

STEPHEN P. ELLNER

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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, AAAS.

RECENT APPOINTMENTS

2003-2012 Editorial Board, *PloS Biology*
2006-2009 Editorial Board, *Ecology Letters*

CURRENT RESEARCH SUPPORT

- US National Science Foundation, Division of Environmental Biology. "Effects of Rapid Consumer Evolution on Community Dynamics: Predictions and Tests in a (nearly) Natural Food Web" (PIs Nelson G. Hairston, Jr., S.P. Ellner, G.Hooker, B.P. Lazzaro, G. Hooker). 2013-2015, \$200,000.
- US National Science Foundation, Division of Environmental Biology. "Integral Projection Models for Populations in Varying Environments - Construction and Analysis" (PIs S.P. Ellner, G. Hooker, P.B. Adler, R. Snyder). 2014-2017, \$760,000.

PUBLICATIONS 2005 AND LATER (earlier papers below)

2014

1. P.J. Hurtado, S.R. Hall and S.P. Ellner. 2014. Infectious disease in consumer populations: dynamic consequences of resource-mediated transmission and infectiousness. *Theoretical Ecology* 7:163–179,

doi: 10.1007/s12080-013-0208-2

2. M. Rees, D. Z. Childs and S. P. Ellner. 2014. Building integral projection models: a user's guide. *Journal of Animal Ecology* 83: 528–545. doi: 10.1111/1365-2656.12178
3. T. Hiltunen, N. G. Hairston Jr, G. Hooker, L.E. Jones and S. P. Ellner. 2014. A newly discovered role of evolution in previously published consumer-resource dynamics. *Ecology Letters*. Published online 12 May 2014. doi: 10.1111/ele.12291
4. B. D. Dalziel, K. Huang, J. L. Geoghegan, N. Arinaminpathy, E. J. Dubovi, B. T. Grenfell, S. P. Ellner, E. C. Holmes, C.R. Parrish. 2014. Contact heterogeneity, rather than transmission efficiency, limits the emergence and spread of canine influenza virus. *PLoS Pathogens* 10(10): e1004455. doi:10.1371/journal.ppat.1004455.
5. T. Hiltunen, S.P. Ellner, G. Hooker, L.E. Jones, and N.G. Hairston, Jr.. 2014. Eco-Evolutionary Dynamics in a Three-Species Food Web with Intraguild Predation: Intriguingly Complex. *Advances in Ecological Research* 50: 41-73.

2013

1. T. Hiltunen, , L.E. Jones, S.P. Ellner, and N.G. Hairston, Jr. 2013. Temporal dynamics of a simple community with intraguild predation: an experimental test. *Ecology* 94, 773-779.
2. C. Low, S. P. Ellner, and M. H. Holden. 2013. Optimal control and cold war dynamics between plant and herbivore. *American Naturalist* 182: E25-E39.
3. S.P. Ellner. 2013. Rapid evolution: from genes to communities, and back again? *Functional Ecology* 27: 1087-1099.
4. B. D. Dalziel, B. Pourbohloul and S. P. Ellner. 2013. Human mobility patterns predict divergent epidemic patterns among cities. *Proceedings of the Royal Society B* 280: 1766. doi: 10.1098/rspb.2013.0763.

2012

1. S.P. Ellner and S.J. Schreiber. 2012. Temporally variable dispersal and demography can accelerate the spread of invading species. *Theoretical Population Biology* 82: 283-298.
2. R. J. Tien and S.P. Ellner. 2012. Variable cost of prey defense and coevolution in predator–prey systems. *Ecological Monographs* 82: 491–504.
3. P. B. Adler, H. J. Dalglish, and S.P. Ellner. 2012. Forecasting plant community impacts of climate variability and change: when do competitive interactions matter? *Journal of Ecology* 100: 478-487.
4. L. Becks, S.P. Ellner, L.E. Jones, and N.G. Hairston, Jr. 2012. The functional genomics of an eco-evolutionary feedback loop: linking gene expression, trait evolution, and community dynamics. *Ecology Letters* 15: 492-501.
5. J.L. Williams, T.E.X. Miller, and S.P. Ellner. 2012. Avoiding unintentional eviction from integral projection models. *Ecology* 93: 2008-2014
6. M.H. Holden, S.P. Ellner, D-H Lee, J.P. Nyrop, and J.P. Sanderson. 2012. Designing an effective trap cropping strategy: the effects of attraction, retention and plant spatial distribution. *Journal of Applied Ecology* 49: 715-722.
7. E.G. Cooch, P.B. Conn, S.P. Ellner, A.Dobson, and K.H. Pollock. Disease dynamics in wild populations: modeling and estimation: a review. *Journal of Ornithology* 152 (Supplement 2): S485-S509.
8. S. P. Ellner. 2012. Comments on: Inference for size demography from point pattern data using Integral Projection Models. *Journal of Agricultural, Biological, and Environmental Statistics* 17: 682–689.

