



## Stevan J. Arnold --- Publications

1. **Arnold, S.J. 1972.** Species densities of predators and their prey. *American Naturalist* 106: 220-236. [pdf](#)
2. **Arnold, S.J. 1976.** Sexual behavior, sexual interference and sexual defense in the salamanders *Ambystoma maculatum*, *Ambystoma tigrinum*, and *Plethodon jordani*. *Zeitschrift für Tierpsychologie*. 42: 247-300. [pdf](#)
3. **Arnold, S.J. 1977.** Polymorphism and geographic variation in the feeding behavior of the garter snake, *Thamnophis elegans*. *Science* 197: 676-678. [pdf](#)
4. **Arnold, S.J. 1977.** The courtship behavior of North American salamanders with some comments on Old World salamandrids. Pp. 141-183 *IN*: D. Taylor and S. Guttman (eds.), *The Reproductive Biology of Amphibians*. Plenum Press, New York. [pdf](#)
5. **Arnold, S.J. 1978.** Some effects of early experience on feeding responses in the common garter snake, *Thamnophis sirtalis*. *Animal Behaviour*. 26: 455-462. [pdf](#)
6. **Arnold, S.J. 1978.** The evolution of a special class of modifiable behaviors in relation to environmental pattern. *American Naturalist*. 112: 415-427. [pdf](#)
7. **Arnold, S.J. and R.J. Wassersug. 1978.** Differential predation on metamorphic anurans by garter snakes (*Thamnophis*): social behavior as a possible defense. *Ecology* 59: 1014-1022. [pdf](#)
8. **Wade, M.J. and S. J. Arnold. 1980.** The intensity of sexual selection in relation to male sexual behaviour, female choice and sperm precedence. *Animal Behaviour* 28: 446-461. [pdf](#)
9. **Arnold, S.J. 1980.** Inheritance and evolution of reproductive traits in garter snakes. *American Zoologist*. 20: 271 (Abstract). [pdf](#)
10. **Arnold, S.J. 1981.** The microevolution of feeding behavior. Pp. 409-453 *IN*: A. Kamil and T. Sargent (eds.), *Foraging Behavior: Ecological, Ethological and Psychological Approaches*. Garland Press, New York. [pdf](#)
11. **Arnold, S.J. 1981.** Behavioral variation in natural populations. I. Phenotypic, genetic and environmental correlations between chemoreceptive responses to prey in the garter snake, *Thamnophis elegans*. *Evolution* 35: 489-509. [pdf](#) [litter means](#)

12. **Arnold, S.J. 1981.** Behavioral variation in natural populations. II. The inheritance of feeding response in crosses between geographic races of the garter snake, *Thamnophis elegans*. *Evolution* 35: 510-515. [pdf](#)
13. **Arnold, S.J. 1981.** Sociobiology evolving. *Evolution* 35: 824-825. (Book Review).
14. **Arnold, S.J. 1982.** A quantitative approach to antipredator performance: salamander defense against snake attack. *Copeia* 1982 (2): 247-253. [pdf](#)
15. **Marx, H., G. Rabb and S.J. Arnold. 1982.** *Pythonodipsas* and *Spalerosophis*: colubrid snake genera convergent to the vipers. *Copeia* 1982 (3): 553-561. [pdf](#)
16. **Harvey, P.H. and S.J. Arnold. 1982.** Female mate choice and runaway sexual selection. *Nature* 297: 533-534. [pdf](#)
17. **Feder, M.E., and S.J. Arnold. 1982.** Anaerobic metabolism and behavior during predatory encounters between snakes (*Thamnophis elegans*) and salamanders (*Plethodon jordani*). *Oecologia* 53: 93-97. [pdf](#)
18. **Arnold, S.J. and L.D. Houck, 1982.** Courtship pheromones: evolution by natural and sexual selection. pp. 173-211 *IN*: M. Nitecke (ed.), *Biochemical Aspects of Evolutionary Biology*. Univ. Chicago Press, Chicago. [pdf](#)
19. **Kephart, D.G. and S.J. Arnold. 1982.** Garter snake diets in a fluctuating environment: a seven year study. *Ecology* 63: 1232-1236. [pdf](#)
20. **Arnold, S.J. 1983.** Sexual selection: the interface of theory and empiricism. Pp. 67-107 *IN*: *Mate Choice*, P.P.G. Bateson (ed.), Cambridge Univ. Press. [pdf](#)
21. **Arnold, S.J. 1983.** Morphology, performance and fitness. *American Zoologist* 23: 347-361. [pdf](#)
22. **Garland, T., Jr. and S.J. Arnold. 1983.** The effect of a full stomach on locomotory performance of juvenile garter snakes (*Thamnophis elegans*). *Copeia* 1983: 1092-1096. [pdf](#)
23. **Lande, R. and S.J. Arnold. 1983.** The measurement of selection on correlated characters. *Evolution* 37: 1210-1226. [pdf](#)
24. **Ayres, F.A. and S.J. Arnold. 1983.** Behavioural variation in natural populations. IV. Mendelian models and heritability of a feeding response in the garter snake, *Thamnophis elegans*. *Heredity* 51: 405-413. [pdf](#)
25. **Arnold, S.J. and A.F. Bennett. 1984.** Behavioural variation in natural populations. III. Antipredator displays in the garter snake *Thamnophis radix*. *Animal Behaviour* 32:1108-1118. [pdf](#)

