boker, Israel: 2019

PATENTS

Patent EP3125689A1, EP3125689A4, US20170013832, October 18, 2017. Title: *Use of Erythritol or Composition Comprising Same in Mammal-Safe Insecticide* By: Daniel R. Marenda and Sean O'Donnell.

RESEARCH AWARDS

Current funding

Lead PI on Sponsored Research Agreement, Biologic Insecticides/Academic Venture Technologies, Developing erythritol as a novel human-safe insecticide (Daniel Marenda co-PI), 2017-present, $25,000.

Department head research supplement, Drexel College of Arts and Sciences, 2019-2020, $8,000.

Previous external grants

Lead PI on NSF-IOS Behavioral Systems, 1209072. Collaborative research: Comparative-developmental analysis of brain architecture in social wasps (Sarah Farris co-PI), January 2010-August 2015, total budget $390,000.

Lead PI on Eppley Foundation for Research, Toward developing erythritol as a novel human-safe insecticide (Daniel Marenda co-PI), 2015-16, $24,495.

Co-PI on Wistar-Morris fund grant (awarded 2014, D. Velinsky PI): Using stable isotopes to test the role of nutrition in division of labor, 2014, $26,367

Co-PI on Wistar-Morris fund grant (awarded 2014, T. Livshutz PI): Neuroecology and pollination biology of SE Asian social wasps, $33,311.

PI on National Geographic Society Committee for Research and Exploration grant: Using automated radio tracking to study avian exploitation of Neotropical army ants, 2014-2015, $19,000.

Lead PI on National Geographic Society Waitt grant: Bivouac checking: Automated tracking of a complex cognitive task in the field. Start 1 January 2012 for 12 months, budget $15,000.

Lead PI on NSF-IBN 0347315 Behavioral Neuroscience panel, Collaborative research: Brain plasticity and division of labor- from simple to complex societies (Theresa Jones co-PI), starting March 2004 for 60 months, total budget $416,555

National Geographic Society Research Grant (M. Kaspari PI; J. Lattke Co-PI), Behavior and Diversity of Army Ants across a Latitudinal Gradient, June 2003 for 12 months, $24,221

PI on NSF-IBN 9904885, Dominance and division of labor in social wasps, October 1999 to March 2003, $86,578

NSF-DEB Postdoctoral Fellowship, University of California at Davis, 1994-1996, $69,600

NSF Research Training Grant Postdoctoral Fellowship, University of California at Davis, 1993-1994, $21,200

Previous home institution funding

PI on Stein Fellowship for collaborative research in Israel (Ben Gurion University), Thermal physiology of ants and the ecology of seed dispersal, July 2018-December 2019, $15,000.

Co-PI on Drexel Venture fund grant, Developing erythritol as a novel human-safe insecticide (Daniel Marenda PI), 2016-17, $65,000

University of Washington Royalty Research Fund: Army ant population genetics and forest fragmentation, 2006-2008, $34,775

University of Washington Royalty Research Fund: Dominance and division of labor in social paper wasps 1997-1998, $28,969

University of Washington Startup Grant, 1996-1999, $80,000

University of Wisconsin: Entomology Department Travel Award 1992; Zoology Department Davis Travel Award 1991 and 1992; Graduate School Vilas Travel Grant 1990

Previous grant supplements and short-term funding

NSF Research Experiences for Undergraduates supplemental award, Sean Tully, 2009, $6,655
NSF Research Experiences for Undergraduates supplemental award, Kayla Helem, 2008, $6,426
NSF Research Experiences for Undergraduates supplemental award, Justin Neste, 2006, $3500
NSF Research Experiences for Undergraduates supplemental award, Andrea Repetto, 2005, $5950
NSF-IBN Research Opportunity Award 0119690 Animal Behavior panel, Social Aggression in Bees (Robin Foster Co-PI), 2001, $13, 074
Organization for Tropical Studies/Pew Charitable Trust Tropical Fellowship, 1991
Smithsonian Tropical Research Institute Short-term Fellowship, 1990
Organization for Tropical Studies/Jesse Smith Noyes Foundation Pilot Research Award, 1988

SCIENTIFIC PUBLICATIONS

In preparation (drafts available on request):

O'Donnell, S., S. Bulova, V. Caponera, K. Oxman, & I. Giladi. Body size and critical thermal limits in seed-harvesting desert ants (*Messor ebenius* and *M. arenarius*).

O'Donnell, S., S. McCann, & R.L. Jeanne. Evolution of nest defense in eusocial paper wasps (Polistinae) and hornets (Vespinae) (Hymenoptera: Vespidae).

DeLeon S.D., R.W. Driver & **S. O'Donnell**. Resource tracking by facultative army ant-exploiting birds.

O'Donnell, S., S.J. Bulova, M. Barrett, and B.L. Thorne. Developmental and caste effects on brain architecture in dampwood termites (*Zootermopsis angusticollis* and *Z. nevadensis*).

O'Donnell S., S. Tully, W. Hallwachs, D.H. Janzen, & J. Rodriguez. Elevational and seasonal patterns of Neotropical paper wasp abundance and species richness (Vespidae: Polstinae).

Oyamaguchi, H., **S. O'Donnell**, E. Sepa, A. Kang, M. McNulty, & M. Gonder. Shortcomings of macro-scale temperature data: microclimatic variation and the thermal physiology of small-bodied ectotherms.

Submitted manuscripts.

O'Donnell, S. *In review.* Caste. Encyclopedia of Social Insects (C.K. Starr. Ed.). Springer Press.

O'Donnell, S., & M.P. O'Connor. *In review.* Factors favoring social foraging under intense competition. Behavioral Ecology.

GoogleScholar metrics (23 March 2020): Citations 4669, h-index 36, i-10 index 86

Peer-reviewed papers and chapters (published or in press):

131. **O'Donnell, S.** *In press*. Brain evolution and plasticity. Encyclopedia of Social Insects (C.K. Starr. Ed.). Springer Press.

130. **O'Donnell, S.** *In press*. *Mischocyttarus*. Encyclopedia of Social Insects (C.K. Starr. Ed.). Springer Press.

129. Soare T.W., A. Kumar, K.A. Naish & **S. O'Donnell**. 2020. Multi-year genetic sampling indicates maternal gene flow via colony emigrations in the army ant *Eciton burchellii parvispinum*. Insectes Sociaux 67: 155-166.

128. Barrett, M., K. Fiocca, E. Waddell, C. McNair, **S. O'Donnell**, & D. Marenda. 2020. Larval mannitol diets increase mortality, prolong development, and decrease adult body sizes in fruit flies (*Drosophila melanogaster*). Biology Open (12): bio047084. doi:10.1242/bio.047084

127. Barrett, M., V. Caponera, C. McNair, **S. O'Donnell,** & D.R. Marenda. 2020. Potential for use of erythritol as a socially-transferrable ingested insecticide for ants (Hymenoptera: Formicidae). Journal of Economic Entomology toaa019, https://doi.org/10.1093/jee/toaa019

126. Caponera, V., M. Barrett, D.R. Marenda, & S. O'Donnell. 2019. Erythritol ingestion causes concentration-dependent mortality in subterranean termites (Reticulitermites flavipes). Journal of Economic Entomology, toz260, https://doi.org/10.1093/jee/toz260

125. Baudier, K.M. & **S. O'Donnell.** 2019. Rain shadow effects predict population differences in thermal tolerance of leaf-cutting ant workers (*Atta cephalotes*). Biotropica https://doi.org/10.1111/btp.12733

124. **O'Donnell, S.**, S. Bulova, S. Deleon, M. Barrett, & K. Fiocca. 2019. Brain structure differences between solitary and social wasps are independent of body size allometry. Journal of Comparative Physiology A 205: 911-916.

123. **O'Donnell, S.** 2019. Observation of a Nocturnal Curassow *Nothocrax urumutum* with fledgling chicks in eastern Ecuador. Cotinga 41: 119-120.

122**. O'Donnell, S.** 2019. Head-to-body size allometry in wasps (Vespidae): does brain housing constrain the evolution of small body sizes? Insectes Sociaux 66: 647-651.

121. Fiocca, K., M. Barrett, E. Waddell, C. McNair, **S. O'Donnell**, & D.R. Marenda. 2019. Mannitol ingestion causes concentration-dependent, sex-biased mortality in adults of the fruit fly (*Drosophila melanogaster*). PLoS ONE 14: e0213760.

120. Baudier, K., C. D'Amelio, E. Sulger, M.P. O'Connor, & **S. O'Donnell**. 2019. Plastic collective endothermy in a complex animal society (army ant bivouacs: *Eciton burchellii parvispinum*). Ecography 42: 730-739.

119. Baudier, K.M. & **S. O'Donnell.** 2018. Complex worker subcaste differences in thermal tolerances in the army ant *Eciton burchellii parvispinum.* Journal of Thermal Biology 77: 278-280.

118. Baudier K.M., C.L. D'Amelio, R. Malhotra, M.P. O'Connor & **S. O'Donnell**. 2018. Extreme insolation: climatic variation shapes the evolution of thermal tolerance at multiple scales. American Naturalist 192: 347-359.

117. Gilkey P., D. Bolshakov, J. Kowala, L. Taylor, **S. O'Donnell**, D. Marenda, & L. Sirot. 2018. Lethal effects of erythritol on the mosquito *Aedes aegypti* Linnaeus (Diptera: Culicidae). Journal of Applied Entomology 142: 873-881.

116. **O'Donnell, S.,** S. Bulova, M. Barrett, & C. von Beeren. 2018. Brain investment under colony-level selection: soldier specialization in *Eciton* army ants (Formicidae: Dorylinae). BMC Zoology 3: 3.

115. **O'Donnell, S.,** K. Fiocca, M. Campbell, S. Bulova, P. Zelanko, & D. Velinsky. 2018. Adult nutrition and reproductive physiology: a stable isotope analysis in a eusocial paper wasp (*Mischocyttarus mastigophorus*, Hymenoptera: Vespidae). Behavioral Ecology and Sociobiology 76: 86.