2011

1. S.P. Ellner, M.A. Geber, and N.G. Hairston, Jr. 2011. Does rapid evolution matter? Measuring the rate of contemporary evolution and its impacts on ecological dynamics *Ecology Letters* 14: 603–614.
2. J.F. Bruno, S. P. Ellner, I. Vu, K. Kim, and C. D. Harvell. 2011. Impacts of aspergillosis on sea fan coral demography: modeling a moving target. *Ecological Monographs* 81:123-139.
3. E. Jongejans, K. Shea, O. Skarpaas, D. Kelly, and S. P. Ellner. 2011. Importance of individual and environmental variation for invasive species spread: a spatial integral projection model. *Ecology* 92:86-97.
4. G. Hooker, S. P. Ellner, L. De Vargas Roditi and D. J. D. Earn. Parameterizing state–space models for infectious disease dynamics by generalized profiling: measles in Ontario. *Journal of the Royal Society Interface* 8: 961-974.
5. S.P. Ellner and L. Becks. Rapid prey evolution and the dynamics of two-predator food webs. *Theoretical Ecology* 4:133–152.

2010

1. L. Becks, S. P. Ellner, L. E. Jones, and N. G. Hairston, Jr. Reduction of adaptive genetic diversity radically alters eco-evolutionary community dynamics. *Ecology Letters* 13: 989 – 997.
2. P. B. Adler, S.P. Ellner and J. M. Levine. Coexistence of perennial plants: an embarrassment of niches. *Ecology Letters* 13: 1019-1029.
3. V.B. Pasour and S.P. Ellner. Computational and analytic perspectives on the drift paradox. *SIAM Journal on Applied Dynamical Systems* 9: 333-356.
4. J. Mao-Jones K.B. Ritchie, L.E. Jones and S.P. Ellner. How Microbial Community Composition Regulates Coral Disease Development. *PLoS Biol* 8(3):e1000345. doi:10.1371/journal.pbio.1000345
5. M.H. Cortez and S.P. Ellner. Understanding rapid evolution in predator-prey interactions using the theory of fast-slow dynamical systems. *American Naturalist* 176: E109–E127.

2009

1. L. E. Jones, L. Becks, S. P. Ellner, N. G. Hairston, Jr, T. Yoshida and G. Fussmann. Rapid contemporary evolution and clonal food web dynamics. *Philosophical Transactions of the Royal Society of London B* 364: 1579-1591.
2. M. Rees and S.P. Ellner. Integral projection models for populations in temporally varying environments. *Ecological Monographs* 79: 575-594.

2008

1. E. Benincà, J. Huisman, R. Heerkloss, K.D. Jöhnk, P. Branco, E.H. Van Nes, M. Scheffer, and S.P. Ellner. Chaos in a long-term experiment with a plankton community. *Nature* 451: 822-825.
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* 11: E1–E5. doi: 10.1111/j.1461-0248.2008.01211.x
3. 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*. 96: 821-832. doi: 10.1111/j.1365-2745.2008.01374.x

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. S.P. Ellner and J. Guckenheimer. 2006. *Dynamic Models in Biology*. Princeton University Press, Princeton NJ.
2. 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.
3. S.P. Ellner and M. Rees. Integral projection models for species with complex demography. *American Naturalist* 167: 410-428.
4. T. Yoshida, L.E. Jones, S.P. Ellner, N.G. Hairston, Jr. Mechanisms for consumer diversity. *Nature* 439: E1-E2.
5. 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.

INVITED TALKS (previous 10 years)

2013

- INTECOL 2013/British Ecological Society Annual Meeting, London UK (invited symposium talk)
- Department of Ecology & Evolutionary Biology, Princeton University.

2012

- Tansley Lecture (plenary), British Ecological Society Annual Meeting, Birmingham UK
- Conference on Mathematical Ecology, University of Nebraska, Lincoln

- Workshop on Integral Projection Models, Max Planck Institute for Demographic Research, Rostock, Germany
- Biology Department, Penn State University

2011

- Departments of Ecology and Evolution, UC Davis.
- Ecological Society of America Annual Meeting, Austin TX (invited symposium talk)

2010

- Mathematical Biology seminar, Departments of Biology and Mathematics, Georgia Tech.
- Mathematical Biosciences Institute, Ohio State

2009

- University of Utah, Department of Mathematics, Workshop on Building an Interdisciplinary Career in Mathematical Biology (plenary)
- Ecological Society of America Annual Meeting (invited symposium talk)
- Department of Natural Resources, Cornell University.
- First International Conference on Computational Sustainability, Cornell (plenary)

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 (plenary)

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 (invited minisymposium talk)
- Ecological Society of America Annual Meeting (invited symposium talk)
- Department of Ecology and Evolutionary Biology, University of Michigan

2004

- Department of Biology, Penn State University

OTHER PROFESSIONAL ACTIVITIES

- Cornell service: Director of Undergraduate Studies for Computational Biology (2006-2010), 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).
- Editorial boards: *PLoS Biology* (2003-2012), *Ecology Letters* (2006-2009), *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.

