MICHAEL G. NEUBERT
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EDUCATION

Ph. D. (1994)	Applied Mathematics University of Washington, Seattle, Washington Advisor: Prof. Mark Kot
M. S. (1990)	Applied Mathematics University of Washington, Seattle, Washington
Sc. B. (1988)	Applied Mathematics / Biology (magna cum laude) Brown University, Providence, Rhode Island

PROFESSIONAL EXPERIENCE

2015 – present	Senior Scientist, Biology Department Woods Hole Oceanographic Institution, Woods Hole, MA
2000 – 2015	Associate Scientist (with tenure since 2005), Biology Department Woods Hole Oceanographic Institution, Woods Hole, MA
2012 – 2013	Chair, Joint Committee for Biological Oceanography MIT/WHOI Joint Program in Oceanography and Applied Ocean Science and Engineering
2007 – 2012	Education Coordinator (J. Seward Johnson Chair) Biology Department, Woods Hole Oceanographic Institution Woods Hole, MA
1996 – 2000	Assistant Scientist, Biology Department Woods Hole Oceanographic Institution, Woods Hole, MA
1994 – 1996	Postdoctoral Scholar, Biology Department Woods Hole Oceanographic Institution, Woods Hole, MA Advisor: Hal Caswell
1990 – 1994	Research and Teaching Assistant, Dept. of Applied Mathematics University of Washington, Seattle, WA

HONORS, AWARDS & FELLOWSHIPS

2017	*Rollie Lamberson Medal*, Resource Modeling Association (with G. Herrera and H. V. Moeller) "Recognizes…each year the most outstanding paper [published in any journal] in natural resource modeling in the previous two years." *[Award to be officially announced in June 2017.]*
2014	*Arnold B. Arons Award for Excellence in Teaching, Advising and Mentoring*, Woods Hole Oceanographic Institution
2006	*Presidential Award*, American Society of Naturalists (with B. Fagan, M. Lewis, J. Apple and J. Bishop) This award is for the best paper published in *The American Naturalist* in 2005.
2004 – 2008	Fellow, Ocean Life Institute, Woods Hole Oceanographic Institution
2003 – 2005	Chair (2004-2005) & Vice-Chair (2003-2004), Theoretical Ecology Section, Ecological Society of America
1999 – 2001	Secretary, Theoretical Ecology Section, Ecological Society of America
1994 – 1996	Postdoctoral Award in Ocean Science and Engineering Woods Hole Oceanographic Institution, Woods Hole, MA
1994	Geophysical Fluid Dynamics Summer Fellowship Woods Hole Oceanographic Institution, Woods Hole, MA

PROFESSIONAL LEADERSHIP & SERVICE

Elected Offices

- Chair, Theoretical Ecology Section, Ecological Society of America (2004-2005).
- Vice-Chair, Theoretical Ecology Section, Ecological Society of America (2003-2004).
- Secretary, Theoretical Ecology Section, Ecological Society of America (1999-2001).

Editorial Boards

- Associate Editor, *The American Naturalist* (2008 – present).
- Associate Editor, *Natural Resource Modeling*, (2012 – present).
- Associate Editor, *Theoretical Ecology* (2014 – present).
- Associate Editor, *Faculty of 1000, Biology* (2010 – 2013).
- Associate Editor, *Ecology and Ecological Monographs* (2001 - 2005).

Government Agency Proposal Review Panels

- Panelist, National Science Foundation, Division of Environmental Biology, Population and Community Ecology, Full proposal Panel (2014, 2016).
- Panelist, National Science Foundation, Division of Environmental Biology, Population and Community Ecology Pre-proposal Panels (2012, 2013, 2014).
- Panelist, National Science Foundation, Division of Mathematical Sciences, Mathematical Biology Panel (2011, 2017).
- Panelist, National Institutes of Health/National Science Foundation, Ecology of Infectious Diseases Panel (2007, 2008, 2009).
- Panelist, National Science Foundation, Division of Environmental Biology, Ecology Panel (2004).