114. Driver R.W., S.D. DeLeon, & **S. O'Donnell**. 2018. Novel observation of a raptor (Collared Forest-falcon: *Micrastur semitorquatus*) predating a fleeing snake (Squamata: Serpentina) at an army ant raid front (*Eciton burchellii parvispinum*). Wilson Journal of Ornithology.

113. **O'Donnell, S**. 2018. The neurobiology of climate change. Science of Nature - Naturwissenschaften 105: 11.

112. **O'Donnell, S**., S.J. Bulova, M. Barrett, & K. Fiocca. 2018. Size constraints and sensory adaptations affect mosaic brain evolution (paper wasps- Vespidae: Epiponini). Biological Journal of the Linnaean Society 123: 302–310.

111. Nelson A.S., T.J. Scott, M. Barczyk, T. P. McGlynn, A. Avalos, E. Clifton, A. Das, A. Figueiredo, L. Figueroa, M. Janowiecki, S. Pahlke, J. Rana, and **S.O'Donnell**. 2018. Day/night upper thermal tolerance limits differ within *Ectatomma ruidum* ant colonies. Insectes Sociaux

65: 183-189. DOI: 10.1007/s00040-017-0585-4

110. **O'Donnell S.** & T. McGlynn. 2017. Emigrating on the fly: a novel method of army ant colony movement observed in *Eciton mexicanum.* Journal of Insect Behavior 30: 471-474. DOI: 10.1007/s10905-017-9635-z

109. O'Connor M.P. & **S. O'Donnell**. 2017. Implications of iterative communication for biological system performance. Journal of Theoretical Biology 436: 93-104.

108. **O'Donnell, S.,** S.J. Bulova, S. DeLeon, M. Barrett, & K. Fiocca. 2017. Caste-differences in the mushroom bodies of swarm-founding paperwasps: implications for brain plasticity and brain evolution (Vespidae, Epiponini). Behavioral Ecology and Sociobiology 71: 116.

107. **O'Donnell, S. &** S.J. Bulova. 2017. Development and evolution of brain allometry in wasps (Vespidae): Size, ecology and sociality. Current Opinion in Insect Science 22: 54-61. https://doi.org/10.1016/j.cois.2017.05.014

106. Baudier, K.M. & **S. O'Donnell.** 2017. Weak links: How colonies counter the social costs of individual variation in thermal physiology. Current Opinion in Insect Science 22: 85-91. https://doi.org/10.1016/j.cois.2017.06.004

105. **O'Donnell, S.**, K.M. Baudier & D.R. Marenda. 2017. Erythritol ingestion impairs adult reproduction and causes larval mortality in *Drosophila melanogaster* fruit flies (Diptera: Drosophilidae). Journal of Applied Entomology. DOI: 10.1111/jen.12409

104. **O'Donnell, S**. 2017. Evidence for facilitation among avian army-ant attendants: specialization and species associations across elevations. Biotropica. DOI: 10.1111/btp.12452

103. Esch, C., J. Peña Jimenez, C. Peretz, H. Uno, & **S. O'Donnell**. 2017. Thermal tolerances differ between diurnal and nocturnal foragers in the ant *Ectatomma ruidum*. Insectes Sociaux. doi:10.1007/s00040-017-0555-x

102. Lukasik, P., J.A. Newton, J.G. Sanders, Y. Hu, C.S. Moreau, D.J.C. Kronauer, **S. O'Donnell**, R. Koga, & J.A. Russell. 2017. The structured diversity of specialized gut symbionts of the New World army ants. Molecular Ecology. 26: 3808-3825. DOI: 10.1111/mec.14140

101. Baudier K.M. & **S. O'Donnell**. 2016. Structure and thermal biology of subterranean army ant bivouacs in a tropical montane forest. Insectes Sociaux 63: 467-476.

100. **O'Donnell, S.,** K.M. Baudier & D.R. Marenda. 2016. Non-nutritive polyol sweeteners differ in insecticidal activity when ingested by adult *Drosophila melanogaster* (Diptera: Drosophilidae). Journal of Insect Science 16: 47; 1-3

99. Bulova S., K. Purce, P. Khodak, E. Sulger & **S. O'Donnell**. 2016. Into the black, and back: The ecology of brain investment in Neotropical army ants (Formicidae: Dorylinae). Science of Nature/Naturwissenschaften 103: 1-11.

98. **O'Donnell S.**, S.J. Bulova, S. DeLeon, P. Khodak, S. Miller, & E. Sulger. 2015. Distributed cognition and social brains: reductions in mushroom body investment accompanied the origins of sociality in wasps (Hymenoptera: Vespidae). Proceedings of the Royal Society B 282: 20150791.

97. Baudier K.M., A. E. Mudd, S.C. Erickson, & **S. O'Donnell**. 2015. Microhabitat and body size effects on heat tolerance: implications for responses to climate change (army ants: Formicidae, Ecitoninae). Journal of Animal Ecology 84: 1322-1330.

96. Arcilla N., L.H. Hollbech, & **S. O'Donnell.** 2015. Severe declines of understory birds follow illegal logging in Upper Guinea forests of Ghana, West Africa. Biological Conservation 188: 41-49.

95. McCann S., T. Jones, O. Moeri, C. Scott, **S. O'Donnell** & G. Gries. 2015. Red-throated Caracara, a falconid raptor, rivals predatory impact of army ants on social wasps. Insectes Sociaux 62: 101-108.

94. Rehan S.M, S.J. Bulova, & **S. O'Donnell**. 2015. Cumulative effects of foraging behavior and social dominance on brain development in a facultatively social bee (*Ceratina australensis*). Brain, Behavior and Evolution 85: 117-124.

93. **O'Donnell S**., A. Kumar & C.J. Logan. 2014. Do Nearctic migrant birds compete with residents at army ant raids? A geographical and seasonal analysis. Wilson Journal of Ornithology 126: 474-487.

92. Sulger E., N. Mcaloon, S.J. Bulova, J. Sapp & **S. O'Donnell**. 2014. Evidence for adaptive brain tissue reduction in obligate social parasites (*Polyergus mexicanus*) relative to their hosts (*Formica fusca*). Biological Journal of the Linnean Society 113: 415-422.

91. Baudier K.M., S.D. Kaschock-Marenda, N. Patel, K.L. Diangelus, **S. O'Donnell** & D.R. Marenda. 2014. Erythritol, a non-nutritive sugar alcohol sweetener and the main component of Truvia®, is a palatable ingested insecticide. PLOS ONE. DOI: 10.1371/journal.pone.0098949

90. **O'Donnell S**., M.R. Clifford, S. Deleon, C. Papa, N. Zahedi & S.J. Bulova. 2014. A test of neuroecological predictions using paperwasp caste differences in brain structure (Hymenoptera: Vespidae). Behavioral Ecology & Sociobiology 68: 529-536.

89. Soare T.W., A. Kumar, K.A. Naish & **S. O'Donnell**. 2014. Genetic evidence for habitat effects on colony dispersal in the army ant *Eciton burchellii.* Molecular Ecology 23: 96-109.

88. McCann S., O. Moeri, T. Jones, C. Scott, G. Khaskin, R. Gries, **S. O'Donnell** & G. Gries. 2013. Strike fast, strike hard: the Red-throated Caracara exploits absconding behavior of social wasps during nest predation. PLOS ONE 8: e84114.

87. **O'Donnell S**., M.R. Clifford, S. DeLeon, C. Papa, N. Zahedi & S.J. Bulova. 2013. Brain size and visual environment predict species differences in paperwasp sensory processing brain regions (Hymenoptera: Vespidae, Polistinae). Brain Behavior and Evolution 82: 177-184.

86. **O'Donnell, S**., & J.H. Hunt. 2013. Group hunting by two species of Neotropical swarm-founding paper wasps (*Parachartergus apicalis* and *Agelaia* sp., Hymenoptera: Vespidae). Insectes Sociaux 60: 369-372.

85. Chavarria Pizarro L., H.F. McCreery, S.P. Lawson, M.E. Winston & **S. O'Donnell**. 2012. Sodium-specific foraging by leafcutter ant workers (*Atta cephalotes*, Hymenoptera: Formicidae). Ecological Entomology 37: 435–438.

84. **O'Donnell S.**, C.J. Logan & N.S. Clayton. 2012. Specializations of birds that attend army ant raids: an ecological approach to cognitive and behavioral studies. Behavioural Processes 91: 267-274.

83. Laurance W.F, D.C. Useche, J. Rendeiro, … **S. O'Donnell**, et al. 2012. Averting biodiversity collapse in tropical forest protected areas. Nature 489: 290-294.

82. Logan C., S. **O'Donnell**, & N. Clayton. 2011. A case of mental time travel in ant-following birds? Behavioral Ecology 22: 1149-1153.

81. **O'Donnell** S., M.R. Clifford, & Y. Molina. 2011. A comparative analysis of constraints and caste differences in brain investment among social paper wasps. Proceedings of the National Academy of Sciences. 108: 7107-7112.

80. Kaspari M., S. Powell, J. Lattke, & **S. O'Donnell**. 2011. Predation and patchiness in the tropical litter: do swarm-raiding army ants skim the cream or drain the bottle? Journal of Animal Ecology 80: 818-823.

79. Soare T.W., S.I. Tully, S.K. Willson, D.J.C. Kronauer & **S. O'Donnell**. 2011. Choice of nest site protects army ant colonies from environmental extremes in tropical montane forest. Insectes Sociaux 58: 299-308.

78. **O'Donnell S**., M. Kaspari, A. Kumar, J. Lattke & S. Powell. 2011. Elevational and geographic variation in army ant swarm raid rates. Insectes Sociaux 58: 293-298.

77. Kronauer, D.J.C., **S. O'Donnell**, J.J. Boomsma, & N.E. Pierce. 2011. Strict monandry in the ponerine army ant genus *Simopelta* suggests that colony size and complexity drive mating system evolution in social insects. Molecular Ecology 20: 420-428.

76. Lattke, J., **S. O'Donnell**, S. Powell, M. Kaspari. 2010. Las hormigas ecitoninas de Venezuela (Hymenoptera: Formicidae: Ecitoninae): elenco preliminar. Entomotropica, 22: 153-170.