26. **Arnold, S.J. and M.J. Wade. 1984.** On the measurement of natural and sexual selection: theory. *Evolution* 38:709-719. [pdf](#)
27. **Arnold, S.J. and M.J. Wade. 1984.** On the measurement of natural and sexual selection: applications. *Evolution* 38:720-734. [pdf](#)
28. **Houck, L.D., S.J. Arnold and R.A. Thisted. 1985.** A statistical study of mate choice: sexual selection in a plethodontid salamander (*Desmognathus ochrophaeus*). *Evolution* 39: 370-386. [pdf](#)
29. **Houck, L.D., S.G. Tilley and S.J. Arnold. 1985.** Sperm competition in a plethodontid salamander: preliminary results. *Journal of Herpetology* 19: 420-423. [pdf](#)
30. **Lande, R. and S.J. Arnold. 1985.** Evolution of mating preference and sexual dimorphism. *Journal of Theoretical Biology* 117: 651-664. [pdf](#)
31. **Arnold, S.J. 1985.** Quantitative genetic models of sexual selection. *Experientia* 41: 1296-1310. [pdf](#)
32. **Arnold, S.J. 1986.** Laboratory and field approaches to the study of adaptation. Pp. 157-179 *IN: M. Feder and G. Lauder (eds.), Predator-prey Relationships*. Univ. Chicago Press, Chicago. [pdf](#)
33. **Arnold, S.J. 1986.** Limits on stabilizing, disruptive and correlational selection set by the opportunity for selection. *American Naturalist* 128: 143-146. [pdf](#)
34. **Arnold, S.J. 1986.** Measuring selection. *Science* 232: 271-272 (Book Review). [pdf](#)
35. **Arnold, S.J. and T. Halliday. 1986.** *Hyla regilla* (Pacific Treefrog). Predation. *Herpetological Review* 17:44. [pdf](#)
36. **Peterson, C.R. and S.J. Arnold. 1986.** Individual variation in the thermoregulatory behavior of free-ranging garter snakes, *Thamnophis elegans*. *American Zoologist* 26:112A (Abstract).
37. **Arnold, S.J. 1987.** Natural selection in the wild. *Animal Behaviour* 35:308-309 (Book Review).
38. **Arnold, S.J. 1987.** The comparative ethology of courtship in salamandrid salamanders. 1. *Salamandra* and *Chioglossa*. *Ethology* 74:133-145. [pdf](#)
39. **Heisler, L., M. Andersson, S.J. Arnold, C.R. Boake, G. Borgia, G. Hausfater, M. Kirkpatrick, R. Lande, J. Maynard Smith, P. O'Donald, A.R. Thornhill and F. Weissing. 1987.** The evolution of mating preferences and sexually selected traits. Pp. 96-118 *IN: J.W. Bradbury and M.B. Andersson (eds.), Sexual Selection: Testing the Alternatives*. Dahlem Konferenzen. John Wiley and Sons, Chichester. [pdf](#)

