

STEPHEN C. PRATT

Curriculum vitae

2 May 2019

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EDUCATION:

1997 Ph.D., Cornell University, Neurobiology and Behavior.
1988 B.A., Harvard University, Biology.

APPOINTMENTS

2019–present Professor, School of Life Sciences, Arizona State University.
2012–2019 Associate Professor, School of Life Sciences, Arizona State University.
2006–2012 Assistant Professor, School of Life Sciences, Arizona State University.
2001–2006 Lecturer and Postdoctoral Scientist, Department of Ecology and Evolutionary Biology, Princeton University.
1998–2000 Postdoctoral Fellow, Department of Biology, University of Bath.
1997–1998 Postdoctoral Scientist, Whitehead Institute for Biomedical Research/MIT Center for Genome Research.

RESEARCH FUNDING

Current research support

<u>Dates</u>	<u>Title</u>	<u>Source</u>	<u>Role</u>	<u>Value</u>
2018– 2020	BISECT: Biologically-inspired swarm perception and control technology Phase II	DARPA	PI of ASU section	\$259,999
2016– 2019	Emergent computation in collective decision making by the crevice-dwelling rock ant <i>Temnothorax rugatulus</i>	NSF	Co-I	\$595,520
2017– 2018	BioSwarm supplement: A methodology for modeling swarm behavioral dynamics from local observations	DARPA	PI of ASU section	\$175,000
2017– 2018	BioSwarm: Bio-inspired swarming	DARPA	PI of ASU section	\$193,078

Completed research support

<u>Dates</u>	<u>Title</u>	<u>Source</u>	<u>Role</u>	<u>Value</u>
2017	BISECT: Biologically-inspired swarm perception and control technology Phase I	DARPA	PI of ASU section	\$22,500
2010–2016	Distributed processing over cognitive networks	NSF	PI of ASU section	\$528,652
2010–2014	Automating the large-scale measurement of insect behavior	NSF	PI of ASU section	\$209,014
2008–2014	HUNT: Heterogeneous unmanned networked teams	ONR	PI of ASU section	\$300,934

PUBLICATIONS

Peer-reviewed articles

62 articles total; Web of Science: 3004 citations, h=27; Google: 4589 citations, h=32

Undergraduate mentees are underlined; Graduate mentees are double-underlined; Postdoctoral mentees are marked with an asterisk.*

- 2019 Ostwald, M.M., Shaffer, Z., **Pratt, S.C.**, Fewell, J.H. Multimodal cues facilitate nest recognition in carpenter bee aggregations. *Animal Behaviour*, in press.
- 2019 Mizumoto, N.*, Miyata, S., **Pratt, S.C.** Inferring collective behavior from a fossilized fish shoal. *Proceedings of the Royal Society B*, in press.
- 2019 Salafsky, N., Boshoven, J., Burivalova, Z., Dubois, N., Gomez, A., Johnson, A., Lee, Aileen, Margoluis, R., Morrison, J., Muir, M., **Pratt, S.C.**, Pullin, A., Salzer, D., Steward, A., Sutherland, W., Wordley, C. Defining and using evidence in conservation practice. *Conservation Science and Practice*, in press.
- 2019 Baudier, K.M.*, Ostwald, M.M., Grüter, C., Segers, F.H.I.D., Roubik, D.W., Pavlic, T.P., **Pratt, S.C.**, Fewell, J.H. Changing of the guard: Mixed specialization and flexibility in nest defense (*Tetragonisca anugustula*). *Behavioral Ecology*, in press.
- 2019 Doering, G.N., **Pratt, S.C.** Symmetry breaking and pivotal individuals during the reunification of ant colonies. *Journal of Experimental Biology* 222: jeb194019.
Citations: 1 Impact factor: 3.320
- 2018 Marting, P.R., Kallman, N., Wcislo, W., **Pratt, S.C.** Ant-plant sociometry in the *Azteca-Cecropia* mutualism. *Scientific Reports* 8: 17968.
Citations: 0 Impact factor: 4.122
- 2018 Wilson, S., Buffin, A.*, **Pratt, S.C.**, Berman, S. Multi-robot replication of ant collective towing behaviors. *Royal Society Open Science* 5: 180409.
Citations: 0 Impact factor: 2.504

- 2018 Buffin, A.*, Sasaki, T., **Pratt, S.C.** Scaling of speed with group size in cooperative transport by the ant *Novomessor cockerelli*. *PLoS ONE* 13: e0205400.
Citations: 2 Impact factor: 2.806
- 2018 Sasaki, T., **Pratt, S.C.**, Kacelnik, A. Parallel vs. comparative evaluation of alternative options by colonies and individuals of the ant *Temnothorax rugatulus*. *Scientific Reports* 8: 12730.
Citations: 0 Impact factor: 4.122
- 2018 Sasaki, T. and **Pratt, S.C.** The psychology of superorganisms: Collective decision-making by insect societies. *Annual Review of Entomology* 63: 259-275.
Citations: 6 Impact factor: 12.867
- 2018 Tollis, M., Hutchins, E.D., Stapley, J., Rupp, S.M., Eckalbar, W.L., Maayan, I., Lasku, E., Infante, C.R., Dennis, S.R., Robertson, J.A., May, C.M., Crusoe, M.R., Birmingham, E., DeNardo, D.F., Hsieh, S.T., Kulathinal, R.J., McMillan, W.O., Menke, D.B., **Pratt, S.C.**, Rawls, J.A., Sanjur, O., Wilson-Rawls, J., Wilson Sayres, M.A., Fisher, R.E., Kusumi, K. Comparative genomics reveals accelerated evolution in conserved pathways during the diversification of anole lizards. *Genome Biology and Evolution* 10: 489-506.
Citations: 4 Impact factor: 3.979
- 2018 Marting, P.R., Weislo, W.T., and **Pratt, S.C.** Colony personality and plant health in the *Azteca-Cecropia* mutualism. *Behavioral Ecology* 29: 264-271.
Citations: 2 Impact factor: 3.311
- 2016 Doering, G.N. and **Pratt, S.C.** Queen location and nest site preference influence colony reunification by the ant *Temnothorax rugatulus*. *Insectes Sociaux* 63: 585-591.
Citations: 6 Impact factor: 1.700
- 2016 Shaffer, Z., Sasaki, T., Haney, B., Janssen, M., **Pratt, S.C.**, and Fewell, J.H. The foundress's dilemma: Group selection for cooperation among queens of the harvester ant, *Pogonomyrmex californicus*. *Scientific Reports* 6: 29828.
Citations: 4 Impact factor: 4.259
- 2016 Buffin, A.* and **Pratt, S.C.** Cooperative transport by the ant *Novomessor cockerelli*. *Insectes Sociaux* 63: 429-438.
Citations: 1 Impact factor: 1.700
- 2016 Sasaki, T., Penick, C.A., Shaffer, Z., Haight, K.L., **Pratt, S.C.**, and Liebig, J. A simple behavioral model predicts the emergence of complex animal hierarchies. *The American Naturalist* 187: 765-775.
Citations: 8 Impact factor: 4.167
- 2016 Sasaki, T., Janssen, M.A., Shaffer, Z., and **Pratt, S.C.** Exploration of unpredictable environments by networked groups. *Current Zoology* 62: 207-214.
Citations: 0 Impact factor: 2.181

