

STEPHEN P. ELLNER

Department of Ecology and Evolutionary Biology
Corson Hall, Cornell University, Ithaca NY 14853-2701
(607) 254-4221 (voice), 255-8088 (FAX)
email: spe2@cornell.edu

170 Lexington Drive
Ithaca NY 14850

EDUCATION

- B.A.** 1975 University of California, Berkeley: Mathematics
Ph.D. 1982 Cornell University: Applied Mathematics, directed by Simon A. Levin
Postdoctoral 1984-85 with Lee Segel, Department of Applied Mathematics, Weizmann Institute

PROFESSIONAL EMPLOYMENT

- 2000 – present Department of Ecology and Evolutionary Biology, Cornell University.
Professor.
- 1986-2000 Biomathematics Graduate Program, Department of Statistics, North Carolina State University, Raleigh, NC. **Professor** 1994-2000, **Associate Professor** 1989-1994, **Assistant Professor** 1986-1989. **Director of Graduate Studies** for the Biomathematics Program, 1991-1995 and 1997.
- 1982-1986 Department of Mathematics and Program in Ecology, University of Tennessee, Knoxville. **Assistant Professor.**

Visiting positions at Department of Mathematics, University of Arizona, Tucson (1984); Institute of Advanced Studies, Hebrew University, Jerusalem (1990); Isaac Newton Institute for Mathematical Sciences, Cambridge, UK (1993); Biology Department, Kyushu University (1996); Section of Ecology and Systematics, Cornell University (1996).

AFFILIATIONS: Ecological Society of America, Society for Mathematical Biology, Society for Industrial and Applied Mathematics, American Society of Naturalists, American Statistical Association, AAAS.

RECENT APPOINTMENTS

- 2001-2005 Editorial Board, *Journal of Animal Ecology*
2001-2005 Editorial Board, *Evolutionary Ecology Research*
2000-2003 Editorial Board, *Journal of Theoretical Biology*
2003-present Editorial Board, *PloS Biology*
2006-present Editorial Board, *Ecology Letters*

CURRENT RESEARCH SUPPORT

1. NSF/NIH (Ecology of Infectious Diseases) "Origins and Spread of the Aspergillus - Gorgonian Coral Epizootic: Role of Climate and Environmental Facilitators" (co-PI with C. Drew Harvell and 4 others) Sept. 2003- August 2008.
2. Andrew W. Mellon Foundation "The evolutionary ecology of population dynamics: experimental and modeling approaches" (co-PI with Nelson G. Hairston, Jr.) 2003 – 2008.
3. James S. McDonnell Foundation. Contemporary rapid evolution: dynamics and persistence in complex ecological communities (co-PIs Nelson G. Hairston Jr., L.E. Jones and G.F Fussmann) 2008 - 2010.

BOOK

S.P. Ellner and J. Guckenheimer. 2006. *Dynamic Models in Biology*. Princeton University Press, Princeton NJ.

REFEREED PUBLICATIONS AND BOOK CHAPTERS**2008**

1. P. Kuss, M. Rees, H. H. Ægisdóttir, S.P. Ellner, and J. Stöcklin. Evolutionary demography of long-lived monocarpic perennials: a time-lagged Integral Projection Model. *Journal of Ecology*. Published online 27 March 2008. doi: 10.1111/j.1365-2745.2008.01374.x.
2. S.P. Ellner and E.E. Holmes. Commentary on Holmes et al. (2007): Resolving the debate on when extinction risk is predictable. *Ecology Letters* (to appear August 2008).

2007

1. S.P. Ellner, L.E. Jones, L.D. Mydlarz, and C.D. Harvell. Within-host disease ecology in the sea fan *Gorgonia ventalina*: modeling the spatial immunodynamics of a coral-pathogen interaction. *American Naturalist* 170, pp. E143–E161.
2. T. Yoshida, S. P. Ellner, L. E. Jones, B. J. M. Bohannan, R. E. Lenski, N. G. Hairston Jr. 2007. Cryptic population dynamics: rapid evolution masks trophic interactions. *PloS Biology* 5: e235. doi:10.1371/journal.pbio.0050235
3. S.P. Ellner and M. Rees. Stochastic stable population growth in integral projection models. *Journal of Mathematical Biology* 54:227–256
4. L.E. Jones and S.P. Ellner. Effects of rapid prey evolution on predator-prey cycles. *Journal of Mathematical Biology* 55:541–573.
5. R. B. Aronson and S.P. Ellner. Biotic turnover events on coral reefs: a probabilistic approach. Pp. 61-84 in: *Geological Approaches to Coral Reef Ecology* (Ecological Studies vol. 192), R.B. Aronson (ed.). Springer, New York.
6. L. J. Moniz, E.G. Cooch, S.P. Ellner, J.D. Nichols and J.M. Nichols. Application of information theory methods to food web reconstruction. *Ecological Modelling* 208: 145-158.