40. **Halliday, T.R. and S.J. Arnold. 1987.** Multiple mating by females: a perspective from quantitative genetics. *Animal Behaviour* 35:939-941. [pdf](#)
41. **Arnold, S.J. 1987.** Quantitative genetic models of sexual selection: a review. Pp. 283-315 *IN: S. Stearns (ed.), The Evolution of Sex and Its Consequences.* Birkhauser, Basel. [pdf](#)
42. **Arnold, S.J. 1987.** Genetic correlation and the evolution of physiology. Pp. 189-212 *IN: M.E. Feder, A.L. Bennett, W.W. Burggren and R.B. Huey (eds.), New Directions in Ecological Physiology.* Cambridge Univ. Press. [pdf](#)
43. **Arnold, S.J. 1988.** Behavior, energy and fitness. *American Zoologist* 28:815-827. [pdf](#)
44. **Houck, L.D., S.J. Arnold and A. Hickman. 1988.** Tests for sexual isolation in plethodontid salamanders (genus *Desmognathus*). *Journal of Herpetology* 22:186-191. [pdf](#)
45. **Arnold, S.J. 1988.** Snakes: ecology and evolutionary biology. (Book Review) *Herpetologica* 44: 259-260. [pdf](#)
46. **Arnold, S.J. 1988.** Quantitative genetics and selection in natural populations: microevolution of vertebral numbers in the garter snake *Thamnophis elegans*. Pp. 619-636 *IN: B.S. Weir, E.J. Eisen, M.M. Goodman, and G. Namkoong (eds.), Proceedings of the Second International Conference on Quantitative Genetics.* Sinauer, Sunderland, MA [pdf](#)
47. **Arnold, S.J. and A.F. Bennett. 1988.** Behavioural variation in natural populations. V. Morphological correlates of locomotion in the garter snake *Thamnophis radix*. *Biological Journal of the Linnean Society* 34: 175-190. [pdf](#)
48. **Price, T., M. Kirkpatrick and S.J. Arnold. 1988.** Directional selection and the evolution of breeding date in birds. *Science* 240: 798-799. [pdf](#)
49. **Arnold, S.J. and T.R. Halliday. 1988.** Multiple mating: natural selection is not evolution. *Animal Behaviour* 36: 1547-1548. [pdf](#)
50. **Lynch, M. and S.J. Arnold. 1988.** The measurement of selection on size and growth. Pp. 47-59 *IN: B. Ebenman and L. Persson (eds.), Size-structured Populations, Ecology and Evolution.* Springer-Verlag, Berlin. [pdf](#)
51. **Arnold, S.J. 1989.** Biology of the Reptilia, vol. 16 (Book Review). *American Scientist* 77: 187.
52. **Arnold, S.J., P. Alberch, V. Csányi, R.C. Dawkins, S.B. Emerson, B. Fritsch, T.J. Horder, J. Maynard Smith, M.J. Starck, E.S. Vrba, G.P. Wagner and D.B. Wake. 1989.** How do complex organisms evolve? Pp. 403-433 *IN: D.B. Wake and G. Roth (eds.), Complex Organismal Functions: Integration and Evolution in Vertebrates.* Wiley, New York. [pdf](#)
53. **Emerson, S.B. and S.J. Arnold. 1989.** Intra- and interspecific relationships between

morphology, performance, and fitness. Pp. 295-314 *IN*: D.B. Wake and G. Roth (eds.), *Complex Organismal Functions: Integration and Evolution in Vertebrates*. Wiley, New York. [pdf](#)

54. **Huey, R.B., C.R. Peterson, S.J. Arnold and W.P. Porter. 1989.** Hot rocks and not-so-hot rocks: thermal consequences of retreat site selection by garter snakes. *Ecology* 70: 931-944. [pdf](#)

55. **Phillips, P.C. and S.J. Arnold. 1989.** Visualizing multivariate selection. *Evolution* 43: 1209-1222. [pdf](#)

56. **Verrell, P.A. and S.J. Arnold. 1989.** Behavioral observations on sexual isolation between allopatric populations of the Mountain Dusky Salamander, *Desmognathus ochrophaeus*. *Evolution* 43: 745-755. [pdf](#)

57. **Arnold, S.J. and C.R. Peterson. 1989.** A test for temperature effects on the ontogeny of shape in the garter snake *Thamnophis sirtalis*. *Physiological Zoology* 62: 1316-1333. [pdf](#)

58. **Arnold, S.J. 1990.** Inheritance and the evolution of behavioral ontogenies. Pp. 167-189 *IN*: M. Hahn, J. Hewitt, N. Henderson, and R. Benno (eds.), *Developmental Behavior Genetics: Neural, Biometrical, and Evolutionary Approaches*. Oxford Univ. Press, New York. [pdf](#)

59. **Kirkpatrick, M., T. Price and S.J. Arnold. 1990.** The Darwin-Fisher theory of sexual selection in monogamous birds. *Evolution* 44:180-193. [pdf](#)

60. **Tilley, S.G., P.A. Verrell and S.J. Arnold. 1990.** Correspondence between sexual isolation and allozyme differentiation: a test in the salamander *Desmognathus ochrophaeus*. *Proceedings of the National Academy of Sciences U.S.A.* 87:2715-2719. [pdf](#)

61. **Arnold, S.J. 1990.** Reproductive success: studies of individual variation in contrasting breeding systems. (Book Review). *American Scientist* 78:468.