- 2015 Oldroyd, B.P. and **Pratt, S.C.** Comb architecture of the eusocial bees arises from simple rules used during cell building. *Advances in Insect Physiology* 49: 101-121.
Citations: 1 Impact factor: 3.552
- 2015 Sasaki, T., Colling, B., Sonnenschein, A., Boggess, M.M., and **Pratt, S.C.** Flexibility of collective decision making during house hunting in *Temnothorax* ants. *Behavioral Ecology and Sociobiology* 69: 707-714.
Citations: 4 Impact factor: 2.185
- 2014 Wilson, S., Pavlic, T.P., Kumar, G.P., Buffin, A. *, **Pratt, S.C.**, and Berman, S. Design of ant-inspired stochastic control policies for collective transport by robotic swarms. *Swarm Intelligence* 8(4): 303-327.
Citations: 12 Impact factor: 3.115
- 2014 Sasaki, T., Hölldobler, B., Millar, J.G., and **Pratt, S.C.** A context-dependent alarm signal in the ant *Temnothorax rugatulus*. *Journal of Experimental Biology* 217: 3229-3236.
Citations: 11 Impact factor: 3.320
- 2014 Overson, R., Gadau, J., Clark, R.M., **Pratt, S.C.** and Fewell, J.H. Behavioral transitions with the evolution of cooperative nest founding by harvester ant queens. *Behavioral Ecology and Sociobiology* 68: 21-30.
Citations: 10 Impact factor: 2.185
- 2013 Sasaki, T. and **Pratt, S.C.** Ants learn to rely on more informative attributes during decision making. *Biology Letters* 9: 20130667.
Citations: 9 Impact factor: 3.089
- 2013 Shaffer, Z., Sasaki, T. and **Pratt, S.C.** Linear recruitment leads to allocation and flexibility in collective foraging by ants. *Animal Behaviour* 86: 967-975.
Citations: 14 Impact factor: 2.869
- 2013 Sasaki, T., Granovskiy, B., Mann, R.P., Sumpter, D.J.T. and **Pratt, S.C.** Ant colonies outperform individuals when a sensory discrimination task is difficult but not when it is easy. *Proceedings of the National Academy of Sciences* 110: 13769-13773.
Citations: 34 Impact factor: 9.661
- 2013 Bowens, S., Glatt, D. and **Pratt, S.C.** Visual navigation during colony emigration by the ant *Temnothorax rugatulus*. *PLoS ONE* 8: e64367.
Citations: 3 Impact factor: 2.806
- 2012 Sasaki, T. and **Pratt, S.C.** Groups have a larger cognitive capacity than individuals. *Current Biology* 22: R827-R829.
Citations: 24 Impact factor: 8.851
- 2011 Berman, S., Lindsey, Q., Sakar, M.S., Kumar, V. and **Pratt, S.C.** Experimental study and modeling of group retrieval in ants as an approach to collective transport in swarm robotic systems. *Proceedings of the IEEE* 99: 1470-1481.
Citations: 30 Impact factor: 9.237

- 2011 Sasaki, T. and **Pratt, S.C.** Emergence of group rationality from irrational individuals. *Behavioral Ecology* 22:276-281.
Citations: 40 Impact factor: 3.311
- 2010 *Nasonia* Genome Working Group Functional and evolutionary insights from the genomes of three parasitoid *Nasonia* species. *Science* 327: 343-348.
Citations: 453 Impact factor: 37.205
- 2009 Edwards, S.C. and **Pratt, S.C.** Rationality in collective decision-making by ants. *Proceedings of the Royal Society of London B* 276: 3655-3661.
Citations: 31 Impact factor: 4.940
- 2009 Sumpter, D.J.T. and **Pratt, S.C.** Quorum responses and consensus decision-making. *Philosophical Transactions of the Royal Society B* 364: 743-753.
Citations: 179 Impact factor: 5.846
- 2008 Healey, C.I.M. and **Pratt, S.C.** The effect of prior experience on nest site evaluation by the ant *Temnothorax curvispinosus*. *Animal Behaviour* 76: 893-899.
Citations: 15 Impact factor: 2.869
- 2008 **Pratt, S.C.** Efficiency and regulation of recruitment during colony emigration by the ant *Temnothorax curvispinosus*. *Behavioral Ecology and Sociobiology* 62: 1369-1376.
Citations: 29 Impact factor: 2.185
- 2007 Loomes, K.M., Stevens, S.A., O'Brien, M.L., Gonzalez, D.M., Ryan, M.J., Segalov, M., Dormans, N.J., Mimoto, M.S., Gibson, J.D., Sewell, W., Schaffer, A.A., Nah, H.D., Rappaport, E.F., **Pratt, S.C.**, Dunwoodie, S.L. and Kusumi, K. *Dll3* and *Notch1* genetic interactions model axial segmental and craniofacial malformations of human birth defects. *Developmental Dynamics* 236: 2943-2951.
Citations: 24 Impact factor: 2.004
- 2007 William, D.A., Saitta, B., Gibson, J.D., Traas, J., Markov, V., Gonzalez, D.M., Sewell, W., Anderson, D.M., **Pratt, S.C.**, Rappaport, E.F. and Kusumi, K. Identification of oscillatory genes in somitogenesis from functional genomic analysis of a human mesenchymal stem cell model. *Developmental Biology* 305: 172-186.
Citations: 35 Impact factor: 2.944
- 2006 **Pratt, S.C.** and Sumpter, D.J.T. A tunable algorithm for collective decision-making. *Proceedings of the National Academy of Sciences* 103: 15906-15910.
Citations: 77 Impact factor: 9.661
- 2006 Balch, T., Dellaert, F., Feldman, A., Guillory, A., Isbell, C., Khan, Z., **Pratt, S.C.**, Stein, A. and Wilde, H. How multi-robot systems research will accelerate our understanding of social animal behavior. *Proceedings of the IEEE* 94: 1445-1463.
Citations: 30 Impact factor: 9.237

- 2006 Gabriel, A., Dapprich, J., Kunkel, M., Gresham, D., **Pratt, S.C.** and Dunham, M. Global mapping of transposon location, *PLoS Genetics* 2: 2026-2038.
Citations: 34 Impact factor: 6.100
- 2006 Ruderfer, D., **Pratt, S.C.**, Seidel, H. and Kruglyak, L. Population genomic analysis of outcrossing and recombination in yeast. *Nature Genetics* 38: 1077-1081.
Citations: 127 Impact factor: 27.959
- 2006 Gresham, D., Ruderfer, D. M., **Pratt, S.C.**, Schacherer, J., Dunham, M., Botstein, D. and Kruglyak, L. Genome-wide mapping of polymorphisms at nucleotide resolution with a single DNA microarray. *Science* 311: 1932-1936.
Citations: 194 Impact factor: 37.205
- 2005 **Pratt, S.C.** Behavioral mechanisms of collective nest-site choice by the ant *Temnothorax curvispinosus*. *Insectes Sociaux* 52: 383-392.
Citations: 49 Impact factor: 1.700
- 2005 **Pratt, S.C.**, Sumpter, D.J.T., Mallon, E.B. and Franks, N.R. An agent-based model of collective nest choice by the ant *Temnothorax albipennis*. *Animal Behaviour* 70: 1023-1036.
Citations: 77 Impact factor: 2.869
- 2005 **Pratt, S.C.** Quorum sensing by encounter rates in the ant *Temnothorax albipennis*. *Behavioral Ecology* 16: 488-496.
Citations: 113 Impact factor: 3.311
- 2004 **Pratt, S.C.** Collective control of the timing and type of comb construction by honey bees (*Apis mellifera*). *Apidologie* 35: 193-205.
Citations: 19 Impact factor: 2.196
- 2003 Sumpter, D.J.T. and **Pratt, S.C.** A modeling framework for understanding social insect foraging. *Behavioral Ecology and Sociobiology* 53: 131-144.
Citations: 86 Impact factor: 2.185
- 2002 McLeman, M.A., **Pratt, S.C.**, and Franks, N.R. Navigation using visual landmarks by the ant *Leptothorax albipennis*. *Insectes Sociaux* 49: 203-208.
Citations: 41 Impact factor: 1.700
- 2002 Franks, N.R., **Pratt, S.C.**, Britton, N.F., Mallon, E.B., and Sumpter, D.J.T. Information flow, opinion-polling and collective intelligence in house-hunting social insects. *Philosophical Transactions: Biological Sciences* 357: 1567-1584.
Citations: 179 Impact factor: 5.846
- 2002 Britton, N.F., Franks, N.R., **Pratt, S.C.**, and Seeley, T.D. Deciding on a new home: how do honey bees agree? *Proceedings of the Royal Society of London B* 269: 1383-1388.
Citations: 63 Impact factor: 4.940
- 2002 **Pratt, S.C.**, Mallon, E.B., Sumpter, D.J.T., and Franks, N.R. Quorum sensing, recruitment, and collective decision-making during colony emigration by the ant *Leptothorax albipennis*. *Behavioral Ecology and Sociobiology* 52: 117-127.
Citations: 222 Impact factor: 2.185