2006

1. J.R. Rowell, S.P. Ellner, and H.K. Reeve. Why animals lie: how dishonesty and belief can coexist in a signaling system. *American Naturalist* 168: E180-E204.
2. S.P. Ellner and M. Rees. Integral projection models for species with complex demography. *American Naturalist* 167: 410-428.
3. T. Yoshida, L.E. Jones, S.P. Ellner, N.G. Hairston, Jr. Mechanisms for consumer diversity. *Nature* 439: E1-E2.
4. J.R. Meyer, Stephen P. Ellner, Nelson G. Hairston, Jr., Laura E. Jones, and Takehito Yoshida. Prey evolution on the time scale of predator–prey dynamics revealed by allele-specific quantitative PCR. *Proceedings of the National Academy of Sciences* 103: 10690–10695.

2005

1. B.E. Kendall, S.P. Ellner, E. McCauley, S.N. Wood, C.J. Briggs, W.W. Murdoch, and P. Turchin. Population cycles in the pine looper moth *Bupalus piniarius*: dynamical tests of mechanistic hypotheses. *Ecological Monographs* 75: 259–276
2. Gregor F. Fussman, Stephen P. Ellner, Nelson G. Hairston, Jr., Laura E. Jones, Kyle W. Shertzer and Takehito Yoshida. Ecological and evolutionary dynamics of experimental plankton communities. *Advances in Ecological Research* 37: 221-243.
3. N. G. Hairston, Jr., S. P. Ellner, M. A. Geber, T. Yoshida, and J. A. Fox. Rapid evolution and the convergence of ecological and evolutionary time. *Ecology Letters* 8: 1114-1127.
4. S.P. Ellner and P. Turchin. When can noise induce chaos and why does it matter: a critique. *Oikos* 111: 620-631.
5. P. Schliekelman, S. Ellner, and F. Gould. Pest control by genetic manipulation of sex ratio. *Journal of Economic Entomology* 98: 18-34.

2004

1. D. Z. Childs, M. Rees, K.E. Rose, P.J. Grubb, and S.P. Ellner. 2004. Evolution of size-dependent flowering in a variable environment: construction and analysis of a stochastic integral projection model. *Proceedings of the Royal Society of London Series B* 271: 425-434.
2. L.E. Jones and S.P. Ellner. Evolutionary tradeoff and equilibrium in an aquatic predator-prey system. *Bulletin of Mathematical Biology* 66: 1547-1573.
3. T.Y. Yoshida, N.G. Hairston, Jr., and S.P. Ellner. Evolutionary tradeoff between defence against grazing and competitive ability in a simple unicellular alga, *Chlorella vulgaris*. *Proceedings of the Royal Society of London Series B* 271: 1947 - 1953.
4. D. Harvell, Aronson R, Baron N, Connell J, Dobson A, Ellner S, Gerber L, Kim K, Kuris A, McCallum H, Lafferty K, McKay B, Porter J, Pascual M, Smith G, Sutherland K, Ward J. The rising tide of ocean diseases: unsolved problems and research priorities. *Frontiers in Ecology and the Environment* 2: 375-382.

2003

1. S.P. Ellner. When does parameter drift decrease the uncertainty in extinction risk estimates? *Ecology Letters* 6: 1039–1045
2. G. F. Fussmann, S.P. Ellner, and N.G. Hairston, Jr. Evolution as a critical component of plankton dynamics. *Proceedings of the Royal Society of London Series B* 270: 1015-1022.
3. S.P. Ellner and G.F. Fussmann. Effects of successional dynamics on metapopulation persistence. *Ecology*, 84: 882–889.
4. T. Yoshida, L.E. Jones, S.P. Ellner, G.F. Fussmann, and N. G. Hairston, Jr. Rapid evolution drives ecological dynamics in a predator-prey system. *Nature* 424: 303-306.
5. S.P. Ellner and J. Fieberg. Using PVA for management despite uncertainty: effects of habitat, hatcheries, and harvest on salmon. *Ecology* 84: 1359-1369.
6. D.Z. Childs, M. Rees, K.E. Rose, P.J. Grubb, and S. P. Ellner. Evolution of complex flowering strategies: an age and size-structured integral projection model approach. *Proceedings of the Royal Society of London Series B* 270: 1829-1838.
7. N. Thomson and S.P. Ellner Pair-edge approximation for heterogeneous lattice population models. *Theoretical Population Biology* 64: 271-280.

8. Turchin, P., S. N. Woods, S. P. Ellner, B. E. Kendall, W. W. Murdoch, A. Fischlin, J. Casas, E. McCauley, and C. J. Briggs. Dynamical effects of plant quality and parasitism on population cycles of larch budmoth. *Ecology* 84(5):1207-1214.

