# KENNETH A. ROSE

**ADDRESS**
University of Maryland Center for Environmental Science
Horn Point Laboratory
PO Box 775
Cambridge, MD 21613
Cell: 225-773-5625 Office: 410-221-8255 E-Mail: krose@umces.edu

## EDUCATION

Ph.D., Fisheries, University of Washington, 1985.
M.S., Fisheries, University of Washington, 1981.
B.S., Biology and Mathematics, State University of New York at Albany, 1979.

## PROFESSIONAL EXPERIENCE

2017 - Present France-Merrick Professor in Sustainable Ecosystem Restoration, Horn Point Lab, UMCES
2015 - 2017 Associate Dean for Research, College of the Coast & Environment, LSU
2001 – 2017 Professor, Abraham Distinguished Professor (2009-2013), LSU
1998 - 2001 Associate Professor, Louisiana State University
1987 - 1998 Research Scientist, Oak Ridge National Laboratory
1983 - 1987 Consultant, Martin Marietta Environmental Systems

## PROFESSIONAL INTERESTS

Develop and apply mathematical and simulation models to better understand and forecast the effects of natural and anthropogenic factors on aquatic populations, communities, and ecosystems; use of models in resource and fisheries management and risk assessment.

## PROFESSIONAL SOCIETIES AND EDITORIAL BOARDS

American Association for the Advancement of Science (AAAS)
Ecological Society of America
American Fisheries Society
American Society of Limnology and Oceanography

*Associate Editor:*
Transactions of the American Fisheries Society (1995-1997)
Ecological Applications (1997-2000)
Canadian Journal of Fisheries and Aquatic Sciences (2008-2014)
San Francisco Estuary and Watershed Science (2008-)
Marine and Coastal Fisheries (2008-)
Fisheries Research (2010-2014)

*Guest Editor of Special Issues and Books:* {also listed under Publications}
Challenges for a new generation of marine ecosystem models: Overview of the Advances in Marine Ecosystem Modelling Research (AMEMR) Symposium. *Journal of Marine Systems* (with J. Blackford, J.I. Allen, and T.R. Anderson), 2010.

Global Climate Change and Marine Ecosystems. *Ecological Modelling* (with I. Allen), 2013.

Combining Modeling and Observations to Better Understand Marine Ecosystem Dynamics. *Progress in Oceanography* (with E. Curchitser, M. Peck, M. Kishi, and S. Ito), 2015.

Co-editor, *Modeling Coastal Hypoxia: Numerical Simulations of Patterns, Controls and Effects of Dissolved Oxygen Dynamics* (with D. Justic, K. Fennel, and R. Hetland) Springer, New York, in review.

## HONORS and ADJUNCTS

Fellow of the American Association for the Advancement of Science, 2000.

Award of Excellence for life time achievement, American Fisheries Society, 2014.

Fellow of the American Fisheries Society, 2015.

LSU Distinguished Faculty Award, 2014.

LSU Rainmaker Award for Outstanding Research, 2009.

Abraham Distinguished Professor in Louisiana Environmental Sciences, LSU, 2009.

Best Paper of the Year, Transactions of the American Fisheries Society, 2009.

Most Significant Paper of the Year, North Amer. Journal of Fisheries Management, 1997.

Lipsey Award for Teaching, Department of Oceanography and Coastal Sciences, 2003.

Special Achievement Award (for research), Oak Ridge National Laboratory, 1991.

## TEACHING AND STUDENT ADVISING

Developed and regularly teach:

OCS 4038 Scientific Writing and Collaboration
OCS 7340 Population Dynamics Modeling

Also taught: ENVS 7010 Math Modeling of Energy and Environmental Systems

Averaged student teaching evaluations: 3.87/4 for instructor; 3.85/4 for courses

Supervised 12 Post-Doctoral Students.

Member of 44 (Chair of 19) MS and PhD student graduate committees (including Universities of Tennessee, Maryland, Delaware, South Alabama, and UC-Davis).

## ADVISORY AND REVIEW PANELS AND COMMITTEES (since 2006)

1. Independent Science Board of the CALFED Bay Authority, 2004-2006.

2. Technical Review Panel of the CALFED Environmental Water Account, 2001-2006.
3. Ecosystem Management Science and Statistical Committee (SSC) for the Gulf of Mexico Fisheries Management Council, 2005-2013.
4. Science Advisory Panel for the Santa Clara Habitat Conservation Plan and Natural Community Conservation Plan, 2006.
5. Panel Review Member, proposals to EPA's Ecological Thresholds, 2006.
6. Panel Review Member, proposals to EPA's Nonlinear Responses to Global Change in Linked Aquatic and Terrestrial Ecosystems, 2006.
7. Panel Review Member, proposals to Coastal Impact Assistance Program, LA, 2006.
8. Scientific Steering Committee, NSF's Bering Sea Study (BEST) Program, 2006-2008.
9. Ecosystem Studies of the Sub-Arctic Seas Modeling Working Group, 2007-2008.
10. Review Panel of the Delta Risk Management Strategy for San Francisco Bay, 2007.
11. Bay Delta Conservation Plan Steering Committee, 2007-2009.
12. Panel Review Member, proposals to NSF's GLOBEC Pan Regional Synthesis, 2008.
13. Panel Review Member, Regional Salmon Outmigration Study Proposal Review, 2008.
14. Review panel of the Long-term Central Valley Project (CVP) and State Water Project (SWP) Operations Criteria and Plan (OCAP) Biological Opinion on Delta Smelt, 2008.
15. Scientific Steering Committee of the US GLOBEC Program, 2008-2011.
16. Review panel of the Long-Term Central Valley Project (CVP) and State Water Project (SWP) Operations Criteria and Plan (OCAP) Biological Opinion on Salmon, 2009.
17. Certification team for the EnviroFish model, Army Corps of Engineers, 2010.
18. Panel Review Member, proposals to NOAA/NSF's CAMEO Program, 2010.
19. Certification team for the Sacramento River Bank Protection Project Standard Assessment Methodology (SAM), 2010.
20. ***National Research Council Committee on Sustainable Water and Environmental Management in the California Bay-Delta, 2010-2011.***
21. Klamath River Expert Panel, Effects of Dam Removals on Coho and Steelhead, 2011.
22. Klamath River Expert Panel, Effects of Dam Removals on Chinook Salmon, 2011.
23. Chairperson, Salmonid Life Cycle Model Workshop, Delta Science Program, 2011.
24. MRGO Final Independent External Peer Review Report for the Mississippi River – Gulf Outlet Ecosystem Restoration Plan Feasibility Study and Environmental Impact Statement, Army Corps of Engineers, 2011-2012.

25. Review Team of the SALSIM Population Model for Fall-Run Chinook in the San Joaquin River. Ecosystem Restoration Program, CA Delta, 2012.

26. U.S. Delegate, ICES Working Group on Integrative Physical-biological and Ecosystem Modelling, Copenhagen, Norway, March 2012.

27. ***Member, NRC Committee on Evaluating the Effectiveness of Stock Rebuilding Plans of the 2006 Fishery Conservation and Management Reauthorization Act, 2012-2013.***

28. Modeling Subcommittee, Gulf of Mexico Integrated Ecosystem Assessment, 2012-2013.

29. Expert Panel on Fishery Resources for Renewal of the Bay-Delta Plan, California State Water Resources Control Board, 2012.

30. Remote Reviewer, Proposals to Portugal Foundation for Science and Technology, 2012.

31. Invited Presenter, Briefing to the Executive Office of the President, on issues related to large-scale ecosystem restoration, October 2012.

32. External Peer Review of the Morganza to the Gulf of Mexico Hurricane Protection Project, Louisiana, Army Corps of Engineers, March 2013.