75. McCann, S., O. Moeri, T. Jones, **S. O'Donnell** & G. Gries. 2010. Nesting and nest provisioning of the Red-throated Caracara (*Ictyber americanus*). Journal of Raptor Research 44: 236-240.

74. **O'Donnell S**., A. Kumar & C. Logan. 2010. Army ant raid attendance and bivouac-checking behavior by Neotropical montane forest birds. Wilson Journal of Ornithology 122: 503-512.

73. **O'Donnell** S., M. Garcia, J. Beard, T. Chiwocha, D. Lewis, C. Liu, H. Phillips, & T. Williams. 2010. Leaf cutter ants (*Atta cephalotes*) harvest baits offering salt rewards. Insectes Sociaux 57: 205-208.

72. Smith, A.R., K.M. Kapheim, **S. O'Donnell** & W.T. Wcislo. 2009. Social competition but not subfertility leads to a division of labour in the facultatively social sweat bee *Megalopta genalis* (Hymenoptera: Halictidae). Animal Behaviour 78: 1043-1050.

71. Molina, Y., Harris, R. & **S. O'Donnell**. 2009. Brain organization mirrors the evolution of caste determination, colony founding and nest architecture in paper wasps (Hymenoptera: Vespidae). Proceedings of the Royal Society B 276: 3345-3351.

70. Molina, Y. & **S. O'Donnell**. 2009.Males exhibit novel relationships of dominance with nest departure in the social paper wasp *Mischocyttarus mastigophorus* (Hymenoptera: Vespidae). Ethology 115: 738-746.

69. Jones, T.A., N.A. Donlan & **S. O'Donnell**. 2009. Growth and pruning of mushroom body Kenyon cell dendrites during worker behavioral development in the paper wasp, *Polybia aequatorialis* (Hymenoptera: Vespidae). Neurobiology of Learning and Memory 92: 485-495.

68. **O'Donnell** S., J. Lattke, S. Powell & M. Kaspari. 2009. Species and site differences in Neotropical army ant emigration behavior. Ecological Entomology 34: 476-482.

67. Kumar, A., J.T. Longino, R.K. Colwell & **S. O'Donnell**. 2009. Elevational patterns of diversity and abundance of eusocial paper wasps (Vespidae) in Costa Rica. Biotropica 41: 338-346.

66. Molina, Y. & **S. O'Donnell**. 2009. Worker reproductive competition affects division of labour in a primitively social paperwasp (*Polistes instabilis*). Insectes Sociaux 56: 14-20.

65. Kumar, A. & **S. O'Donnell**. 2009. Elevation and forest clearing effects on foraging differ between surface and subterranean army ants (Formicidae: Ecitoninae). Journal of Animal Ecology 78: 91-97.

64. Molina, Y. & **S. O'Donnell**. 2008. A developmental test of the dominance-nutrition hypothesis: Linking adult feeding, aggression, and reproductive potential in the paperwasp *Mischocyttarus mastigophorus*. Ethology, Ecology & Evolution 20: 125-139.

63. Smith, A.R., W.T. Wcislo, & **S. O'Donnell**. 2008. Body size shapes caste expression, and cleptoparasitism reduces body size in the facultatively eusocial bees *Megalopta* (Halictidae). Journal of Insect Behavior 21: 394-406.

62. Molina, Y. & **S. O'Donnell**. 2008. Age, sex, and dominance-related mushroom body plasticity in the paperwasp *Mischocyttarus mastigophorus*. Developmental Neurobiology 68: 950-959.

61. **O'Donnell S**. & S.J. Bulova. 2007. Worker connectivity: a review of the design of worker communication systems and their effects on task performance in insect societies. Insectes Sociaux 54: 203-210.

60. **O'Donnell S.** & S.J. Bulova. 2007. Worker connectivity: a simulation model of variation in worker communication and its effects on task performance. Insectes Sociaux 54: 211-218.

59. Kumar, A. & **S. O'Donnell**. 2007. Fragmentation and elevation effects on bird-army ant interactions in Neotropical montane forest of Costa Rica. Journal of Tropical Ecology 23: 581-590.

58. Molina, Y. & **S. O'Donnell**. 2007. Mushroom body volume is related to social aggression and ovary development in the paperwasp *Polistes instabilis*. Brain Behavior and Evolution 70: 137-144.

57. **O'Donnell S**., J. Lattke, S. Powell, & M. Kaspari. 2007. Army ants in four forests: Geographic variation in raid rates and species abundance. Journal of Animal Ecology 76: 580-589.

56. Smith, A.R., W.T. Wcislo, & **S. O'Donnell**. 2007. Survival and productivity benefits to social nesting in the sweat bee *Megalopta genalis* (Hymenoptera: Halictidae). Behavioral Ecology and Sociobiology 61:1111-1120.

55. Gardner, K.E., R.L. Foster, & **S. O'Donnell**. 2007. Experimental analysis of worker division of labor in bumblebee nest thermoregulation (*Bombus huntii*, Hymenoptera: Apidae). Behavioral Ecology and Sociobiology 61: 783-792.

54. **O'Donnell S.,** N.A. Donlan, & T.A. Jones. 2007. Developmental and dominance-associated differences in mushroom body structure in the paper wasp *Mischocyttarus mastigophorus*. Developmental Neurobiology 67: 39-46.

53. **O'Donnell S.** & A. Kumar. 2006. Elevational patterns of army ant community composition in tropical montane forest. Ecological Entomology 31: 491-498.

52. **O'Donnell S.** 2006. *Polybia* wasp biting interactions recruit foragers following experimental worker removals. Animal Behaviour 71: 709-715.

51. **O'Donnell S.,** M. Kaspari, and J. Lattke. 2005. Extraordinary predation by the Neotropical army ant *Cheliomyrmex andicola*: implications for the evolution of the army ant syndrome. Biotropica 37: 706-709.

50. **O'Donnell S.** & S.N. Beshers. 2004. The role of male disease susceptibility in the evolution of haplodiploid insect societies. Proceedings of the Royal Society of London B 271: 979-983.

49. Foster, R.L., A. Brunskill, D. Verdirame, & **S. O'Donnell**. 2004. Reproductive physiology, dominance interactions, and division of labour among bumblebee workers. Physiological Entomology 29: 327-334.

48. **O'Donnell S.,** N.A. Donlan, & T.A. Jones. 2004. Mushroom body structural plasticity is associated with temporal polyethism in eusocial wasp workers. Neuroscience Letters 356: 159-162.

47. Kaspari, M. & **S. O'Donnell.** 2003. High rates of army ant raids in the Neotropics and implications for ant colony and community structure. Evolutionary Ecology Research 5:933-939.

46. **O'Donnell S**. 2003. The development of biting interactions and task performance in a tropical eusocial wasp. Behaviour 140: 255-267.

45. Smith, A.R., W.T. Wcislo, & **S. O'Donnell.** 2003. Assured fitness returns favor sociality in a mass-provisioning sweat bee, *Megalopta genalis* (Hymenoptera: Halictidae). Behavioral Ecology and Sociobiology 54: 14-21.

44. **O'Donnell S.** 2002. Caste. *In:* V. Resh and R.T. Cardé (eds) Encyclopedia of Insects. Academic Press. pp. 151-154.

43. **O'Donnell S.** 2002. Colonies. *In:* V. Resh and R.T. Cardé (eds) Encyclopedia of Insects. Academic Press. pp. 239-242.

42. Howard, K.J., A.R. Smith, **S. O'Donnell** & R.L. Jeanne. 2002. Novel method of swarm emigration by the epiponine wasp, *Apoica pallens* (Hymenoptera: Vespidae). Ethology, Ecology and Evolution 14: 365-371.

41. Smith, A.R., **S. O'Donnell**, & R.L. Jeanne. 2002. Evolution of swarm communication in eusocial wasps (Hymenoptera: Vespidae). Journal of Insect Behavior 15: 751-764.

40. **O'Donnell S.** and R.L. Jeanne. 2002. The nest as fortress: defensive behavior of *Polybia emaciata*, a mud-nesting eusocial wasp. 5 pp. Journal of Insect Science 2.3. Available online: http://insectscience.org/2.3

39. **O'Donnell S.** & F.J. Joyce. 2001. Seasonality and colony composition in the tropical eusocial wasp *Mischocyttarus mastigophorus* Richards (Hymenoptera: Vespidae). Biotropica 33: 468-473.

38. Markiewicz, D.A. & **S. O'Donnell**. 2001. Social dominance, task performance and nutrition: implications for reproduction in eusocial wasps. Journal of Comparative Physiology A 187: 327-333.

37. Hunt, J.H., **S. O'Donnell,** N. Chernoff, & C. Brownie. 2001. Observations on two Neotropical swarm-founding wasps, *Agelaia yepocapa* and *A. panamaensis* (Hymenoptera: Vespidae). Annals of the Entomological Society of America 94: 555-562; cover photograph.

36**. O'Donnell S.** 2001. Worker age, ovary development, and temporal polyethism in the swarm-founding wasp *Polybia occidentalis* (Hymenoptera: Vespidae). Journal of Insect Behavior 14: 201-213.

35. **O'Donnell S.** & R.L. Foster. 2001. Thresholds of response in nest thermoregulation by worker bumble bees, *Bombus bifarius nearcticus* (Hymenoptera: Apidae). Ethology 107: 387-399.

34. **O'Donnell S.** 2001. Worker biting interactions and task performance in a swarm-founding eusocial wasp (*Polybia occidentalis*, Hymenoptera: Vespidae). Behavioral Ecology 12: 353-359.

33. Smith, A.R., **S. O'Donnell,** & R.L. Jeanne. 2001. Correlated evolution of colony defense and social structure: a comparative analysis in eusocial wasps (Hymenoptera: Vespidae). Evolutionary Ecology Research 3: 331-344.

32. **O'Donnell S.** 2000. Eusocial wasps (Vespidae: Polistinae). *In:* N.M. Nadkarni and N.T. Wheelwright (eds) Monteverde: Ecology and Conservation of a Tropical Cloud Forest. pp. 129-131 and p. 535. Oxford University Press.