Scientific Meeting and Workshop Organization

- Scientific Advisory Committee, *Sixth International Conference on Mathematical Modeling and Analysis of Populations in Biological Systems*, University of Arizona, Tucson (2017).
- Co-Organizer (with Holly Moeller and Monica Granados) *Transcending Guilds: Mixotrophs and Omnivores as Regulators of Ecosystem Function*. Organized oral session at the Annual Meeting of the Ecological Society of America, Portland (2017).
- Co-Organizer (with Hal Caswell, Alison Shaw, and Tom Miller), *Sex-Structured Population Dynamics: Theoretical and Empirical Approaches*. Organized oral session at the Annual Meeting of the Ecological Society of America, Minneapolis (2013).
- Co-Organizer (with Jeanne Burns), *Spatial Spread of Invasive Species and Infectious Diseases: Theoretical and Empirical Advances*. Organized oral session, Annual Meeting of the Ecological Society of America, Austin (2011).
- Co-Organizer (with Alan Hastings), *Spatial Bioeconomic Theory for Fisheries Management and Conservation*. Symposium, International Marine Conservation Congress, Fairfax, Virginia (2009).
- Scientific Committee, *Modelling the Spread and Distribution of Invasive Forest Insects and Diseases.* Sponsored by the Canadian Forest Centre and MITACS. Fredericton, New Brunswick (2007).
- Co-Organizer (with H. Caswell), *Projecting Rates of Spread for Invasive Species*, a workshop at the Annual Meeting of the Ecological Society of America, San Jose, California (2007).
- Co-Organizer (with H. Caswell), *Projecting Rates of Spread for Invasive Species*, a workshop at the Annual Meeting of the Ecological Society of America, Memphis, Tennessee (2006).
- Co-Organizer (with J. Roughgarden and A. Dobson), *Symposium on Family Dynamics*. Ecological Society of America Annual Meeting, Portland, Oregon (2004).

- Co-Organizer (with H. Caswell), *A New Synthesis of Demography and Dispersal*, a working group at the National Center for Ecological Analysis and Synthesis, Santa Barbara, California (2000-2003).
- Co-Organizer (with H. Caswell), *Symposium on Demography and Dispersal*. Second International Conference on Mathematical Ecology, Alcala, Spain (2003).

Workshop participation

- Invited participant, *USDA/EPA Workshop: Risk Analysis for Invasive Species*, Las Cruces, NM (2001).
- Invited participant, *NSF, NSA, CIA, FBI Workshop: Approaches to Combat Terrorism (ACT): Opportunities for Basic Research*, Chantilly, VA (2002). Helped develop a report for the U.S. Intelligence Community on how basic research in the mathematical and physical sciences could be useful for combating terrorism.
- Invited lecturer and participant, *NSF, NIH Workshop: Accelerating Mathematical-Biological Linkages*, Bethesda, MD (2003). Lectured on the nature of collaborations between mathematicians and ecologists. Helped develop a report on ways that NSF and NIH could accelerate activity in this area.
- Invited participant, MAA, AAAS, *ASM Workshop: Meeting the Challenges: Education Across the Biological, Mathematical, and Computer Sciences*, Bethesda, MD (2003). Helped to develop a report on undergraduate mathematics education for science majors, particularly biologists.
- Invited participant, *NSF Workshop: Quantitative Environmental and Integrative Biology*, San Diego, CA (2003). Produced a report on the current state of "quantitative biology" and its future prospects.
- Invited participant, *AARMS-CRM Workshop on Sustainability of Aquatic Ecosystem Networks,* Fredericton, New Brunswick, Canada (2013).
- Invited participant, *National Socio-Environmental Synthesis Center Workshop on Seed Dispersal*, Annapolis, MD (2016).

Other service outside of WHOI

- Akira Okubo Prize Selection Committee, Society for Mathematical Biology (2014).
- Mercer Award Selection Committee, Ecological Society of America (2015 – 2016).

Service at WHOI

- WHOI Postdoctoral Scholar Selection Committee (2017 – present).
- WHOI Scientific Staff Executive Committee (2014 – 2016). Chair (2015-2016).
- Co-Chair, WHOI Biology Department Microbiology/Phytoplankton Ecology Search Committee (2015).
- Committee to review WHOI's Responsible Conduct of Research Policy (2010).

- MIT/WHOI Joint Committee for Biological Oceanography (2001-2013). This committee is responsible for administering the graduate program in biological oceanography.
- WHOI Biology Department Hiring Advisory Committee (2003 – 2006).
- WHOI Web Advisory Committee (2001 – 2003).
- WHOI Information Technology Advisory Committee (2001 – 2003).
- WHOI Summer Student Fellowship selection committee (1998, 1999, 2000).

Journal Peer Reviews

Deep Sea Research, Theoretical Population Biology, Journal of Mathematical Biology, Journal of Theoretical Biology, Bulletin of Mathematical Biology, American Naturalist, Ecological Applications, Ecology, Proceedings of the National Academy of Science, Mathematical Biosciences, Ecology Letters, *Theoretical Ecology, Natural Resources Modeling*.

Professional Societies

Current: Society for Mathematical Biology
American Society of Naturalists
Ecological Society of America
Resource Modeling Association

Previous: American Association for the Advancement of Science
Society for Industrial and Applied Mathematics
American Mathematical Society
Canadian Society for Applied and Industrial Mathematics

PUBLICATIONS

1 Sullivan, L. L., B. Li, T. E. X. Miller, M. G. Neubert, A. K. Shaw. 2017. Density dependence in demography and dispersal generates fluctuating invasion speeds. *Proceedings of the National Academy of Sciences of the USA*, in press.