33. ***Member, NRC Committee on the Edwards Aquifer Authority Habitat Conservation Plan, 2014-2016.***

34. Panel Member, Workshop on Delta Outflows and Related Stressors. Provide advice to the State Water Board, 2013.

35. Panel Member, Workshop on Delta Inflows and Related Stressors, 2014.

36. Member, Moffatt & Nichol team (with LSU's Coastal Sustainability Studio) for Changing Course Design and Competition: Lower Mississippi River Delta, 2014-2015.

37. Member, Fishery Ecosystem Task Force, LENFEST Ocean Program, 2015-2016.

38. Steering Committee Member, US-China International Workshop on Key Processes and Regulation of Wetland Ecosystems. Baton Rouge, LA, 2014.

39. Reviewer, Proposal to the AAAS Research Competitiveness Program, 2015.

40. Reviewer, Proposals to California Department of Fish and Wildlife special program on Predation Effects on Special Status Fish Species, 2015.

41. Peer Review of the Phase II Post Authorization Decision Documents (PADD) for the Sacramento River Bank Protection Project (SRBPP), Army Corps of Engineers, 2015.

42. Panel Review Member, Methodology and Scientific Basis to Support a Delta Levee Investment Strategy. CA Delta Science Program, 2015.

43. Panel Review Member, Proposals to Florida Center of Excellence Program, 2015.

44. ***Member, NRC Committee on Effective Approaches for Monitoring and Assessing Gulf of Mexico Restoration Activities, 2015-2016.***

45. Panel Review Member, NSF Graduate Research Fellowship Program, 2015.

46. Outside Mentor, Dr. Joel Fodrie as part of his Early-Career Research Fellowship from the National Academy of Science's Gulf Research Program, 2015-2016.

47. Erudite Visiting Scholar, Cochin University of Science and Technology (CUSAT), Identify research and education opportunities for joint efforts and collaboration, 2015.

48. Certification of the Combined Habitat Assessment Protocols (CHAP). Prepared by the APMI for the Army Corps of Engineers, 2016.

49. Invited Workshop Facilitator, NOAA Restore Act workshop on "Aligning Ecosystem Modeling Efforts with Ecosystem-Based Fisheries Management and Restoration Needs in the Gulf of Mexico". Tampa, summer 2016.

50. Member, Global Oxygen Research Network ($GO_2NE$), UNESCO (first meeting: 2015).

51. Review Team Member, NOAA's Great Lakes Environmental Research Lab, 2016.

**REVIEWER OF MANUSCRIPTS (40 journals)**

Transactions of the American Fisheries Society; Canadian Journal of Fisheries and Aquatic Sciences; Ecological Modelling; Ecological Applications; North American Journal of Fisheries Management; Ecology; Copeia; Limnology and Oceanography; Hydrological Processes; Landscape Ecology; Marine and Freshwater Research; Environmental Science and Technology; Mathematical Biosciences; International Journal in Computer Simulation; Environmental Biology of Fishes; BioScience; Advances in Environmental Research; Fisheries Oceanography; Journal of Marine Systems; Deep Sea Research; Human and Ecological Risk Assessment; Fisheries; Ecology of Freshwater Fish; San Francisco Estuary and Watershed Science; Ecosystems; Reviews in Fish Biology and Fisheries; Estuaries; Progress in Oceanography; Fisheries Research; Journal of Applied Ecology; Ecotoxicology; Functional Ecology; Climatic Change; Ecosphere; Fish and Fisheries, Integrated Environmental Assessment and Management, ICES Journal of Marine Science, ISRN Ecology, Journal of the American Water Resources Association.

**REVIEWER OF NRC REPORTS**

Evaluation of the Drakes Bay Oyster Company Special Use Permit DEIS & Peer Review
Assessing Risks from Pesticides to Endangered and Threatened Species

**REVIEWER OF PROPOSALS (22 agencies and organizations)**

National Science Foundation; National Sea Grant Program; Wisconsin Sea Grant; New York Sea Grant; Hudson River Foundation; Electric Power Research Institute; NSERC (Natural Sciences and Engineering Research Council of Canada); National Marine Fisheries Service; Saltonstall-Kennedy Program; New Jersey Sea Grant Program; Utility Water Act Group; Ecosystem Restoration Project of the CALFED Bay-Delta Program; Maryland Sea Grant Program; Research Foundation for Advancement of Tropical Research; United States-Israel Binational Science Foundation; South Africa National Research Foundation; Jeffress Research Grant from the Thomas F. and Kate Miller Memorial Trust; NOAA Coastal Ocean Program; Netherlands Organisation for Scientific

Research; Alabama Center for Estuarine Studies (an EPA center of excellence), North Pacific Research Board, Portugal Foundation for Science and Technology

Selection committee for Special Professor in Marine Habitats, National Institute of Aquatic Resources (DTU Aqua), Copenhagen, 2014.

**GRANTS AND CONTRACTS**
**(Principal or Co-Principal Investigator, ending dates of 2005 or later)**

*TOTAL WITH ENDING DATES OF 2005 OR LATER IS 4.78 MILLION DOLLARS TO LSU.*

1. Modeling Water Quality Effects on Estuarine Fish Populations. Component of a larger EPA Center entitled "Consortium for Estuarine Ecoindicator Research for the Gulf of Mexico", 5.9 million ($236K to LSU).
2. Using a Combined Measurement-Modeling Approach to Study Movement and Inshore Nursery Areas by Louisiana Brown Shrimp. Louisiana Sea Grant, $168K.
3. Scaling Gene Chips of Sheepshead Minnow to the Population Level. Part of University of Southern Mississippi's Research Consortium, NOAA Coastal Ocean Program, $131K.
4. Relating Structure and Function in Natural and Restored Marshes. NOAA Restoration Office and Louisiana Sea Grant Program, $50K.
5. Review of Disinfection Byproducts Formed during the Offshore Gasification of Liquefied Natural Gas and the Vertical Distribution of Ichthyoplankton in the Gulf of Mexico. Minerals Management Service, Coastal Marine Institute, $97K.
6. Can Pulsed River Diversions Shift Ecological Baselines in Louisiana Estuarine Ecosystems? Louisiana Department of Wildlife and Fisheries, $632K.
7. NGOMEX: Reproductive and Population Effects of Moderate Hypoxia. NOAA, Lead is University of Texas, $1.5M ($256K to LSU).
8. Modeling the Delta Smelt Population. CALFED Science Program, Lead is San Francisco State University, $997K ($98K to LSU).
9. DELTA Ecosystem Forecasting System. Northern Gulf Institute, a NOAA Cooperative Institute, $301K.
10. Reef Fish Demographics on Louisiana Artificial Reefs: The Effects of Reef Size. Louisiana Department of Wildlife and Fisheries, $900K.
11. From Physics to Fish: Modeling the Effects of Pulsed River Diversion on Fish Distribution. Northern Gulf Institute, a NOAA Cooperative Institute, $240K.
12. Tightly Coupled Dynamic End-To-End Marine Ecosystem Models. NOAA High Performance Computing Program, $25K.
13. NGOMEX 2009: Modeling Reproductive and Population Impacts of Hypoxia in the Northern Gulf of Mexico, NOAA, Lead is University of Texas, $1.5M ($646K to LSU).

14. Mechanisms for Low-Frequency Variability of Forage Fish: A Comparative Analysis of North Pacific Sardine, NSF, Lead is Rutgers University, $315K ($58K to LSU).

15. CHRP: Shallow Water Hypoxia - Tipping the Balance for Individuals, Populations and Ecosystems. NOAA, with Smithsonian Institute and University of Delaware, $261K.

16. Relationships between Salt Marsh Inundation Patterns and Brown Shrimp Productivity. Louisiana Board of Regents, $47K.

17. Impact of the Deepwater Horizon Oil Spill on the Louisiana Coastal Environments. Northern Gulf Institute, a NOAA Cooperative Institute, $497K.

18. Predicting Trophic Interactions and Habitat Utilization in the California Current, Office of Naval Research, $32K.

19. Advice on Assessing Fish Responses to Restoration. Water Institute of the Gulf, $15K.

20. RNR-SCE Joint Program in Training Applied Conservation Scholars. Funding of graduate students and summer internships, National Fish and Wildlife Federation, $44K.