62. **Arnold, S.J. and T. Halliday. 1991.** Multiple mating by females: design and interpretation of selection experiments. *Animal Behaviour* 43:178-179. [pdf](#)

63. **Duvall, D., S.J. Arnold and G.W. Schuett. 1992.** Pitviper mating systems: ecological potential, sexual selection, and microevolution. Pp. 321-336 *IN*: J.A. Campbell & E.D. Brodie, Jr. (eds.), *The Biology of the Pitvipers*. Selva Press, Tyler, TX. [pdf](#)

64. **Arnold, S.J. 1992.** Behavioural variation in natural populations. VI. Prey responses by two species of garter snakes in three regions of sympatry. *Animal Behaviour* 44:705-719. [pdf](#)

65. **Arnold, S.J. 1992.** Constraints on phenotypic evolution. *American Naturalist* 140:S85-S107. [pdf](#)

66. **Arnold, S.J. 1993.** Foraging theory and prey size - predator size relations in snakes. Pp. 87-115 *IN*: R.A. Seigel & J.T. Collins (eds.), *Snakes: Ecology and Behavior*. McGraw Hill, New York. [pdf](#)

67. **Duvall, D., G.W. Schuett and S.J. Arnold. 1993.** Ecology and evolution of snake mating systems. Pp. 165-200 *IN: R.A. Seigel & J.T. Collins (eds.), Snakes: Ecology and Behavior.* McGraw Hill, New York. [pdf](#)
68. **Arnold, S. J., N. L. Reagan and P. A. Verrell. 1993.** Reproductive isolation and speciation in plethodontid salamanders. *Herpetologica* 49: 216-228. [pdf](#)
69. **Arnold, S.J. and D. Duvall. 1994.** Animal mating systems: a synthesis based on selection theory. *American Naturalist* 143:317-348. [pdf](#)
70. **Arnold, S. J. 1994.** Is there a unifying concept of sexual selection that applies to both plants and animals? *American Naturalist* 144:S1-S12. [pdf](#)
71. **Arnold, S. J. 1994.** Bateman's principles and the measurement of sexual selection in plants and animals. *American Naturalist* 144:S126-S149. [pdf](#)
72. **Arnold, S.J. 1994.** Multivariate inheritance and evolution: a review of concepts. Pp. 17-48 *IN: C.R.P. Boake (ed.), Quantitative Genetics Studies of the Evolution of Behavior.* Univ. Chicago Press, Chicago. [pdf](#)
73. **Arnold, S.J. 1994.** Constraints on phenotypic evolution. pp. 258-278 *IN: L.A. Real (ed.), Behavioral Mechanisms in Evolutionary Biology.* Univ. Chicago Press, Chicago. [pdf](#)
74. **Arnold, S.J. 1995.** Monitoring quantitative genetic variation and evolution in captive populations. pp. 295-317 *IN: J. Ballou, M. Gilpin & T. Foose (eds.), Population Management for Survival and Recovery: Analytical Methods and Strategies in Small Population Conservation.* Columbia University Press. [pdf](#)
75. **Arnold, S. J., C. R. Peterson and J. Gladstone. 1995.** Behavioural variation in natural populations. VII. Maternal body temperature does not affect juvenile thermoregulation in a garter snake (*Thamnophis elegans*). *Animal Behaviour* 50: 623-633. [pdf](#)
76. **Arnold, S. J. 1995.** Fauna of Australia. Vol. 2A, Amphibia and Reptilia. (Book Review) *Copeia* 1995: 247-248. [pdf](#)
77. **Webster, M. S., S. Pruett-Jones, D. F. Westneat, and S. J. Arnold 1995.** Measuring the effects of pairing success, extra-pair copulations and mate quality on the opportunity for sexual selection. *Evolution* 49: 1147-1157. [pdf](#)
78. **Arnold, S. J., P. A. Verrell and S. G. Tilley. 1996.** The evolution of asymmetric sexual isolation: a polygenic model and a test case. *Evolution* 50:1024-1033. [pdf](#) [Excel file that calculates standard errors of isolation measures](#) [Readme file with instructions](#)
79. **Arnold, S. J. and H. J. Brockmann. 1996.** Evolution of behavior, approaches to studying behavioral change. Pp. 673-682 *IN: L. D. Houck & L. C. Drickamer (eds.), Foundations of Animal Behavior.* Univ. Chicago Press, Chicago. [pdf](#)