2 Shaw, A. K., H. Kokko and M. G. Neubert. 2017. Sex differences and Allee effects shape the dynamics of sex-structured invasions. *Journal of Animal Ecology* doi:10.1111/1365-2656.12658.

3 Pascual, M., M. G. Neubert, J. L. Acuña, A. R. Solow, C. Dominguez-Carrió, J. Salvador, A. Olariaga, V. Fuentes. 2016. Environmental drivers of salp Thalia democratica population dynamics from in situ observations. *Marine Ecology Progress Series* **561**:189-201.

4 Hunter-Cevera, K. R., M. G. Neubert, R. J. Olson, A. R. Solow, A. Shalapyonok, and H. M. Sosik. 2016. Physiological and ecological drivers of early spring blooms of a coastal phytoplankter. *Science*, **354**(6310):326-329.

5 Moeller, H. V., E. Peltomaa, M. D. Johnson, and M. G. Neubert. 2016. Acquired phototrophy stabilizes coexistence and shapes intrinsic dynamics of an intraguild predator and its prey. *Ecology Letters* **19**(4):393-402.

6 Herrera, G. E., H. V. Moeller, and M. G. Neubert. 2016. High-seas fish wars generate marine reserves. *Proceedings of the National Academy of Sciences of the USA* **113**(14): 3767-3772.

7 Moeller, H. V. and M. G. Neubert. 2016. Multiple friends with benefits: an optimal mutualist management strategy? *American Naturalist* **187**(1):E1-E12.

8 Moberg, E. A., J. B. Kellner, and M. G. Neubert. 2015. Bioeconomics and biodiversity in harvested metacommunities: a patch-occupancy approach. *Ecosphere* **6**(11):246.

9 Moberg, E. A., E. Shyu, G. E. Herrera, S. Lenhart, Y. Lou, and M. G. Neubert. 2015. On the bioeconomics of marine reserves when dispersal evolves. *Natural Resource Modeling* **28**:456-474.

10 Bateman, A., M. G. Neubert, M. Krkošek, and M. A. Lewis. 2015. Generational spreading speed and the dynamics of population range expansion. *American Naturalist* **186**:362-375.

11 Moeller, H. V. and M. G. Neubert. 2015. Economically optimal marine reserves without spatial heterogeneity in a simple two-patch model. *Natural Resource Modeling* **28**:244-255.

12 Hunter-Cevera, K. R., M. G. Neubert, A. R. Solow, R. J. Olson, A. Shalapyonok and H. M. Sosik. 2014. Diel size distributions reveal seasonal growth dynamics of a coastal phytoplankter. *Proceedings of the National Academy of Sciences of the USA* **111**:9852-9857.

13 Moeller, H. V. and M. G. Neubert. 2013. Habitat damage, marine reserves, and the value of spatial management. *Ecological Applications* **23**:959-971.

14 Kot, M., M. A. Lewis and M. G. Neubert. 2012. Integrodifference equations. Pgs. 381-384 in, *Encyclopedia of Theoretical Ecology*, A. Hastings and L. Gross, Eds. University of California Press, Berkeley, CA.

15 Strasser, C. A., M. G. Neubert, H. Caswell and C. M. Hunter. 2012. Contributions of high- and low-quality patches to a metapopulation with stochastic disturbance. *Theoretical Ecology*, **5**:167-179.

16 Miller, T.E.X., A. K. Shaw, B. D. Inouye, and M. G. Neubert. 2011. Sex-biased dispersal and the speed of two-sex invasions. *American Naturalist*, **177**:549-561.

17 Caswell, H., M. G. Neubert, and C. M. Hunter. 2011. Demography and dispersal: invasion speeds and sensitivity analysis in periodic and stochastic environments. *Theoretical Ecology* **4**:407-421.

18 Costello, C. J., M. G. Neubert, S. A. Polasky and A. R. Solow. 2010. Bounded uncertainty and climate change economics. *Proceedings of the National Academy of Sciences of the USA* **107**: 8108-8110.

19 Goldberg, E. E., H. J. Lynch, M. G. Neubert, and W. F. Fagan. 2010. Effects of branching spatial structure and life history on the asymptotic growth rate of a population. *Theoretical Ecology*, **3**:137-152.

20 Neubert, M.G., H. Caswell and A. R. Solow. 2009. Detecting reactivity. *Ecology* **90**:2683-2688.

21 Joshi, H. R., G. E. Herrera, S. Lenhart, and M. G. Neubert. 2009. Optimal dynamic harvest of a mobile renewable resource. *Natural Resource Modeling* **22**:322-343.