21. Ecosystem-Based Management and Marine Spatial Planning: Developing the Empirical Foundation for Coastal Louisiana. Louisiana Sea Grant (funding for a post-doc), $50K.

**INVITED PARTICIPANT AT WORKSHOPS (since 2005)**

Synthesis Workshop on the Pelagic Organism Decline in San Francisco Estuary. Sacramento, CA, October 2005.

Workshop on Assumption-Based Planning for Evaluation of the State's Master Plan, Organized by the RAND Gulf States Policy Institute, Baton Rouge, LA, September 2006.

Ecosystem Modeling Workshop, Gulf of Mexico Fisheries Management Council, St Petersburg, FL, May 2007.

Skill Assessment for Coupled Biological/Physical Models of Marine Systems Workshops, Chapel Hill, NC, July 2006 and March 2007.

ESSAS (Ecosystem Studies of Sub-Arctic Seas) Workshop, Hakodate, June 2007

Workshop on Developing Conceptual Ecological Models for Coastal Louisiana, Baton Rouge, LA, June 2008.

Workshop on Linking Nitrogen, Hypoxia, Fish, and Fisheries. Smithsonian Environmental Research Center, Edgewater, MD, October 2009 and June 2010.

Workshop on Incorporating Climate Change into the Endangered Species Act. NOAA, Seattle, WA, June 2010.

MARIFISH-ICES Joint Workshop on Integrated Ecosystem Modelling; Building Our Capacity to Understand and Manage Marine Ecosystems, Barcelona, November 2010.

Ecosystem Management by Earth Systems Modeling Workshop, Gulf Coast Research Laboratory, Ocean Springs, MS, January 2011.

Workshop on Physical-Biological Coupling and Fish Recruitment in Large Lakes. Great Lakes Fisheries Commission, Ann Arbor, MI, August 2011.

Mekong and Tonle Sap Foodweb Modeling Workshop. Conservation International, Santa Barbara, CA, July 2011.

U.S. Delegate, ICES Working Group on Integrative Physical-biological and Ecosystem Modelling. Copenhagen (2012), Amsterdam (2014), Paris (2013).

Symposium on Quantitative Approaches to Ecosystem Assessment. Bodega Bay, CA, May 2012.

Modeling Summit: Asian Carp Population Dynamics in a Spatially Explicit Context. Southern Illinois University, St. Louis, February 2013.

Northern Gulf Institute Integrated Ecosystem Assessment and Atlantis Modeling Coordination Workshop. New Orleans, LA, February 2013.

The Art and Science of Reduced Complexity Modeling in the Environmental Sciences. Boulder, CO, March 2013.

Invited Instructor, End-to-End Modeling of Marine Ecosystems, AIMEN Summer School on Innovative Approaches in Marine Ecosystem Modeling, Brest, France August 2013.

Invited Participant, How to Incorporate Ecosystem Modeling Products into Living Marine Resource Scientific Review Processes. Workshop to help inform the newly named NOAA Senior Scientist for Ecosystem Management, Woods Hole, July 2013.

Invited participant, ICES Working Group on the Value of Coastal Habitats for Exploited Species. Lisbon (2014), Palermo (2015).

Invited Instructor, PICES International Summer School on End-to-End Models for Marine Resources Management and Research, Gangneung-Wonju National University, Korea, August 2014.

**SERVICE AT LOUISIANA STATE UNIVERSITY (Examples)**

Member of the Council on Research, 2002-2005. Advised the Vice Chancellor for Research on issues, policies, and strategic planning.

Chairperson, Search Committee for Director of Louisiana Sea Grant, 2004.

Department of Oceanography Promotion and Tenure Committee, 2004-2014.

High Performance Computing Allocation Committee, 2006-2007.

Coastal Environmental Modeling Laboratory Steering Committee, 2006-2010.

Search Committee for the Physical Oceanographer Faculty Position, 2007.

Search Committee for Dean of the School of the Coast and Environment, 2008.

Mentor Committee for Dr. Aixin Hou, Dept. of Environmental Sciences, 2009-2011.

Department of Oceanography Review Committee, 2010-2012. Develop and prepare reports on student activities for academic accreditation.

Dean's Advisory Committee, School of the Coast and Environment, 2010-ongoing.

Search committee for Vice Chancellor for Research, 2010.

Member of the Graduate Council, 2011 and 2013-2017. Advise the Dean of the Graduate School and advice Provost on university-wide Tenure and Promotion decisions.

Search Committee for Ecologist and Wetlands Faculty Positions (co-Chair), 2013.

Associate Dean for Research, College of the Coast and Environment, 2015-ongoing.

## PEER-REVIEWED PUBLICATIONS (career)

***Total of 160 publications, involving over 375 different co-authors.***

***Goggle Scholar***: H-index of 48; total of 8,816 Citations

**[Cited >1000 times]** Patterns of life-history diversification in North-American fishes: implications for population regulation. 1992. Canadian Journal of Fisheries and Aquatic Sciences 49: 2196-2218.

**[Cited > 700 times]** Ecological forecasts: An emerging imperative. Science 293: 657-660.

Two papers reprinted in the book entitled: *Foundations of Fisheries Science*. 2014. Greg G. Sass and Micheal S. Allen (editors), American Fisheries Society, Bethesda, MD.

1. Swartzman, G.L., W.M. Getz, R.C. Francis, R.T. Haar, and **K.A. Rose**. 1983. A management analysis of the Pacific whiting fishery using an age structured stochastic recruitment model. *Canadian Journal of Fisheries and Aquatic Sciences* 40:524-539.

2. Swartzman, G.L., and **K.A. Rose**. 1984. Simulating the biological effects of toxicants in aquatic microcosm systems. *Ecological Modelling* 122:123-134

3. Reed, K.L., **K.A. Rose**, and R.C. Whitmore. 1984. Latin hypercube analysis of parameter sensitivity in a large model of recreation demand. *Ecological Modelling* 24:159-169.

4. Polgar, T.T., J.K. Summers, R.A. Cummins, **K.A. Rose**, and D.G. Heimbuch. 1985. Investigation of relationships among pollutant loadings and fish stock levels in Northeastern estuaries. *Estuaries* 8:20-29.

5. Summers, J.K., T.T. Polgar, J.A. Tarr, **K.A. Rose**, D.G. Heimbuch, J. McCurley, R.A. Cummins, G.F. Johnson, K.T. Yetman, and G.T. DiNardo.1985. Reconstruction of long-term time series for commercial fisheries abundance and estuarine pollution loadings. *Estuaries* 8:114-124.

6. **Rose, K.A**., J.K. Summers, D.G. Heimbuch, and R.A. Cummins. 1986. Analysis of long-term ecological data using categorical time series regression. *Canadian Journal of Fisheries and Aquatic Sciences* 43:2418-2426.

7. Summers, J.K., and **K.A. Rose**. 1987. The role of interactions among environmental variables in controlling historical fisheries dynamics. *Estuaries* 10:255-266.

8. **Rose, K.A**., G.L. Swartzman, A.C. Kindig, and F.B. Taub. 1988. Stepwise iterative calibration of a multispecies phytoplankton-zooplankton simulation model using laboratory data. *Ecological Modelling* 42:1-32.

9. **Rose, K.A**., R.I. McLean, J.K. Summers, and S.L. Domotor. 1988. Radiosilver (AG-110m) concentrations in Chesapeake Bay oysters maintained near a nuclear power plant: a statistical analysis. *Environmental Monitoring and Assessment* 10:205-218.

10. Swartzman, G.L., **K.A. Rose**, A.C. Kindig, and F.B. Taub. 1989. Modeling the direct and indirect effects of streptomycin in aquatic microcosms. *Aquatic Toxicology* 14:109-130.

11. **Rose, K.A**., R.I. McLean, and J.K. Summers. 1989. Development and Monte Carlo analysis of an oyster bioaccumulation model applied to biomonitoring data. *Ecological Modelling* 45:111-132.

