

Curriculum vitae

Deborah M. Gordon

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Education: 1983 Ph.D., Zoology, Duke University
1977 M.S., Biology, Stanford University
1976 B.A., French, with high honors, Oberlin College

Employment: 2003 - Professor
1997 Associate Professor
1991 Assistant Professor, Stanford University

1989-91 Research Associate, Centre for Population Biology
Imperial College at Silwood Park, UK
College Research Fellow, Lady Margaret Hall
University of Oxford, UK
1987-88 Centre for Mathematical Biology, Oxford, UK
1984-87 Harvard Society of Fellows

Honors and Fellowships:

2016 Fellow, Animal Behavior Society
2009-10 Fellow, Center for Advanced Study in the Behavioral Sciences, Stanford
2007 Fellow, California Academy of Sciences
2001-02 J S Guggenheim Fellowship
2001-02 Fellow, Center for Advanced Study in the Behavioral Sciences, Stanford
2001 Walter J Gores Award for Excellence in Teaching, Stanford University
1997 Fellow, Center for Advanced Study in the Behavioral Sciences, Stanford
1995 Phi Beta Kappa Association of N. California, Excellence in Teaching Award
1993 MacNamara Fellow, Stanford
1989-91 E.P.A. Cephalosporin Research Fellowship, Lady Margaret Hall, Oxford
1987-88 NSF-NATO Postdoctoral Fellowship
1984-87 Junior Fellow, Harvard Society of Fellows

Publications:

Books:

1. D. M. Gordon. 1999. *Ants at Work: how an insect society is organized*. New York: Free Press, Simon and Schuster. 2000 paperback, New York: W. W. Norton. Excerpted in *Best American Science Writing 2000*, ed. J Gleick, Harper Collins.
2. Gordon DM. 2010. *Ant Encounters: Interaction Networks and Colony Behavior*. Princeton (NJ): Princeton University Press. (Primers in complex systems).

Articles:

1. Gordon DM. 1983. Dependence of necrophoric response to oleic acid on social context in the harvester ant, *Pogonomyrmex badius*. *J. Chemical Ecology*. 9(1): 105-111.
2. Gordon DM. 1983. The relation of recruitment rate to activity rhythms in the harvester ant, *Pogonomyrmex barbatus*. *J. Kansas Entomological Society*. 56(3):277-285.
3. Gordon DM. 1983. Daily rhythms in social activities of the harvester ant. *Pogonomyrmex badius*. *Psyche*. 90(4): 413-423.
4. Gordon DM. 1984. Species-specific patterns in the social activities of harvester ant colonies. *Insectes Sociaux*. 31(1): 74-86.
5. Gordon DM. 1984. Harvester ant middens: refuse or boundary? *Ecological Entomology*. 9:403-412.
6. Gordon DM. 1984. The persistence of role in exterior workers of the harvester ant, *Pogonomyrmex badius*. *Psyche*. 91(3-4): 251-266.
7. Gordon DM. 1985. Do we need more ethograms? *Zeitschrift fur Tierpsychologie*. 68: 340-342.
8. Gordon DM. 1986. The dynamics of the daily round of the harvester ant colony. *Animal Behaviour*. 34: 1402-1419.
9. Gordon DM. 1987. Group-level dynamics in harvester ants: young colonies and the role of patrolling. *Animal Behaviour*. 35:833-843.
10. Gordon DM, Holldobler B. 1987. Worker longevity in harvester ants. *Psyche*. 94:341-46.
11. Gordon DM. 1987. The dynamics of group behavior. In: Bateson PPG, Klopfer PH, editors. *Perspectives in Ethology*, Vol. 7. New York: Plenum Press; p. 217-231

12. Gordon DM. 1988. The development of organizational flexibility in harvester ant colonies. In: Greenberg G, Tobach E, editors. *Evolution of Social Behavior and Integrative Levels*. Hillsdale (NJ): Lawrence Erlbaum Press; p. 197-203.
13. Gordon DM. 1988. The group context of role switching in harvester ants. In: Jeanne RL, editor. *Interindividual Behavioral Variability in Social Insects*. Boulder (CO): Westview Press; p.53-59.
14. Gordon DM. 1988. Nest-plugging: interference competition in desert harvester ants (*Pogonomyrmex barbatus* and *Novomessor cockerelli*). *Oecologia*. 75: 114-117.
15. Gordon DM. 1988. Group-level exploration tactics in fire ants. *Behaviour*. 104:162-175.
16. Gordon DM. 1988. Behavior changes - finding the rules. In: Ho M, Fox S, editors. *Processes and Metaphors in the Evolutionary Paradigm*. London: Wiley & Sons; p. 243-254.
17. Gordon DM. 1988. Groups, change and the ordinary: some new questions about ant behavior. In: Trager JC, editor. *Advances in Myrmecology*. New York: E.J. Brill Co; p. 259-266.
18. Gordon DM. 1989. Dynamics of task switching in harvester ants. *Animal Behaviour*. 38: 194-204.
19. Gordon DM. 1989. Caste and change in social insects. *Oxford Surveys in Evolutionary Biology*. 6:56-72.
20. Silverton J, Gordon DM. 1989. A framework for the analysis of plant behaviour. *Annual Reviews of Ecology and Systematics*. 20:349-366.
21. Gordon DM. 1989. Ants distinguish neighbours from strangers. *Oecologia*. 81:198-200.
22. Gordon DM. 1991. Behavioral flexibility and the foraging ecology of seed-eating ants. *Am Nat*. 138:379-411.
23. Gordon DM. 1991. Variation and change in behavioral ecology. *Ecology*. 72:1196-1203.
24. Gordon DM. 1991. Comment on "Short-term activity cycles in ants." *American Naturalist*. 137:260-61.
25. Gordon DM. 1992. How colony growth affects forager intrusion in neighboring harvester ant colonies. *Behav Ecol Sociobiol*. 31:417-427.
26. Gordon DM, Goodwin B, Trainor LEH. 1992. A parallel distributed model of ant colony behaviour. *Journal of Theoretical Biology*. 156:293-307.