- 2001 **Pratt, S.C., Brooks, S.E.** and Franks, N.R. The use of edges in visual navigation by the ant *Leptothorax albipennis*. *Ethology* 107: 1125-1136.
Citations: 54 Impact factor: 1.398
- 2001 Mallon, E.B., **Pratt, S.C.**, and Franks, N.R. Individual and collective decision-making during nest site selection by the ant *Leptothorax albipennis*. *Behavioral Ecology and Sociobiology* 50: 352-359.
Citations: 133 Impact factor: 2.185
- 2001 **Pratt, S.C.** and Pierce, N.E. The cavity-dwelling ant *Leptothorax curvispinosus* uses nest geometry to discriminate among potential homes. *Animal Behaviour* 62: 281-287.
Citations: 35 Impact factor: 2.869
- 2000 **Pratt, S.C.**, Daly, M.J. and Kruglyak, L. Exact multipoint quantitative-trait linkage analysis in pedigrees by variance components. *American Journal of Human Genetics* 66: 1153-1157.
Citations: 109 Impact factor: 9.025
- 2000 **Pratt, S.C.** Gravity-independent orientation of honeycomb cells. *Naturwissenschaften* 87: 33-35.
Citations: 1 Impact factor: 2.221
- 1999 **Pratt, S.C.** Optimal timing of comb construction by honey bee colonies: a dynamic programming model and experimental tests. *Behavioral Ecology and Sociobiology* 46: 30-42.
Citations: 12 Impact factor: 2.185
- 1998 **Pratt, S.C.** Condition-dependent timing of comb construction by honey bee colonies: How do workers know when to start building? *Animal Behaviour* 56: 603-610.
Citations: 12 Impact factor: 2.869
- 1998 **Pratt, S.C.** Decentralized control of drone comb construction in honey bee colonies. *Behavioral Ecology and Sociobiology* 42: 193-205.
Citations: 19 Impact factor: 2.185
- 1996 **Pratt, S.C.**, Kühnholz, S., Seeley, T.D. and Weidenmüller, A. Worker piping associated with foraging in undisturbed queenright colonies of honey bees. *Apidologie* 27: 13-20.
Citations: 10 Impact factor: 2.196
- 1994 **Pratt, S.C.** Ecology and behavior of *Gnamptogenys horni* (Formicidae: Ponerinae). *Insectes Sociaux* 41: 255-262.
Citations: 16 Impact factor: 1.700
- 1994 **Pratt, S.C.**, Calabi, P. and Carlin, N.F. Division of labor in *Ponera pennsylvannica* (Formicidae: Ponerinae). *Insectes Sociaux* 41: 43-61.
Citations: 9 Impact factor: 1.700
- 1989 **Pratt, S.C.** Recruitment and other communication behavior in the ponerine ant *Ectatomma ruidum*. *Ethology* 81: 313-331.
Citations: 54 Impact factor: 1.398

Book chapters and other publications

- 2018 Valentini, G., Moore, D.G., Hanson, J.R., Pavlic, T.P., **Pratt, S.C.** and Walker, S.I. Transfer of information in collective decisions by artificial agents. *Proceedings of the 2018 Conference on Artificial Life*, pp. 641-648. MIT Press, Cambridge, Massachusetts.
- 2018 Cooke, G., Squires, E., Strickland, L., Bowers, K., Pippin, C., Pavlic, T. and **Pratt, S.C.** Bio-inspired nest-site selection for distributing robots in low-communication environments. In: Bajo J. et al. (eds) *Highlights of Practical Applications of Agents, Multi-Agent Systems, and Complexity: The PAAMS Collection. PAAMS 2018. Communications in Computer and Information Science*, Vol. 887, pp. 517-524. Springer, Cham, Switzerland.
- 2013 Pavlic, T.P.* and **Pratt, S.C.** Superorganismic behavior via human computation. In: Michelucci, P. (Ed.), *Handbook of human computation*, pp. 911-960. Berlin: Springer.
- 2013 Kumar, G.P., Buffin, A., Pavlic, T.P.*, **Pratt, S.C.** and Berman, S.M. A stochastic hybrid system model of collective transport in the desert ant *Aphaenogaster cockerelli*. *Hybrid Systems: Computation and Control, HSCC'13*, pp. 119-124.
- 2010 **Pratt, S.C.** Nest site choice in social insects. In: M. D. Breed and J. Moore (Eds.), *Encyclopedia of animal behavior*, Vol. 2, pp. 534-540. Amsterdam: Elsevier.
- 2010 **Pratt, S.C.** Collective intelligence. In: M. D. Breed and J. Moore (Eds.), *Encyclopedia of animal behavior*, Vol. 1, pp. 303-309. Amsterdam: Elsevier.
- 2008 **Pratt, S.C.** Insect societies as models for collective decision-making. In: J. Gadau & J. N. Fewell (Eds.), *Organization of insect societies: From genomes to sociocomplexity*, pp. 503-524. Cambridge: Harvard University Press.
- 2007 Berman, S., Halász, A., Kumar, V. and **Pratt, S.C.** Bio-inspired group behaviors for the deployment of a swarm of robots to multiple destinations. *Proceedings of the IEEE International Conference on Robotics and Automation, ICRA'07*, pp. 2318-2323.
- 2007 Berman, S., Halász, A., Kumar, V. and **Pratt, S.C.** Algorithms for the analysis and synthesis of a bio-inspired swarm robotic system. In: E. Sahin, W. M. Spears and A. F. T. Winfield (Eds.), *Swarm robotics*, pp. 56-70. Berlin: Springer.
- 1997 **Pratt, S.C.** Managing for comb construction. *Bee Culture* 125(4): 24-26.

INVITED TALKS

- 2019 Decentralized mechanisms of collective behavior in social insects. Department of Biological Sciences Seminar, Macquarie University, Sydney, May 29.
- 2016 Decentralized mechanisms of collective behavior in social insects. Department of Biology Seminar, Colorado State University, Fort Collins, December 7.

- 2016 Collective cognition by insect societies. Department of Ecology and Evolutionary Biology Seminar, University of Colorado, Boulder, November 4.
- 2016 Collective cognition by insect societies. Department of Entomology Colloquium, University of Illinois, Champaign-Urbana, October 24.
- 2016 Collective cognition by insect societies. Department of Ecology and Evolutionary Biology, University of California, Los Angeles, February 3.
- 2015 Collective cognition by insect societies. USDA Arid –Land Agricultural Research Center, Maricopa, Arizona, October 5.
- 2015 Mechanisms of collective behavior by insect societies. Ant Course, Southwestern Research Station, Portal, Arizona, August 14.
- 2015 Collective cognition by insect societies. Mathematical Institute, University of Uppsala, Sweden, May 6.
- 2015 Collective cognition by insect societies. School of Biological Sciences, University of Sydney, Australia, March 20.
- 2012 Psychology of a superorganism: Collective decision-making by ant colonies. Department of Biology, Northern Arizona University, April 12.
- 2011 Psychology of a superorganism: Collective decision-making by ant colonies. Strategic Studies Group, Naval War College, Newport, Rhode Island, November 14.
- 2011 Psychology of a superorganism: Collective decision-making by ant colonies. Department of Economics, Boston University, March 31.
- 2010 Collective decision-making in ants: The interplay of group and individual cognition. Groningen Lectures in Theoretical Biology, University of Groningen, Netherlands, January 13.
- 2007 The role of quorum sensing in the collective decisions of insect societies. Center for Insect Science Fall Hexapodium, University of Arizona, Tucson, Arizona, December 7.
- 2007 Collective decision-making by ant colonies: Linking group and individual behavior. University of Pennsylvania, Philadelphia, Pennsylvania, March 16.
- 2006 From individual behavior to collective cognition in decision-making by ants. University of Missouri, Columbia, Missouri, October 18.
- 2005 A tunable algorithm for collective decision-making by ant colonies. Arizona State University, Tempe, Arizona, August 22.
- 2005 How ants choose a new nest: an algorithm for collective decision-making. University of Umeå, Sweden, April 13.
- 2005 From individual behavior to collective cognition in decision-making by ants. University of Minnesota, St. Paul, Minnesota, February 21.
- 2004 From individual to collective behavior in nest site selection by ants. University of Oxford, United Kingdom, May 13.
- 2002 Individual recruitment rules underlying collective choice of nest sites by ants. Harvard University, Cambridge, Massachusetts, September 3.

- 2002 Quorum sensing, recruitment, and collective decision-making during colony emigration by the ant *Leptothorax albipennis*. Cornell University, Ithaca, New York, February 21.
- 2000 From individual behavior to collective decisions: how emigrating ant colonies choose a new nest site. University of Bristol, Bristol, United Kingdom, May 16.
- 2000 Functional design of an insect society: how honey bee colonies control the timing and type of comb construction. Yale University, New Haven, Connecticut, February 9.
- 1999 Optimal timing of comb construction by honey bee colonies: a dynamic programming model and experimental tests. University of Würzburg, Würzburg, Germany, February 24.