12. **Rose, K.A.** 1989. Sensitivity analysis in ecological simulation models. In: *Systems and Control Encyclopedia* (M.G. Singh, ed.), Pergammon Press, pp. 4230-4234.

13. Hettelingh, J.P., R.H. Gardner, **K.A. Rose**, and A. Brenkert. 1989. Broad scale effects of sulfur deposition: a response surface analysis of a complex model. In: *Regional Acidification Models: Geographic Extent and Time Development* (J. Kamari, D.F. Brakke, A. Jenkins, S.A. Norton, and R.F. Wright, eds.), Springer-Verlag, pp. 267-277.

14. Smith, E.P., and **K.A. Rose**. 1991. Trend detection in the presence of covariates: stagewise versus multiple regression. *Environmetrics* 2:153-168.

15. **Rose, K.A**., R.B. Cook, A.L. Brenkert, R.H. Gardner, and J.P. Hettelingh. 1991. Systematic comparison of ILWAS, MAGIC, and ETD watershed acidification models: 1. Mapping among model inputs and deterministic results. *Water Resources Research* 27:2577-2603.

16. **Rose, K.A**., A.L. Brenkert, R.B. Cook, R.H. Gardner, and J.P. Hettelingh. 1991. Systematic comparison of ILWAS, MAGIC, and ETD watershed acidification models: 2. Monte Carlo analysis under regional variability. *Water Resources Research* 27:2591-2603.

17. **Rose, K.A**., E.P. Smith, R.H. Gardner, A. Brenkert, and S.M. Bartell. 1991. Parameter sensitivities, Monte Carlo filtering, and model forecasting under uncertainty. *Journal of Forecasting* 10:117-133.

18. **Rose, K.A**., and J.K. Summers. 1992. Relationships among long-term fish abundances, hydrographic variables, and gross pollution indicators in Northeastern US estuaries. *Fisheries Oceanography* 1:281-293.

19. **Rose, K.A**., and E.P. Smith. 1992. Experimental design: the neglected aspect of environmental monitoring. *Environmental Management* 16:691-700.

20. Cook, R.B., **K.A. Rose**, A.L. Brenkert, and P.F. Ryan. 1992. Systematic comparison of ILWAS, MAGIC, and ETD watershed acidification models: 3. ANC mass balance budgets. *Environmental Pollution* 77:235-242.

21. Gross, L.J., **K.A. Rose**, E.J. Rykiel, W. Van Winkle, and E.E. Werner. 1992. Individual-based modelling: summary of a workshop. In: *Individual-based Approaches in Ecology: Populations, Communities, and Ecosystems* (D.L. DeAngelis and L.J. Gross, eds.), Routledge, Chapman, and Hall, pp. 511-522.

22. DeAngelis, D.L. and **K.A. Rose**. 1992. Which individual-based approach is most appropriate for a given problem? In: *Individual-based Approaches in Ecology: Populations, Communities, and Ecosystems* (D.L. DeAngelis and L.J. Gross, eds.), Routledge, Chapman, and Hall, pp. 67-87.

23. Winemiller, K.O., and **K.A. Rose**. 1992. Patterns of life-history diversification in North American fishes: implications for population regulation. *Canadian Journal of Fisheries and Aquatic Sciences* 49:2196-2218.

24. Van Winkle, W., **K.A. Rose**, and R.C. Chambers. 1993. Individual-based approach to fish population dynamics: an overview. *Transactions of the American Fisheries Society* 122:396-403.

25. **Rose, K.A**., S.W. Christensen, and D.L. DeAngelis. 1993. Individual-based modeling of populations with high mortality: a new method for following a fixed number of model individuals. *Ecological Modelling* 68:273-292.

26. DeAngelis, D.L., **K.A. Rose**, L. Crowder, E. Marschall, and D. Lika. 1993. Fish cohort dynamics: application of complementary modeling approaches. *American Naturalist* 142:604-622.

27. **Rose, K.A**., A.L. Brenkert, G.A. Schohl, Y. Onishi, J.S. Hayworth, F. Holly, W. Perkins, L. Beard, R.B. Cook, and W. Waldrop. 1993. Multiple model analysis of sediment transport and contaminant distribution in the Clinch River/Watts Bar Reservoir, TN. *Water Science and Technology* 28:65-78.

28. **Rose, K.A.**, J.H. Cowan, E.D. Houde, and C.C. Coutant. 1993. Individual-based modeling of environmental quality effects on early life stages of fish: a case study using striped bass. *American Fisheries Society Symposium* 14:125-145.

29. **Rose, K.A**., and J.H. Cowan. 1993. Individual-based model of young-of-the-year striped bass population dynamics: I. Model description and baseline simulations. *Transactions of the American Fisheries Society* 122:415-438.

30. Cowan, J.H., **K.A. Rose**, E.S. Rutherford, and E.D. Houde. 1993. Individual-based model of young-of-the-year striped bass population dynamics: II. Factors affecting recruitment in the Potomac River, Maryland. *Transactions of the American Fisheries Society* 122:439-458.

31. Van Winkle, W., **K.A. Rose**, K.O. Winemiller, D.L. DeAngelis, S.W. Christensen, R.G. Otto, and B.J. Shuter. 1993. Linking life history theory, environmental setting, and

individual-based modelling to compare responses of different fish species to environmental change. *Transactions of the American Fisheries Society* 122:459-466.

32. Winemiller, K.O., and **K.A. Rose**. 1993. Why do most fish produce many tiny offspring? *American Naturalist* 142:585-603.

33. Rice, J.A., L.B. Crowder, and **K.A. Rose**. 1993. Interactions between size-structured predator and prey populations: experimental test and model comparison. *Transactions of the American Fisheries Society* 122:481-491.

34. Rice, J.A., T.J. Miller, **K.A. Rose**, L.B. Crowder, E.A. Marschall, A.S. Trebitz, and D.L. DeAngelis. 1993. Growth rate variation and larval survival: implications of an individual-based size-dependent model. *Canadian Journal of Fisheries and Aquatic Sciences* 50:133-142.

35. Tyler, J.A., and **K.A. Rose**. 1994. Individual variability and spatial heterogeneity in fish population models. *Reviews in Fish Biology and Fisheries* 4:91-123.

36. DeAngelis, D.L., **K.A. Rose**, and M.A. Huston. 1994. Individual-oriented approaches to modeling populations and communities. In: *Frontiers in Mathematical Biology* (S.A. Levin, ed.), Lecture Notes in Biomathematics, Vol. 100, Springer-Verlag, pp. 390-410.

37. Crowder, L.B., R.A. Wright, **K.A. Rose**, T.H. Martin, and J.A. Rice. 1994. Direct and indirect effects of southern flounder predation on a spot population: experimental and model analyses. In: *Theory and Application in Fish Feeding Ecology* (D.J. Stouder, K.L. Fresh, and R.J. Feller, eds.), University of South Carolina Press, pp. 61-78.

38. Smith, E.P., and **K.A. Rose**. 1995. Model goodness of fit analysis using regression and related techniques. *Ecological Modelling* 77:49-64.

39. Chambers, R.C., **K.A. Rose**, and J.A. Tyler. 1995. Recruitment and recruitment processes of young-of-the-year winter flounder, *Pleuronectes americanus*, at different latitudes: implications of an individual-based simulation model. *Netherlands Journal of Sea Research* 34:19-43.

40. Scheffer, M., J.M. Baveco, D.L. DeAngelis, and **K.A. Rose**. 1995. Super-individuals: a simple solution for modelling large populations on an individual basis. *Ecological Modelling* 80:161-170.

41. Cowan, J.H., E.D. Houde, and **K.A. Rose**. 1996. Size-dependent vulnerability of marine fish larvae to predation: an individual-based numerical experiment. *ICES Journal of Marine Science* 53:23-37.