27. Gordon DM. 1992. Nest relocation in the harvester ant, *Pogonomyrmex barbatus*. *Annals Entomol Soc Am.* 85(1):44-47.
28. Gordon DM, Rosengren R, Sundstrom L. 1992. The allocation of foragers in red wood ants. *Ecological Entomology.* 17:114-120.
29. Adler FR, Gordon DM. 1992. Information collection and spread by networks of patrolling ants. *American Naturalist.* 40:373-400.
30. Gordon DM. 1992. Wittgenstein and ant-watching. *Biology & Philosophy.* 7:13-25.
31. Gordon DM. 1992. Phenotypic plasticity. In: Keller EF, Lloyd EA, editors. *Keywords in Evolutionary Biology.* Cambridge (MA): Harvard University Press. p. 255-262.
32. Gordon DM., Paul REH, Thorpe K. 1993. What is the function of encounter patterns in ant colonies? *Animal Behaviour.* 45:1083-1100.
33. Gordon DM. 1993. The spatial scale of seed collection by harvester ants. *Oecologia.* 95: 479-487.
34. Gordon DM. 1993. Untangling data and theory. Review of D. H. Wise, *Spiders in Ecological Webs.* *Nature.* 362:800.
35. Gordon DM. 1993. Communal Dwellings. *Animal Behaviour.* 45(6):1083-1100.
36. Gordon DM. 1994. How social insect colonies respond to variable environments. In: Real LA, editor. *Behavioral Mechanisms in Evolutionary Ecology.* Chicago: University of Chicago Press; p. 409-422.
37. Gordon DM. 1995. The development of an ant colony's foraging range. *Anim Behav.* 49:649-659.
38. Gordon DM. 1995. The expandable network of ant exploration. *Animal Behaviour.* 50:995-1007.
39. Gordon DM. 1995. Look to the ant, thou sluggard. Review of B. Holldobler and E. O. Wilson, *Journey to the Ants.* *Nature.* 372:292.
40. Gordon DM. 1995 Sep. Peter and the Wolf. Review of P. Steinhart, *The Company of Wolves.* *Stanford magazine.*
41. Gordon DM. 1995. Review of J.H. Hunt and C.A. Nalepa, eds, *Nourishment and Evolution in Insect Societies.* *Trends in Ecology and Evolution.* 10:90.
42. Gordon DM. 1995. The development of organization in ant colonies. *American Scientist.* 83:50-57.

43. Human KG, Gordon DM. 1996. Exploitative and interference competition between the Argentine ant and native ant species. *Oecologia*. 105:405-412.
44. Pacala SW, Gordon DM, Godfray HCJ. 1996. Effects of social group size on information transfer and task allocation. *Evolutionary Ecology*. 10:127-165.
45. Gordon DM, Kulig AW. 1996. Founding, foraging and fighting: colony size and the spatial distribution of harvester ant nests. *Ecology*. 77:2393-2409.
46. Gordon DM. 1996. The organization of work in social insect colonies. *Nature*. 380:121-124.
47. Gordon DM. 1996. The population consequences of territorial behavior. *Trends in Ecology and Evolution*. 12:63-66.
48. Gordon DM. 1996. How sociobiology explains ant behavior. Review of A. Bourke and N. Franks, *Social Evolution in Ants*. *Ecology*. 77(7):2261.
49. Gordon DM. 1996. Soldier production under threat. *News and Views, Nature*. 379:583-584.
50. Gordon DM. 1997. Task allocation and interaction rates in ant colonies. In: Greenberg, G, Tobach E, editors. *Comparative Psychology of Invertebrates: The Field and Laboratory Study of Insect Behavior*. New York: Garland Publishing; p. 125-134.
51. Wagner D, Brown MJF, Gordon DM. 1997. Harvester ant nests, soil biota and soil chemistry. *Oecologia*. 112:232-236.
52. Human KG, Gordon DM. 1997. Effects of Argentine ants on invertebrate biodiversity in northern California. *Conservation Biology*. 11:1242-1248.
53. Brown MJF, Gordon DM. 1997. Individual specialisation and encounters between harvester ant colonies. *Behaviour*. 134:849-866.
54. Gordon DM, Wagner D. 1997. Neighborhood density and reproductive potential in harvester ants. *Oecologia*. 109:556-560.
55. Gordon DM. 1997. Networking ants. *Natural History*. 106(7):26.
56. Wagner D, Brown MJF, Gordon DM. 1997. Harvester ant nests, soil biota and soil chemistry. *Oecologia*. 112:232-236.
57. Gordon DM, Kulig AW. 1998. The effect of neighboring colonies on mortality in harvester ants. *J Anim Ecol*. 67: 141-148.
58. Human KG, Weiss S, Weiss A, Sandler B, Gordon DM. 1998. The effect of abiotic factors on the local distribution of the invasive Argentine ant (*Linepithema humile*) and native ant species. *Environmental Entomology*. 27:822-833.