CONFERENCE PRESENTATIONS

Keynote and plenary addresses are marked with an asterisk.*

- 2018 Pratt, S.C., Buffin, A., Wilson, S., Berman, S.M., Sasaki, T. Using robots to test hypotheses about cooperative transport in ants. 17th International Congress of the International Society for Behavioral Ecology, Minneapolis, Minnesota, August 11–16.
- 2018 Pratt, S.C. Using robots to test hypotheses about cooperative transport in ants (*Poster*). 18th International Congress of the International Union for the Study of Social Insects, Guarujá, Brazil, August 5–10.
- 2015 *Pratt, S.C. Mechanisms of collective behavior by insect societies. 1st International Symposium on Swarm Behavior and Bio-inspired Robotics, Kyoto, Japan, October 30.
- 2014 Pratt, S.C. Distributed information processing by insect societies. 2nd Workshop on Biological Distributed Algorithms, Austin, Texas, October 11.
- 2014 Pratt, S.C. and Pavlic, T.P. Sequential-sampling models of quorum detection in house-hunting ants. 17th International Congress of the International Union for the Study of Social Insects, Cairns, Australia, July 13-18.
- 2014 *Pratt, S.C. Collective cognition by insect societies. Collective Intelligence Conference, Cambridge, Massachusetts, June 11.
- 2013 *Pratt, S.C. Distributed information processing by insect societies. 1st IEEE Global Conference on Signal and Information Processing, Austin, Texas, December 3.
- 2012 Pratt, S.C. Collective decision-making in ants. 60th Annual Meeting of the Entomological Society of America, Knoxville, Tennessee, November 11.
- 2012 *Pratt, S.C. Collective intelligence of insect societies: Understanding the algorithmic basis of behavior. 2012 meeting of the Computational Social Science Society of the Americas, Santa Fe, New Mexico, September 20.
- 2012 Pratt, S.C. Psychology of a superorganism: Collective decision-making by ant colonies. Interdisciplinary Workshop on Collective Decisions, Paris School of Economics, Paris, France, July 1.

- 2011 Pratt, S.C., Berman, S., Kumar, V., Lindsey, Q., and Sakar M.S. Collective transport by ants as a model for robot teams (*Poster*). Annual Meeting of the Society for Integrative and Comparative Biology, Salt Lake City, Utah.
- 2010 Pratt, S.C. Collective decision-making in ants: The interplay of group and individual cognition. 16th International Congress of the International Union for the Study of Social Insects, Copenhagen, Denmark.
- 2010 Pratt, S.C. Collective decision-making in ants: The interplay of group and individual cognition. 47th annual meeting of the Animal Behavior Society, Williamsburg, Virginia.
- 2009 Pratt, S.C. Ant colonies as distributed information processors. National Science Foundation Workshop on Distributed Processing over Cognitive Networks, Los Angeles, California, November 20.
- 2009 Pratt, S.C. Decision-making by ants: Rational groups of irrational individuals? Third Workshop on Swarming in Natural and Engineering Systems, Block Island, Rhode Island, June 4.
- 2008 Pratt, S.C. Discovering the algorithms that coordinate animal behavior. Kickoff meeting for the Office of Naval Research HUNT project, University of Pennsylvania, Philadelphia, Pennsylvania, September 18.
- 2008 Pratt, S.C. The interaction of group and individual decision-making during nest-site selection by ants. Workshop on Systems Biology of Decision Making, Mathematical Biosciences Institute at The Ohio State University, Columbus, Ohio, June 20.
- 2008 Pratt, S.C. Collective decision-making by ant colonies: Linking group and individual behavior. Workshop on Modeling Complex Biological Systems, Center for Interdisciplinary Mathematics, University of Uppsala, Sweden, April 17.
- 2008 Pratt, S.C. Quorum responses and consensus decision-making. Group as Individual in Social Dynamics, 1st International Conference of the ASU Center for Social Dynamics and Complexity, Tempe, Arizona.
- 2007 Pratt, S.C. The role of quorum sensing in the collective decisions of insect societies. 55th Annual Meeting of the Entomological Society of America, San Diego, California.
- 2007 Pratt, S.C. Collective decision-making by ant colonies: Linking group and individual behavior. Robotics Science and Systems Conference: Workshop on Algorithmic Equivalences Between Biological and Robotic Swarms, Atlanta, Georgia, June 30.
- 2007 Pratt, S.C. Rationality in collective and individual decision-making by ants. Second Workshop on Swarming in Natural and Engineered Systems, Philadelphia, Pennsylvania, May 16.
- 2006 Pratt, S.C. Irrationality in collective decision-making by ants. 15th International Congress of the International Union for the Study of Social Insects, Washington, D.C.

- 2005 Pratt, S.C. A tunable algorithm for collective decision-making by ant colonies. Workshop on Swarming in Natural and Engineered Systems, Napa, California, August 3.
- 2004 Pratt, S.C. A tradeoff between speed and accuracy of collective nest site choice by ants. Annual Meeting of the North American Section of the International Union for the Study of Social Insects, Camp Tontozona, Arizona.
- 2003 Pratt, S.C. Detection of a nestmate quorum via encounter rates in the ant *Leptothorax albipennis*. 2nd International Workshop on the Mathematics and Algorithms of Social Insects, Atlanta, Georgia.
- 2003 Pratt, S.C. Detection of a nestmate quorum via encounter rates in the ant *Leptothorax albipennis*. 51st Annual Meeting of the Entomological Society of America, Cincinnati, Ohio.
- 2002 Pratt, S.C. Individual recruitment rules underlying collective choice of nest sites by ants. Fondation des Treilles Workshop on Self-organization and Collective Decision-Making by Animal Societies, Tourtours, France, August 30.
- 2002 Pratt, S.C. Collective decision-making in ants. Symposium on Multilevel Selection at the 39th annual meeting of the Animal Behavior Society, Bloomington, Indiana, July 16.
- 2002 Pratt, S.C., Mallon, E.B., Sumpter, D.J.T., and Franks, N.R. Quorum-sensing and collective decision-making during colony emigration by the ant *Leptothorax albipennis*. 14th International Congress of the International Union for the Study of Social Insects, Sapporo, Japan.
- 2002 Pratt, S.C. Quorum-sensing and collective decision-making during colony emigration by the ant *Leptothorax albipennis*. 9th Biennial Congress of the International Society for Behavioral Ecology, Montreal, Canada.
- 2001 Pratt, S.C., Mallon, E.B., Sumpter, D.J.T., and Franks, N.R. From individual to collective behavior in nest site selection by the ant *Leptothorax albipennis*. Workshop on the Mathematics of Social Insects, Isaac Newton Institute for Mathematical Sciences, University of Cambridge.
- 2001 Pratt, S.C., Mallon, E.B., Sumpter, D.J.T., and Franks, N.R. From individual to collective behavior in nest site selection by the ant *Leptothorax albipennis*. 38th annual meeting of the Animal Behavior Society, Corvallis, Washington.
- 2001 Pratt, S.C., Mallon, E.B., Sumpter, D.J.T., and Franks, N.R. Information flow and collective decision-making during nest site selection by the ant *Leptothorax albipennis*. 2001 conference of the Society for the Study of Evolution, Knoxville, Tennessee.
- 2000 Pratt, S.C. Collective decision-making in a small society: how the ant *Leptothorax albipennis* chooses a nest site. ANTS 2000: 2nd International Workshop on Ant Algorithms, Brussels, Belgium.
- 1998 Pratt, S.C. Decentralized control of drone comb construction in honey bee colonies. 13th Congress of the International Union for the Study of Social Insects, Adelaide, Australia.

- 1998 Pratt, S.C. Optimal timing of comb construction by honey bee colonies. Winter meeting of the International Union for the Study of Social Insects–British Section, London, United Kingdom.
- 1998 Pratt, S.C. Decentralized control of drone comb construction in honey bee colonies. International meeting on the mathematical biology of pattern and process, University of Bath, Bath, United Kingdom.
- 1997 Pratt, S.C. Control of the timing of comb construction by honey bee colonies. 1997 meeting of the International Union for the Study of Social Insects–North American Section, Nederland, Colorado.
- 1994 Pratt, S.C. Regulation of the timing of comb construction by honey bee colonies. 12th Congress of the International Union for the Study of Social Insects, Paris, France.