42. Letcher, B.H., J.A. Rice, L.B. Crowder, and **K.A. Rose**. 1996. Variability in survival of larval fishes: disentangling components of variance with a generalized individual-based model. *Canadian Journal of Fisheries and Aquatic Sciences* 53:787-801.

43. **Rose, K.A.**, J.A. Tyler, R.C. Chambers, G. MacPhee, and D.J. Danila. 1996. Simulating winter flounder population dynamics using coupled individual-based young-of-the-year and age-structured adult models. *Canadian Journal of Fisheries and Aquatic Sciences* 53:1071-1091.

44. **Rose, K.A**., J.A. Tyler, D. SinghDermot, and E. Rutherford. 1996. Multispecies modeling of fish populations. In: *Computers in Fisheries Research* (B. Megrey and E. Moksness, eds.), Chapman and Hall, pp. 194-222.

45. Tyler, J.A., **K.A. Rose**, and R.C. Chambers. 1997. Compensatory responses to decreased young-of-the-year survival: an individual-based modeling analysis of winter flounder. In: *Early Life History and Recruitment in Fish Populations* (R. Chambers and E. Trippel, eds.), Chapman and Hall, pp. 391-422.

46. Cowan, J.H., **K.A. Rose**, and E.D. Houde. 1997. Size-based foraging success and vulnerability to predation: selection of survivors in individual-based models of larval fish populations. In: *Early Life History and Recruitment in Fish Populations* (R. Chambers and E. Trippel, eds.), Chapman and Hall, pp. 357-386.

47. Wang, S-B, J.H. Cowan, **K.A. Rose**, and E.D. Houde. 1997. Individual-based modeling of recruitment variability and production potential of bay anchovy, *Anchoa mitchilli*, in mid-Chesapeake Bay. *Journal of Fish Biology* 51 (Suppl. A):101-120.

48. Clark, M.E., and **K.A. Rose**. 1997. Individual-based model of sympatric populations of stream resident rainbow trout and brook char: model description, corroboration, and effects of sympatry and spawning season duration. *Ecological Modelling* 94:157-175.

49. Jaworska, J.S., **K.A. Rose**, and L.W. Barnthouse. 1997. General response patterns of fish populations to stress: an evaluation using an individual-based simulation model. *Journal of Aquatic Ecosystem Stress and Recovery* 6:15-31.

50. Van Winkle, W., **K.A. Rose**, B.D. Shuter, H.I. Jager, and B.D. Holcomb. 1997. Effects of climatic temperature change on growth, survival, and reproduction of rainbow trout: predictions from a simulation model. *Canadian Journal of Fisheries and Aquatic Sciences* 54:2526-2542.

51. Clark, M.E., and **K.A. Rose**. 1997. An individual-based modeling analysis of management strategies for enhancing brook char populations in southern Appalachian streams. *North American Journal of Fisheries Management* 17:54-76.

52. Tyler, J.A., and **K.A. Rose**. 1997. Effects of individual habitat selection in a heterogeneous environment on fish cohort survivorship: a modelling analysis. *Journal of Animal Ecology* 66:122-136.

53. Clark, M.E., and **K.A. Rose**. 1997. Factors affecting competitive exclusion of brook char by rainbow trout in southern Appalachian streams: implications of an individual-based model. *Transactions of the American Fisheries Society* 126:1-20.

54. Jaworska, J.A., **K.A. Rose**, and A.L. Brenkert. 1997. Individual-based modeling of PCB effects on young-of-the-year largemouth bass in southeastern US reservoirs. *Ecological Modelling* 99:113-135.

55. Clark, M.E., **K.A. Rose**, J.A. Chandler, T.J. Richter, D.J. Orth, and W. Van Winkle. 1998. Simulating smallmouth bass reproductive success in reservoirs subject to water level fluctuations. *Environmental Biology of Fishes* 51:161-174.

56. **Rose, K.A**., and E.P. Smith. 1998. Model goodness-of-fit analysis using permutation tests. *Ecological Modelling* 106:129-139.

57. **Rose, K.A**., E.S. Rutherford, D. McDermott, J.L. Forney, and E.L. Mills. 1999. Individual-based model of walleye and yellow perch populations in Oneida Lake. *Ecological Monographs* 69:127-154.

58. Breitburg, D., **K. Rose**, and J. Cowan. 1999. Linking water quality to larval survival: predation mortality of fish larvae in an oxygen-stratified water column. *Marine Ecology Progress Series* 178:39-54.

59. **Rose, K.A**., J.H. Cowan, M.E. Clark, E.D. Houde, and S-B Wang. 1999. Individual-based modeling of bay anchovy population dynamics in the mesohaline region of Chesapeake Bay. *Marine Ecology Progress Series* 185:113-132

60. Railsback, S.F., and **K.A. Rose**. 1999. Bioenergetics modeling of stream trout growth: temperature and food consumption effects. *Transactions of the American Fisheries Society* 128:241-256.

61. Cowan, J.H., **K.A. Rose**, E.D. Houde, and J. Young. 1999. Modeling effects of increased larval mortality on bay anchovy population dynamics and production in the mesohaline Chesapeake Bay: evidence of compensatory reserve. *Marine Ecology Progress Series* 185:133-146.

62. McDermot, D., and **K.A. Rose**. 1999. An individual-based model of lake fish communities: application to piscivore stocking in Lake Mendota. *Ecological Modelling* 125:67-102.

63. **Rose, K.A**., L.W. Brewer, L.W. Barnthouse, G.A. Fox, N.W. Gard, M. Mendoca, K.R. Munkittrick, and L.J. Witt. 1999. Ecological responses of oviparous vertebrates to contaminant effects on reproduction and development. In: *Reproductive and Developmental Effects of Contaminants in Oviparous Vertebrates*, (R.T. Di Giulio and D. E. Tillitt, eds.) SETAC Press, Pensacola, FL, pp. 225-282.

64. Rutherford, E.S., **K.A. Rose**, D. McDermot, E.L. Mills, J.L. Forney, C.M. Mayer, and L.G. Rudstam. 1999. Individual-based model simulations of zebra mussel (*Dreissena polymorpha*)- induced energy shunt on walleye (*Stizostedion vitreum*) and yellow perch (*Perca flavescens*) populations in Oneida Lake, NY. *Canadian Journal of Fisheries and Aquatic Sciences* 56: 2148-2160.

65. **Rose, K.A**. 2000. Why are quantitative relationships between environmental quality and fish populations so elusive? *Ecological Applications* 10:367-385.

66. Kimmerer, W., J.H. Cowan, L.W. Miller, and **K.A. Rose**. 2000. Analysis of an estuarine striped bass population: influence of density-dependent mortality between metamorphosis and recruitment. *Canadian Journal of Fisheries and Aquatic Sciences* 57:478-486.

67. Cowan, J.H., **K.A. Rose**, and D. DeVries. 2000. Is density-dependent growth in young-of-the-year fishes a question of critical weight? *Reviews in Fish Biology and Fisheries* 10:61-89.

68. Jager, H.I., W.W. Hargrove, C.C. Brandt, A.W. King, R.J. Olson, J.M.O. Scurlock, and **K.A. Rose**. 2000. Constructive model validation on a regional scale. *Ecosystems* 3:396-411.

69. **Rose, K.A**., and J.H. Cowan. 2000. Predicting fish population dynamics: compensation and the importance of site-specific considerations. *Environmental Science and Policy* 3: S433-S443.

70. Sample, B.E., **K.A Rose**, and G.W. Suter. 2000. Estimation of population-level effects on wildlife based on individual-level exposures: influence of life history strategies. In: *Environmental Contaminants and Terrestrial Vertebrates: Effects on Populations, Communities, and Ecosystems*, (P.H. Albers, G.H. Heinz, and H.M. Ohlendorf, eds.), SETAC Press, Pensacola, FL, pp. 225-244.

71. Sutton, T.M., **K.A. Rose**, and J.J. Ney. 2000. A model analysis of strategies for enhancing stocking success of landlocked striped bass populations. *North American Journal of Fisheries Management* 20:841-859.