- 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*, *Journal of Agricultural Biological and Environmental Statistics*, 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.

PREVIOUS AWARDS AND RESEARCH GRANTS

- National Science Foundation "Rapid Evolution and the Dynamics of Complex Ecological Communities" (co-PIs Nelson G. Hairston Jr., L.E. Jones, and G.Hooker). 2008 - 2012.
- 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 - 2012.
- Andrew W. Mellon Foundation, "The evolutionary ecology of population dynamics: experimental and modeling approaches" (co-PI with Nelson G. Hairston, Jr.), 2004-2008.
- 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) 2003- 2009.
- National Science Foundation (DEB Systematics and Population Biology) "Long term diapause and spreading of risk across the life cycle: testing predictions" (co-PI with 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 with Nelson G. Hairston, Jr.), 1997-2003.
- NSF Grant DMS-9217866, "Estimation and inference for noisy nonlinear systems" (co-PIs 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-investigator with 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-PIs 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).

POSTDOCS SUPERVISED (and current or last known positions)

- Masato Yamamichi (2012-2014, jointly supervised by Nelson G. Hairston, Jr). Assistant Professor, Center for Ecological Research University of Kyoto.
- Candace Low (2010-2012), Adjunct Assistant Professor, San Francisco State University. .
- Teppo Hiltunen (2008-2011, jointly supervised by Nelson G. Hairston, Jr.). Postdoc, University of Helsinki, Finland
- Lutz Becks (2006-2008, jointly supervised by Nelson G. Hairston, Jr.). Emmy Noether research group leader, Max Plank Institute for Evolutionary Biology, Plön, Germany.
- Takehito Yoshida (2001-2006, jointly supervised by Nelson G. Hairston, Jr.). Associate Professor, University of Tokyo.
- Gregor Fussmann (1998-2001, jointly supervised by Nelson G. Hairston, Jr.). Associate Professor, McGill University, Montreal CA.
- Yodit Seifu (1996-1997). Research statistician, Wyeth Laboratories.
- Dariouche Babai (1994-1995). No longer active in science for medical reasons.
- Akira Sasaki (1992-1994). Professor, Graduate University for Advanced Studies (SOKENDAI), Hayama, 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
Rebecca Tien**	EEB, Cornell	PhD 2009
Paul Hurtado	Applied Mathematics, Cornell	PhD 2012
Michael Cortez**	Applied Mathematics, Cornell	PhD 2011
Ben Dalziel	EEB, Cornell	PhD 2014
Matthew Holden	Applied Mathematics, Cornell	PhD in progress
Hidetoshi Inamine	EEB, Cornell	PhD in progress
Collin Edwards	EEB, Cornell	PhD in progress

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

Current employment of past PhD students:

- Ben Dalziel: Department of Ecology and Evolutionary Biology, Princeton University: Postdoc
- Paul Hurtado, Department of Mathematics and Statistics, University of Nevada, Reno: Assistant Professor
- Michael Cortez, Department of Mathematics and Statistics, Utah State University: Assistant Professor.
- Rebecca Tien, Ohio State University: Researcher
- Virginia Pasour, US Army Research Office, Research Triangle Park NC: Program Officer for Mathematical Biology.
- Jonathan Rowell, Department of Mathematics and Statistics, UNC Greensboro: Assistant Professor
- Paul Schliekelman, Department of Statistics, University of Georgia: Associate Professor.
- Kyle Shertzer, NOAA/NMFS Center for Coastal Fisheries and Habitat Research, Beaufort NC: Leader of Population Dynamics and Sustainable Fisheries Branch.
- John Fieberg, Department of Fisheries, Wildlife and Conservation Biology, University of Minnesota: Assistant Professor
- Michael Easterling, Constella Group, Research Triangle Park, NC: Biomathematician.
- Barbara Bailey, Department of Mathematics and Statistics, San Diego State University: Associate Professor.
- Jack Weiss: deceased.
- Georgiy Bobashev, Research Triangle Institute, Durham, North Carolina: Senior Data Scientist.
- Steve Peck, Department of Biology, Brigham Young University, Associate Professor.
- George Hess, Department of Forestry, North Carolina State University: Professor

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 2008
Kristi Arend	Natural Resources, Cornell	PhD 2008
Sam Arbesman	Computational Biology, Cornell	PhD 2008
Rebecca Doyle-Morin	EEB, Cornell	PhD 2011
Michael Schmidt	Computational Biology, Cornell	PhD 2011
Joseph Simonis	EEB, Cornell	PhD 2012
Patrick Ayscue	Veterinary Medicine, Cornell	VMD/PhD in progress
Katherine Marchetto	EEB, Cornell	PhD in progress

* *non-thesis Masters, NCSU Biomathematics Program.*

PUBLICATIONS: 2004 and earlier

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.
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