80. **Kelley, K. C., S. J. Arnold and J. Gladstone. 1997.** The effects of substrate and vertebral number on locomotion in the garter snake *Thamnophis elegans*. *Functional Ecology* 11:189-198. [pdf](#)
81. **Arnold, S. J. 1998.** Snakes, the evolution of mystery in nature. (Book Review). *Integrative and Comparative Biology* 1:76-77.
82. **Bronikowski, A. M. and S. J. Arnold. 1999.** The evolutionary ecology of life history variation in the garter snake *Thamnophis elegans*. *Ecology* 80:2314-2325. [pdf](#)
83. **Bernardo, J. and S. J. Arnold. 1999.** Mass-rearing of plethodontid salamander eggs. *Amphibia-Reptilia* 20:219-224. [pdf](#)
84. **Phillips, P. C. and S. J. Arnold. 1999.** Hierarchical comparison of genetic variance-covariance matrices. I. Using the Flury hierarchy. *Evolution* 53:1506-1515. [pdf](#) [Software](#)
85. **Arnold, S. J. and P. C. Phillips. 1999.** Hierarchical comparison of genetic variance-covariance matrices.II. Coastal-inland divergence in the garter snake, *Thamnophis elegans*. *Evolution* 53:1516-1527. [pdf](#)
86. **Osypka, N. M. and S. J. Arnold. 2000.** The developmental effect of sex ratio on a sexually dimorphic scale count in the garter snake *Thamnophis elegans*. *Journal of Herpetology* 34:1-5. [pdf](#)
87. **Arnold, S. J. 2000.** Systematics at the turn of a century. Pp. 167-178 *IN: R. C. Bruce, R. G. Jaeger, and L. D. Houck (eds.), The Biology of Plethodontid Salamanders*. Kluwer/Plenum, New York, New York. [pdf](#)
88. **Jones, A. G., G. Rosenqvist, A. Berglund, S. J. Arnold and J. C. Avise. 2000.** The Bateman Gradient and the cause of sexual selection in a sex-role-reversed pipefish. *Proceedings of the Royal Society of London B: Biological Sciences* 267:1-4. [pdf](#)
89. **Arnold, S. J., J. Kagan and B. Taylor. 2000.** Summary of current status of Oregon's biodiversity. Pp.121-162 *IN: The Oregon State of the Environment Report 2000*. [pdf](#)
90. **Arnold, S. J. and J. A. Anthony. 2000.** Summary of the current status of exotic species in Oregon. Pp. 127-131 *IN: Oregon State of the Environment Report 2000*. [pdf](#)
91. **Bronikowski, A. M. and S. J. Arnold. 2001.** Cytochrome *b* phylogeny does not match subspecific classification in the western terrestrial garter snake, *Thamnophis elegans*. *Copeia* 2001: 508-513. [pdf](#)
92. **Alfaro, M. and S. J. Arnold. 2001.** Molecular systematics and evolution of *Regina* and the thamnophiine snakes. *Molecular Phylogenetics and Evolution* 21: 408-423. [pdf](#)

93. **Arnold, S. J., M. E. Pfrender, A. G. Jones. 2001.** The adaptive landscape as a conceptual bridge between micro- and macroevolution. *Genetica* 112/113: 9-32. [pdf](#)
94. **Jones, A. G., M. S. Blouin and S. J. Arnold. 2001.** Genetic variation in two populations of the rough-skinned newt (*Taricha granulosa*) assessed using novel tetranucleotide microsatellite loci. *Molecular Ecology Notes* 1: 293-296. [pdf](#)
95. **Arnold, S. J. and C. R. Peterson. 2002.** A model for optimal reaction norms: the case of the pregnant garter snake and her temperature sensitive embryos. *American Naturalist* 160: 306-316. [pdf](#)
96. **Jones, A. G., E. M. Adams and S. J. Arnold. 2002.** Topping off: a mechanism of sperm competition in a vertebrate. *Proceedings of the National Academy of Sciences U.S.A.* 99: 2078-2081. [pdf](#)
97. **Boake, C. R. B., S. J. Arnold, F. Breden, L. Meffert, M. Ptacek, M. Ritchie, B. Taylor, J. B. Wolf, and A. J. Moore. 2002.** Genetic tools for studying adaptation and the evolution of behavior. *American Naturalist* 160(Suppl.): S143-S159. [pdf](#)
98. **Jones, A. G., J. R. Arguello and S. J. Arnold. 2002.** Validation of Bateman's principles: a genetic study of sexual selection and mating patterns in newts. *Proceedings of the Royal Society of London B: Biological Sciences* 269: 2533-2539. [pdf](#)
99. **Arnold, S. J., M. E. Pfrender, A. G. Jones. 2002.** The adaptive landscape as a conceptual bridge between micro- and macroevolution. Pp. 9-32 *IN: A. P. Hendry and M. T. Kinnison (eds.). Microevolution – Rate, Pattern, Process.* Kluwer Academic Publishers, Dordrecht. [pdf](#)
100. **Bernardo, J. and S. J. Arnold. 2002.** *Gyrinophilus porphyriticus* (Spring Salamander). Male combat. *Herpetological Review* 33: 121-122. [pdf](#)
101. **Houck, L. D. and S. J. Arnold. 2003.** Courtship and mating behavior. Pp. 383-424 *IN: D. Sever (ed.), Reproductive Biology and Phylogeny of Urodela.* M/s Science Publications, Endfield, NH. [pdf](#)
102. **Jones, A. G., S. J. Arnold and R. Bürger. 2003.** Stability of the G-matrix in a population experiencing mutation, stabilizing selection, and genetic drift. *Evolution* 57: 1747-1760. [pdf](#)
103. **Arnold, S. J. 2003.** Too much natural history, or too little? *Animal Behaviour* 65: 1065-1068. [pdf](#)
104. **Arnold, S. J. 2003.** Performance surfaces and adaptive landscapes. *Integrative & Comparative Biology* 43: 367-375. [pdf](#)
105. **Jones, A. G., J. R. Arguello, and S. J. Arnold. 2004.** Molecular parentage analysis in experimental newt populations: the response of mating system measures to variation in the operational sex ratio. *American Naturalist* 164: 444-456. [pdf](#)