59. Human KG, Gordon DM. 1998. Behavioral interactions of the invasive Argentine ant with native ant species. *Insectes Sociaux*. 46(2): 159-163.
60. Wagner D, Brown MJF, Broun P, Cuevas W, Moses LE, Chao DL, Gordon DM. 1998. Task-related differences in the cuticular hydrocarbon composition of harvester ants, *Pogonomyrmex barbatus*. *J Chemical Ecology*. 24:2021-2037
61. Gordon DM. 1998. Review of J.K. Parrish and W.M. Hamner, eds. *Animal Groups in Three Dimensions*. *Animal Behaviour*. 56:798-799.
62. Gordon DM. 1998. Review of R. K. Vandermeer, M . D. Breed, M. L. Winston, K. E. Espelie, eds., *Pheromone Communication in Social Insects: Ants, Wasps, Bees and Termites*. *Quarterly Review Biology*. 73:361.
63. Gordon DM. 1999. Interaction patterns and task allocation in ant colonies. In: Detrain C, Deneubourg JL, Pasteels JM, editors. *Information Processing in Social Insects*. Basel: Birkhuaser Verlag; p. 51-86.
64. Wagner D, Gordon DM. 1999. Colony age, neighborhood density and reproductive potential in harvester ants. *Oecologia*. 119:175-182.
65. Gordon DM, Mehdiabadi N. 1999. Encounter rate and task allocation in harvester ants. *Behavioral Ecology and Sociobiology*. 45:370-77.
66. Brown MJF, Gordon DM. 2000. How resources and encounters affect the distribution of foraging activity in a seed-harvesting ant. *Behavioral Ecology and Sociobiology*. 47:195-203.
67. Sanders N, Gordon DM. 2000. The effects of interspecific interactions on resource use and behavior in a desert ant. *Oecologia*. 125: 436:443.
68. Wagner D, Tissot M, Cuevas W, Gordon DM. 2000. Harvester ants utilize cuticular hydrocarbons in nestmate recognition. *J Chemical Ecology*. 26 (10): 2245-2257.
69. Gordon DM. 2000. Review of R. C. Lewontin, The Triple Helix. *Nature Medicine*. 6(11):1206.
70. Gordon DM. 2000. The evolution of social behavior. In: Singh RS, Krimbas CB, editors. *Evolutionary Genetics: From Molecules to Morphology*. Cambridge: Cambridge University Press; p. 641-652.
71. Tissot M, Nelson DR, Gordon DM. 2001. Qualitative and quantitative differences in cuticular hydrocarbons between laboratory and field colonies of *Pogonomyrmex barbatus*. *Comparative Biochemistry and Physiology B*. 130: 349-358.

72. Nelson DR, Tissot M, Nelson LJ, Fatland CL, Gordon DM. 2001. Novel wax esters and hydrocarbons in the cuticular surface lipids of the red harvester ant, *Pogonomyrmex barbatus*. *Comparative Biochemistry and Physiology B*. 128: 575-595.
73. Wagner D, Tissot M, Gordon DM. 2001. Task-related environment alters the cuticular hydrocarbon composition of harvester ants. *J Chemical Ecology*. 27:1805-1819.
74. Sanders NJ, Barton KE, Gordon DM. 2001. Dynamics of the distribution and impact of the invasive Argentine ant, *Linepithema humile*, in northern California. *Oecologia*. 127:123-130.
75. Pereira H, Gordon DM. 2001. A trade-off in task allocation between sensitivity to the environment and response time. *J. Theoretical Biology*. 208:165-184.
76. Gordon DM, Moses L, Falkowitz-Halpern M, Wong EH. 2001. Effect of weather on infestation of buildings by the invasive Argentine ant, *Linepithema humile*. *American Midland Naturalist*. 146:321-328.
77. Gordon DM. 2001. Review of U. Segerstrale, *Defenders of the Truth*. *Biodiversity and Conservation*. 10(2): 314-315.
78. Gordon DM. 2001. The development of ant colony behavior. In: Oyama S, Gray R, Griffiths P, editors. *Cycles of Contingency: Developmental Systems and Evolution*. Cambridge (MA): MIT Press; 141-148.
79. Gordon DM. 2001. Task allocation in ant colonies. In: Segel LA, Cohen IR, editors. *Design Principles for the Immune System and other Distributed Autonomous Systems*. Oxford: Oxford University Press; p. 293-301.
80. Hirsh AE, Gordon DM. 2001. Distributed problem solving in social insects. *Annals of Mathematics and Artificial Intelligence*. 31:199-221.
81. Barton KE, Sanders NJ, Gordon DM. 2002. The effects of proximity and colony age on interspecific interference competition between the desert ants *Pogonomyrmex barbatus* and *Aphaenogaster cockerelli*. *American Midland Naturalist*. 148:76-182.
82. Sanders NJ, Gordon DM. 2002. Resources and the flexible allocation of work in the desert ant *Aphaenogaster cockerelli*. *Insectes Sociaux*. 49: 371-379.
83. Volny VP, Gordon DM. 2002. Characterization of polymorphic microsatellite loci in the red harvester ant, *Pogonomyrmex barbatus*. *Molecular Ecol Notes*. 2:302-303.
84. Volny VP, Gordon DM. 2002. Genetic basis for queen-worker dimorphism in a social insect. *Proc Nat Acad Sci*. 99:6108-6111.
85. Gordon DM. 2002. The regulation of foraging activity in red harvester ant colonies. *Am Nat*. 159:509-518.