22 Kot, M. and M. G. Neubert. 2008. Saddle-point approximations, integrodifference equations, and invasions. *Bulletin of Mathematical Biology* **70**:1790-1826.

23 Neubert, M. G. and G. Herrera. 2008. Triple benefits from spatial resource management. *Theoretical Ecology* **1**:5-12.

24 Klanjscek, T., R. M. Nisbet, H. Caswell and M. G. Neubert. 2007. A model for energetics and bioaccumulation in marine mammals with applications to the right whale. *Ecological Applications* **17**: 2233–2250.

25 Klepac, P., P. van den Driessche and M. G. Neubert. 2007. Dispersal delays, predator-prey stability, and the paradox of enrichment. *Theoretical Population Biology* **71**:436-444.

26 Fuchs, H. L., M. G. Neubert and L. S. Mullineaux. 2007. Effects of turbulence-mediated larval behavior on larval supply and settlement in tidal currents. *Limnology and Oceanography* **52**:1156-1165.

27 Rios-Soto, K. R., C. Castillo-Chavez, M. G. Neubert, E. S. Titi and A.-A.Yakubu. 2006. Epidemic spread in populations at demographic equilibrium. Contemporary Mathematics Vol. 410, *Mathematical Studies on Human Disease Dynamics: Emerging Paradigms and Challenges*. Editors: A. Gumel, C. Castillo-Chavez, R. E. Mickens, and D. P. Clemence. American Mathematical Society, Providence.

28 Klanjscek, T., H. Caswell, M. G. Neubert, and R. Nisbet. 2006. Integrating dynamic energy budgets into matrix population models. *Ecological Modelling* **196**:407–420.

29 Neubert, M. G., L. Mullineaux, and M.F. Hill. 2006. A metapopulation approach to interpreting diversity at deep-sea hydrothermal vents. In, *Marine Metapopulations*, J. P. Kritzer and P. F. Sale, eds. Academic Press.

30 Fujiwara, M., K. Anderson, M. G. Neubert and H. Caswell. 2006. On the estimation of dispersal kernels from individual mark-recapture data. *Environmental and Ecological Statistics* **13**:183 – 197.

31 Lewis, M.A., M. G. Neubert, H. Caswell, J. Clark, and K. Shea. 2006. A guide to calculating discrete-time invasion rates from data. In *Conceptual Ecology and Invasions Biology: Reciprocal Approaches to Nature.* Editors: Marc W. Cadotte, Sean M. McMahon and Tadashi Fukami. Kluwer, Amsterdam.

32 Fagan, W. F., M. Lewis, M. G. Neubert, C. Aumann, J. L. Apple and J. G. Bishop. 2005. When can herbivores slow or reverse the spread of an invading plant? A test case from Mount St. Helens. *American Naturalist* **166**:669 – 685.

33 Jacquemyn, H., R. Brys, and M. G. Neubert. 2005. Fire increases invasive spread of Molinia caerulea mainly through changes in demographic parameters. *Ecological Applications* **15**:2097 - 2108.

34 Green, J. L., A. Hastings, P. Arzberger, F. Ayala, K. L. Cottingham, K. Cuddington, F. Davis, J. Dunne, M.-J. Fortin, L. Gerber, and M. G. Neubert. 2005. Complexity in ecology and conservation: mathematical, statistical, and computational challenges. *BioScience* **55**:501-510.

35 Caswell, H. and M. G. Neubert. 2005. Reactivity and transient dynamics of discrete-time ecological systems. *Journal of Difference Equations and Applications* **11**:295-310.

36 Neubert, M. G. and I. M. Parker. 2004. Projecting rates of spread for invasive species. *Risk Analysis* **24**:817–831.

37 Marvier, M., P. Kareiva and M. G. Neubert. 2004. Habitat destruction, fragmentation, and disturbance promote invasion by habitat generalists in a multispecies metapopulation. *Risk Analysis* **24**:869–878.

38 Neubert, M. G., T. Klanjscek and H. Caswell. 2004. Reactivity and transient dynamics of predator-prey and food web models. *Ecological Modelling* **179**:29-38.

39 Olli, K., D. M. Anderson, and M. G. Neubert. 2004. Encystment probability and encystment rate: new terms to quantitatively describe formation of resting cysts in planktonic microbial populations. *Marine Ecology Progress Series* **273**:43–48.

40 Neubert, M. G. 2003. Marine reserves and optimal harvesting. *Ecology Letters* **6**:843–849.

41 Caswell, H., R. Lensink and M. G. Neubert. 2003. Demography and Dispersal: life table response experiments for invasion speed. *Ecology* **84**:1968–1978.