2002

1. S.P. Ellner, Y. Seifu, and Robert H. Smith. Fitting population models to time series data by gradient matching. *Ecology* 83: 2256-2270.
2. Shertzer, K.W. and S.P. Ellner. State-dependent energy allocation in variable environments: life history evolution of a rotifer. *Ecology* 83: 2181–2193.
3. Shertzer, K.W., S.P. Ellner, G.F. Fussmann, and N.G. Hairston, Jr. Predator-prey cycles in an aquatic microcosm: testing hypotheses of mechanism. *Journal of Animal Ecology* 71: 802–815.
4. S.P. Ellner, J. Fieberg, D. Ludwig, and C. Wilcox. Precision of population viability analysis. *Conservation Biology* 16: 258-261.
5. S.P. Ellner and Y. Seifu. Using spatial statistics to select model complexity. *Journal of Computational and Graphical Statistics* 11: 348-369.
6. Shertzer, K.W. and S.P. Ellner. Energy storage and the evolution of population dynamics. *Journal of Theoretical Biology*, 215, 183–200.
7. Morales, J.M. and S.P. Ellner. Scaling up animal movements in heterogeneous landscapes: the importance of behavior. *Ecology* 83: 2240-2247.

2001

1. S. P. Ellner, E McCauley, B E Kendall, C J. Briggs, P R. Hosseini, S N. Wood, A Janssen, M W. Sabelis, P Turchin R M. Nisbet, W W. Murdoch. Habitat structure and population persistence in an experimental community. *Nature* 412: 538-542.
2. S. P. Ellner. Pair approximation for lattice models with multiple interaction scales. *Journal of Theoretical Biology* 210: 435-447.
3. J. Fieberg and S. P. Ellner. Stochastic matrix models for conservation and management: a comparative review of methods. *Ecology Letters* 4: 244-266.
4. Schliekelman, P. and S.P. Ellner. Egg size evolution and energetic constraints on population dynamics. *Theoretical Population Biology* 60: 73-92.

2000

1. S.L. Peck, S.P. Ellner, and F. Gould. Varying migration and deme size and the feasibility of the shifting balance. *Evolution* 54: 324-327.
2. M.R. Easterling and S.P. Ellner. Dormancy strategies in a random environment: comparing structured and unstructured models. *Evolutionary Ecology Research* 2: 387-407.
3. S. P. Ellner. Defining chaos in real, noisy data: Lyapunov exponents and sensitive response to perturbations. Pp 1-32 in: Perry, J.N., Smith, R.H., Woiwod, I.P. & Morse, D. R. (eds.) *Chaos in Real Data: Analysis of Non-linear Dynamics from Short Ecological Time Series*. Kluwer Academic Publishers, Dordrecht.
4. P. Turchin and S. P. Ellner. Time-series modeling of population fluctuations. Pp. 33-48 in: Perry, J.N., Smith, R.H., Woiwod, I.P. & Morse, D. R. (eds.) *Chaos in Real Data: Analysis of Non-linear Dynamics from Short Ecological Time Series*. Kluwer Academic Publishers, Dordrecht.
5. R.H.Smith, S. Daniels, K.Simkiss, E.D. Bell, S. P. Ellner & B. Forrest. Blowflies as a case study in non-linear population dynamics. Pp. 137-172 In: Perry, J.N., Smith, R.H., Woiwod, I.P. & Morse, D.

- R. (eds.) *Chaos in Real Data: Analysis of Non-linear Dynamics from Short Ecological Time Series*. Kluwer Academic Publishers, Dordrecht.
6. C. Jost and S. P. Ellner. Testing for predator dependence in predator-prey dynamics: a nonparametric approach. *Proceedings of the Royal Society of London Series B: Biological Sciences* 267: 1611 – 1620.
 7. M. Pascual, X. Rodo, S.P.Ellner, R. Colwell, and M.J. Bouma. Cholera dynamics and the El Niño-Southern Oscillation. *Science* 289: 1766-1769.
 8. J. Fieberg and S.P. Ellner. When is it meaningful to estimate an extinction probability? *Ecology* 81: 2040–2047.
 9. P. Turchin and S.P. Ellner. Living on the edge of chaos: population dynamics of Fennoscandian voles. *Ecology* 81: 3099–3116.
 10. M. Pascual and S.P. Ellner. Linking ecological patterns to environmental forcing via nonlinear time series modeling. *Ecology* 81: 2767–2780.
 11. M. R. Easterling, S.P. Ellner, and P. Dixon. Size-specific sensitivity: applying a new structured population model. *Ecology* 81: 694-708.
 12. G. V. Bobashev, S. P. Ellner, D. W. Nychka, and B. Grenfell. Reconstruction of susceptible and recruitment dynamics from measles epidemic data. *Mathematical Population Studies* 8: 1-29.
 13. G. Fussmann, S.P. Ellner, K.W. Shertzer, and N.G. Hairston, Jr. Crossing the Hopf bifurcation in a live predator-prey system. *Science* 290: 1358-1360.
 14. E. McCauley, B. Kendall, A. Janssen, S. Wood, W. Murdoch, P. Hosseini, C. Briggs, S. P. Ellner, R. Nisbet, M. Sabelis, and P. Turchin. Inferring colonization processes from population dynamics in spatially structured predator-prey systems. *Ecology* 81: 3350–3361.