86. Sanders NJ, Gordon DM. 2003. Resource dependent interactions and the organization of desert ant communities. *Ecology*. 84(4): 1024-31.
87. Sanders NJ, Gotelli NJ, Heller NE, Gordon DM. 2003. Community disassembly by an invasive species. *Proc Nat Acad Sci*. 100:2474-2477.
88. Greene MJ, Gordon DM. 2003. Cuticular hydrocarbons inform task decisions. *Nature*. 423: 32.
89. Adler FR, Gordon DM. 2003. Optimization, conflict, and non-overlapping foraging ranges in ants. *American Naturalist*. 162:529-543.
90. Ingram K, Gordon DM. 2003. Genetic analysis of dispersal dynamics in an invading population of Argentine ants, *Linepithema humile*. *Ecology*. 84:2832-42.
91. Wagner D, Jones JB, Gordon DM. 2004. Development of harvester ant colonies alters soil chemistry. *Soil Biology and Biochemistry*. 36:797-804.
92. Sanders NJ, Gordon DM. 2004. The interactive effects of climate and interspecific neighbours on mortality of red harvester ants. *Ecological Entomology*. 29:632-637.
93. Gordon DM. 2004. Dad's Not Lost. Review of R C Francis, *Why Men Won't Ask For Directions: The Seductions of Sociobiology*. *Natural History*. 113(6):52-55.
94. Ingram KK, Oefner P, Gordon DM. 2005. Task-specific expression of the foraging gene in harvester ants. *Molecular Ecology*. 14:813-818.
95. Gordon DM, Chu J, Lillie A, Tissot M, Pinter N. 2005. Variation in the transition from inside to outside work in the red harvester ant, *Pogonomyrmex barbatus*. *Insectes Sociaux*. 52:212-217.
96. Frederickson M, Greene MJ, Gordon DM. 2005. Ants bedevil devil's gardens. *Nature*. 437: 495-96
97. Schafer RJ, Holmes S, Gordon DM. 2006. Forager activation and food availability in harvester ants. *Animal Behaviour*. 71:815-822.
98. Heller NE, Sanders NJ, Gordon DM. 2006. Linking temporal and spatial scales in the study of an Argentine ant invasion. *Biological Invasions*. 8:501-507
99. Heller NE, Gordon DM. 2006. Seasonal spatial dynamics and causes of nest movement in colonies of the invasive Argentine ant (*Linepithema humile*). *Ecological Entomology*. 31:499-510.
100. Volny VP, Greene MJ, Gordon DM. 2006. Brood production and lineage discrimination in a harvester ant population with genetic caste determination. *Ecology*. 87:2194-2200.

101. Linksvayer T, Wade MJ, Gordon DM. 2006. Genetic caste determination in harvester ants: possible origin and maintenance by cyto-nuclear epistasis. *Ecology*. 87:2185-2193.
102. Greene MJ, Gordon DM. 2007. Structural complexity of chemical recognition cues affects the perception of group membership in the ants *Linepithema humile* and *Aphaenogaster cockerelli*. *Journal Experimental Biology*. 201:897-905.
103. Greene MJ, Gordon DM. 2007. Interaction rate informs harvester ant task decisions. *Behavioral Ecology*. 18:451-455.
104. Frederickson, M. and D. M. Gordon. 2007. The devil to pay: a cost of mutualism with *Myrmelachista schumanni* ants in "devil's gardens" is increased herbivory on *Duroia hirsuta* trees. *Proc R Soc B*. 274:1117-1123.
105. Gordon DM. 2007. Control without hierarchy. *Nature*. 446:143.
106. Greene MJ, Gordon DM. 2007. How patrollers set foraging direction in harvester ants. *American Naturalist*. 170:943-948.
107. Suni S, Gordon DM. 2007. Queens produce males in harvester ants. *Molecular Ecology*. 16:5149-5155
108. Heller NE, Sanders NJ, Shors JW, Gordon DM. 2008. Rainfall facilitates the spread, and time alters the impact of the invasive Argentine ant. *Oecologia*. 155:385-395.
109. Gordon DM, Holmes S, Nacu S. 2008. The short-term regulation of foraging in harvester ants. *Behav Ecol*. 19:217-222.
110. Gordon DM. 2008. Review of J. H. Hunt, *The Evolution of Social Wasps*. *Quarterly Review of Biology*. 83:104.
111. Heller NE, Ingram KK, Gordon DM. 2009. Nest connectivity and colony structure in unicolonial Argentine ants. *Insectes Sociaux*. 55: 397-403.
112. Frederickson ME, Gordon DM. 2009. The intertwined population biology of two Amazonian myrmecophytes and their symbiotic ants. *Ecology*. 90(6):1595-1607.
113. Beverly B, McLendon H, Nacu S, Holmes S, Gordon, DM. 2009. How site fidelity leads to individual differences in the foraging activity of harvester ants. *Behavioral Ecology*. 20:633-638.
114. Suni S, Gordon DM. 2009. Fine-scale genetic structure and dispersal distance in the harvester ant *Pogonomyrmex barbatus*. *Heredity*. 104:168-173.
115. Pringle E, Dirzo R, Gordon DM. 2010. Indirect benefits of symbiotic coccoids for an ant-defended myrmecophytic tree. *Ecology*. 92:37-46.
116. Gordon, DM. 2010 Sept. Colonial studies. *Boston Review*. 59-62.