42 Sosik, H. M., R. J. Olson, M. G. Neubert, A. Shalapyonok and A. R. Solow. 2003. Growth rates of coastal phytoplankton from time-series measurements with a submersible flow cytometer. *Limnology and Oceanography* **48**:1756–1765.

43 Neubert, M. G., P. Klepac and P. van den Driessche. 2002. Stabilizing dispersal delays in predator-prey metapopulation models. *Theoretical Population Biology* **61**:339-347.

44 Fagan, W. F., M. A. Lewis, M. G. Neubert and P. van den Driessche. 2002. Invasion theory and biological control. *Ecology Letters* **5**:148-157.

45 Neubert, M. G., J. D. Murray and H. Caswell. 2002. Transient dynamics and pattern formation: reactivity is necessary for Turing instabilities. *Mathematical Biosciences* **175**:1-11.

46 Wang, M-H., M. Kot, and M. G. Neubert. 2002. Integrodifference equations, Allee effects, and invasions. *Journal of Mathematical Biology* **44**:150-168.

47 Neubert, M. G., M. Kot, and M. A. Lewis. 2000. Invasion speeds in fluctuating environments. *Proceedings of the Royal Society of London* **B 267**:1603-1610.

48 Neubert, M. G. and H. Caswell. 2000. Density-dependent vital rates and their population dynamic consequences. *Journal of Mathematical Biology* **41**:103-121.

49 Neubert, M. G. and H. Caswell. 2000. Demography and dispersal: calculation and sensitivity analysis of invasion speeds for structured populations. *Ecology* **81**:1613-1628.

50 Neubert, M., S. Blumenshine, D. Duplisea, T. Jonsson, and B. Rashleigh. 2000. Body size and food web structure: testing the equiprobability assumption of the cascade model. *Oecologia* **123**:241-251.

51 Caswell, H. and M. G. Neubert. 1998. Chaos and closure terms in plankton food chain models. *Journal of Plankton Research* **20**:1837–1845.

52 Neubert, M. G. 1997. A simple population model with qualitatively uncertain dynamics. *Journal of Theoretical Biology* **189**:399–411.

53 Neubert, M. G. and H. Caswell. 1997. Alternatives to resilience for measuring the responses of ecological systems to perturbations. *Ecology* **78**:653–665.

54 Little, S., S. Ellner, M. Pascual, M. Neubert, D. Kaplan, T. Sauer, H. Caswell, and A. Solow. 1996. Detecting nonlinear dynamics in spatio-temporal systems: examples from ecological models. *Physica D* **96**:321–333.

55 Neubert, M. G. and M. Kot. 1995. Dispersal and pattern formation in a discrete-time predator-prey model. *Theoretical Population Biology* **48**:7–43.

56 Neubert, M. G. and M. Kot. 1992. The subcrititcal collapse of predator populations in discrete-time predator-prey models. *Mathematical Biosciences* **110**:45–66.

UNREVIEWED PUBLICATIONS

Neubert, M. G. Can we catch more fish and still preserve the stock? *Oceanus*. January 19, 2005.

MANUSCRIPTS IN REVIEW

Moberg, E. A., M. G. Neubert and C. Costello. Optimal harvest in a deteriorating environment. *American Journal of Agricultural Economics*, in revision.

BOOK REVIEWS

Neubert, M. G. and M. Fujiwara. 2000. On "Introduction to Chaos: Physics and Mathematics of Chaotic Phenomena", by H. Nagashima and Y. Baba. *SIAM Review* **42**:756–758.

Neubert, M. G. 1997. On "The Lure of Modern Science: Fractal Thinking", by B. J. West and B. Deering. *Bulletin of Mathematical Biology* **59**:802–805.

Neubert, M. G. and S. Little. 1996. On "Predictability and Nonlinear Modelling in Natural Sciences and Economics", J. Grasman and G. van Straten, editors. *Bulletin of Mathematical Biology* **58**:397–399.

INVITED LECTURES

November 2016	*Marine reserves and strategic spatial models for fisheries management*. Mathematics Department Colloquium, University of Nebraska, Lincoln, Nebraska.
September 2016	*Invasion Variability in "Simple" Integrodifference Equation Models.* (Co-authors: L. Sullivan, A. K. Shaw, B. Li, and T. E. X. Miller) Banff International Research Center Symposium: "Integrodifference Equations, 30 Years and Counting". Banff, Alberta, Canada.
June 2015	*Allee effects and density-dependent dispersal interact to generate variable invasion speed*. (Co-authors: L. Sullivan, A. K. Shaw and T. E. X. Miller) Annual Meeting of the Society for Mathematical Biology, Atlanta.
June 2015	*Bioeconomics of marine reserves when dispersal evolves*. (Co-authors: E. Shyu and E. Moberg) Mathematics of Planet Earth 2013+ Workshop on Management of Natural Resources, Howard University, Washington DC.
August 2015	*Allee effects and density-dependent dispersal interact to generate variable invasion speed*. (Co-authors: L. Sullivan, A. K. Shaw and T. E. X. Miller) Annual Meeting of the Ecological Society of America, Baltimore.