1999

1. B.E. Kendall, C.J. Briggs, W. W. Murdoch, P. Turchin, S.P. Ellner, E. McCauley, R. Nisbet, and S.N. Wood. Why do populations cycle? a synthesis of statistical and mechanistic modeling approaches. *Ecology* 80: 1789-1805.
2. S. Peck, F. Gould, and S.P. Ellner. The spread of resistance in spatially extended regions of transgenic cotton: implications for the management of *Heliothis virescens* (Lepidoptera: Noctuidae). *Journal of Economic Entomology* 92: 1-16.
3. S. P. Ellner, N.G. Hairston, Jr., C.M. Kearns, and D. Babaï. The roles of fluctuating selection and long-term diapause in microevolution of diapause timing in a freshwater copepod. *Evolution* 53: 111-122.

1998

1. S. P. Ellner, A. Sasaki, Y. Haraguchi, H. Matsuda. Speed of invasion in lattice population models: pair-edge approximation. *J. Mathematical Biology* 36: 469-484.
2. S. P. Ellner, B. A. Bailey, G. V. Bobashev, A. R. Gallant, B. T. Grenfell, and D.W. Nychka. Noise and nonlinearity in measles epidemics: combining mechanistic and statistical approaches to population modeling. *American Naturalist* 151: 425-440.
3. S. Peck, S. P. Ellner, and F. Gould. A spatially explicit stochastic model demonstrates the feasibility of phase III of Wright's shifting balance. *Evolution* 52: 1834-1839.
4. D. Nychka, P.D. Haaland, M. O'Connell, and S. Ellner. FUNFITS, data analysis and statistical tools for estimating functions. Pp. 159-179 in: D. Nychka, W.W. Piegorsch, and L.H. Cox (eds.) *Case Studies in Environmental Statistics* (Lecture Notes in Statistics vol. 132). Springer-Verlag, NY.

5. S. P. Ellner, N. G. Hairston, Jr, and Dariouche Babaï. Long-term diapause and spreading of risk across the life cycle. *Advances in Limnology (Archiv fuer Hydrobiologie Special Issues)* vol. 52, pp. 297-312.

1997

1. B. A. Bailey, S. Ellner, and D.W. Nychka. Chaos with confidence: asymptotics and applications of Local Lyapunov Exponents. pp. 115-133 in: C. D. Cutler and D. T. Kaplan (eds.) *Nonlinear Dynamics and Time Series: Building a Bridge Between the Natural and Statistical Sciences*. Fields Institute Communications, vol 110. American Mathematical Society, Providence RI.
2. S. Peck. and S. Ellner. Effects of economic thresholds on the development of pesticide resistance in a regional setting. *American Naturalist* 149: 43-63.
3. S.P. Ellner, B.E. Kendall, S.N. Wood, E. McCauley, and C.J. Briggs. Inferring mechanism from time-series data: delay differential equations. *Physica D* 110: 182-194.
4. A. Sasaki and S.P. Ellner, Quantitative genetic variance maintained by fluctuating selection with overlapping generations: variance components and covariances. *Evolution* 51: 682-696.
5. S. Ellner. You bet your life: life-history strategies in fluctuating environments. pp. 3-24 in: H.G. Othmer, F. R. Adler, M.A. Lewis and J.C. Dallon (eds.) *Case Studies in Mathematical Modeling: Ecology, Physiology, and Cell Biology*. Prentice-Hall, NJ.

1996

1. L. A. Real, D.D. Weigmann, T.A. Capone, and S. Ellner, Some distinguishing features of models of search behavior and mate choice. *American Naturalist* 147: 188-204.
2. S. Ellner, A. Neori, M.D. Krom, K.Tsai, and M.R. Easterling. Simulation model of recirculating mariculture with seaweed biofilter: development and experimental tests of the model. *Aquaculture* 143: 167-184.
3. S. Ellner. Environmental fluctuations and the maintenance of genetic diversity in age- or stage-structured populations. *Bulletin of Mathematical Biology* 58: 103-129.
4. S. Ellner and A. Sasaki. Patterns of genetic polymorphism maintained by fluctuating selection with overlapping generations. *Theoretical Population Biology* 50, 31-65.
5. A. Neori, M.D. Krom, S.P. Ellner, C.E. Boyd, D. Popper, R. Rabinovitch, P.J. Davidson, O.Dvir, D. Zuber, M. Ucko, D. Angel and H. Gordin. Seaweed biofilters as regulators of water quality in integrated fish-seaweed culture units. *Aquaculture* 141: 183-199.
6. S. Little, S. Ellner, M. Pascual, M. Neubert, D. Kaplan, T. Sauer, H. Caswell, and A. Solow. Detecting nonlinear dynamics in spatio-temporal systems: examples from ecological models. *Physica D* 96: 321-333.
7. N.G. Hairston, Jr. , S. Ellner, and C.M. Kearns, Overlapping generations: the storage effect and the maintenance of biotic diversity. pp. 109-145 in O. E. Rhodes, R. K. Chesser, and M. H. Smith (eds.) *Population Dynamics in Ecological Space and Time*. University of Chicago Press.
8. N.G. Hairston, Jr., C.M. Kearns, and S. Ellner. Phenotypic variation in a zooplankton egg bank. *Ecology* 77: 2382-2392.