117. Gordon DM. 2011. The fusion of ecology and behavioral ecology. *Behavioral Ecology*. 22:225-230.
118. Gordon DM, Guetz A, Greene MJ, Holmes S. 2011. Colony variation in the collective regulation of foraging by harvester ants. *Behav Ecol*. 22:429-435.
119. Sturgis SJ, Greene MJ, Gordon DM. 2011. Hydrocarbons on harvester ant (*Pogonomyrmex barbatus*) middens guide foragers to the nest. *Journal of Chemical Ecology*. DOI 10.1007/s10886-011-9947-y
120. Pinter-Wollman N, Wollman R, Guetz A, Holmes S, Gordon DM. 2011. The effect of individual variation on the structure and function of interaction networks in harvester ants. *Journal of the Royal Society Interface*. doi: 10.1098/rsif.2011.0059
121. Sorrells TR, Kuritzky LY, Kauhanen PG, Fitzgerald K, Sturgis SJ, Chen J, Dijamco CA, Basurto KN, Gordon DM. 2011. Chemical defense by the native winter ant (*Prenolepis imparis*) against the Invasive Argentine ant (*Linepithema humile*). *PloS One*. 6(4):e18717
122. Gordon DM. 2011 Jun. Twitter in the ant nest. *Natural History*. 10-12.
123. Sturgis SJ, Gordon DM. 2012. Nestmate recognition in ants: a review. *Myrmecological News*. 16:101-110.
124. Fitzgerald K, Gordon DM. 2012. Effects of vegetation cover, presence of a native species, and human disturbance on colonization by Argentine ants. *Conservation Biology*. 26(3):525-538.
125. Pinter-Wollman N, Gordon DM, Holmes S. 2012. Nest site and weather affect the personality of harvester ant colonies. *Behavioral Ecology*. 23(5):1022-1029. doi: 10.1093/beheco/ars066
126. Gordon DM, Heller NE. 2012. Seeing the forest and the trees. Invited comment on Moffett article. *Behavioral Ecology*. doi: 10.1093/beheco/ars046.
127. Pringle EG, Dirzo R, Gordon DM. 2012. Plant defense, herbivory, and the growth of *Cordia alliodora* trees and their symbiotic *Azteca* ant colonies. *Oecologia*. 170(3): 677-685. doi: 10.1007/s00442-012-2340-x
128. Prabhakar B, Dektar KN, Gordon DM. 2012. The regulation of ant colony foraging activity without spatial information. *PLoS Computational Biology*. 8(8):e1002670. doi: 10.1371/journal.pcbi.1002670
129. Pringle EG, Ramirez SR, Bonebrake TC, Gordon DM, Dirzo R. 2012. Diversification and phylogeographic structure in widespread *Azteca* plant-ants from the northern Neotropics. *Molecular Ecology*. 21:3576-3592.