106. **Mead, L. S. and S. J. Arnold. 2004.** Quantitative genetic models of sexual selection. *Trends in Ecology and Evolution* 19: 264-271. [pdf](#)
107. **Watts R., C. Palmer, R. Feldhoff, P. Feldhoff, L. D. Houck, A. Jones, M. Pfrender, S. Rollmann, and S. J. Arnold. 2004.** Stabilizing selection on behavior and morphology masks positive selection on the signal in a salamander pheromone signaling complex. *Molecular Biology & Evolution* 21: 1032-1041. [pdf](#)
108. **Jones, A. G., S. J. Arnold, and R. Bürger. 2004.** Evolution and stability of the G-matrix on a landscape with a moving optimum. *Evolution* 58: 1639-1654. [pdf](#)
109. **DeGross, D. J., L. S. Mead, and S. J. Arnold. 2004.** Novel tetranucleotide microsatellite markers from the Del Norte Salamander (*Plethodon elongatus*) with applications to its sister species the Siskiyou Mtn. Salamander (*P. stormi*). *Molecular Ecology Notes* 4: 352-354. [pdf](#)
110. **Adams, E. M., A. G. Jones, and S. J. Arnold. 2005.** Multiple paternity in a natural population of a salamander with long-term sperm storage. *Molecular Ecology* 14: 1803-1810. [pdf](#)
111. **Palmer, C., R. A. Watts, R. Gregg, M. McCall, L. D. Houck, R. Highton, and S. J. Arnold. 2005.** Lineage-specific differences in evolutionary mode in a salamander courtship pheromone. *Molecular Biology & Evolution* 22: 2243-2256. [pdf](#)
112. **Manier, M. K. and S. J. Arnold. 2005.** Population genetic analysis identifies source-sink dynamics for two sympatric garter snake species (*Thamnophis elegans* and *T. sirtalis*). *Molecular Ecology* 14: 3965-3976. [pdf](#)
113. **O'Donnell, R. P. and S. J. Arnold. 2005.** Evidence for selection on thermoregulation: effects of temperature on duration of pregnancy and embryo mortality in the garter snake *Thamnophis elegans*. *Copeia* 2005: 929-933. [pdf](#)
114. **Arnold, S. J. 2005.** The ultimate causes of phenotypic integration: lost in translation. (Book Review). *Evolution* 59: 2059-2061. [pdf](#)
115. **Manier, M. K. and S. J. Arnold. 2006.** Ecological correlates of population genetic structure: a comparative approach using a vertebrate metacommunity. *Proceedings of the Royal Society of London B: Biological Sciences* 273: 3001-3009. [pdf](#)
116. **Estes, S. and S. J. Arnold. 2007.** Resolving the paradox of stasis: models with stabilizing selection explain evolutionary divergence on all timescales. *American Naturalist* 169: 227-244. [pdf supplementary material.](#)
117. **Palmer, C. A., R. A. Watts, L. D. Houck, A. Picard and S. J. Arnold. 2007.** Evolutionary replacement of components in a salamander pheromone signaling complex: more evidence for phenotypic-molecular decoupling. *Evolution* 61: 202-215. [pdf](#)