August 2014 *Rapid evolution of dispersal and marine reserves*. (Co-authors: E. A. Moberg and E. Shyu.) Annual Meeting of the Ecological Society of America, Sacramento, CA.

July 2014 *Transient sensitivity of spatial invasion models*. (Co-author: H. Caswell.) Joint Annual Meetings of the Society for Mathematical Biology and the Japanese Society for Mathematical Biology. Osaka, Japan.

May 2014 *Bioeconomics of marine reserves*. Invited plenary lecture. Biomath Days. Sponsored by the Fields Institute for Research in the Mathematical Sciences and the University of Ottawa.

April 2014 *Marine reserves and strategic spatial models for fisheries management*. Department of Mathematics and the SIAM Student Chapter, University of Tennessee, Knoxville.

April 2014 *Marine reserves and strategic spatial models for fisheries management*. Department of Mathematics, Worcester Polytechnic Institute, Worcester, MA.

October 2013 *Rapid evolution of dispersal and the bioeconomic optimality of marine reserves*. Mathematical Biosciences Institute Workshop on Rapid Evolution and Sustainability. Ohio State University, Columbus.

October 2013 *Fish wars, warring fish, and the no-mans land*. AARMS-CRM Workshop on the Sustainability of Aquatic Ecosystems. University of New Brunswick, Fredericton.

June 2013 *Strategic spatial models for fisheries management*. (Keynote plenary lecture) 2013 Annual Meeting of the Resource Modeling Association and World Conference on Natural Resource Modeling. Cornell University, Ithaca, NY.

June 2013 *Pair formation mechanisms and their effect on invasion dynamics*. 2013 Annual Meeting of the Society for Mathematical Biology. Tempe, AZ.

December 2012 *Invasion speeds of sex- and age-structured populations*. Everything Disperses To Miami: The Role Of Movement And Dispersal In Spatial Ecology, Epidemiology And Environmental Science. University of Miami.

April 2012 *Models for the spatial management of transboundary and straddling stocks and their bioeconomic implications for marine protected areas*. Mathematical Ecology Meeting, University of Nebraska, Lincoln.

January 2012	*Models for the spatial management of transboundary and straddling stocks and their bioeconomic implications for marine protected areas*. Joint Meeting of the American Mathematical Society and the Mathematical Association of America, Boston.
April 2011	*Projecting rates of spread from demographic and dispersal data*. 2nd Annual IGERT Symposium on Quantitative Spatial Ecology, Evolution and the Environment. University of Florida, Gainesville.
May 2009	*Habitat Effects of Fishing and Their Implications for Spatial Management*. International Marine Conservation Congress, May 2009, George Mason University.
April 2009	*Chargoggagoggmanchauggauggagoggchaubunagungamaugg.* Dept. of Applied Mathematics, Univ. of Washington, Seattle.
March 2009	*Marine reserves and optimal spatial harvesting.* Dept. of Environmental, Earth and Ocean Sciences, University of Massachusetts, Boston.
August 2008	*Reactivity and the transient responses of ecosystems to perturbations*. Annual Meeting of the Ecological Society of America. Milwaukee, WI.
April 2008	*Marine reserves and optimal spatial harvesting.* Biology Department, University of Maryland, College Park.
December 2007	*Advances in the theory of invasive species spread.* Department of Biology, Washington University, Saint Louis.
November 2007	*Stage structured models for ecological invasions*. Modelling the Spread and Distribution of Invasive Forest Insects and Diseases, a workshop *s*ponsored by the Canadian Forest Centre and MITACS. Fredericton, New Brunswick.
May 2007	*Spatial bioeconomic models and fisheries management.* Annual Meeting of the Canadian Industrial and Applied Mathematics Society, Banff, Alberta.
February 2006	*Stage structured models for ecological invasions*. Department of Evolution and Ecology, University of California, Davis.
April 2005	*Spatial bioeconomics of the Schaefer model*. 3rd Workshop on Spatial-Dynamic Models of Economics and Ecosystems. Abdus-Salaam International Centre for Theoretical Physics. Trieste, Italy.
February 2005	*Structured population models for ecological invasions*. Department of Ecology and Evolutionary Biology, University of Chicago.