130. Fitzgerald K, Heller N, Gordon DM. 2012. Modeling the spread of the Argentine ant into natural areas: habitat suitability and spread from neighboring sites. *Ecological Modelling*. 247:262-272. doi:10.1016/j.ecolmodel.2012.07.036
131. Gordon DM. 2012. The dynamics of foraging trails in the tropical arboreal ant, *Cephalotes goniodontus*. *PLoS One*. 7(11):e50472. doi: 10.1371/journal.pone.0050472
132. Flanagan TP, Pinter-Wollman NM, Moses ME, Gordon DM. 2013. Fast and flexible: Argentine ants recruit from nearby trails. *PLoS One*: 8(8):e70888. doi:10.1371/journal.pone.0070888
133. Sturgis S, Gordon DM. 2013. Aggression is task-dependent in the red harvester ant (*Pogonomyrmex barbatus*). *Behavioral Ecology*. 24(2):532-539. doi: 10.1093/beheco/ars194
134. Greene MJ, Pinter-Wollman N, Gordon DM. 2013. Interactions with combined chemical cues inform harvester ant foragers' decisions to leave the nest in search of food. *PLoS ONE*. 8(1):e52219. doi:10.1371/journal.pone.0052219
135. Gordon DM, Dektar KN, Pinter-Wollman N. 2013. Harvester ant colony variation in foraging activity and response to humidity. *PLoS ONE*. 8(5): e63363. doi:10.1371/journal.pone.0063363
136. Pinter-Wollman N, Bala A, Merrell A, Queirolo J, Stumpe MC, Holmes S, Gordon DM. Harvester ants use interactions to regulate forager activation and availability. *Animal Behaviour*. 86(1):197-207. doi: 10.1016/j.anbehav.2013.05.012
137. Gordon DM, Pilko A, DeBortoli N, Ingram KK. 2013. Does an ecological advantage produce the asymmetric lineage ratio in a harvester ant population? *Oecologia*. doi 10.1007/s00442-013-2690-z
138. Ingram KK, Pilko A, Heer J, Gordon DM. 2013. Colony life history and lifetime reproductive success of red harvester ant colonies. *Journal of Animal Ecology*. 82(3):540-550. doi:10.1111/1365-2656.12036
139. Gordon DM. 2013. The rewards of restraint in the collective regulation of foraging by harvester ant colonies. *Nature*. 498:91-93. doi 10.1038/nature12137
140. Pringle EG, Gordon DM. 2013 Protection mutualisms and the community: Geographic variation in an ant-plant symbiosis and the consequences for herbivores. *Sociobiology* 60:242-251.
141. Gordon DM. 2013 Jul 6. What do ants know that we don't? *Wired*. <http://www.wired.com/opinion/2013/07/what-ants-yes-know-that-we-dont-the-future-of-networking/>
142. Pringle EG, Ackay E, Raab TK, Dirzo R, Gordon DM. Water stress strengthens

- mutualism among ants, plants and scale insects. *PloS Biology* DOI: 10.1371/journal.pbio.1001705.
143. Gordon DM 2014 The ecology of collective behavior. *PLoS Biology* DOI: 10.1371/journal.pbio.1001805
144. Esponda, F, Gordon, DM 2015. Distributed nestmate recognition in ants. *Proceedings Royal Society B*. DOI: 10.1098/rspb.2014.2838
145. Countryman SM, Stumpe MC, Crow SP, Adler FR, Greene MJ, Vonshak M, Gordon DM. 2015 Collective search by ants in microgravity. *Frontiers Ecology Evolution*. DOI: 10.3389/fevo.2015.00025
146. Vonshak M, Gordon DM. Intermediate disturbance promotes invasive ant abundance. *Biological Conservation* 186:359-367. DOI: 10.1016/j.biocon.2015.03.024
147. Pless E, Queirolo J, Pinter-Wollman N, Crow SP, Allen K, Mathur MB, Gordon DM. 2015. Interactions increase forager availability and activity in harvester ants. *PLoS One*. DOI: 10.1371/journal.pone.0141971
148. Gordon DM. 2015. From division of labor to collective behavior. *Behavioral Ecology and Sociobiology*. DOI 10.1007/s00265-015-2045-3.
149. Dosmann, A., Bahet, N., and D. M. Gordon. 2016. Experimental modulation of external microbiome affects nestmate recognition in harvester ants (*Pogonomyrmex barbatus*). *Peer J* DOI 10.7717/peerj.1566.
150. Gordon, D.M. 2016. The collective wisdom of ants. *Scientific American*, February 2016.
151. Jandt, J. M. and D. M. Gordon. 2016. The behavioral ecology of variation in social insects. *Current Opinion in Insect Science* 15:40-44.
152. Ingram. K. K., Gordon, D. M., Friedman, D., Greene, M. K.,Kahler, J. and Peteru, S. 2016. Context-dependent expression of the foraging gene in field colonies of ants: the interacting roles of age, environment and task. *Proceedings Royal Society B* doi 10.1098/rspb.2016.0841.
153. Friedman, D. A. and Gordon, D. M. 2016. Ant genetics: reproductive physiology, worker morphology, and behavior. *Annual Reviews Neuroscience* 39:41-56. DOI: 10.1146/annurev-neuro-070815-013927
154. Davidson, J.D., Arauco-Aliaga, R. P., Crow. S., Gordon, D. M., Goldman, M.S. 2016. Effect of interactions between harvester ants on forager decisions. *Frontiers in Ecology and Evolution* doi.org/10.3389/fevo.2016.00115

155. Gordon, D. M. 2016. The evolution of the algorithms for collective behavior. *Cell Systems*. doi.org/10.1016/j.cels.2016.10.013
156. Gordon, D. M. 2017. Local regulation of trail networks in the arboreal turtle ant, *Cephalotes goniodontus*. *American Naturalist* 190 DOI: 10.1086/693418
157. Davidson, J. D. and Gordon D.M. 2017. Spatial organization and interactions of harvester ants during foraging activity. *Journal of the Royal Society Interface*. DOI: 10.1098/rsif.2017.0413
158. Gordon, D. M. and Friedman, D. A. 2017. Two lineages that need each other. *Molecular Ecology* 26: 975–976. doi:10.1111/mec.13964
159. Chandrasekhar A., Gordon D. M., Navlakha S. 2018. A distributed algorithm to maintain and repair the trail networks of arboreal ants. *Scientific Reports*, 8:9297 | DOI:10.1038/s41598-018-27160-3