1995 and earlier

1. Shmida and S. Ellner, 1981. Why are adaptations for long-range seed dispersal rare in desert plants? *Oecologia* 51: 133-144.
2. A. Shmida and S. Ellner, 1983. Seed dispersal on pastoral grazers in open Mediterranean chaparral, Israel. *Israel J. Botany* 32: 147-159.
3. S. Ellner, 1984. Asymptotic behavior of some stochastic difference equation population models. *J. Mathematical Biology* 19: 169-200.

4. S. Ellner and C. A. Beuchat, 1984. A model of optimal thermoregulation during gestation by *Sceloporus jarrovi*, a live-bearing lizard. pp. 15-28 in: S. A. Levin and T. G. Hallam, eds. *Mathematical Ecology. Proceedings, Trieste 1982 (Lecture Notes in Biomathematics Volume 54)*. Springer-Verlag.
5. A. Shmida and S. Ellner, 1984. Coexistence of plant species with similar niches. *Vegetatio* 58: 29-55.
6. S. Ellner and A. Shmida, 1984. Seed dispersal in relation to habitat in the genus *Picris* (Compositae). *Israel J. Botany* 33: 25-39 .
7. S. Ellner, 1985. ESS germination strategies in randomly varying environments. I. Logistic type models. *Theoretical Population Biology* 28: 50-79.
8. S. Ellner, 1985. ESS germination strategies in randomly varying environments. II. Reciprocal Yield Law Models. *Theoretical Population Biology* 28: 80-116.
9. S. Ellner, 1985. The accuracy of Bartlett's small-fluctuation approximation for stochastic-difference-equation population models. *Mathematical Biosciences* 74: 233-246.
10. S. Ellner, 1986. Germination dimorphisms and parent-offspring conflict in seed germination. *J. Theoretical Biology* 123: 173-185.
11. W. M. Schaffer, S. Ellner, and M. Kot, 1986. Effects of noise on some dynamical models in ecology. *J. Mathematical Biology* 24: 479-523.
12. C. A. Beuchat and S. Ellner, 1987. A quantitative test of life history theory: thermoregulation by a viviparous lizard. *Ecological Monographs* 57: 45-60.
13. S. Ellner, 1987. Alternate plant life history strategies and coexistence in randomly varying environments. *Vegetatio* 69: 199-208.
14. S. Ellner, 1987. Competition and dormancy: a reanalysis and review. *American Naturalist* 130, 798-803.
15. S. Ellner, 1988. Estimating attractor dimensions from limited data: a new method, with error-estimates. *Physics Letters A* 133, 128-133.
16. S. Ellner, M. D. Krom, and F. Brauer, 1988. Modeling and management for seawater fishponds. pp. 215-237 in: *Mathematical Ecology. Proceedings of the Autumn Course Research Seminars (T. G. Hallam, L. J. Gross, and S. A. Levin, eds.)* World Scientific, Singapore.
17. M.D. Krom, J. Erez, C.B. Porter, and S. Ellner, 1989. Phytoplankton nutrient uptake dynamics in earthen marine fishponds under winter and summer conditions. *Aquaculture* 76, 237-253.
18. P. L. Chesson and S. Ellner, 1989. Invasibility and stochastic boundedness in monotonic competition models. *J. Mathematical Biology* 27:117-138.
19. S. Ellner, 1989. Inferring the causes of population fluctuations. pp. 286-307 in: *Mathematical Approaches to Problems in Resource Management and Epidemiology (C. Castillo-Chavez, S.A. Levin, and C.A. Shoemaker, eds.)*, Lecture Notes in Biomathematics vol. 81, Springer-Verlag.
20. S. Ellner, 1989. Convergence to stationary distributions in two-species stochastic competition models. *J. Mathematical Biology* 27: 451-462.
21. S. Ellner and L. Real, 1989. Optimal foraging models for stochastic environments: are we missing the point? *Comments on Theoretical Biology* 1: 122-158.
22. S. Ellner and A. Shmida, 1990. An evolutionary game theory model for risk-taking (abstract). pp. 377-379 in: T. Ichiishi, A. Neyman, and Y. Tauman (eds.), *Game Theory and Applications*. Academic Press, New York.
23. L. Real, S. Ellner, and L.D. Harder, 1990. Short-term energy maximization and risk-aversion in bumblebees: a reply to Possingham et. al. *Ecology* 71: 1625-1628.