31. **O'Donnell S.** & F. Joyce. 2000. A dual mimicry complex involving eusocial wasps (Hymenoptera: Vespidae). *In:* N.M. Nadkarni and N.T. Wheelwright (eds) Monteverde: Ecology and Conservation of a Tropical Cloud Forest. pp. 131-132. Oxford University Press.

30. **O'Donnell S.,** M. Reichardt, & R.L. Foster. 2000. Individual and colony factors in bumble bee division of labor (*Bombus bifarius nearcticus* Handl, Hymenoptera: Apidae). Insectes Sociaux 47: 164-170.

29. Kaspari, M., L. Alonso, & **S. O'Donnell**. 2000. Three energy variables predict ant abundance at a geographical scale. Proceedings of the Royal Society of London B 267: 485-489.

28. Kaspari, M., **S. O'Donnell** & J.R. Kercher. 2000. Energy, density, and constraints to species richness: ant assemblages along a productivity gradient. The American Naturalist 155: 280-293.

27. **O'Donnell S.** & F.J. Joyce. 1999. Dual mimicry in the dimorphic eusocial wasp, *Mischocyttarus mastigophorus* Richards. Biological Journal of the Linnean Society 66: 501-514.

26. Ranger, S. & **S. O'Donnell.** 1999. Genotypic effects on forager behavior in the Neotropical stingless bee *Partamona bilineata* (Hymenoptera: Meliponidae). Naturwissenschaften 86: 187-190.

25. **O'Donnell S.** 1999. The function of male dominance in the eusocial wasp *Mischocyttarus mastigophorus* (Hymenoptera: Vespidae). Ethology 105: 273-282.

24. **O'Donnell S.** 1998. Reproductive caste determination in eusocial wasps (Hymenoptera: Vespidae). Annual Review of Entomology 43: 323-346.

23. **O'Donnell S.** 1998. Dominance and polyethism in the eusocial wasp *Mischocyttarus mastigophorus* (Hymenoptera: Vespidae). Behavioral Ecology and Sociobiology 43: 327-331.

22. **O'Donnell S.** 1998. Effects of experimental forager removals on division of labour in the primitively eusocial wasp *Polistes instabilis* (Hymenoptera: Vespidae). Behaviour 135: 173-193.

21. **O'Donnell S.** 1998. Genetic effects on task performance, but not on age polyethism, in a swarm-founding eusocial wasp. Animal Behaviour 55: 417-426.

20. **O'Donnell S.** 1997. How parasites can promote the expression of social behaviour in their hosts. Proceedings of the Royal Society of London B 264: 689-694.

19**. O'Donnell S.,** J.H. Hunt, & R.L. Jeanne. 1997. Gaster-flagging during colony defense in Neotropical swarm-founding wasps (Hymenoptera: Vespidae, Epiponini). Journal of the Kansas Entomological Society 70:175-180.

18. **O'Donnell S.** 1996. Reproductive potential and division of labor in wasps: are queen and worker behavior alternative strategies? Ethology Ecology and Evolution 8: 305-308.

17. **O'Donnell S.** 1996. RAPD markers suggest genotypic effects on forager specialization in a eusocial wasp. Behavioral Ecology and Sociobiology 38: 83-88.

16. **O'Donnell S**. 1996. Dragonflies (*Gynacantha nervosa* Rambur) avoid wasps (*Polybia aequatorialis* Zavattari and *Mischocyttarus* sp.) as prey. Journal of Insect Behavior 9: 159-162.

15. **O'Donnell S.** & R.L. Jeanne. 1995. Implications of senescence patterns for the evolution of age polyethism in eusocial insects. Behavioral Ecology 6: 269-273.

14. **O'Donnell S.** & R.L. Jeanne. 1995. Worker lipid stores decrease with outside-nest task performance in wasps: implications for the evolution of age polyethism. Experientia 51: 749-752.

13. **O'Donnell S.** 1995. Division of labor in post-emergence colonies of the primitively eusocial wasp *Polistes instabilis* de Saussure (Hymenoptera: Vespidae). Insectes Sociaux 42: 17-29.

12. **O'Donnell S.** & R.L. Jeanne. 1995. The roles of body size and dominance in division of labor among workers of the eusocial wasp *Polybia occidentalis*. Journal of the Kansas Entomological Society 68: 43-50.

11. **O'Donnell S**. 1995. Necrophagy by Neotropical swarm-founding wasps (Hymenoptera: Vespidae, Epiponini). Biotropica 27: 133-136.

10. **O'Donnell S.** 1994. Nestmate copulation in the Neotropical eusocial wasp *Polistes instabilis* de Saussure (Hymenoptera: Vespidae). Psyche 101: 33-36.

9. **O'Donnell S.** & R.L. Jeanne. 1993. Methoprene accelerates age polyethism in workers of a social wasp (*Polybia occidentalis*). Physiological Entomology 18: 189-194.

8. **O'Donnell S.** 1993. Interactions of predaceous katydids (Orthoptera: Tettigoniidae) with Neotropical social wasps (Hymenoptera: Vespidae): are wasps a defense mechanism or prey? Entomological News 104: 39-42.

7. **O'Donnell S.** & R.L. Jeanne. 1992. Life-long patterns of forager behaviour in a tropical swarm-founding wasp: effects of specialization and activity level on longevity. Animal Behaviour 44: 1021-1027.

6. **O'Donnell S.** & R.L. Jeanne. 1992. Forager success increases with experience in *Polybia occidentalis* (Hymenoptera: Vespidae). Insectes Sociaux 39: 451-454.

5. **O'Donnell S.** & R.L. Jeanne. 1992. The effects of colony characteristics on longevity and foraging behavior of individual wasps (*Polybia occidentalis*, Hymenoptera: Vespidae, Epiponini). Insectes Sociaux 39: 73-80.

4. **O'Donnell S.** & R.L. Jeanne. 1991. Interspecific occupation of a tropical social wasp colony (*Polistes*, Hymenoptera: Vespidae). Journal of Insect Behavior 4: 397-400.

3. **O'Donnell S.** & R.L. Jeanne. 1990. Forager specialization and the control of nest repair in *Polybia occidentalis* Olivier (Hymenoptera: Vespidae). Behavioral Ecology and Sociobiology 27: 359-364.

2. **O'Donnell S.** & R.L. Jeanne. 1990. Notes on an army ant (*Eciton burchelli* Westwood) raid of a social wasp nest (*Agelaia yepocapa* Richards) in Costa Rica. Journal of Tropical Ecology 6: 507-509.

1. **O'Donnell S.** 1989. A comparison of fruit removal by bats and birds from *Piper hispidum* Sw (Piperaceae), a tropical second growth shrub. Brenesia 31: 25-32.

OTHER PUBLICATIONS

O'Donnell, S. 2019. Fortresses of tropical forests. Natural History 127 January: 48.

O'Donnell, S. 2018. Brain development and evolution in social insects. ScienceTrends.

O'Donnell, S. 2018. Neuroeconomics (Perspectives). Natural History 125 March: 22-27.

O'Donnell S. 2017. Book review of *The Sting of the Wild* (by Justin O. Schmidt), 2016 (Johns Hopkins University Press). Quarterly Review of Biology 92: 484.

O'Donnell, S. 2017. Keep your distance (Endpaper- an encounter with Giant Otters). Natural History 125 June.

O'Donnell S. 2016. Bushwhacked (Endpaper- viper bite). Natural History 124: 48.

O'Donnell S. 2015. Hug with caution: trees are vicious killers. (Feature article). Natural History 123: 30-34.

O'Donnell S. 2014. Exploiting the infantry. (Feature article). Natural History 122: 12-13.

O'Donnell S. 2011. In memoriam: Carl W. Rettenmeyer (1931-2009). Insectes Sociaux 58: 279-280.

O'Donnell S. 2008. Book review of *The Evolution of Social Wasps* (by James H. Hunt, 2007, Oxford University Press). Animal Behaviour 76: 2079-2080.

O'Donnell S. 1999. Book review of *Parasites in Social Insects* (by Paul Schmid-Hempel, 1998, Princeton University Press). Animal Behaviour 58: 453-454.

O'Donnell S. 1993. Scientific note: Neotropical social wasp folklore. Sphecos 25: 13-14.

O'Donnell S. 1992. Scientific note: Time-sharing, drifting, and pilfering: inter-nest activities of *Polybia occidentalis* foragers. Sphecos 23: 4.

O'Donnell S. 1992. Scientific note: Gastral rubbing observed in *Mischocyttarus immarginatus* (Hymenoptera: Vespidae) in Costa Rica. Sphecos 23: 5.

O'Donnell S. 1991. Scientific note: Swarm-founding wasp defensive behavior (Hymenoptera, Vespidae, Epiponini). Sphecos 21: 14-15.

O'Donnell S. 1990. Collecting report: Southeastern Peru 1989. Sphecos 20: 31-32.

O'Donnell S. 1986. Niche partitioning among Anisoptera (dragonfly) nymphs in a small pond community. The Bio Digest, Shaffrey Chapter AIBS, Philadelphia, PA, pp. 15-17.

PUBLICATION HONORS

2019 Nominated for Berliner award (most influential scientific paper), Science of Nature, "Neurobiology of Climate Change"

2017 Nominated for John Burroughs Association essay-length distinguished nature writing award (Keep Your Distance, Natural History Magazine).

2016 Nominated for John Burroughs Association essay-length distinguished nature writing award (Hug with Caution, Natural History Magazine).