CAMPUS AND DEPARTMENTAL TALKS

- 2016 Collective cognition by insect societies. Symposium in honor of Robert E. Page, December 13.
- 2016 Decentralized mechanisms of collective behavior in social insects. ASU Math Club, Tempe, Arizona, March 23.
- 2014 The psychology of ants and ant colonies. BEYOND Center Workshop on Information, Complexity and Life, Tempe, Arizona, February 25.
- 2010 Collective transport by ants as a model for robot teams. Conference on Social Biomimicry: Insect Societies and Human Design, Tempe Arizona, February 19.
- 2007 Collective decision-making by ant colonies: Linking group and individual behavior. Applied Psychology Seminar, Cognitive Engineering Research Institute, Mesa, Arizona September 18.
- 2005 Insect societies as collective decision-makers. Neuroscience of Social Decision Making Seminar, Princeton University, November 8.
- 2005 Collective decision-making by ant colonies. Neuroscience Retreat, Princeton University, June 2.
- 2005 Speed-accuracy tradeoffs in collective decision-making by ants. Maclean House postdoctoral seminar series, Princeton University, March 31.

CONFERENCE PRESENTATIONS BY STUDENTS AND POSTDOCS

Undergraduate mentees are underlined; Graduate mentees are double-underlined; Postdoctoral mentees are marked with an asterisk.*

- 2019 Burchill, A., O’Meara, Pavlic, T.P., Pratt, S.C., Reid, C.R. Cooperatively transporting massive prey up vertical surfaces in the weaver ant *Oecophylla smaragdina*. Entomology 2019, St. Louis, Missouri.
- 2019 Charbonneau, D.*, Jackson, J., Diel, D., Pratt, S.C. Strategies for collective attack and defense of nests in the ant *Temnothorax rugatulus*. Entomology 2019, St. Louis, Missouri.

- 2018 Jackson, J., Pratt, S.C. Effects of colony proximity on conspecific aggression in honey bees. 17th International Congress of the International Society for Behavioral Ecology, Minneapolis, Minnesota.
- 2018 Baudier, K.* Changing of the guard: Task dynamics of stingless bee nest defense in cleptoparasitic environments 18th International Congress of the International Union for the Study of Social Insects, Guarujá, Brazil.
- 2018 Valentini, G.* Information transfer during tandem-running behavior of the ant *Temnothorax rugatulus*: Time scales of leadership? 18th International Congress of the International Union for the Study of Social Insects, Guarujá, Brazil.
- 2018 Burchill, A.T. Collective transport up vertical surfaces in the weaver ant *Oecophylla smaragdina* (Poster). 18th International Congress of the International Union for the Study of Social Insects, Guarujá, Brazil.
- 2018 Marting, P.R. The effects soil nutrients on collective personality in the *Azteca-Cecropia* mutualism. 18th International Congress of the International Union for the Study of Social Insects, Guarujá, Brazil.
- 2018 Marting, P.R. Ant-plant sociometry: growth, distribution, morphology, and behavior in the *Azteca-Cecropia* mutualism. 18th International Congress of the International Union for the Study of Social Insects, Guarujá, Brazil.
- 2018 Cho, J.Y. Food vs. safety: The question for recruiters of the ant *Temnothorax rugatulus* (Poster). 18th International Congress of the International Union for the Study of Social Insects, Guarujá, Brazil.
- 2018 Pavlic, T.P, Hanson, J., Valentini, G.*, Imari Walker, S., Pratt, S.C. Quorum sensing without counting, a discounting approach, or: Nobody goes there anymore, it's too crowded. 6th Workshop on Biological Distributed Algorithms, London, UK.
- 2018 Marting, P.R., Wcislo, W.T., Pratt, S.C. The effect of colony transplant and resource manipulation on collective personality in an ant-plant mutualism. Annual Meeting of the Society for Integrative and Comparative Biology, San Francisco, California.
- 2017 Marting, P.R. Ant-plant sociometry: Tree structure, colony distribution, colony size, and ant morphology (Poster). Annual Meeting of the Association for Tropical Biology and Conservation, Mérida, Yucatán, Mexico.
- 2017 Marting, P.R. Ant-plant sociometry: How tree and colony structure interact and give rise to emergent behavior. 54th annual meeting of the Animal Behavior Society, Toronto, Ontario, Canada.
- 2017 Burchill, A. Macronutrient regulation and foraging strategies in the Neotropical ant *Ectatomma ruidum*. Entomology 2017, Denver, Colorado.
- 2017 Cho, J.Y., Pratt, S.C. The effect of target quality and type on the behavior of tandem recruiters in the ant *Temnothorax rugatulus*. Entomology 2017, Denver, Colorado.
- 2016 Pratt, S.C., Jackson, J., Barnes M. Absence of robust regulation of drone comb construction by the honey bee, *Apis mellifera*. 25th International Congress of Entomology, Orlando, Florida.

- 2016 Cho, J.Y., Pratt, S.C. Do *Temnothorax rugatulus* (Hymenoptera: Formicidae) recruiters inform nestmates about the quality of the target? 25th International Congress of Entomology, Orlando, Florida.
- 2016 Burchill, A., Pavlic, T.P., Pratt, S.C. Consistent self-organized foraging allocations in the macronutrient-regulating carpenter ant *Camponotus fragilis* (*Poster*). 25th International Congress of Entomology, Orlando, Florida.
- 2016 Jackson, J., Pratt, S.C. Friend or foe: Testing the acceptance threshold model in honeybees (*Poster*). Meeting of the North American Section of the International Union for the Study of Social Insects, Orlando, Florida.
- 2016 Cho, J.Y., Pratt, S.C. Does hunger state increase recruitment effort in the ant *Temnothorax rugatulus*? (*Poster*). Meeting of the North American Section of the International Union for the Study of Social Insects, Orlando, Florida.
- 2016 Burchill, A., Pavlic, T.P., Pratt, S.C. Refusing to regulate: Starvation, sugar, and the ideal free distribution in carpenter ant colonies (*Poster*). Meeting of the North American Section of the International Union for the Study of Social Insects, Orlando, Florida.
- 2016 Doering, G.N., Pratt, S.C. Consensus decisions in *Temnothorax rugatulus* ants: The factors involved in reunifying divided colonies. 53rd annual meeting of the Animal Behavior Society, Columbia, Missouri.
- 2016 Cho, J.Y., Pratt, S.C. Do *Temnothorax rugatulus* recruiters inform nestmates about the quality of the target? 53rd annual meeting of the Animal Behavior Society, Columbia, Missouri.
- 2014 Buffin, A.*, Sasaki, T., Pratt, S.C. Is there a coordination cost to cooperative transport? 17th International Congress of the International Union for the Study of Social Insects, Cairns, Australia.
- 2014 Sasaki, T., Hölldobler, B., Millar, J., Pratt, S.C. A context-dependent alarm signal in the ant *Temnothorax rugatulus*. 17th International Congress of the International Union for the Study of Social Insects, Cairns, Australia.
- 2014 Pavlic, T.P.*, Pratt, S.C. Understanding foraging patterns that achieve colony-level macronutrient regulation. 17th International Congress of the International Union for the Study of Social Insects, Cairns, Australia.
- 2013 Ebie, J., Shaffer, Z., Pratt, S.C. To recruit or not to recruit: When do *Temnothorax rugatulus* recruit to natural prey? 50th annual meeting of the Animal Behavior Society, Boulder, Colorado.
- 2013 Evans, J., Shaffer, Z., Pratt, S.C. Mechanisms of brood aggregation by colonies of the ant *Temnothorax rugatulus* after nest destruction. 50th annual meeting of the Animal Behavior Society, Boulder, Colorado.
- 2013 Briner, J., Sasaki, T., Pratt, S.C. Some is good, more is better: brood presence affects collective choice in *Temnothorax* colonies. 50th annual meeting of the Animal Behavior Society, Boulder, Colorado.
- 2013 Pavlic, T.P.*, Pratt, S.C. Sequential-sampling models of quorum sensing in house-hunting *Temnothorax* ants. 50th annual meeting of the Animal Behavior Society, Boulder, Colorado.