February 2005	*Spatial bioeconomic models and fisheries management.* Department of Ecology and Evolutionary Biology, University of Chicago.
January 2005	*Structured population models for ecological invasions*. Department of Biology, University of Miami..
January 2005	*Spatial bioeconomic models and fisheries management.* Center for Ecosystem Science and Policy, University of Miami.
January 2005	*Spatial bioeconomic models and fisheries management*. Invited plenary lecture. Workshop on spatial ecology: the interplay between theory and data. Institute of Theoretical and Mathematical Ecology, University of Miami.
November 2004	*Optimization and bioeconomic models for renewable resources*. Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara.
June 2004	*Marine Reserves and Optimal Harvesting*. American Institute of Mathematical Sciences 5th International Conference on Dynamical Systems and Differential Equations. California State Polytechnic University, Pomona.
June 2004	*Marine Reserves and Optimal Harvesting*. Gordon Research Conference on Theoretical Biology. Tilton, New Hampshire.
April 2004	*Marine Reserves and Optimal Harvesting*. Workshop on Spatial-Dynamic Models of Economics and Ecosystems. Trieste, Italy.
March 2004	*Marine Reserves and Optimal Harvesting*. International Symposium on Dynamical Systems Theory and Its Applications to Biology and Environmental Sciences. Shizuoka University, Hamamatsu, Japan.
February 2003	*Advancing Our Understanding of Ecological Invasions: Ecological and Mathematical Theory*. NSF, NIH Workshop: Accelerating Mathematical-Biological Linkages. Bethesda, Maryland.
January 2003	*Marine Protected Areas and Fisheries Yield: A Mathematical Analysis*. Marine Biological Laboratories Ecosystem Center Woods Hole, Massachusetts.
October 2002	*Ecological Invasions*. Botany Department, University of Vermont. Burlington, Vermont.
July 2002	*Two-Sex Invasions*. Annual Meeting, Society for Mathematical Biology Knoxville, Tennessee.

March 2002	*Demography, Life History, and Invasions: Theory*. SIAM Life Sciences Meeting. Boston, Massachusetts.
October 2001	*Projecting Spread Rates for Invasive Species*. USDA/EPA Workshop: Risk Analysis for Invasive Species. Las Cruces, New Mexico.
July 2001	*The Effects of Environmental Variation on Ecological Invasions*. Annual meeting, Society of Mathematical Biology. Hilo, Hawaii.
April 2001	*Ecological Invasions*. Department of Mathematics, Worcester Polytechnic Institute. Worcester, Massachusetts.
July 2000	*The Effects of Environmental Variation on Ecological Invasions*. Annual Meeting, Society of Industrial and Applied Mathematics. San Juan, Puerto Rico.
May 2000	*Ecological Invasions: Theory and Data*. Marine Biological Laboratory Ecosystems Center Lecture Series. Woods Hole, Massachusetts.
February 2000	*Integrodifference Equation Models for Population Growth and Spread*. Fifth Course on Mathematical Ecology at the Abdus Salam International Centre for Theoretical Physics (Trieste, Italy).
January 2000	*Complexity in Ecological Invasions*. Workshop on Biocomplexity sponsored by the Institute for Mathematics and its Applications and the National Science Foundation. University of Minnesota. Minneapolis, Minnesota.
January 2000	*Complexity in Ecological Invasions*. Department of Mathematics, University of Utah. Salt Lake City, Utah.
September 1998	*Invasion speeds in fluctuating environments*. 1st International Conference on Mathematical Ecology, Alcala, Spain.
February 1998	*The dynamics of plankton food web models*. Annual meeting, AAAS, Philadelphia.
December 1997	*Invasion speeds in time-varying environments*. Annual meeting, Entomological Society of America, Nashville.

OTHER PRESENTATIONS

June 2016	*Allee effects and density-dependent dispersal interact to generate variable invasion speed.* 2016 World Conference on Natural Resource Modeling, Flagstaff, AZ. June 2016.

August 2013	*Pair formation mechanisms and their effect on invasion dynamics*. 2013 Annual Meeting of the Ecological Society of America. Minneapolis, MN.
May 2011	*Models for the Spatial Management of Transboundary and Straddling Stocks and their Bioeconomic Implications for Marine Protected Areas*. 2nd International Marine Conservation Congress, Victoria, BC, Canada.
August 2010	*Invasion speeds in variable environments*. Annual Meeting of the Ecological Society of America. Pittsburgh, PA.
August 2005	*Spatial bioeconomic models and fisheries management*. Annual Meeting of the Ecological Society of America. Montreal, Canada.
October 2004	*Projecting rates of spread for invasive species*. Fall meeting of the New England Estuarine Research Society. Block Island, RI.
March 2004	*Chargoggagoggmanchauggauggagoggchaubunagungamaugg*. New England Estuarine Research Society Annual Meeting. Burlington, Vermont.
September 2003	*Chargoggagoggmanchauggauggagoggchaubunagungamaugg*. Second International Conference on Mathematical Ecology. Alcala, Spain; presented by Petra Klepac.
August 2003	*Chargoggagoggmanchauggauggagoggchaubunagungamaugg*. Annual Meeting of the Society for Mathematical Biology. Dundee, Scotland.
August 2002	*Dispersal, Demography, and Invasion Speed: Sensitivity and LTRE Analysis*. Annual Meeting, Ecological Society of America Tucson, Arizona.
August 1999	*Stabilizing Dispersal Delays*. Annual meeting, Ecological Society of America. Spokane, Washington.
August 1998	*Structured population models: the combined effects of growth and dispersal*. (Contributed poster) Annual meeting, Ecological Society of America.
July 1998	*Uncertainty in population dynamics*. WHOI Summer Student Fellow Lecture Series.