24. S. Ellner, A.R. Gallant, D. McCaffrey, and D. Nychka, 1991. Convergence rates and data requirements for Jacobian-based estimates of Lyapunov exponents from data. *Physics Letters A* 153, 357-363.
25. Y. Lubin, M.Kotzman, and S. Ellner 1991. Ontogenetic and seasonal changes in webs and websites of the desert widow spider, *Latrodectus revivensis*. *J. Arachnology* 19:40-48.
26. S. Ellner, 1991. Detecting low-dimensional chaos in population dynamics data: a critical review. pp. 63-90 in: J. Logan and F. Hain (eds.), *Chaos and Insect Ecology*. VPI & SU, Charlottesville, VA.
27. D.W. Nychka, S. Ellner, A.R.Gallant, & D. McCaffrey. 1992. Finding chaos in noisy systems (with discussion). *J. Royal Stat. Soc. Series B* 54, 399-426.
28. D. McCaffrey, S. Ellner, A.R. Gallant, and D. Nychka, 1992. Estimating the Lyapunov exponent of a chaotic system with nonparametric regression. *J. Amer. Stat. Assoc.* 87: 682-695.
29. M. E. Cochran and S. Ellner, 1992. Simple methods for calculating age-specific life history parameters from stage-structured models. *Ecological Monographs* 62: 345-364.
30. Peleg, B., A. Shmida, and S. Ellner. 1992. Foraging graphs: constraints on matching between bees and flowers in a two-sided pollination market. *J. Theoretical Biology* 157: 191-201.
31. Real, L.A. and S. Ellner. 1992. Life history evolution in stochastic environments: a graphical mean-variance approach. *Ecology* 73: 1227-1236.
32. L. Phillips, J. Brake, S. Ellner, and R. Oukama. 1992. A mathematical model for estimation of broiler egg weight loss from physical dimensions and air cell size during incubations. *Poultry Science* 71: 625-630.
33. R. Dukas and S. Ellner, 1993. Attention and the detection of prey by foragers. *Ecology* 74: 1337-1346.
34. Y. Lubin, S. Ellner, and M. Kotzman, 1993. Web relocation and habitat selection in a desert widow spider. *Ecology* 74: 1915-1928.
35. A. Hastings, C.L. Hom, S. Ellner, P. Turchin, and H.C.J. Godfray, 1993. Chaos in ecology: is Mother Nature a strange attractor? *Annual Reviews of Ecology and Systematics* 24: 1-33.
36. A. Neori, S.P. Ellner, C.E. Boyd, and M.D. Krom. 1993. The integration of seaweed biofilters with intensive fish ponds to improve water quality and recapture nutrients. pp. 603-607 in: G. A. Moshiri (ed.) *Constructed Wetlands for Water Quality Improvement*. Lewis Publishers, Boca Raton, Florida.
37. S. Ellner and N.G. Hairston, Jr., 1994. Role of overlapping generations in maintaining genetic variation in a fluctuating environment. *American Naturalist* 143: 403-417.
38. B. T. Grenfell, A. Kleczkowski, S. Ellner, and B. Bolker, 1994. Measles as a case study in nonlinear forecasting and chaos. *Philosophical Transactions of the Royal Society (London) A* 348: 515-532.
39. S. Ellner and P. Turchin, 1995. Chaos in a noisy world: new methods and evidence from time series analysis. *American Naturalist* 145: 343-375.
40. S. Ellner, A.R. Gallant, and J.Theiler, 1995. Detecting nonlinearity and chaos in epidemic data. pp. 229-247 in: *Epidemic Models: Their Structure and Relation to Data*, (ed. D. Mollison). Cambridge University Press, Cambridge, UK.
41. A. Sasaki and S. Ellner, 1995. The evolutionarily stable phenotype distribution in a random environment. *Evolution* 49: 337-350.
42. B. Grenfell, A. Kleczkowski, S. Ellner, and B. Bolker, 1995. Nonlinear forecasting and chaos in ecology and epidemiology: measles as a case study. pp. 321-345 in: H.Tong (ed.) *Chaos and Forecasting*. World Scientific, Singapore.

43. M.D. Krom, S. Ellner, J. van Rijn, and A. Neori, 1995. Nitrogen and phosphorus cycling in a prototype 'non-polluting' integrated mariculture system, Eilat, Israel. *Marine Ecology Progress Series* 118: 25-36.