72. Clark, M.E., **K.A. Rose**, D.A. Levine, and W.W. Hargrove. 2001. Predicting climate change effects on brook and rainbow trout populations in southern Appalachian streams: combining GIS and individual-based modeling. *Ecological Applications* 11:161-178.

73. Pearson, S., and **K.A. Rose**. 2001. Effects of sampling design on the estimation of the magnitude and distribution of contaminated bottom sediments of a large reservoir. *Environmetrics* 12:81-102.

74. Kimmerer, W., J.H. Cowan, L.W. Miller, and **K.A. Rose**. 2001. Analysis of an estuarine striped bass population: effects of environmental conditions during early life. *Estuaries* 24:557-575.

75. Clark, J.S., S. Carpenter, M. Barber, S. Collins, A. Dobson, J. Foley, D. Lodge, M. Pascual, R. Pielke, W. Pizer, C. Pringle, W. Reid, **K. Rose**, O. Sala, W. Schlesinger, D. Wall, and D. Wear. 2001. Ecological forecasts: an emerging imperative. *Science* 293: 657-660.

76. **Rose, K.A**., J.H. Cowan, K.O. Winemiller, R.A. Myers, and R. Hilborn. 2001. Compensatory density-dependence in fish populations: importance, controversy, understanding, and prognosis. *Fish and Fisheries* 2:2930327.

77. Haas, H., C. Lamon, **K.A. Rose**, and R. Shaw. 2001. Environmental and biological factors associated with the stage-specific abundance of brown shrimp (*Penaeus aztecus*) in Louisiana: applying a new combination of statistical techniques to long-term monitoring data. *Canadian Journal of Fisheries and Aquatic Sciences* 58:2258-2270.

78. Jager, Y., and **K.A Rose**. 2003. Designing optimal flow patterns for fall Chinook salmon in a Central Valley, California river. *North American Journal of Fisheries Management* 23:1-21.

79. **Rose, K.A**., C.A. Murphy, S.L. Diamond, L.A. Fuiman, and P. Thomas. 2003. Using nested models and laboratory data for predicting population effects of contaminants on

fish: a step towards a bottom-up approach for establishing causality in field studies. *Human and Ecological Risk Assessment* 9:231-257.

80. Rutherford, E.S., **K.A. Rose**, and J.H. Cowan. 2003. Evaluation of the Shepherd and Cushing (1980) model of density-dependent survival: a case study using striped bass, *Morone saxatillis*, larvae in the Potomac River, Maryland, USA. *ICES Journal of Marine Science* 60:1275-1287.

81. **Rose, K.A**., and J.H. Cowan. 2003. Data, models, and decisions in US marine fisheries management: lessons for ecologists. *Annual Review of Ecology, Evolution, and Systematics* 34:127-151.

82. Breitburg, D.L., A. Adamack, **K.A. Rose**, S.E. Kolesar, M.B. Decker, J.E. Purcell, J.E. Keister, JH. Cowan. 2003. The pattern and influence of low dissolved oxygen in the Patuxent River, a seasonally hypoxic estuary. *Estuaries* 26(2A):280-297.

83. Haas, H.L., **K.A. Rose**, B. Fry, T.J. Minello, and L.P. Rozas. 2004. Brown shrimp on the edge: linking habitat to survival using an individual-based simulation model. *Ecological Applications* 14:1232-1247.

84. Runge, J.A., P.J.S. Franks, W.C. Gentleman, B.A. Megrey, **K.A. Rose**, F.E. Werner, and B. Zakardjian. 2004. Diagnosis and prediction of variability in secondary production and fish recruitment processes: developments in physical-biological modelling. In: *Global Coastal Ocean: Multi-Scale Interdisciplinary Processes,* (A.R. Robinson and K.H. Brink, eds.), The Sea: Vol. 13, Harvard University Press, Cambridge, MA., pp. 413-473.

85. **Rose, K.A**. 2005. Lack of relationship between fish population responses and their life history traits: inaccurate models, incorrect analyses, or importance of site-specific factors. *Canadian Journal of Fisheries and Aquatic Sciences* 62:886-902.

86. Murphy, C.A., **K.A. Rose**, and P. Thomas. 2005. Modeling vitellogenesis in female fish exposed to environmental stressors: predicting the effects of endocrine disturbance due to exposure to a PCB mixture and cadmium. *Reproductive Toxicology* 19:395-409.

87. Brouwer, M., N.J. Brown-Peterson, P. Larkin, S. Manning, N. Denslow, and **K. Rose.** 2005. Molecular indicators and organismal effects of chronic and intermittent hypoxia in marine crustacean. In: *Estuarine Indicators*, (S.A. Bortone, ed.), CRC Press, Boca Raton, FL, pp. 261-276.

88. Richmond, C.E., D.L. Breitburg , and **K.A. Rose**. 2005. The effect of stress-tolerance on the relationship between species richness and system function. *Ecological Modelling* 188: 279-295.

89. Butler, M.J., J.H. Hunt, W.F. Herrnkind, **K.A. Rose**, and T. Dolan. 2005. Recruitment in degraded marine habitats: a spatially-explicit, individual-based model for spiny lobster. *Ecological Applications* 15:902-918.

90. Alvarez, M.C., C.A. Murphy, **K.A. Rose**, I.D. McCarthy, and L.A. Fuiman. 2006. Maternal body burdens of methylmercury impair survival skills of offspring in Atlantic croaker (*Micropogonias undulatus*). *Aquatic Toxicology* 80:329–337.

91. Fuiman, L.A., **K.A. Rose**, J.H. Cowan, and E.P. Smith. 2006. Survival skills required for predator evasion by fish larvae and their relationship to laboratory measures of performance. *Animal Behaviour* 71:1389-1399.

92. Scharf, F.S., J.A. Buckel, **K.A. Rose**, F. Juanes, and J.H. Cowan. 2006. Effects of variable prey and cohort dynamics on growth of young-of-the-year estuarine bluefish: evidence for interactions between spring- and summer-spawned cohorts. *Transactions of the American Fisheries Society* 135:1266-1289.

93. Neer, J.A., **K.A. Rose**, and E. Cortes. 2007. Simulating the effects of temperature on individual and population growth of the cownose ray, *Rhinoptera bonasus*: a coupled bioenergetics and matrix modeling approach. *Marine Ecology Progress Series* 329:211-223.

94. **Rose, K.A**., B.A. Megrey, F Werner, and D.M. Ware. 2007. Calibration of the NEMURO nutrient-phytoplankton-zooplankton food web model to a coastal ecosystem: evaluation of an automated calibration approach. *Ecological Modelling* 203:38-51.

95. Yoshie, N, Y. Yamanaka, **K.A. Rose**, D.L. Eslinger, D.M. Ware, and M.J. Kishi. 2007. Parameter sensitivity study of the NEMURO lower trophic level marine ecosystem model. *Ecological Modelling* 203: 26-27.

96. Megrey, B.A., **K.A. Rose**, R.A. Klumb, D.E. Hay, F.E. Werner, D.L. Eslinger, and S.L. Smith. 2007. A bioenergetics-based population dynamics model of Pacific herring (*Clupea harengus pallasi*) coupled to a lower trophic level nutrient-phytoplankton-zooplankton model: description, calibration, and sensitivity analysis. *Ecological Modelling* 203:144-164.

97. Megrey, B.A., **K.A. Rose**, S. Ito, D.E. Hay, F.E. Werner, Y. Yamanaka, M. Aita-Noguchi. 2007. Basin-scale differences in lower and higher trophic level marine ecosystem response to climate impacts using a coupled biogeochemical-fisheries bioenergetics model. *Ecological Modelling* 203:196-210.