- 2013 Shaffer, Z., Pratt, S.C., Fewell, J.H. The foundress' dilemma: Group selection for cooperation among queens of *Pogonomyrmex californicus*. 50th annual meeting of the Animal Behavior Society, Boulder, Colorado.
- 2013 Cho, J.Y., Morshed, T., Lindsey, Q., Sakar, M.S., Steager, E., Kumar, V., Pratt, S.C. A robotic ant to probe route learning during tandem recruitment by ants. 50th annual meeting of the Animal Behavior Society, Boulder, Colorado.
- 2013 Sasaki, T., Pratt, S.C. Collective decision-making: Ants adjust attribute weights according to prior experience. 50th annual meeting of the Animal Behavior Society, Boulder, Colorado.
- 2013 Sasaki, T., Pratt, S.C. Ants adjust attribute weights according to prior experience. 61st Annual Meeting of the Entomological Society of America, Austin, Texas.
- 2013 Marting, P.R., Pratt, S.C. Collective individuality in defense behavior of *Azteca* ant colonies in *Cecropia* trees. 61st Annual Meeting of the Entomological Society of America, Austin, Texas.
- 2013 Shaffer, Z., Pratt, S.C. The wisdom of the acorn: Social foraging of the ant *Temnothorax rugatulus*. 61st Annual Meeting of the Entomological Society of America, Austin, Texas.
- 2013 Buffin, A. *, Sasaki, T., Pratt, S.C. Individual and group transport: What are the benefits of teamwork? 61st Annual Meeting of the Entomological Society of America, Austin, Texas.
- 2012 Marting, P.R., Weislo, W.T., Pratt, S.C. Testing for collective personality in *Azteca* colonies (*Poster*). Meeting of the North American Section of the International Union for the Study of Social Insects, Greensboro, North Carolina.
- 2012 Ebie, J.D., Shaffer, Z., Pratt, S.C. When do *Temnothorax rugatulus* recruit to prey items? (*Poster*). Meeting of the North American Section of the International Union for the Study of Social Insects, Greensboro, North Carolina.
- 2012 Shaffer, Z., Drayer, S., Pratt, S.C., Fewell, J.H. Optimum foundress number in *Pogonomyrmex californicus*: survival, division of labor, and productivity. (*Poster*). Meeting of the North American Section of the International Union for the Study of Social Insects, Greensboro, North Carolina.
- 2012 Sasaki, T., Granovskiy, B., Mann, R.P., Sumpter, D.J.T., Pratt, S.C. Colonies more precisely discriminate options than individual ants do. Meeting of the North American Section of the International Union for the Study of Social Insects, Greensboro, North Carolina.
- 2012 Buffin, A. *, Pratt, S.C. Emergence of coordination in collective food transport by the ant *Aphaenogaster cockerelli*. Meeting of the North American Section of the International Union for the Study of Social Insects, Greensboro, North Carolina.
- 2012 Pavlic, T. *, Pratt, S.C. Sequential-sampling models of quorum detection in house-hunting ants. Meeting of the North American Section of the International Union for the Study of Social Insects, Greensboro, North Carolina.

- 2012 Sasaki, T., Granovskiy, B., Sumpter, D.J.T., Pratt, S.C. Colonies more precisely discriminate options than individual ants do. 14th Congress of the International Society for Behavioral Ecology, Lund, Sweden.
- 2012 Shaffer, Z., Pratt, S.C. Social foraging in the ant *Temnothorax rugatulus*. 14th Congress of the International Society for Behavioral Ecology, Lund, Sweden.
- 2012 Sasaki, T., Pratt, S.C. Colonies more precisely discriminate options than individual ants do. 49th annual meeting of the Animal Behavior Society, Albuquerque, New Mexico.
- 2012 Shaffer, Z., Pratt, S.C. Individual behavior and social foraging in the ant, *Temnothorax rugatulus*. 49th annual meeting of the Animal Behavior Society, Albuquerque, New Mexico.
- 2012 Schaper, G.J., Shaffer, Z., Pratt, S.C. Elite ants and the regulation of house hunting and foraging in the rock cavity ant *Temnothorax rugatulus* (*Poster*). 49th annual meeting of the Animal Behavior Society, Albuquerque, New Mexico.
- 2011 Shaffer, Z., Pratt, S.C. Bees in a box: collective decision-making by the ant *Temnothorax rugatulus* during foraging. 59th Annual Meeting of the Entomological Society of America, Reno, Nevada.
- 2011 Sasaki, T., Pratt, S.C. Do groups have a larger cognitive capacity than individuals? 59th Annual Meeting of the Entomological Society of America, Reno, Nevada.
- 2011 Sasaki, T. Do groups have a larger cognitive capacity than individuals? 48th annual meeting of the Animal Behavior Society, Bloomington, Indiana.
- 2011 Shaffer, Z., Pratt, S.C. Bees in a box: collective foraging of the ant *Temnothorax rugatulus*. 48th annual meeting of the Animal Behavior Society, Bloomington, Indiana.
- 2011 Schaper, G., Sasaki, T., Pratt, S.C. Flexibility of nest site preferences based on cue validity in the ant *Temnothorax rugatulus* (*Poster*). 48th annual meeting of the Animal Behavior Society, Bloomington, Indiana.
- 2011 Noelck, F., Sasaki, T., Pratt, S.C. Behavioral syndromes in nest site selection by the ant *Temnothorax rugatulus* (*Poster*). 48th annual meeting of the Animal Behavior Society, Bloomington, Indiana.
- 2011 Shaffer, Z., Pratt, S.C., Sasaki, T. Mapping social networks in house-hunting ants (*Poster*). Annual Meeting of the Society for Integrative and Comparative Biology, Salt Lake City, Utah.
- 2011 Sasaki, T., Pratt, S.C. Emergence of group rationality from irrational individuals in ants. Annual Meeting of the Society for Integrative and Comparative Biology, Salt Lake City, Utah.
- 2010 Sasaki, T., Shaffer, Z., Pennick, C., Pratt, S.C., Liebig, J. Ponerine putsch: An agent-based model of dominance hierarchy formation in the ant, *Harpegnathos saltator*. Annual Meeting of the Computational Social Science Society, Tempe, Arizona.

- 2010 Sasaki, T., Janssen, M., Shaffer, Z., Pratt, S.C. Evolved communication networks for different payoff distributions. Annual Meeting of the Computational Social Science Society, Tempe, Arizona.
- 2010 Sasaki, T., Pratt, S.C. (Ir)rational decision-making in ants. 16th International Congress of the International Union for the Study of Social Insects, Copenhagen, Denmark.
- 2010 Shaffer, Z., Sasaki, T., Pratt, S.C. Mapping social networks in house-hunting ants. 16th International Congress of the International Union for the Study of Social Insects, Copenhagen, Denmark.
- 2010 Sasaki, T., Pratt, S.C. (Ir)rationality in ants. 47th annual meeting of the Animal Behavior Society, Williamsburg, Virginia.
- 2009 Shaffer, Z., Janssen, M., Sasaki, T., Fewell, J., Anderies, M., Pratt, S.C. The foundress' dilemma: An agent-based model of colony founding strategy in ants. Annual Conference of the North American Association for Computational, Social, and Organizational Sciences, Arizona State University, Tempe, Arizona.
- 2008 Shaffer, Z., Pratt, S.C., Fewell, J. Invadability and maintenance of foundress strategy in *Pogonomyrmex californicus*. Meeting of the North American Section of the International Union for the Study of Social Insects, Arecibo, Puerto Rico.

CONFERENCE PRESENTATIONS BY COLLABORATORS

- 2016 Pavlic, T.P., Walker, S.I., Pratt, S.C. From social insects to smart, flexible, adaptive teams of robots: The biomechanics of group decision-making. 25th International Congress of Entomology, Orlando, Florida.
- 2008 Overson, R.P., Fewell, J., Pratt, S.C., Clark, R., Gadau, J. From conflict to cooperation: colony founding by unrelated ant queens. Meeting of the North American Section of the International Union for the Study of Social Insects, Arecibo, Puerto Rico.
- 2008 Sewell, W., Stevens, S.A., Gonzalez, D.M., Pratt, S.C., Dunwoodie, S.L., Loomes, K.L., Kusumi, K. Notch Pathway Mutants Display Craniofacial Birth Defects and Disrupt Expression of the Pharyngeal Arch Gene *Barx1*. 67th Annual Meeting of the Society for Developmental Biology, Philadelphia, Pennsylvania.
- 2007 Kusumi, K., William, D.A., Saitta, B., Gibson, J.D., Traas, J., Markov, V., Gonzalez, D.M., Anderson, D.M., Pratt, S.C, Rappaport, E.F. Functional genomic analysis of human & mouse cell culture models identifies novel oscillatory genes in somitogenesis & a 5-hour human segmentation clock rate. 66th Annual Meeting of the Society for Developmental Biology and First Pan-American Congress in Developmental Biology, Cancun, Mexico.
- 2007 Berman, S., Halasz, A., Kumar, V., Pratt, S.C. Bio-inspired group behaviors for the deployment of a swarm of robots to multiple destinations. IEEE International Conference on Robotics and Automation, Rome, Italy.