The following presentations, given by students of mine, and on which I was a co-author, have earned awards.

August 2014	*Optimal investment in a multi-mutualist system: Tree maintenance of ectomycorrhizal fungal diversity*. Holly Moeller, first author. Annual Meeting of the Ecological Society of America, Sacramento. Volterra Prize for the best oral presentation in theoretical ecology by a student.
August 2012	*The cost of protecting biodiversity in harvested metacommunities*. Emily Moberg, first author. Annual Meeting of the Ecological Society of America, Portland, OR. Lotka Award for best poster in theoretical ecology by a student.
August 2004	*Invasion dynamics in sex-structured populations*. Presented by Allison Shaw (WHOI Summer Student Fellow). Annual meeting of the Ecological Society of America, Portland, OR. Lotka Award for best poster in theoretical ecology presented by a student.

TEACHING

MIT/WHOI Joint Program in Biological Oceanography

Biannually since 1997	*An Introduction to Mathematical Ecology* (with Hal Caswell).
Spring 2017	*Topics in Quantitative Marine Science: Structured Population Models*
Autumn 2016	*Topics in Biological Oceanography: Food Webs: Structure, Dynamics and Ecosystem Function* (with Amanda Spivak)
Spring 2015	*Topics in Marine Ecology: Climate Change and Biotic Interactions* (with Stephanie Jenouvrier).
Autumn 2013	*Topics in Marine Physiology and Biochemistry: Chronobiology* (with Ann Tarrant).
Autumn 2012	*Topics in Quantitative Marine Science: Partial Differential Equations in Theoretical Population Biology*.
Spring 2012	*Topics in Quantitative Marine Science: Quantitative modeling and assessment of marine reserves* (with Julie Kellner).
Spring 2007	*Topics in Ecology: Individual-Based Modeling and Ecology.*
Autumn 2005 & Autumn 2000	*Topics in Ecology: Spatial Ecology.*
Spring 2003 & Spring 1999	*Topics in Ecology: Renewable Resource Management* (with Andy Solow).
Summer 2000	*Summer Calculus Review* (with Hal Caswell and Andy Solow).

Spring 1998	*Topics in Ecology: Coupled Biological/Physical Models* (with Hal Caswell and Glenn Flierl).

Other Teaching (outside of MIT/WHOI Joint Program)

Summer 2003	*The Mathematics Behind Biological Invasions*. An NSF-DMS sponsored VIGRE minicourse. With Fred Adler (U. of Utah) and Mark Lewis (U. of Alberta).
May 2001	RTG Visiting Scholar. (Invited, 4 lectures) Institute of Theoretical Dynamics, University of California at Davis.
Winter 2000	Resident lecturer, *Fifth Course on Mathematical Ecology*. A course for students and scientists from developing countries. Abdus Salam International Centre for Theoretical Physics, Trieste, Italy.

ADVISING

Postdoctoral:	Christine Hunter Ian Carrol Holly Moeller Cassidy D'Aloia Austin Phillips
Ph.D.:	Petra Klepac Tin Klanjscek (co-advised by Hal Caswell) Kristen Hunter-Cevera (co-advised by Heidi Sosik) Emily Moberg
MS:	Holly Moeller Lorraine Thomas (co-advised by Heidi Sosik)
Ph.D. Thesis Committees:	**WHOI:** Kevin Archibald (AAC) Christina Hernandez Rob Jennings Masami Fujiwara Heidi Fuchs Esther Shyu Carly Strasser Fabian Tapia Ariane Verde Jeannette Wheeler **Elsewhere**: Holly Moeller (Stanford) Gabriel Andreguetto Maciel (São Paulo State University, Brazil)

External Ph.D. Examiner:	Ali Gharouni (University of New Brunswick) Christopher Baker (University of Melbourne, Australia) Yousef Alqawasmeh (University of Ottawa)
Undergraduates:	Mattias Cape, Julia Chevarry, Petra Klepac, Alison Labonte, Kiva Oken, Allison Shaw