98. **Rose, K.A**., F.E. Werner, B.A. Megrey, M. Noguchi-Aita, Y.Yamanaka, D.E. Hay, J.F. Schweigert, and M.B. Foster. 2007. Simulated herring growth responses in the Northeastern Pacific to historic temperature and zooplankton conditions generated by the 3-dimensional NEMURO nutrient–phytoplankton–zooplankton model. *Ecological Modelling* 203:184-195.

99. **Rose, K.A**., B.A. Megrey, D. Hay, F. Werner, and J. Schweigert. 2008. Climate regime effects on Pacific herring growth using coupled nutrient-phytoplankton-zooplankton and bioenergetics models. *Transactions of the American Fisheries Society* 137:278-297.

100. Jager, H.I., **K.A. Rose**, and A. Vila-Gispert. 2008. Life history correlates and extinction risk of capital-breeding fishes. *Hydrobiologia* 602:15-25.

101. Murphy, C.A., **K.A. Rose**, M.C. Alvarez, and L.A. Fuiman. 2008. Modeling larval fish behavior: scaling the sublethal effects of methylmercury to population relevant endpoints. *Aquatic Toxicology* 86:470-484.

102. Clark, M.E., **K.A. Rose**, J.A. Chandler, T.J. Richter, D.J. Orth, and W. Van Winkle. 2008. Water level fluctuation effects on centrarchid reproductive success in reservoirs: a modeling analysis. *North American Journal of Fisheries Management* 28:1138-1156.

103. Roth, B.M., **K.A. Rose**, L.S. Rozas, and T.J. Minello. 2008. The relative influence of landscape configuration and inundation on brown shrimp (*Farfantepenaeus aztecus*) production in northern Gulf of Mexico salt marshes. *Marine Ecology Progress Series* 359:185-202.

104. Hay, D.E., **K.A. Rose**, J. Schweigert, and B.A. Megrey. 2008. Geographic variation in North Pacific herring populations: pan-Pacific comparisons and implications for climate change impacts. *Progress in Oceanography* 77:233-240.

105. Sable, S.E., and **K.A. Rose**. 2008. A comparison of individual-based and matrix projection models for simulating yellow perch population dynamics in Oneida Lake, New York, USA. *Ecological Modelling* 215:105-121.

106. Lett, C., **K.A. Rose**, and B.A. Megrey. 2009. Chapter 6: Biophysical models of small pelagic fish. In: *Climate Change and Small Pelagic Fish*, (D. Checkley, J. Alheit, Y. Oozeki, and C. Roy, eds.), Cambridge University Press, Cambridge, MA, pp. 88-111.

107. **Rose, K.A**. and S. E. Sable. 2009. Multispecies modeling of fish populations. In: Computers in Fisheries Research, Second Edition, (B.A. Megrey and E. Moksness, eds.), Springer, Netherlands, pp. 373-398.

108. Gregg, W.W., A.R. Robinson, **K.A. Rose**, R. Schlitzer, K.R. Thompson, and S.C. Doney. 2009. Skill assessment in ocean biological data assimilation. *Journal of Marine Systems* 76:16-33.

109. **Rose, K.A**., B.M. Roth, and E.P. Smith. 2009. Skill assessment of spatial maps for oceanographic modeling. *Journal of Marine Systems* 76:34-48.

110. Stow, C.A., J. Jolliff, D.J. McGillicuddy, S.C. Doney, J.I. Allen, M.A.M. Friedrichs, **K.A. Rose**, and P. Wallhead. 2009. Skill assessment for coupled biological/physical models of marine systems. *Journal of Marine Systems* 76:4-15.

111. Murphy, C.A., **K.A. Rose**, M.S. Rahman, and P.Thomas. 2009. Testing and applying a fish vitellogenesis model to evaluate lab and field biomarkers of endocrine disruption in Atlantic croaker exposed to hypoxia. *Environmental Toxicology and Chemistry* 28:1288–1303.

112. **Rose, K.A.**, A.T. Adamack, C.A. Murphy, S.E. Sable, S.E. Kolesar, J.K. Craig, D.L. Breitburg, P. Thomas, M.H. Brouwer, C.F. Cerco, and S. Diamond. 2009. Does hypoxia have population-level effects on coastal fish? Musings from the virtual world. *Journal of Experimental Marine Biology and Ecology* 381:S188-S203.

113. Breitburg, D. L., Craig, J.K., Fulford, R.S., **Rose, K.A.**, Boynton, W.R., Brady, D., Ciotti, B.J., Diaz, R.J., Friedland, K.D., Hagy, J.D., Hart, D.R., Hines, A.H., Houde, E.D., Kolesar, S.E., Nixon, S.W., Rice, J.A., Secor, D.H., and Targett, T.E. 2009.

Nutrient enrichment and fisheries exploitation: interactive effects on estuarine living resources and their management. *Hydrobiologia* 629:31-47.

114. Walters, C., V. Christensen, W. Walters, and **K.A. Rose**. 2010. Representation of multi-stanza life histories in Ecospace models for spatial organization of ecosystem trophic interactions. *Bulletin of Marine Science* 86:439-459

115. Ito, S., **K.A. Rose**, A.J. Miller, K. Drinkwater, K.M. Brander, J.E. Overland, S. Sundby, E. Curchitser, J.W. Hurrell, and Y. Yamanaka. 2010. Ocean ecosystem responses to future global change scenarios: A way forward. In: *Marine Ecosystems and Global Change*, (M. Barange, J.G. Field, R.P. Harris, E.E. Hofmann, R.I. Perry, and F.E. Werner, eds.), Oxford University Press, Oxford, England, pp. 287-322.

116. **Rose, K.A.**, J.I. Allen, Y. Artioli, M. Barange, J. Blackford, F. Carlotti, R. Cropp, U. Daewel, K. Edwards, K. Flynn, S.L. Hill, R. HilleRisLambers, G. Huse, S. Mackinson, B. Megrey, A. Moll, R. Rivkin, B. Salihoglu, C. Schrum, L. Shannon, Y.-J. Shin, S.L. Smith, C. Smith, C. Solidoro, M. St. John, and M. Zhou. 2010. End-to-end models for the analysis of marine ecosystems: challenges, issues, and next steps. *Marine and Coastal Fisheries* 2:115-130.

117. Cowan, J.H., C. B. Grimes, W. F. Patterson, C. J. Walters, A. C. Jones, W. J. Lindberg, D. J. Sheehy, W. E. Pine, J. E. Powers, M. D. Campbell, K. C. Lindeman, S. L. Diamond, R. Hilborn, H. T. Gibson, and **K.A. Rose**. 2010. Red snapper management in the Gulf of Mexico: science- or faith-based? *Reviews in Fish Biology and Fisheries* 21:187-204.

118. Blackford, J., J.I. Allen, T.R. Anderson, and **K.A. Rose**. 2010. Challenges for a new generation of marine ecosystem models: overview of the Advances in Marine Ecosystem Modelling Research (AMEMR) Symposium. *Journal of Marine Systems* 81:1-3.

119. Ito, S., N. Yoshie, T. Okunishi, T. Ono, Y. Okazak, A. Kuwata, T. Hashioka**, K.A. Rose**, B.A. Megrey, M.J. Kishi, M. Nakamachi, Y. Shimizu, S. Kakehi, H. Saito, K. Takahashi, K. Tadokoro, A. Kusaka, and H. Kasai. 2010. Application of an automatic approach for calibrating the NEMURO nutrient-phytoplankton-zooplankton food web model in the Oyashio region. *Progress in Oceanography* 87:186-200.

120. Sable, S.E. and **K.A. Rose**. 2010. Predicting yellow perch population responses using a density-dependent age-structured matrix projection model: how many annual data points are enough? *Transactions of the American Society* 139:1857-1871.

121. Massoudieh, A., E. Loboschefsky, T. Sommer, T. Ginn, **K. Rose**, and F. Loge. 2011. Spatio-temporal modeling of striped-bass egg and larvae movement and fate in the San Francisco Bay-Delta. *Ecological Modelling* 222:3513-3523.