Selected Recent Talks

1. Invited talks at conferences:

2013-14:

Empirical studies of the evolution of colony-level traits, International Union for the Study of Social Insects, 4 yr meeting, Organized (with H. Matilla).
World Economic Forum, Davos
TED 2014

2014-15

Janelia Farms. Life in the Aggregate: Mechanisms and Features of Social Dynamics
National Academies Keck Futures Initiative: Collective behavior
Social Insects as a Model for Biological Complexity, Entomological Society of America annual meeting
Harvard Univ: Swarms with a Purpose: Collective Motion, Dynamics and Control: From Bacteria to Ballet
Gordon Conference in Stochastic Physics in Biology
Cold Spring Harbor Labs Social insect Genetics
Biological Distributed Algorithms, Univ Texas

2015-16

Biological Distributed Algorithms, MIT
Institute for Complex Adaptive Matter, Univ Michigan
American Society for Cell Biology annual meeting
World Economic Forum, Davos
Symposium on Discrete Algorithms, Society for Industrial and Applied Mathematics

2016-17

Animal Behavior Society annual meeting: Behavioral Genetics
Bioinspiration symposium, International Congress of Entomology
2017-18
International Society for Evolution, Ecology and Cancer
Distributed Collective Computation in Biological and Artificial Systems, Janelia
Farms
Conference on Collective Behavior, International Centre for Theoretical Physics,
Trieste, Italy

Selected other invited talks:

2013-14
Chicago Humanities Institute
University of Chicago, Field Museum
American Museum of Natural History, NYC Science Cafe
Google Tech
University of Michigan, Dept of Ecology and Evolutionary Biology
Pennsylvania State
Kenyon College, Dept of Biology

2014-15
Hewlett Foundation
Institute for Science and Technology, Vienna
Wissenschaftskolleg zu Berlin
Macquarie University, Sydney, Australia
University of Pittsburgh

2015-16
Dept. of Bioinformatics, UC San Diego
Dell Research Labs, Mountain View
Dept. of Entomology, Univ Minnesota
Alfred M Boyce Lecture in Entomology, UC Riverside
World Economic Forum, Davos, Ideas Lab

2016-17
Institut des Systemes Complexes, Paris
OECD (Organization for Cooperation and Economic Development), Paris
Max Planck Institute for Ornithology, Konstanz
Max Planck Institute for Cell Biology, Dresden
Oxford University, Department of Zoology
University of Copenhagen, Department of Macroecology
Princeton University, Ecology and Evolutionary Biology
Dartmouth College, Dept of Ecology
Stony Brook University, Dept Ecology and Evolution named lectureship
UCSF Systems Biology Center
University of Texas Southwestern, Green Center for Systems Biology
Symposium on Biomimetics, International Congress of Entomology
University of Manitoba, Interdisciplinary Science Speakers Series
Interactive Media Seminar Series, Bioengineering, Stanford

2017-18

Organismal and Evolutionary Biology, Harvard University
Dept of Ecology and Evolutionary Biology, University of Montana
Dept of Computing, Information and Decision Systems, Arizona State University
Institute for Genomics and Systems Biology, University of Chicago
Dept of Evolutionary Genetics, University of Duesseldorf, Germany
Behavioral Physiology and Sociobiology, University of Wurzburg, Germany
Dept of Genetics, Evolution and Environment, University College London, UK
ImmunoConcept, CNRS and University of Bordeaux, France
Center for Integrative Genomics, Universite de Lausanne, Switzerland

Recent Outreach

1. Study of the spread of the invasive Argentine ant:

This 24-yr survey in Stanford's Jasper Ridge Biological Preserve, begun in 1993 and conducted by a series of graduate students in my lab, is now a citizen science project. The survey is conducted twice yearly by volunteers.

2. Ants in Space - data collection on ant collective search, based on 2014 experiment in the International Space Station

Ant Colony Search: <https://web.stanford.edu/~dmgordon/cgi-bin/acs/>

2016 Marvel Studios Science Event

National Academy of Sciences Exchange

2016 Center for the Advancement of Science in Space

outreach event on Ants in Space project in ISS at Kennedy Space Center, Florida

2017 [Brains On, Science podcast for kids](#)

2016 Invited speaker, AP Biology Readers and Test Developers annual grading conference, Kansas City

[Aeon](#). 2016. Gordon, D.M. How ant societies point to radical possibilities for humans (article)

[KQED Deep Look](#) 2016. Program on Jasper Ridge Survey of Argentine Ants

[Ars technica \(2016\)](#) The worst ants in the world (interview)

[SYFY](#) A Biologist Reviews the Ants of Ant-Man (interview)

[ContractRoom \(2016\)](#) What do music, ants and contract management all have in common? (interview)

Professional Service:

2018 TPNC 2018 Program Committee
International Conference on the Theory and Practice of Natural Computing

2016 "Swarm Intelligence"
Task Force of IEEE Computational Intelligence Society.