RESEARCH PRESENTATIONS

Symposia I have organized (presented in all)

2015 SysEB Section Symposium- Social wasps, the model "non-model" organisms: Celebrating the synergistic contributions of Robert L. Jeanne (Professor Emeritus, University of Wisconsin-Madison) (with Jenny Jandt and Amy Toth). Entomological Society of America national meetings, November, Minneapolis, MN

2007 Program Symposium- Making Connections: Social Interactions and Social Networking in Insects (with Jennifer Fewell and Stanley Schneider), Entomological Society of America national meetings, December, San Diego, CA

2006 Symposium on Neuroethology (with Christoph Kleinedam). 15th International Congress of the International Union for the Study of Social Insects, August, Washington, DC

2002 Section C Symposium on Parasites and Pathogens in Insect Societies (with Rebecca Rosengaus) Entomological Society of America national meetings, December, Ft. Lauderdale, FL

2001 Invited Talk Session on Aggression and Social Behavior (with Robin Foster)
Animal Behavior Society National Meetings, July, Corvallis, OR

1997 Section C Symposium on Coevolution with Social Insects (with Theresa Singer)
Entomological Society of America national meetings, December, Nashville, TN

1995 Section C Symposium on Behavioral Genetics (with Greg Hunt), Entomological Society of America national meetings, December, Las Vegas, NV

1992 Informal Conference on Symbioses involving eusocial insects: an evolutionary perspective. Entomological Society of America national meetings, December, Baltimore, MD

Invited symposium talks and competitive presentations

2016 Wisdom of the Hive symposium, Arizona State University

2016 30th Anniversary National Conference on Undergraduate Research, University of North Carolina Asheville (Savanna Michener Undergraduate Researcher)

2014 Member symposium presentation, Entomological Society of America (ESA) national meetings, Portland, OR

2013 Member symposium presentation, ESA national meetings, Austin, TX

2012 Section symposium presentation, ESA national meetings, Knoxville, TN

2012 Member symposium presentation, ESA national meetings, Knoxville, TN

2011 Section symposium presentation, Entomological Society of America national meetings, November, Reno, NV

2009 Poster, Workshop on Microbes to metazoans: regulation, dynamics, and evolution of social behavior. Georgia Institute of Technology, Atlanta, GA December

2008 12th International Behavioral Ecology Congress, August, Ithaca, NY

2001 Section symposium presentation, ESA national meetings, December, San Diego, CA

1999 XIII International Congress of the International Union for the Study of Social Insects, January, Adelaide, Australia

1992 Subsection Cb student paper competition. ESA national meetings, December, Baltimore, MD

1990 Program Symposium presentation (Physiology of Insect Colonies). ESA National Meetings, December, New Orleans, LA

Invited professional talks

2019 fall to present: Connell lecture, Valsosta State University, GA; Plenary speaker, workshop on Bio-inspired computing & miniaturization, Arizona State University; Michigan State University Department of Entomology

2019: Ben Gurion University- Sede Boker campus, Israel; Princeton University Ecology and Evolution

2018: University of New Hampshire Biological Sciences

2017: Tulane University (declined- family emergency); American Entomological Society; Drexel International Research showcase; Bryn Mawr College senior research seminar; Bryn Mawr College Dept. of Biology

2016: Rutgers University-Camden, Dept. of Biology; Rockefeller University; University of Delaware Wildlife Biology & Entomology

2015: St. Joseph's University- Invertebrate Zoology; St. Joseph's University Department of Biology

2014: Department of Neurobiology and Anatomy- Drexel College of Medicine; Department of Biological Resources, National Chiayi University, Taiwan; Hengchun Forestry Research Laboratory, Kenting National Park, Taiwan; Biology Division, National Museum of Natural History, Taichung, Taiwan; University of Scranton Neuroscience Honors Society induction speaker; North Carolina State University Department of Entomology

2013: Villanova University Department of Biology

2012: University of Pennsylvania Department of Biology

2011: Academy of Natural Sciences, Philadelphia; American Entomological Society/University of Delaware; University of Miami Department of Biology; University of Victoria Department of Biology (BC, Canada); University of Washington Behavioral Neuroscience Program; Drexel University Department of Biology

2010: Washington State University Department of Entomology/Graduate Student Choice; University of Washington Biology faculty mini-symposium; University of Washington Physiology & Biological Structure

2009: University of Miami Department of Biology

2008: University of Maryland Department of Entomology

2007: National Science Foundation Integrative Organismal Systems

2006: National Science Foundation Integrative Organismal Biology; George Washington University Department of Biological Sciences

2005: Mount Holyoke College, Biology Department; University of Washington Neurobiology & Behavior Program; University of Washington Conservation Colloquium; Simon Fraser University, British Columbia, Canada, Biological Sciences; USDA Entomology Center, Gainesville, FL

2004: University of Illinois, Department of Entomology; University of Texas-Austin Institute for Neuroscience

2003: University of Washington Biology Department; Louisiana State University Distinguished Lecturer, Department of Entomology

2002: Washington State University Department of Entomology

2000: University of Oklahoma Zoology Department

1999: University of Georgia-Athens Department of Entomology

1998: University of Puget Sound Biology Department

1997: University of Oregon Program in Evolutionary Biology

1995: University of Washington Psychology

Submitted presentations

2016: North American Section/International Union for the Study of Social Insects, Orlando, FL (contributed talk; co-authored graduate student talk) Entomological Society of America national meetings, Orlando, FL (contributed talk, co-authored graduate student talk)

2015: NE Region Social Insect Biology meetings, Scranton, PA (contributed talk, graduate student talk, undergraduate student talk); American Ornithological Union national meetings, Norman, OK (contributed talk)

2014: Entomological Society of America national meetings, Portland, OR (contributed talk, graduate student talk)

2013: Mid-Atlantic Social Insect symposium (co-authored graduate student poster)

2012: Academy of Natural Sciences 200th Anniversary Symposium (co-authored undergraduate poster); North American Section/International Union for the Study of Social Insects, Greensboro, NC (contributed talk; co-authored graduate student poster); Animal Behavior Society national meetings, Albuquerque, NM (co-authored graduate student talk)

2010: ESA, San Diego, CA (poster); University of Washington Undergraduate Research Symposium (co-authored poster)

2009: Society for the Study of Evolution, Moscow, ID (co-authored undergraduate talk)

2005: ESA, Ft. Lauderdale, FL (contributed talk, co-authored graduate student talk)

2004: ESA, Salt Lake City, UT (contributed talk)

2000: North American Section/International Union for the Study of Social Insects, Benton County, AR (contributed talk; two co-authored graduate student talks)

1999: ESA, Atlanta, GA (contributed talk)

1997: North American Section/International Union for the Study of Social Insects, Boulder, CO (contributed talk; co-authored graduate student talk)

1995: Animal Behavior Society, Lincoln, NE (contributed talk)

1994: Animal Behavior Society, Seattle, WA (contributed talk)

1992: Animal Behavior Society, Kingston, ON, Canada (contributed talk)

1991: Animal Behavior Society, Wilmington, NC (contributed talk)

1990: Animal Behavior Society, Binghamton, NY (contributed talk)

SELECTED MEDIA COVERAGE OF RESEARCH

2017 December: Drexel ASK (Arts & Sciences) magazine **May:** Philadelphia FOX29 TV; UPI science news; Phys.org; PhillyVoice

2016 June: Entomology Today; Daily Mail (United Kingdom); National Science Foundation **March:** Gizmodo.com; LiveScience.com

2015 June/July: Philadelphia NPR (WHYY) "The Pulse"; National Geographic Phenomena/Ed Yong's "Not Exactly Rocket Science" blog; Audubon Magazine; NSF 360 web site; LiveScience.com

2014 December: Drexel ASK (Arts & Sciences) magazine **June:** Science/AAAS news service; Scientific American; American Chemical Society; CBS news; Philadelphia Inquirer; Philadelphia Metro; WHYY public radio; The Verge; Discovery; LiveScience/Yahoo; DrexelNOW web page; Prevention; Salon; Christian Science Monitor; io9; Xinhua; Correio Braziliense **January:** NSF news service (Science360, with "Picture of the day"); DrexelNOW web page

2013 June: Drexel EXCEL research magazine **April:** Interview in Drexel Quarterly **March:** Interviews on neurobiology and animal behavior, AskimoTV.com website

2012 March: Drexel University TV interview

2011 November: BBC Nature News **October:** Physorg; Science Daily; Moscow (Russia) Kommersant Science; **April/May:** Moscow (Russia) news media portal BFM.ru; US News & World Report; ScienceDaily; E!ScienceNews

2010 November: National Geographic Science of Great Migrations web page; University of Washington homepage; University Week newspaper **September:** Futurity website

2009 October: National Science Foundation homepage (NSF.gov); University of Washington homepage; Frontier Economy; New Scientist; Christian Science Monitor; UPI science news; ScienceDaily

2008 July/August: New Scientist magazine; National Science Foundation Biology Directorate website; ScienceDaily; NewsSmashHits.com; Webwire.com; Eureka!ScienceNews; ScienceCentric.com; Physorg.com **June:** Scientific American MIND magazine **March:** EurekAlert! (AAAS website); Medical News Today website; ScienceCentric website; ScienceDaily website; **January:** National Science Foundation multimedia gallery

2007 May: National Science Foundation multimedia gallery (http://www.nsf.gov/news/mmg/); **January**: University Week (UW campus newspaper); Washington Post (DC) science briefs; Presszoom.com; Biologynews.net; Newscientist.com; Physorg.com; LiveScience.com

2006 December: Sciencedaily.com; UPI.com/NewsTrack; Physorg.com; Medicalnewstoday.com; **May/June:** Science & Vie magazine (Paris, France), p. 32; Smithsonian Magazine Wild Things section; University of Washington Daily front page; Animal communication project- http://acp.eugraph.com; **March :** University of Washington homepage; FoxNews.com; Baltimore Sun; LiveScience.com

2004 April: Canadian Broadcasting Corporation Radio, Quirks & Quarks; Der Spiegel magazine (Germany); The Oregonian Newspaper; Science Daily web site

2002 March: National Geographic World magazine

2001 September: Natural History Magazine, In Sum Section; **June/July 2001**: New York Times Science Section; ABCnews.go.com SciTech Section; Science 292: 2399 (Editor's Choice Section); Science News

1999 October: Seattle Times Science Section; **February:** Newsday Magazine, Discovery section; Science News; The Univ. of Washington Daily; ScienceNOW (Science magazine website)

1997 May: New Scientist Magazine; Focus Magazine (Germany); **January:** The Oregonian (Portland, OR Newspaper).

TEACHING EXPERIENCE

Teaching honors

Drexel Outstanding STAR fellow mentor, 2013

Invited external Ph.D. committee member:
Environmental Biology student Sean McCann, Simon Fraser University, 2008-2014
Biology student Floria Mora-Kepfer, University of Miami, (PhD awarded 2010)
External Ph.D. defense examiner for Biological Sciences student Shelley Hoover, Simon Fraser University, October 2005

Nominated, University of Washington Distinguished Teaching Award, 2007

Twice nominated by University of Washington seniors as "Most influential undergraduate instructor," University of Washington Alumni Association, 2007 and 2005

Courses taught

Graduate courses

BEES Ecology/Evolution Journal Club
Core Concepts in Behavioral Genetics, 4 cr.
Evolutionary Psychology of Human Reproduction, 3 cr.
Topical Seminars (Geographic Variation in Behavior; Senescence and Behavior; Parasites and Behavior; Animal Behavior Journal Club), 2 cr.
Current Research in Animal Behavior, U.C. Davis Animal Behavior Group

Undergraduate lecture courses

Tropical Ecology 3 cr.
Insect Behavior 4 cr.
Behavioral Genetics 3 cr.
Animal Communication 5 cr.
Mechanisms of Animal Behavior 4 cr.
Biodiversity 3 cr.
Animal Behavior (majors) 5 cr. (UW), 3 cr. (Drexel)
Comparative Animal Behavior (general ed.) 5 cr.
Discoveries in Animal Behavior (non-majors) 3 cr.