118. **Houck, L. D., C. A. Palmer, R. A. Watts, S. J. Arnold, P. W. Feldhoff and R. C. Feldhoff. 2007.** A new vertebrate courtship pheromone, PMF, affects female receptivity in a terrestrial salamander. *Animal Behaviour* 73: 315-320. [pdf](#)
119. **Houck, L. D., L. S. Mead, R. A. Watts, S. J. Arnold, P. W. Feldhoff and R. C. Feldhoff. 2007.** A candidate vertebrate pheromone, SPF, increases female receptivity in a salamander. Pp. 213-221 *IN: J. Hurst, R. Beynon, and D. Muller-Schwarze (eds.), Chemical Signals in Vertebrates 11.* [pdf](#)
120. **Sparkman, A. M., S. J. Arnold and A. M. Bronikowski. 2007.** An empirical test of evolutionary theories for reproductive senescence and reproductive effort in the garter snake *Thamnophis elegans*. *Proceedings of the Royal Society of London B: Biological Sciences* 274: 943-950. [pdf](#)
121. **Manier, M. K., C. M. Seyler, and S. J. Arnold. 2007.** Adaptive divergence within and between ecotypes of the terrestrial garter snake, *Thamnophis elegans*, assessed with Fst-Qst comparisons. *Journal of Evolutionary Biology* 20: 1705-1719. [pdf](#) [Figure 1a](#) [Figure 1b](#) [Appendix S1](#) [Appendix S2](#)
122. **Jones, A. G., S. J. Arnold and R. Bürger. 2007.** The mutation matrix and the evolution of evolvability. *Evolution* 61: 727-745. [pdf](#)
123. **Palmer, C. A., D. M. Hollis, R. A. Watts, L. D. Houck, M. A. McCall, R. G. Gregg and S. J. Arnold. 2007.** Plethodontid modulating factor (PMF), a hypervariable salamander courtship pheromone in the three-finger protein superfamily. *FEBS Journal* 274: 2300-2310. [pdf](#)
124. **Hohenlohe, P. A. and S. J. Arnold. 2008.** MIPoD: a hypothesis-testing framework for microevolutionary inference from patterns of divergence. *American Naturalist* 171: 366-385. [pdf](#) [Appendix MIPoD software](#)
125. **Houck, L. D., R. A. Watts, S. J. Arnold, K. E. Bowen, K. M. Kiemnec, H. A. Godwin, P. W. Feldhoff and Richard C. Feldhoff. 2008.** A recombinant courtship pheromone affects sexual receptivity in a plethodontid salamander. *Chemical Senses* 33: 623-631. [pdf](#)
126. **Stinchcombe, J. R., A. F. Agrawal, P. A. Hohenlohe, S. J. Arnold, and M. W. Blows. 2008.** Estimating nonlinear selection gradients using quadratic regression coefficients: double or nothing? *Evolution* 62: 2435-2440. [pdf](#)
127. **Arnold, S. J., R. Bürger, P. A. Hohenlohe, B. C. Ajie and A. G. Jones. 2008.** Understanding the evolution and stability of the G-matrix. *Evolution* 62: 2451-2461. [pdf](#) [spreadsheet](#)
128. **Kiemnec-Tyburczy, K. M., R. A. Watts, R. G. Gregg, D. von Borstel, and S. J. Arnold. 2009.** Evolutionary shifts in courtship pheromone composition revealed by EST analysis of plethodontid salamander mental glands. *Gene* 432:75-81. [pdf](#)