2016 Collective Intelligence annual meeting,
Program Committee

2011- 2015 Editorial Board, PLoS ONE

2010- 2015 Editorial Board, Proceedings Royal Society B

2010-15, 2003 - 08, 1995-2001 Santa Fe Institute Science Board

2007 Fellow, California Academy of Sciences

2013-2014 California Academy of Sciences– Fellows Selection Committee

2009-2011 Editorial Board, Behavioral Ecology

2011 National Science Foundation Panel, Population Biology and Ecology

2007 National Science Foundation Panel, Animal Behavior Program

2004 National Science Foundation Panel, Animal Behavior Program

2003-29006 Editorial Board, Oecologia

2001-2004 Editorial Board, American Naturalist

2000 National Science Foundation Panel, Animal Behavior Program

1998-2001 Editorial Board, Ecology

1997 Yale Ecology Summit (advise on new department)

1996- 2002 Chair, Ethics Committee; 1993-96 Member, Ethics Committee, Animal Behavior Society

Recent University service:

Departmental:

2014-2018 Graduate studies committee; chair of co-term committee

2011-2012 Undergraduate studies committee

2008-2009 Ecology search committee
Undergraduate laboratory course redesign committee
Policy committee

2006 - 2008 Chair, Ecology and Evolution group

University:

2017-18 University Awards Committee
 2016-2017 Breadth Governance Board
 SIGF Fellowship committee
 2015-2016 Breadth Governance Board
 2013-2015 Writing Governance Board
 2012-2013 SIGF selection committee
 IPER Admissions committee
 Writing Governance Board
 2011-2012 SIGF selection committee
 Writing Governance Board
 2010-2011 SIGF selection committee
 Writing Governance Board

Research Grants:

*ongoing collaborative projects

*2016-2019 National Science Foundataion Collaborative Proposal (CO PI with J Nickerson, PI): "Understanding and Improving Implicit Coordination in Peer Production Networks"

*2014-2019 Stanford Neuroscience Initiative, collaborative project "Neurochoice; collective decision-making" (\$70K, with Brian Knudson)

2014-2018 Hewlett Foundation Research Grant

2014-2016 Cisco Research Fund

2013- 2016 National Institutes of Health (with M Goldman)
 "Stochastic integrator models of collective decision-making"

2010-2013 National Science Foundation, Ecology Program
 (with M Moses, S Forrest, F Koster)
 "Search, signal and information exchange in distributed biological systems"

2009-2013 National Science Foundation, Population and Community Ecology
 (with R. Dirzo)
 "Evolutionary ecology of a multi-species mutualism at a regional scale"

2007-2012 National Science Foundation, Animal Behavior Program
 "The relation of foraging activity and reproductive success in red harvester ant colonies"

2008-2012 Mid-Peninsula Regional Open Space District, "Monitoring the spread of Argentine ants in MROSD reserves"

- 2003-2005 Stanford Bio-X Initiative. With Prof. S. Holmes, Dept of Statistics.
"Statistics of Biological Networks".
- 2000-2003 U.S. Dept of Agriculture, Entomology Program
"Invasion of the Argentine ant: predicting rate of spread"
- 1997-2000 National Science Foundation, Animal Behavior Program
"Task allocation in social animal colonies".
- 1997-2000 Structural Pest Control Board, State of California Consumer Services Agency
"Use of artificial outdoor nests to inhibit seasonal infestation of buildings by the Argentine ant"
- 1995-1998 U.S. Dept. of Agriculture, Entomology Program
"Invasion of the Argentine ant: how the invasion front advances and how native ants respond"
- 1993-1995 National Science Foundation, Physiology & Behavior
and Computational Biology Program
"Searching behavior and encounter patterns in patrolling ants"

Recent courses taught:

Plant and Population Biology (Ecology section of introductory biology core)

Behavioral Ecology

Networks: Ecological, Revolutionary, Digital (with Dan Edelman, Dept of History)

Ecology for Everyone (ecology course for non-majors)

Graduate Research Supervised:

Kathleen Human (PhD 1996)
 Mark Brown (1997)
 Nathan Sanders (2000)
 Veronica Volny (2003)
 Natasha Mehdiabadi (M.Sc. 2001)
 Nicole Heller (2005)
 Megan Frederickson (2006)
 Sevan Suni (2009)
 Jessica Shors (2009)
 Katherine Fitzgerald (2010)
 Elizabeth Pringle (2011)
 Shelby Sturgis (2012)
 Andrew Merrell (M.Sc. 2016)
 Ga-Il Lee (M. Sc. 2017)
 Daniel Friedman

Postdoctoral fellows

Jacob Davidson

Andy Dosmann

Roxana Auraco

Anna Pilko

Lis Castilo Nelis (NSF Postdoctoral Fellowship)

Merav Vonshak (BARD Israeli Agricultural Agency Fellowship)

Noa Pinter-Wollman (NSF Postdoctoral Fellowship)

Diane Wagner (USDA Postdoctoral Fellowship)

Madeline Tissot (Swiss government fellowship)

Michael Greene (NIH postdoctoral training fellowship)

Krista Ingram (from USDA grant to DMG, then NIH postdoctoral training fellowship)