Tropical field courses

Professor, Tropical Field Studies, Drexel ENVS 323/523, Ecuador, March 2019
Professor, Tropical Field Studies, Drexel ENVS 323, Costa Rica, September 2017
Coordinator, Organization for Tropical Studies graduate short course: Neotropical Social Insects, Costa Rica, March 2017
Coordinator, Organization for Tropical Studies graduate short course: Neotropical Social Insects, Costa Rica, March 2012
Coordinator, Organization for Tropical Studies graduate short course: Neotropical Social Insects, Costa Rica, March 2009
Co-coordinator, University of California Education Abroad Program. Monteverde, Costa Rica, Fall 1995

Resource faculty positions

Organization for Tropical Studies graduate fundamentals ecology course, Costa Rica: 2018, 2016, 2004, 1998, 1997, 1992
Organization for Tropical Studies undergraduate field course, Costa Rica: 2009, 2005
Quality Education for Minorities Network workshop, Washington DC: September 2007
Georgetown University Natural History and Culture undergraduate course, Ecuador: June 2007
University of San Francisco-Quito undergraduate exchange course, Ecuadorian ecosystems: 2007
School for International Training Comparative Ecology & Conservation undergraduate course, Ecuador: 2003
Council for International Educational Exchange undergraduate field course, Costa Rica: 2004, 2002, 2000
Evergreen State College undergraduate field course, Costa Rica: Winter 1996
University of California Education Abroad Program undergraduate course in tropical biology, Monteverde, Costa Rica: 2013, 2008, 1994, 1993

In-house guest lectures and other presentations

Drexel University:
2019: Biology Senior seminar lecture, fall
2019: BEES departmental seminar, spring
2019: Poster, International Research Showcase
2019: Spotlight on… series talk, Office of Global Engagement/Education Abroad, winter
2019: Organized weekly PISB Ecology Evolution & Ethology graduate seminar, winter
2019: BEES departmental seminar, winter
2018-19: Biology Senior group project mentor, fall-winter
2018: Presentation on international undergraduate research, Study Abroad/Undergraduate Research Offices, fall
2018: Roundtable on developing Intensive Courses Abroad, Study Abroad Office, fall
2018: Biology graduate orientation panel & research talk, fall
2017: BEES departmental seminar, fall
2016: Stable isotopes journal club, fall

2016: BEES departmental seminar, fall
2016: Mini-research talk to incoming Biology PhD students, fall
2016: Panel on science writing- Week of Writing, spring
2016: Accepted students day, presentation to Undeclared Science students, spring
2016: BEES University 201 careers lecture, winter
2015-16: Biology Senior Group Project mentor
2015: Biology senior seminar lecture, fall; Biology senior seminar lecture, winter
2014-15: Biology Senior Group Project mentor
2014: Biology honor society (Tri Beta) research lecture; ELC Graduate bridge program STEM language class
2013-14: Biology Senior Group Project mentor
2013: Biology senior seminar; Tri-Beta (Biology honor society) career development panel
2012-13: Biology Senior Group Project mentor
2012: ENVS 393- Entomology; ENVS 322 - Tropical Ecology
2011: Burlington County College Biology senior seminar; Drexel Biology senior seminar; Drexel Biology graduate seminar

University of Washington:
Psychology graduate recruitment: 2011
Biology Graduate Student Symposium (faculty reviewer): 2010
Psychology Honors Seminar: 1996, 1998, 2004, 2008, 2010
Biology General Entomology course student interview: 2009
Psychology Graduate Seminar on Decision Making: 2009
Graduate Psychology Grant Writing Seminar: 2008
Psychology Graduate Proseminar: 2004, 2008
Session moderator, Psychology graduate research festival: 2007
Biology Natural History Seminar: 2006, 2007
Psychology Behavioral Neuroscience seminar: 2007
Psychology Graduate Seminar Neurobiology of Language: 2005
Biology Molecular Evolution: 2003
Biology General Entomology: 2001
Psychology Behavioral Neuroscience Graduate Seminar: 2000

University of California Davis
Entomology, Insect Diversity and Evolution: 1994

University of Wisconsin
Zoology, Organic Evolution: 1989

Postdoc and Graduate Student advising/mentoring

Current graduate students: Thesis advisor

Meghan Barrett, Drexel University Biology Ph.D. candidate, Dean's Fellow, fall 2016-present
Virginia Caponera, Drexel BEES Ph.D. student, Dean's fellow, fall 2018-present
Katherine Fiocca, Drexel University Biology Ph.D. candidate, Dean's Fellow, fall 2016-present
Karmi Oxman, Drexel BEES Ph.D. student, Dean's fellow, starting fall 2019

Stefan Bonestroo, visiting MS student, the Netherlands, 2019-2020

Former postdoctoral advisees

Dr. Nicole Arcilla, 2014-2016
Next position: Research leader, Crane Trust, Nebraska
Dr. Sara Deleon, 2012-2014
Next position: Research Associate, Justus Liebig Universität Gießen, Frankfurt, Germany

Graduated Ph.D. students

Kaitlin Baudier, Drexel University Biology Ph.D. student, Dean's Fellow, May 2017
Current position: Postdoctoral fellow, Arizona State University
Thomas Soare, University of Washington Animal Behavior Area, May 2013
Current position: Epidemiologist, Massachusetts Department of Public Health
Yamile Molina, University of Washington Animal Behavior Area, April 2009
Current position: Assistant Professor, Community Health, University of Illinois Chicago
Anjali S. Kumar, University of Washington Animal Behavior Area, June 2008
Current position: Research Partnerships Advisor- AAAS/USAID, Global Development
Adam R. Smith, University of Washington Animal Behavior Area, July 2005
Current position: Assistant Professor of Biology, George Washington University

Graduated MS student

Jason Stafstrom, Psychology Animal Behavior Area, spring 2011
Next position: Ph.D. student, Biology, University of Nebraska-Lincoln

Graduate Lab Rotations/Research Assistants

Kevin Purce, Drexel Environmental Science PhD student, 2014-2015
Robert Driver, Drexel Biology, 2011-2013
Marie Clifford, UW Biology PhD student, 2010-2011
Robin Harris, UW Neurobiology and Behavior rotation, 2009-2010
William Wood, UW Neurobiology and Behavior 2007
Doug Wacker, UW Biology 2001
Daniel Markiewicz, UW Psychology 2000

Sara Ranger, UW Psychology 1996-1997

Other graduate advising

Current Drexel Ph.D. committees: Benoit Bechade, Stephen Mason (Ph.D. candidate), Steven Miller, Ian Nichols
Graduated Drexel PhD: Paul Clee (2017), Yi Hu (2015), Benjamin Kilham (2015)
Drexel research MS committees: Katie D'Amelio; Danielle Rock (thesis chair); Naryan Wong
Served on 14 Univ. of Washington Ph.D. student advisory committees (Psychology, Neurobiology & Behavior, and Zoology)

Undergraduate directed research/advising

Current undergraduate researchers: Rheanna Congdon, Jenny Dong, Anatstacia Feokstitova, Angelina Gomez, Emily Johns, Devneet Kainth, Cheyenne McNair, Daouda Njie, Purnima Sachdeva

Previous undergraduate researchers (61):

Drexel (25)- Meghan Campbell (STAR fellow), Kelsey Capobianco, Natalie Carroll, Taylor Caton, Francesca Dogias (STAR fellow), Emily Fanswick, Vishakha Hariawala, Lauren Hultgren, Emily Johnson (STAR fellow), Annette Kang, Paulina Khodak, Nola McAloon (STAR fellow), Savanna Michener (STAR fellow), Kyle Monaghan, Abigal Mudd (STAR fellow), Iris Nagai, Chandler Olson, Christopher Papa, Michaela Schuster, Zack Smith, Elisabeth Sulger (STAR fellow), Eve Swearingen, James Warren, Nazaneen Zahedi, Sumiaya Zahid

Liberty Scholar Mentor: James Conway (2018)

U.W. (34)- Tarn Adams, Cara Allen, Natalie Bostwick, Amelia Brunskill, Mark Burns, Chris Dalinkus, Katie Edwards, Jen Gee, Olivia Gelow, Tina Gray, Joel Greenwood, Kristin Haff, Kayla Helem, Hans Kelstrup, Meredith Klacking, Ana Kobayashi, Elise Koncsek, Mary Kotschwar, Joshua Matlock, Melissa Nakanishi, Janake Nathan, Justin Neste, Anna Pollock, Monica Reichardt, Linnaea Renz, Andrea Repetto, John Salvo, Nick Spang, Tina Stremick, Yoko Takahashi, Sean Tully, Geoff Valentine, Dave Verdirame, Ceri Weber

U.C. Davis (2)- Alisa Hove, Amy Kasameyer

Undergraduate honors teaching and mentoring

2016 spring Tropical Ecology honors credit, Jonathan Fink
2015 fall Animal behavior honors credit
2015 Drexel University STAR fellows program, Francesca Dogias, Savanna Michener
2015 Behavioral genetics honors credit, Averie Palovcak
2015 winter Animal behavior honors credit, Elisabeth Sulger