PREVIOUS AWARDS AND RESEARCH GRANTS

- National Science Foundation (DEB Systematics and Population Biology) "Long term diapause and spreading of risk across the life cycle: testing predictions" (co-PI Nelson G. Hairston, Jr.) 1999 – 2003.
- Andrew W. Mellon Foundation, "Evaluating Complex Dynamics and Chaos in Natural Ecological Systems: Experimental, Statistical, and Modeling Approaches" (co-PI Nelson G. Hairston, Jr.), 1997-2003.
- NSF Grant DMS-9217866, "Estimation and inference for noisy nonlinear systems" (co-PI's D. Nychka and A. R. Gallant), 1993-1997.
- Japan Society for Promotion of Science, Visiting Research Fellowship (1996).
- NSF SGER Grant "Real population data for evaluating chaos detection methods" (co-PI Nelson G. Hairston, Jr.), 1995-1996.
- NSF Grant BSR-9118894 "The evolutionary dynamics of a dormant propagule pool" (co-PI Nelson G. Hairston, Jr.), 1992-1995.
- US-Israel BARD Grant IS-1634-89R, "Use of macroalgae to solve water quality problems in intensively cultured marine fishponds" (co-investigators A. Neori, M. Krom, and C. Boyd), 1990-1994.
- US-Israel Binational Science Foundation Grant 86-00092, "Optimal Dispersal in a Desert Widow Spider" (co-PI's Y. D. Lubin and B. Pinshow), 1987-1990.
- US-Israel BSF, Bergmann Memorial Research Award (1987).
- NC State Biomedical Research Support Grant RR7071 (1986-1987).
- BARD research project I-626-83, co-investigator (1986).
- University of Tennessee Faculty Research Award (1982-1983).
- NSF Grant MCS82-01682 (1982-1983).

INVITED LECTURES (previous 10 years)

2008

- Department of Mathematics, University of Nebraska, Lincoln.
- School of Biological Sciences, University of Nebraska, Lincoln.
- Department of Biology, McMaster University, Hamilton ON, Canada
- Cornell Summer School on Probability, Ithaca NY

2007

- National Center for Ecological Analysis and Synthesis, Santa Barbara
- Workshop on Statistical Methods for Modeling Dynamic Systems, Le Centre de recherches mathématiques, University of Montreal, Canada.
- Department of Biology, University of Rochester, Rochester NY
- Department of Biology, Emory University, Atlanta GA.

2006

- Department of Ecology, Evolution, and Organismal Biology, Iowa State University
- Symposium on Computational Research, Miami University, Oxford Ohio
- SUNY Stony Brook, Marine Sciences Center.

2005

- SIAM Conference on Applications of Dynamical Systems (minisymposium)
- Ecological Society of America Annual Meeting
- Department of Ecology and Evolutionary Biology, University of Michigan

2004

- Department of Biology, Penn State University

2003

- Ecological Society of America Annual Meeting
- University of Connecticut, Department of Ecology and Evolutionary Biology

2002

- First Conference on Life Sciences, Society for Industrial and Applied Mathematics, Boston MA
- University of Toronto, Department of Zoology
- Society for Mathematical Biology Annual Meeting, Knoxville TN

2001

- UC Davis, Institute for Theoretical Dynamics
- University of Miami, Department of Biology
- University of Miami, Department of Mathematics

2000

- NIH Short Course on Mathematics of Biocomplexity, University of Tennessee Knoxville (8 lectures)

1999

- British Ecological Society, Leicester, UK.
- AAAS annual meeting, Anaheim, CA
- University of Chicago, Department of Ecology and Evolutionary Biology
- UC Santa Cruz, Department of Biology
- Institute for Mathematics and its Applications, Minneapolis MN

1998

- Dynamics Days 1998, UNC Chapel Hill
- Duke University, Plant Ecology Seminar.

OTHER PROFESSIONAL ACTIVITIES

- Cornell service: Director of Undergraduate Studies for Computational Biology (2006-2009), Center for Applied Mathematics Colloquium Committee (2000-01), FCI Subcommittee on Computational Biology (2000-01), FCI Subcommittee on Computational Science and Engineering (2000-01), Transition Committee for Department of Biostatistics and Computational Biology (2001-02).
- Current editorial boards: *Ecology Letters* (2006→) *PLoS Biology* (2003→),
- Past editorial boards: *Journal of Animal Ecology* (2001→2005), *Evolutionary Ecology Research* (2001→2005), *Journal of Theoretical Biology* (2000→2003), *Theoretical Population Biology* (1989-2000), *Ecology/Ecological Monographs* (1994-97).
- Member of Ecological Society of America, Society for Mathematical Biology American Society of Naturalists, Society for Industrial and Applied Mathematics, American Statistical Association, AAAS.

- Manuscript reviews for *Science*, *Nature*, *PNAS*, *American Naturalist*, *Ecology*, *Journal of Animal Ecology*, *Proc. Royal Society B*, *Biometrics*, *Journal of Mathematical Biology*, *Bulletin of Mathematical Biology*, *Theoretical Population Biology*, and others.
- Grant proposal reviews for NSF, USDA, NSERC (UK and Canada), Israel Science Foundation, and other agencies.

Previous activities:

- Organizing committee, SIAM Conference on Life Sciences/Society for Mathematical Biology annual meeting, August 2006.
- Organizing and program committee, Society for Mathematical Biology annual meeting, August 1997.
- Board of Directors, Society for Mathematical Biology 1996-1998.
- NSF panel in Systematic and Population Biology, 1993.