TEACHING EXPERIENCE AND TRAINING

Course instructor, Arizona State University

General Genetics (Spring 2007-2013, Fall 2008, Spring 2016).
Biometry (Fall 2009-2018, Spring 2017).
Research Techniques in Animal Behavior (Spring 2018; Spring 2019).
Sociobiology and Behavioral Ecology (Fall 2016).
Readings in Complexity (Spring 2009, Fall 2010).
Current Issues in Behavior (Fall 2012, Spring 2016, Spring 2019).
Life Sciences Career Paths (Fall 2014, Fall 2016, Fall 2017).

Course instructor, Princeton University

Biocomplexity (Fall 2001).
Animal Minds and Animal Movements (Fall 2002).
Mechanisms of Social Coordination in Animal Groups (Fall 2003).

Other courses

Emergent Cognition in Insect Colonies. Interdisciplinary College, Günne, Germany, March 9–10, 2016.

Educational training

National Academies Summer Institute on Undergraduate Education, Boulder, Colorado, July 21-25, 2014.

RESEARCH SUPERVISION

Postdoctoral researchers

2018–present Daniel Charbonneau, ASU.
2018–present Nobuaki Mizumoto, ASU.
2016–present Gabriele Valentini, ASU.
2017–2018 Kaitlin Baudier, ASU.
2012–2015 Ted Pavlic, ASU.
2011–2015 Aurélie Buffin, ASU.

Ph.D. students

2015–present Andrew Burchill, ASU.
2013–present Jon Jackson, ASU.
2011–present Yohan Cho, ASU.
2011–2018 Peter Marting, ASU (*currently Postdoctoral Entomology and Communications Consultant, Parque das Aves, Foz do Iguaçu, Brazil*).
2007–2014 Zachary Shaffer, ASU (*currently Lecturer, ASU*).
2008–2013 Takao Sasaki, ASU (*currently Assistant Professor, Univ. of Georgia*).

Ph.D. committees

2019–present	Grant Doering, McMaster University.
2019–present	Nicole DesJardins, ASU.
2019–present	Natalie Melkonoff, ASU.
2019–present	Kyle Gray, ASU.
2018–present	Jill Azzolini, ASU.
2018–present	Madeleine Ostwald, ASU.
2018–present	Steven Messer, ASU.
2017–present	Zachary Graham, ASU.
2017–present	Chris Albin-Brooks, ASU.
2017–present	Romain Dahan, ASU.
2017–present	Kelle Dhein, ASU.
2016–present	Ben Pyenson, ASU.
2016–present	Zahi Kakish, ASU.
2016–present	Tyler Murdock, ASU.
2016–present	Marielle Abalo, ASU.
2014–present	Ioulia Besselova, ASU.
2012–present	Jessica Ebie, ASU.
2013–2018	Melinda Weaver, ASU.
2013–2018	Richard Simpson, ASU.
2013–2018	Ti Eriksson, ASU.
2012–2018	Jason Borchert, ASU.
2018	Jinook Oh, University of Vienna (external reviewer)
2012–2017	Jon Bobek, ASU.
2012–2017	Steve Elliott, ASU.
2013–2016	Keziah Katz, Colorado State University.
2012–2016	Brett Seymoure, ASU.
2013–2015	Andrew Quitmeyer, Ph.D. student, Georgia Tech.
2015	Kevin Purce, Ph.D. student, Drexel University.
2014	Rajbir Kaur, IISER Kolkatta (external reviewer).
2010–2014	Kirsten Traynor, ASU.
2009–2013	Josh Gibson, ASU.
2012	Boris Granovskiy, Ph.D. student, University of Uppsala.
2012	James Herbert-Read, University of Sydney (external examiner).
2009–2012	Dani Moore, ASU.
2008–2012	Adrian Smith, ASU.
2007–2012	James Waters, ASU.

Master's committees

2018–present	Neil Hillis, ASU.
2017–2019	Shinji Otsuru, ASU.
2016–2017	Kaylon Sencio, ASU.
2012	Neal Bradley Jacobson, ASU.
2006–2007	Prashanthi Selvanarayanan, Computational Biosciences, ASU.

Undergraduate honors theses

2018–2019	Cassius Cunningham, ASU.
2018–2019	Byoungsoon Kang, ASU.
2013–2017	Grant Doering, ASU.
2012–2014	Blake Colling, ASU.
2013–2014	Lucas Talken, ASU.
2012–2013	Christal Johnson, ASU.
2012	Samantha Jones, ASU.
2011–2012	Forrest Noelck, ASU.
2010–2014	Gage Schaper, ASU.
2009–2011	Michael Bayuk, ASU.
2008–2011	Trisha Morshed, ASU.
2007–2010	Anne Sonnenschein, ASU.
2006–2010	Sean Bowens, ASU.
2007–2009	Michael McDowell, ASU.
2008–2009	Eric Huynh, ASU.
2004–2006	Susan Edwards, Princeton.
2004–2005	Jessica Lee, Princeton.
2003–2004	Yuvon Mobley, Princeton (co-supervisor).
2003–2004	Megan van Beusekom, Princeton (co-supervisor).

Other undergraduate researchers (partial list)

2016–2018	Hillary Polk, ASU.
2015–2017	Zakaria Mahmoud, ASU.
2015–2016	Nicole Kallman, ASU.
2015–2016	Melissa Lopez, ASU.
2013–2014	Alex Nachman, ASU.
2013–2015	Michael Zager, ASU.
2013–2014	Kevin Ngo, ASU.
2012–2016	Jacob Evans, ASU.
2013–2014	Taylor Vance, ASU.
2013–2014	Sayah Bogor, ASU.
2013–2014	Hana Putnam, ASU.
2013–2014	Shannon O’Leary, ASU.
2013–2014	Rayyan Sheikh, ASU.
2012	Courtney Bruce, ASU.
2011–2013	Jennifer Briner, ASU.
2011–2012	Nick Poetsch, ASU.
2011–2012	Katie Lundy, ASU.
2011–2012	Dane Kania, ASU.
2011	Sam Fox, ASU.
2011	Aaron Houglum, ASU.
2010–2011	Sawen Aziz, ASU.
2010	Savannah Christy, ASU.

Stephen C. Pratt: Curriculum vitae

2010	Glenn LeSueur, ASU.
2010	Catlin Nord, ASU.
2010	Meghan Stewart, ASU.
2009–2010	Sarah Drayer, ASU.
2008	Leah Drake, ASU.
2007	Ryan Brady, ASU.
2005–2006	Binna Lieh, Princeton University.
2004–2006	Daniel Glatt, Byram Hills High School and Princeton University.
2000	Morven McLeman, University of Bath.
1999	Sharon Brooks, University of Bath.
1999	Hannah Ellis, University of Bath.
1999	Allison Reading, University of Bath.

PROFESSIONAL SERVICE

2018-2019	President-Elect, International Union for the Study of Social Insects, North American Section.
2018	Co-organizer of Symposium on Neurobiology, Communication, and Behavior at 18 th International Congress of the International Union for the Study of Social Insects, Guarujá, Brazil.
2017–present	Member, Editorial Board of <i>Swarm Intelligence</i> .
2011–present	Member, Editorial Board of <i>PLoS One</i> .
2014–2017	Member and Chair (from 2016), Awards Committee, International Union for the Study of Social Insects, North American Section.
2017	Member, Program committee for SWARM 2017: The 2nd International Symposium on Swarm Behavior and Bio-Inspired Robotics.
2016, 2019	Grand Award Judge, Intel International Science and Engineering Fair, Phoenix.
2015	Track Organizer, Conference on Complex Systems.
2009	Principal organizer, Spring Workshop of the Office of Naval Research HUNT Project, ASU, Tempe, Arizona, March 9-10.
2011	Co-organizer, Workshop on Insect Self-organization and Swarming, Mathematical Biosciences Institute at The Ohio State University, Columbus, Ohio, March 14-18.
2009	Member of site review committee, French government assessment of the Neuroscience Center, University of Toulouse.