2014 Drexel University STAR fellows program, Alyssa Klein
2013 Drexel University STAR fellows program, Abigail Mudd, Elisabeth Sulger, Nola McAloon
2012 Drexel University STAR fellows program, Emily Johnson
2010-2011 Psychology Honors Program, Anna Pollock
2008-2010 Psychology Honors Program, Sean Tully
2009 Insect behavior honors credit, Marie Clifford and Amy Sharp
2008 Animal behavior honors credit, Kayla Helem

Grants/fellowships to students for research in my laboratory

PhD students grants/fellowships
Meghan Barrett, 2018. Huyck Reserve Research Grant.
Katherine Fiocca, 2017. Jeanne award for paper wasp research.
Kaitlin Baudier, 2016. McClean graduate fellowship; 2014. OTS graduate research fellowship
Marie Clifford, 2011. UW Graduate School Fund for Excellence and Innovation travel award
Yamile Molina, 2007. Society for Integrative/Comparative Biology fellowship
Anjali Kumar, 2005, ALCOR Fellowship award; 2005, Organization for Tropical Studies post course award,
Adam Smith, 2003. A.W. Mellon Research Exploration Award in Tropical Biology, 2000. Smithsonian Tropical Research Institute Short-Term Fellowship; 1999. Organization for Tropical Studies Stone Endowment; 1999. American Museum of Natural History Roosevelt Fund (declined)
Daniel Markiewicz, 1999. Sigma Xi Grants in Aid of Research
Renee Robinette, 1998. Animal Behavior Society grant

Undergraduate students grants/fellowships
Emily Fanwick, 2018. Undergraduate Research Travel Grant
Annette Kang, 2018. Udall scholarship
Annette Kang, 2018. DAAD-RISE scholarship/research internship, Darmstadt, Germany
Kayla Helem, 2008. Mary Gates Endowment Research Scholarship; 2008 Edith Lucena Riehl Endowed Scholarship, UW Biology
Andrea Repetto, 2005. Mary Gates Endowment Research Scholarship
Amelia Brunskill, 2000. Mary Gates Endowment Research Scholarship
Monica Reichardt, 1998. Hughes Foundation Fellowship

Workshops attended/professional development
-Drexel College of Arts & Sciences CASE training on development/fundraising, November 2019
-Drexel international studies safety and security workshop, November 2018
-Drexel University faculty orientation, September 2011
-National Science Foundation Program Management Seminar, September 2007
-Council for International Educational Exchange (CIEE) resident director/faculty training workshop, Portland, ME, June 2003
-University of Washington Faculty Fellows Program, September 1996

SERVICE

Scientific journal editorial positions

Current:

The American Naturalist, 2013-present; Science of Nature/Naturwissenschaften, 2016-present; Journal of Insect Science, 2016-present; Journal of Insect Behavior, 2005-present

Previous:

Insectes Sociaux, 2003-2011; Animal Behaviour, 2006-2007

Elected professional positions

President (president-elect, past president), North American section of the International Union for the Study of Social Insects, Winter 2015-Fall 2018

Chair, Awards Committee, North American section of the International Union for the Study of Social Insects, Spring 2013-Winter 2015

Vice-chair for Research (Board of Directors position), Organization for Tropical Studies, Spring 2009-2012

Nominations committee, Organization for Tropical Studies, Spring 2009-2012

University of Washington Delegate to Board, Organization for Tropical Studies, 2006-2011

Membership committee, Animal Behavior Society, 1994-1997

Member, Monteverde Conservation League, elected 2005

Secretary/Treasurer, North American section of the International Union for the Study of Social Insects, 2001-2004

At-large Member, Committee on International Affairs (Latin America), Entomological Society of America, 2000-2002

Nominating Committee, at-large member, North American Section, International Union for the Study of Social Insects, 2000-2001

Executive Officer, Entomological Society of America Subsection Cb (Apiculture and Social Insects), 1997-1999

Invited professional service positions

Judge, Organization for Tropical Studies student paper award, 2011

Fellowship review for Sigma Delta Epsilon, Graduate Women in Science, 2009

Judge, Subsection Cb/Cc Student Talk Competition, Entomological Society of America National Meetings 2002

Head Judge, Student Posters, Entomological Society of America National Meetings 1999

Head Judge, Subsections Cd & Cf Student Presentation Competition, Entomological Society of America National Meetings 1999

Head Judge, Subsection Cd Student Poster Competition, Entomological Society of America National Meetings 1997

Ad-hoc faculty promotion and thesis reviews

Reviewer for Faculty Promotion (to Full Professor), Bucknell University, 2019 fall
Reviewer for Faculty Promotion (tenure), Roosevelt University, Chicago, 2018
Reviewer for Faculty Promotion (to Full Professor), University of Louisville, 2017
PhD thesis review, Indian Institute of Science Education and Research (IISER) Kolkata, 2016
Reviewer for Faculty Promotion (to Full Professor), Colorado State University, 2016
Reviewer for Faculty Promotion (tenure), Bucknell University, 2007
Reviewer for Academic Advancement, Foundation for Research and Development, South Africa, 1995

Federal grant panel service

Grant Review Panel Member, NSF, Fall 2010
NSF BIO Directorate, Venture Fund for Integrative Research working group, 2007-2008
Grant Review Panel Member, NSF, Fall 2006
Grant Review Panel Member, NSF, Spring 2006
Site visit review panel, NSF, Center for Behavioral Neuroscience, Atlanta, GA, May 2003
Grant Review Panel Member, Entomology, U.S. Dept. Of Agriculture, Spring 2002
Grant Review Panel Member, Entomology, U.S. Dept. Of Agriculture, Spring 2001

Ad hoc reviews of scientific grant proposals

Fall 2019-present: Israel Science Foundation (ISF)

Previous: APEX awards program, Royal Society, Great Britain; U.S. National Science Foundation (Behavioral Systems, Behavioral Neuroscience, Integrative Biology, and Population Biology panels); USDA-CSREES (Entomology panel); Biotechnology and Biological Sciences Research Council, United Kingdom; International Research Fellowship Program, Smithsonian Institution; National Geographic Society; Netherlands Organization for Scientific Research Council for the Earth and Life Sciences; Organization for Tropical Studies; Portuguese Foundation for Science and Technology (FCT); J.S. Guggenheim Memorial Foundation

Ad hoc reviews of scientific papers/chapters

Fall 2019-present: Annals of the Entomological Society of America; Biological Journal of the Linnaean Society (2); Journal of Insect Science (2); Proceedings of the National Academy of Sciences

Previous: Animal Behaviour; American Naturalist; Annales Zoologici Fennici; Ardeola; Arthropod Structure and Development; Australian Journal of Zoology; Behavioral Ecology; Behavioral Ecology and Sociobiology; Behavioral Processes; Belgian Journal of Zoology; Biological Journal of the Linnaean Society; Biological Reviews; Biology Letters; Biotropica; Bird Study/Ringing & Migration; BMC Evolutionary Biology; Brain, Behavior & Evolution; Canadian Entomologist; Caribbean Journal of Science; Current Opinion in Insect Science; Developmental Neurobiology; Ecography; Ecología Austral; Ecology; Ecological Entomology; Environmental Entomology; Ethology, Ecology, & Evolution; Encyclopedia of Social Insects;

Evolution; Florida Entomologist; Frontiers in Invertebrate Physiology; Functional Ecology; Hormones and Behavior; Insectes Sociaux; Journal of Comparative Neurology; Journal of Economic Entomology; Journal of Ethology; Journal of Field Ornithology; Journal of Hymenoptera Research; Journal of the Kansas Entomological Society; Journal of Insect Behavior; Journal of Insect Physiology; Journal of Insect Science; Journal of Neuroscience; Journal of the Royal Society Interface; Journal of Visualized Experiments; Journal of Zoology; Molecular Ecology; Myrmecological News; Nature Science Reports; Neotropical Entomology, Neurobiology of Learning and Memory; Neuroscience Letters; Oecologia; Oikos; Pakistan Journal of Scientific and Industrial Research; PeerJ; Physiology and Behavior; PLoS ONE; Proceedings of the National Academy of Sciences (USA); Proceedings of the Royal Society B; Psychological Review; Science; Science of Nature/Naturwissenschaften; Sociobiology; Theoretical Population Biology; Wilson Journal of Ornithology

Other reviews
2019: Encyclopedia of Social Insects (five chapters)
2007: Reviewed behavioral genetics textbook for Oxford University Press
2006: Reviewed book, "Architecture by Birds and Insects" by McNamara, Bates, & Boone, University of Chicago Press

PROFESSIONAL ORGANIZATION ACTIVITY (CURRENT IN BOLD)

American Ornithological Union; **American Society of Naturalists**; International Society for Behavioral Ecology; Animal Behavior Society; **Association for Tropical Biology**; Entomological Society of America; American Entomological Society; **International Union for the Study of Social Insects**; Kansas Entomological Society

ACADEMIC DEPARTMENT AND UNIVERSITY SERVICE

University governance

University of Washington Faculty Senate, elected to two terms 2000-2004

Department Standing committees

Drexel Biology graduate committee, 2015-present
Drexel BEES executive committee, 2012-present
UW Psychology graduate distinguished teaching award committee, 2010-2011
UW Psychology web page committee chair, 2009-2010
UW Neurobiology and Behavior Program seminar committee, 2009-2010
UW Psychology planning/executive committee, 2002-2007
UW Psychology colloquium committee, 2000-2002
UW Psychology graduate training committee, 1997-2000
UW Psychology Edwards Lecturer selection committee 1998-2007

Executive positions (including president), University of Wisconsin Entomology Graduate Student Association, 1988-1992