POSTDOCS SUPERVISED

- Lutz Becks (2006-present, jointly supervised by Nelson G. Hairston, Jr.)
- Takehito Yoshida (2001-2006, jointly supervised by Nelson G. Hairston, Jr.). Assistant Professor, University of Tokyo (beginning October 2006).
- Gregor Fussmann (1998-2001, jointly supervised by Nelson G. Hairston, Jr.). Currently Assistant Professor at the University of Potsdam, Germany.
- Yodit Seifu (1996-1997). Currently research statistician at Wyeth Laboratories.
- Dariouche Babaï (1994-1995). Left to Chemical Industry Institute of Toxicology, Research Triangle Park NC, Postdoctoral Research Associate. No longer active in science for medical reasons.
- Akira Sasaki (1992-1994). Currently Associate Professor, Department of Biology, Kyushu University, Fukuoka, Japan.

GRADUATE STUDENTS SUPERVISED (committee chair or **co-chair)

Patricia L. Phillips	Biomathematics, NCSU	MBMA* 1991
Gretchen Marcucci	Biomathematics, NCSU	M.Sc. 1991
Ana Henry	Biomathematics, NCSU	M.Sc. 1992
Michael Easterling	Biomathematics, NCSU	M.Sc. 1994; PhD 1998
George Hess	Biomathematics, NCSU	PhD 1994
Jack Weiss**	Biomathematics, NCSU	PhD 1995
Barbara Bailey**	Biomathematics, NCSU	PhD 1996
Steve Peck	Biomathematics, NCSU	PhD 1997
Georgiy Bobashev	Biomathematics, NCSU	PhD 1997
Daniel Fiscus	Ecology, NCSU	MSc 1997
Paul Schliekelman	Biomathematics, NCSU	MBMA* 1998, PhD 2000
John Fieberg	Biomathematics, NCSU	PhD 2000
Kyle Shertzer	Biomathematics, NCSU	PhD 2001
Jonathan Rowell	Biomathematics, NCSU	MBMA* 2000
	Applied Mathematics, Cornell	PhD 2003
Nikkala Thomson	Biomathematics, NCSU	MSc 2002
Takao Kumazawa	EEB, Cornell	MSc 2005
Virginia Pasour	Applied Mathematics, Cornell	PhD 2006
Paul Hurtado	Applied Mathematics, Cornell	PhD in progress
Rebecca Dore**	EEB, Cornell	PhD in progress
Michael Cortez	Applied Mathematics, Cornell	PhD in progress

**MBMA is the non-thesis Masters option from the NCSU Biomathematics Program.*

Current employment of past PhD students:

- Virginia Pasour, Mathematics Department, UCLA: postdoc.
- Jonathan Rowell, Department of Ecology and Evolutionary Biology, UT Knoxville: postdoc.
- Paul Schliekelman, Department of Statistics, University of Georgia: Assistant Professor.
- Kyle Shertzer, NOAA/NMFS Center for Coastal Fisheries and Habitat Research, Beaufort NC: Biometrician.
- John Fieberg, Minnesota Department of Natural Resources: Biometrician.
- Michael Easterling, Constella Group, Research Triangle Park, NC: Biomathematician.
- Barbara Bailey, Department of Mathematics, University of Colorado Denver: Visiting Assistant Professor.
- George Hess, Department of Forestry, North Carolina State University: Associate Professor

- Jack Weiss, Curriculum in Ecology, University of North Carolina, Chapel Hill: Senior Research Associate.
- Steve Peck, Department of Zoology, Brigham Young University, Assistant Professor.
- Georgiy Bobashev, Research Triangle Institute, Durham, North Carolina: Research Statistician.

GRADUATE STUDENT COMMITTEES

Carole Hom	Ecology, UT Knoxville	PhD 1986
Margaret Cochran	Ecology, UT Knoxville	PhD 1986
Katherine Potak	Biomathematics, NCSU	MBMA* 1992
Daniel McCaffrey	Statistics, NCSU	PhD 1991
Reuven Dukas	Zoology, NCSU	PhD 1991
Jane Molofsky	Botany, Duke	PhD 1992
Bernadette Roche	Biology, UNC-Chapel Hill	PhD 1993
Erran Seaman	Zoology, NCSU	PhD 1993
Selena Heppell	Zoology, NCSU	MSc 1993
Susan Wigley	Biomathematics, NCSU	MSc 1994
Ben Letcher	Zoology, NCSU	PhD 1994
Juan Morales	Zoology, NCSU	MSc 1999
David Hiebeler	Applied Mathematics, Cornell	Ph.D. 2001
Hinsby Quiroz-Caudillo	Microbiology, Cornell	PhD in progress
Rebecca Doyle-Morin	EEB, Cornell	PhD in progress
Kristi Arend	Natural Resources, Cornell	PhD in progress
Sam Arbesman	Computational Biology, Cornell	PhD in progress
Megan O'Rourke	EEB, Cornell	PhD in progress

**MBMA is the non-thesis Masters option from the NCSU Biomathematics Program.*