129. **Uyeda, J. C., S. J. Arnold, P. A. Hohenlohe, and L. S. Mead. 2009.** Drift promotes speciation by sexual selection. *Evolution* 63: 583-594. [pdf](#) [Explications and simulation run examples Supplementary appendix and tables](#) [Errata](#)
130. **Arnold, S. J. 2009.** Russell Lande. Pp. 675-676, *IN: M. J. Ruse and J. Travis (eds.), Evolution, the First Four Billion Years*, Harvard University Press, Cambridge, MA. [pdf](#)
131. **Palmer, C.A., A. Picard, R. A. Watts, L. D. Houck and S. J. Arnold. 2010.** Rapid evolution of Plethodontid Modulating Factor (PMF), a hypervariable salamander courtship pheromone, is driven by positive selection. *Journal of Molecular Evolution* 70: 427-440. [pdf](#)
132. **Barker, B. S., S. J. Arnold, and P. C. Phillips. 2010.** A test of the conjecture that G-matrices are more stable than B-matrices. *Evolution* 64: 2601-2613. [pdf](#)
133. **Hohenlohe, P. A. and S. J. Arnold. 2010.** Dimensionality of mate choice, sexual isolation and speciation. *Proceedings of the National Academy of Sciences U.S.A.* 107: 16583-16588. [pdf](#) [Supplementary information](#)
134. **Kiemiec-Tyburczy, K. M., R. A. Watts, and S. J. Arnold. 2011.** Characterization of two putative cytokine receptors, gp130 and ciliary neutrophilic factor receptor, from terrestrial salamanders. *Genes & Genetic Systems* 86: 131-137. [pdf](#)
135. **Uyeda, J. C., T. F. Hansen, S. J. Arnold, and J. Pienaar. 2011.** The million-year wait for macroevolutionary bursts. *Proceedings of the National Academy of Sciences U.S.A.* 108: 15908-15913. [pdf](#) [Supplementary information](#)
136. **Miller, D. A., W. R. Clark, S. J. Arnold, and A. M. Bronikowski. 2011.** Stochastic population dynamics and life-history evolution in the western terrestrial garter snake. *Ecology* 92: 1658-1671. [pdf](#)
137. **Kiemiec-Tyburczy, K. M., S. K. Woodley, R. A. Watts, S. J. Arnold, and L. D. Houck. 2011.** Expression of vomeronasal receptors and related signaling molecules in the nasal cavity of a caudate amphibian (*Plethodon shermani*). *Chemical Senses* doi: 10.1093/chemse/bjr105. [pdf](#)
138. **Highton, R., A. P. Hastings, C. A. Palmer, R. A. Watts, C. A. Hass, M. Culver, and S. J. Arnold. 2012.** Concurrent speciation in the Eastern Woodland Salamanders (genus *Plethodon*): DNA sequences of the complete albumin and partial 12s mitochondrial genes. *Molecular Phylogenetics & Evolution* 63: 278-290. [pdf](#)
139. **Jones, A. G., S. J. Arnold, R. Bürger, P. A. Hohenlohe, and J. C. Uyeda. 2012.** The effects of stochastic and episodic movement of the optimum on the evolution of the G-matrix and the response of the trait mean to selection. *Journal of Evolutionary Biology* 25: 2210-2231. [pdf](#)
140. **Losos, J. B., S. J. Arnold, G. Bejerano, E.D. Brodie III, D. Hibbett, H. E. Hoekstra, D. P. Mindell, A. Monteiro, C. Moritz, H. A. Orr, D. A. Petrov, S. S. Renner, R. E. Ricklefs, P.**

**S. Soltis, and T. L. Turner. 2013.** Evolutionary biology for the 21<sup>st</sup> century. PLOS Biology 11(1): e1001466. doi:10.1371/journal.pbio.1001466. [pdf](#) [Supporting Information](#)

141. **Sparkman, A. M., J. G. Billings, D. von Borstel, A. M. Bronikowski, and S. J. Arnold. 2013.** Avian predation and the evolution of life-histories in the garter snake *Thamnophis elegans*. American Midland Naturalist 170: 66-85. [pdf](#) [Supplementary Information](#)

142. **Friesen, C. R., R. T. Mason, S. J. Arnold, and S. R. Estes. 2013.** Patterns of sperm use in two populations of Red-sided Garter Snake (*Thamnophis sirtalis parietalis*) with long-term female sperm storage. Canadian Journal of Zoology 92: 33-40. [pdf](#)

143. **Arnold, S. J. 2014.** Phenotypic evolution: the ongoing synthesis. The American Naturalist 183:729-746. [pdf](#) [Appendix](#)

144. **Jones, A. G., R. Bürger, and S. J. Arnold. 2014.** Epistasis and natural selection shape the mutational architecture of complex traits. Nature Communications DOI: 10.1038/ncomms4709. [pdf](#) [Supplementary Information](#)

145. **Wilburn, D. B., S. L. Eddy, A. J. Chouinard, S. J. Arnold, R. C. Feldhoff, and L. D. Houck. 2015.** Pheromone isoform composition differentially affects female behaviour in the red-legged salamander, *Plethodon shermani*. Animal Behaviour 100:1-7. [pdf](#)

146. **Arnold, S. J. and L. D. Houck. 2016.** Can the Fisher-Lande process account for birds-of-paradise and other sexual radiations? The American Naturalist 187:717-735. [pdf](#) [Supplemental figures ppt](#)

147. **Pierson, T. W., S. J. Arnold, M. K. Hamed, W. Lattea, and E. T. Carter. 2016.** Courtship behavior of the Yonahlossee Salamander, *Plethodon yonahlossee*: observations in the field and laboratory. Herpetological Conservation & Biology (in press)

148. **Doten, K., G. W. Bury, and S. J. Arnold. 2016.** Courtship in the Torrent Salamander, *Rhyacotriton*, has an ancient and stable history. (in revision).

149. **Arnold, S. J., K. Kiemiec-Tyburczy, and L. D. Houck. 2017.** The evolution of courtship behavior in plethodontid salamanders: contrasting patterns of diversification and stasis. Herpetologica (in revision). [Notes & sketches](#)

150. **Wilburn, D. B., L. D. Houck, S. J. Arnold, P. W. Feldhoff, and R. C. Feldhoff. 2017.** 66 million years of gene duplication, co-option, and structural evolution in plethodontid courtship pheromones. Herpetologica (in revision).