Ad hoc committee service – Department

Drexel BEES faculty tenure & promotion committee chair, 2019
Drexel Biology faculty promotion committee chair, 2018-19
Drexel BEES faculty tenure & promotion committee chair, 2017-18
Drexel BEES Program Alignment and Review (committee member), 2016-17
Drexel BEES faculty tenure & promotion committee, 2015-16
Drexel BEES faculty tenure & promotion committee, 2014-15
Drexel BEES Chair of ornithology search committee, 2013-14 (successful search)
Drexel BEES geoscience search committee, 2013-14
Drexel BEES faculty tenure & promotion committee, 2013-14
Drexel BEES ornithology search committee, 2012-13
Drexel Biology merit criteria review committee, 2013
Drexel Biology faculty tenure & promotion committee, 2012
Drexel BEES/Academy of Natural Sciences Ornithology Curator/Senior Faculty Search, 2012
Academy of Natural Sciences-Philadelphia strategic planning Science subcommittee, 2012
Drexel University BEES/ANSP faculty review/hiring committee, 2012
Drexel University BEES budget committee, 2012
Drexel University BEES curriculum committee, 2011
UW Psychology Search Committee, Tenure-track Quantitative Psychology Position, 2004-2005
UW Psychology Search Committee, Tenure-track Animal Behavior Position, 2002-2003
UW Psychology Animal Behavior Area web page design and production, 2002
UW Psychology Ad Hoc Committee for Psychology Graduate Program Revision 1998-1999
UW Psychology Search Committee, Tenure-track Quantitative Psychology Position, 1997-1998
UW Psychology Ad hoc reviewer, Quantitative Psychology Instructor Search Committee, 1998

Ad hoc committee service – College

Drexel College of Arts & Sciences tenure and promotion advisory committee, annually 2013-2019
Drexel Dean's task force on general education courses for Arts & Sciences, 2012-2013

Ad hoc committee service - University

Drexel Biomedical Engineering Program Accreditation Review, fall 2019
Drexel Provost's office committee on HBCU research & teaching connections, 2019-2020
Drexel Computing & Informatics targeted search, 2013-2014
Drexel Provost's committee, five-year review of CoAS Dean, 2012-2013

Other university service

Reviewer, Drexel NSF graduate fellowship application, 2018
Reviewer, Faculty Summer Research Awards (three proposals), 2018
Reviewer, Drexel NSF graduate fellowship applications (two), 2016
Drexel Biology Program Alignment and Review, 2015-16
Poster reviewer, Biological Sciences, Drexel STAR fellows research day, summer 2015
NSF broader impacts advisory panel, Drexel workshop on K-12 STEM education, May 2015
Poster Judge, Drexel University Research Day, May 2015
Marshall for CoAS undergraduates, Drexel University Graduation, June 2014
Poster Judge, Drexel Arts & Sciences Research Day, February 2014
Poster reviewer, Drexel STAR fellows research day, fall 2013
Reviewer, Drexel NSF graduate fellowship applications, 2012
Poster Judge, Drexel University Research Day, April 2012
UW Mary Gates undergraduate fellowships review committee, fall 2010
University of Washington Royalty Research Fund grant proposal reviews, annually 1998-2010

PUBLIC OUTREACH AND SCIENCE EDUCATION

2019 fall-present: Presentation & panelist on science of climate change, Town Hall-Philadelphia Academy of Natural Sciences; Consultant for book on history of food, science writer Matt Siegel; Panelist- Academy Conversation on tropical deforestation, Philadelphia Academy of Natural Sciences

2019: Presentation on Entomology to Pennsylvania Master Naturalist instructor training program, Tyler Arboretum; Tropical ecology presentation, 2nd grade (three classes), Penn Charter School, Philadelphia; Expert resource to New Scientist magazine; Interview on plant kinship, Drexel Triangle (student newspaper)

2018: Interview on dog behavior, Star Community Newsweekly; Tropical ecology presentation, 2nd grade (three classes), Penn Charter School, Philadelphia; Consultant for book on bird behavior, science writer Jennifer Ackerman; Presentation on climate change - Panels for Panthers fundraiser, Swarthmore PA; Presentation on climate change effects, Shannondell at Valley Forge

2017: Presentation at "Back from the Field" event, Academy of Natural Sciences; Consultant to American Fruit Grower magazine; High school research project consultant-Westtown HS, West Chester PA; Presentation on climate change science, Shannondell at Valley Forge; Presentation on climate change effects, Swarthmore Rotary Club; Presentation on climate change science, Swarthmore Rotary Club; Tropical ecology presentation, 2nd grade (two classes), Penn Charter School, Philadelphia; Presentation on climate change effects, Bryn Mawr Presbyterian Church; Consultant to New Scientist; Presentation on climate change science, Cosmopolitan Club- Philadelphia

2016: Radio interview on native bee declines, theblaze: The Buck Sexton Show**;** Presentation on

climate change science, Bryn Mawr Presbyterian Church; Field exercise on bird migration at Tinicum, Moorestown Middle School Robotics Team.

2015: Interview for PhillyVoice.com (topic: fireflies); Interview for Serious-science.org (topic: ant wars); Lunch & Learn science careers presentation, Alpha Omega Epsilon technical science sorority; Consultant to Canadian Broadcasting Corporation "Quirks and Quarks"; Tropical ecology presentation, 5th grade (two classes), SRS elementary school, Swarthmore, PA; Display at STEM night, SRS elementary school, Swarthmore, PA; Friend's Central HS research shadow (Georgia Fossett); High school field exercise on army ant biology, Monteverde Friends School Costa Rica

2014: Science consultant to author Lola Schaefer www.lolaschaefer.com; Interviewed on field biology career paths for The Open University; exhibit development for Academy of Natural Sciences "Current Events at Science Live"; Consultant to www.askanaturalist.com; Evening lecture at North Carolina Museum of Natural Sciences

2013: Display at STEM night, SRS elementary school, Swarthmore, PA; Display on ants at Academy of Natural Sciences Mega Bad movie night; Interview- Drexel Triangle student newspaper

2012: Philadelphia Café Scientifique presentation; Consultant for book, ANIMAL WISE by Virginia Morell, Crown publishing; Philadelphia Academy of Natural sciences Birdfest public lecture; 7th grade science assembly (300 students), Strathhaven Middle School

2011: Drexel University Arts & Sciences Dean's Seminar; Consultant- Seattle Times: http://seattletimes.nwsource.com/html/fieldnotes/; Neuroscience lab tour, Columbia River High School biology students; Termite biology and brain display, Science Night, Echo Lake Elementary School, Shoreline WA and Hamilton International Middle School, Seattle, WA

2010: Termite biology display, Science Night, Hamilton International Middle School, Seattle, WA, Edmonds Elementary School, Edmonds, WA, Echo Lake Elementary School, Shoreline, WA, and Madison Middle School, Seattle, WA; Butterfly biology talk, Echo Lake Elementary School, Shoreline WA, two 2nd grade classes, Science consultant, New Scientist magazine

2009: Media consultant, La Prensa newspaper, Panama; Delivered lecture on Social Networks in UW Psychology Edwards series; Hosted job shadow experience (research psychology) for Shorewood High School student; Termite biology display, Science Night, Echo Lake Elementary School, Shoreline, WA; Interview on sociobiology of gang behavior, Seattle Times

2008: Belvedere Elementary School, Falls Church VA, three 3rd grade classes: butterfly biology

2007: Career day, opportunities in biology, Swanson Middle School, Arlington, VA; Tropical ant biology, Echo lake Elementary School, 2nd grade (3 classes), Shoreline, WA; Co-organized Science Night, Echo Lake Elementary School, Shoreline, WA; Interview for University of Washington Daily newspaper; Bee behavior display, Science Night, Lake Forest Park Elementary School, WA

2006: Bee behavior display, Science Night, Lake Forest Park Elementary School, WA; Interview on animal morality, Seattle Eastside Prep 8th grade class; Training consultant to biology guides, Monteverde, Costa Rica

2005: Training consultant to biology guides, Monteverde, Costa Rica; Creative Learning Center grade school, 1st&2nd grades, field exercise on ant biology, Monteverde, Costa Rica; Creative Learning Center grade school, 5th&6th grades, lecture on army ant biology, Monteverde, Costa Rica

1997: Training consultant to biology guides, Monteverde, Costa Rica

1994: Museum display design, University of Costa Rica Insect Museum: permanent exhibit on Costa Rican eusocial wasps

On-location field natural history filmmaking/consulting

On-location science expert, BBC/Silverback Films series "Perfect Planet," Tapiche Reserve, Loreto, Peru, April 2019

On-location science expert, BBC/Silverback Films series "The Hunt," Tiputini Station- Yasuni region, Ecuador, September 2014

On-camera TV appearance, Outdoor Learning Network/BBC America series "Wild Things with Dominic Monaghan," Cream Film Productions, Tiputini Biodiversity Station, Ecuador, November-December 2011; Science consultant, Cream Productions (Toronto), September-November 2011

On-camera TV appearance, Windfall Films/National Geographic television special: Patrick Stewart's Animal Superpowers, Yasuni, Ecuador, July 2011; Science consultant, Windfall Films, London, England, June 2011

On-camera TV appearance, Ammonite Ltd./National Geographic Television special: Antzilla/City of Ants, La Selva Biological Station, Costa Rica: spring 2010. Winner, 2011 International Wildlife Film Festival, best scientific content; 2011 Japan Wildlife Film Festival's Award for Best Technical Achievement; nominated 2012 Jackson Hole Wildlife Film Festival "Best Life Sciences"

On-location science expert, National Geographic Television series: Great Migrations, Monteverde and Sta. Rosa, Costa Rica, March and November 2008. Winner, 2011 Emmy awards: best cinematography and best music; 2011 Montana International Wildlife Film Festival special jury award for series and best use of music.

Home-based natural history film consulting

Wildstar films, series on female-based animal societies, 2019 fall-present
BBC natural history unit, series on female power in nature, 2019-present
Silverback Films, Perfect Plant/Amazonia flooded forest project, 2016-present
Discovery TV/October films, 2016
TV documentary on venomous animals, Cream Productions- Toronto, 2015
TV documentary on biology field research, Oxford Scientific Films/BBC, 2015
TV documentary on ants, Arrow Media, London, 2015
Silverback Films/WWF series “Our Planet,” 2015
Atlantic Productions Ltd., IMAX film on the biology of powered flight, 2013
BBC/Silverback Films special on predators “The Hunt,” 2013-2014
BBC channel 1 special “Swarm Chasers hosted by George McGavin,” 2012
Discovery Channel, 2010
National Geographic television, 2007