UNIVERSITY SERVICE

2015–present	Director, Animal Behavior Graduate Program, ASU.
2013–present	Faculty Honors Advisor, Barrett Honors College, ASU.
2016–present	Faculty Advisor, Students of the Social Insect Research Group, ASU.

Stephen C. Pratt: Curriculum vitae

- 2014–present Faculty Advisor, ASU chapter of Out in Science, Technology, Engineering, and Mathematics (oSTEM).
- 2019–present Member, Advisory Board for the Certificate in Computational Life Sciences, ASU.
- 2019–present Mentor, HUES LGBT+ mentoring program.
- 2017–present Treasurer, ASU LGBTQ* Faculty and Staff Association.
- 2016–present Member, Directorate of the Global Biosocial Complexity Initiative, ASU.
- 2017-present Member, Leadership Team for Smithsonian Tropical Research Institute-Arizona State University Partnership.
- 2019 Invited faculty speaker, Rainbow Convocation for LGBTQ graduates.
- 2018–2019 Member, Search committee for Director of the School of Life Sciences, ASU.
- 2017–2018 Faculty Representative, ASU LGBTQ* Faculty and Staff Association.
- 2017 Interim Associate Director, Graduate Programs, School of Life Sciences, ASU.
- 2014–2017 Member, Undergraduate Programs Committee, School of Life Sciences, ASU.
- 2008–2014 Member, Facilities Committee, School of Life Sciences, ASU.
- 2012 Member, Biodesign Graduate Program Advisory Committee, ASU.
- 2011–2012 Member, School of Life Sciences Committee on Complexity, ASU.
- 2009–2012 Member, Users Committee for Interdisciplinary Science and Technology Building 1, ASU.
- 2009–2010 Member, Joint Activities Committee, Consortium for Biosocial Complex Systems, ASU.
- 2009–2010 Co-organizer of Dynamical Discussions seminar series of the Center for Social Dynamics and Complexity, ASU.
- 2008–2009 Member, Education Committee, Center for Social Dynamics and Complexity, ASU.

COMMUNITY SERVICE AND OUTREACH

- 2018 Appeared on Catalyst, an Arizona PBS program exploring the impact of research at ASU.
- 2014 Appeared on STEM Journals, an educational television series aimed at middle school students, April 27.
- 2006–2007 Podcast interviews for ASU’s Ask-A-Biologist and Science Studio programs.
- 2008–2009 Exhibited paint-marked ant colony in “Marriage of Art, Science and Philosophy” at the American Visionary Arts Museum, Baltimore.

PEER REVIEW

Journal manuscripts (~12 per year since 2004)

<i>American Naturalist</i>	2015–2016, 2018
<i>Animal Behaviour</i>	2005–2006, 2008–2009, 2011–2012, 2014–2016
<i>Animal Cognition</i>	2007, 2010, 2015
<i>Annales Zoologici Fennici</i>	2011
<i>Apidologie</i>	2004, 2006, 2009, 2016
<i>Applied Physics Letters</i>	2009
<i>Behavioral Ecology</i>	2004, 2006–2007, 2010, 2013–2015
<i>Behavioral Ecology and Sociobiology</i>	2005–2011, 2013, 2015–2017
<i>Behavioural Processes</i>	2016, 2018
<i>Biology Letters</i>	2009
<i>BioSystems</i>	2010
<i>Bulletin of Mathematical Biology</i>	2006
<i>Current Biology</i>	2008–2009, 2018
<i>Ecological Entomology</i>	2012, 2014
<i>eLife</i>	2018
<i>Ethology</i>	2008, 2015
<i>Evolution</i>	2010
<i>Functional Ecology</i>	2015
<i>Insectes Sociaux</i>	2006–2010, 2013–2014, 2016–2018
<i>International Journal of Pest Management</i>	2009
<i>Journal of Apicultural Research</i>	2007
<i>Journal of Comparative Physiology B</i>	2009–2010
<i>Journal of Economic Entomology</i>	2012
<i>Journal of Experimental Biology</i>	2014, 2016, 2018
<i>Journal of the Royal Society Interface</i>	2010
<i>Journal of Theoretical Biology</i>	2005–2010, 2018
<i>Mathematical Biosciences</i>	2004
<i>Nature Research</i>	2018
<i>Naturwissenschaften</i>	2004, 2008
<i>Philosophical Transactions of the Royal Society</i>	2007
<i>PloS One</i>	2009–2011, 2013, 2015
<i>Proceedings of the National Academy of Sciences</i>	2007–2008, 2011–2013, 2015–2016
<i>Proceedings of the Royal Society B</i>	2009–2011, 2013–2015
<i>Royal Society: Open Science</i>	2015–2016
<i>Science</i>	2008, 2011
<i>Swarm Intelligence</i>	2010, 2016, 2018
<i>Trends in Ecology and Evolution</i>	2005

Grant proposals

Animal Behavior Society	2013, 2017, 2018
Association for the Study of Animal Behaviour	2016
Army Research Office	2011–2012

Stephen C. Pratt: Curriculum vitae

Belgian Science Policy Office	2006
Biotechnology and Biological Sciences Research Council	2002, 2010
Engineering and Physical Sciences Research Council	2010
European Research Council	2015
German Academic Exchange Service	2002
Israeli Science Foundation	2010, 2013–2015
Minerva Stiftung	2015
National Geographic Society	2017
National Institutes of Health	2009, 2012
National Science Foundation	2007–2013, 2016
U.S. Army Corps of Engineers	2014
United States-Israel Binational Science Foundation	2014

Books

Hyde, <i>Introduction to Principles of Genetics</i> , McGraw-Hill.	2009
Kroft et al., <i>Exploring Animal Social Networks</i> , Princeton University Press.	2007
Moffett, <i>Adventures among Ants</i> , University of California Press.	2009

HONORS AND AWARDS

2019	Visiting Research Fellowship, Macquarie University.
2013	Founder's Day Faculty Research Award, ASU Alumni Association.
1998–2000	Long-term Fellowship, Human Frontier Science Program.
1990–1993	National Science Foundation Graduate Research Fellowship.
1990–1993	A.D. White Fellowship, Cornell University.
1987	Short-term fellowship, Smithsonian Tropical Research Institute.

PROFESSIONAL MEMBERSHIPS

2001–present	Animal Behavior Society.
1994–present	International Union for the Study of Social Insects.
2002–present	International Society for Behavioral Ecology.
2013–present	National Organization of Gay and Lesbian Scientists and Technical Professionals.
2003–present	Entomological Society of America.

OTHER AFFILIATIONS

2018–present	Affiliate Faculty, Center for Human, Artificial Intelligence, and Robot Teaming, ASU.
2018–present	Affiliate Faculty, The Biomimicry Center, ASU.
2015–present	Fellow, ASU-Santa Fe Institute Center for Biosocial Complex Systems.
2006–present	Member, ASU Center for Social Dynamics and Complexity.

SELECTED MEDIA COVERAGE

- 2018 The mind of an anthill, interviewed for *Knowable* magazine, September 14.
- 2014 Bees and ants on how to make decisions, *Wall Street Journal*, September 19.
- 2013 How is past experience biasing our decision-making? Insights from rock ants. *Scientific American* blog, November 14.
- 2013 Madness of crowds: single ants beat colonies at easy choices. *National Geographic Phenomena*, July 30.
- 2011 Ants decide rationally together. *Science News*, web edition, Feb 16.
- 2009 Collective rationality. *Current Biology* 19 (15), pp. R629-R630.
- 2009 Mindless collectives better at rational decision-making than brainy individuals (2009) *Scientific American*, July 22.
- 2009 Can't decide? Ask an ant. *ScienceNOW*, July 22.
- 2006 Nesting ants show complex behavior. *Cosmos Online*, October 12.
- 2005 Life imitates ant. *Bulletin of the Atomic Scientists* 61(6): 10-11.
- 2005 The bug for painting. *Wired*, October, p. 38.
- 2005 Meeting of the minds. *The Artist's Magazine*, October, pp. 14-15.
- 2002 Making up their tiny minds. Television news report on @discovery.ca, Discovery Channel Canada.
- 2002 Getting the behavior of social insects to compute. *Science* 295: 2357.
- 2001 Ant group dynamics. *Nature Science Update*, 26 July.