122. Hoeppner, S., and **K.A. Rose**. 2011. Individual-based modeling of flooding and salinity effects on a coastal swamp forest. *Ecological Modelling* 222:3541-3558.

123. Salice, C.J., B.E. Sample, R. Miller-Neilan, **K.A. Rose**, and S. Sable. 2011. Evaluation of alternative PCB clean-up strategies using an individual-based population model of mink. *Environmental Pollution* 159:3334-3343.

124. Nakayama, S., **K.A. Rose**, and L.A. Fuiman. 2011. Batch spawning decreases competition among early life stages in coastal fishes: a simulation study using red drum *Sciaenops ocellatus*. *Marine Ecology Progress Series* 441:213-223.

125. Campbell, M.D., **K.A. Rose**, K. Boswell, J.H. Cowan Jr. 2011. Individual-based modeling of fish population dynamics of an artificial reef community: Effects of habitat quantity and spatial arrangement. *Ecological Modelling* 222:3895-3909.

126. Stock, C.A., M.A. Alexander, N.A. Bond, K. Brander, W.W.L. Cheung, E.N. Curchitser, T.L. Delworth, J.P. Dunne, S.M. Griffies, M.A. Haltuch, J.A. Hare, A.B. Hollowed, P. Lehodey, S.A. Levin, J.S. Link, **K.A. Rose**, R. Rykaczewski, J.L. Sarmiento, R.J. Stouffer, F.B. Schwing, G.A. Vecchi, F.E. Werner. 2011. On the use of IPCC-class models to assess the impact of climate on living marine resources. *Progress in Oceanography* 88:1-27.

127. Kishi, M.J., S. Ito, B.A. Megrey, **K.A. Rose**, F.E. Werner, and Y. Yamanaka. 2011. A review of the NEMURO and NEMURO.FISH models and their application to marine ecosystem investigations. *Journal of Oceanography* 67:3-16.

128. Bi, H., **K.A. Rose**, and M.C. Benfield. 2011. Estimating copepod stage-specific mortality rates in open ocean waters: a case study from the northern Gulf of Mexico, USA. *Marine Ecology Progress Series* 427:145-159.

129. Lobosch**efsky, E.**, G. Benigno, T. Sommer, T. Ginn, A. Massoudieh, **K. Rose**, F. Loge. 2012. Bioenergetic modeling of San Francisco Estuary striped bass. *San Francisco Estuary and Watershed Science 10:* article 1.

130. **Rose, K.A**., M.C. **Fabrizio**, and B.A. Phelan. 2012. Determining authorship: why is something that seems so simple often so difficult? In: *Scientific Communication for Natural Resource Professionals* (C.A. Jennings, T.E. Lauer, and B. Vondracek, eds.), American Fisheries Society, Bethesda, MD, pp. 7-18.

131. Cooperman, M.S., N. So, M. Arias, T.A. Cochrane, V. Elliott, T. Hand, L. Hannah, G.W. Holtgrieve, G.W., L. Kaufman, A.A. Koning, J. Koponen, V. Kum, K.S. McCann, P.B. McIntyre, B. Min, C. Ou, N. Rooney, **K.A. Rose**, J.L. Sabo, and K.O. Winemiller. 2012. A watershed moment for the Mekong: newly announced community use and conservation areas for the Tonle Sap Lake may boost sustainability of the world's largest inland fishery. *Cambodian Journal of Natural History* 2012(2): 101–106.

132. **Rose, K.A.** 2012. End-to-end models for marine ecosystems: Are we on the precipice of a significant advance or just putting lipstick on a pig? *Scientia Marina* 76: 195-201.

133. Adamack, A.T., **K.A. Rose**, D.L. Breitburg, A.J. Nice, and W.S. Lung. 2012. Simulating the effect o**f** hypoxia on bay anchovy egg and larval mortality using coupled watershed, water quality, and individual-based predation models. *Marine Ecology Progress Series* 155: 141-160.

134. Richmond, C.E., **K.A. Rose,** and D.L. Breitburg. 2013. Individual variability and environmental conditions: effects on zooplankton cohort dynamics. Marine Ecology Progress Series 486: 59-78.

135. Watkins, K.S., and K.A. Rose. 2013. Evaluating the performance of individual-based animal movement models in novel environments. *Ecological Modelling* 250: 214-234.

136. Reyes, E. **K. Rose**, and D. Justic. 2013. Chapter 21: Estuarine ecological modeling. In*: Estuarine* Ecology, Second Edition, (J.W. Day, W.M. Kemp, and A. Yaez-Arancibia, eds.), Wiley-Blackwell, Hoboken, NJ, pp. 519-536

137. Xu, Y., F. Chai, **K.A. Rose**, M. Ñiquen C., F.P. Chavez. 2013. Environmental influences on the interannual variation and spatial distribution of Peruvian anchovy (*Engraulis ringens*) population dynamics from 1991 to 2007: A three-dimensional modeling study. *Ecological Modelling* 264: 64-82.

138. Diamond, S.L., C.A. Murphy, **K.A. Rose**. 2103. Simulating the effects of global climate change on Atlantic croaker population dynamics in the Mid-Atlantic Region. *Ecological Modelling* 264: 98-114.

139. **Rose, K.A.**, and J.I. Allen. 2013. Modeling marine ecosystem responses to global climate change: Where are we now and where should we be going? *Ecological Modelling* 264: 98-114.

140. **Rose, K.A.,** W.J. Kimmerer, K.P. Edwards, and W.A. Bennett. 2013. Individual-based modeling of delta smelt population dynamics in the Upper San Francisco Estuary: I. Model description and baseline results. *Transactions of the American Fisheries Society* 142:1238-1259.

141. **Rose, K.A.,** W.J. Kimmerer, K.P. Edwards, and W.A. Bennett. 2103. Individual-based modeling of delta smelt population dynamics in the Upper San Francisco Estuary: II. Alternative baselines and good versus bad years. *Transactions of the American Fisheries Society* 142:1260-1272.

142. Burns, T.P., **K.A. Rose**, and A.L. Brenkert. 2014. Quantifying direct and indirect effects of perturbations using model ecosystems. *Ecological Modelling* 293:69-80.

143. Miller Neilan, R., and **K.A. Rose.** 2014. Simulating the effects of fluctuating dissolved oxygen on growth, reproduction, and survival of fish and shrimp. *Journal of Theoretical Biology* 343:54-68.

144. **Rose, K.A**., H. Huang, D. Justic, and K. de Mutsert. 2014. Simulating fish movement responses to and potential Salinity Stress from large-scale river diversions. *Marine and Coastal Fisheries* 6:43-61.

145. Langseth, B.J., K.M. Purcell, J.K. Craig, A.M. Schueller, J.W. Smith, K.W. Shertzer, S. Creekmore, **K.A. Rose**, and K. Fennel. 2014. Effect of changes in dissolved oxygen concentrations on the spatial dynamics of the Gulf Menhaden fishery in the northern Gulf of Mexico. *Marine and Coastal Fisheries* 6:223-234.

146. Watkins, K.S., and **K.A. Rose**. 2014. The effects of spatial and temporal resolution in simulating fish movement in individual-based models. *Transactions of the American Fisheries Society* 143:1143-1160.

147. **Rose, K.A**., S. Sable, D.L. DeAngelis, S. Yurek, J.C., Trexler, W. Graf, and D.J. Reed. 2015. Proposed best modeling practices for assessing the effects of ecosystem restoration on fish. *Ecological Modelling* 300:12-29.

148. Warden, M.L., H.L. Haas, **K.A. Rose**, and P.M. Richards. 2015. A spatially explicit population model of simulated fisheries impact on loggerhead sea turtles (*Caretta caretta*) in the Northwest Atlantic Ocean. *Ecological Modelling* 299:23-39

149. Fiechter, J., **K.A. Rose**, E.N. Curchitser, and K. Hedstrom. 2015. The role of environmental controls in determining sardine and anchovy population cycles in the California Current: Analysis of an end-to-end model. *Progress in Oceanography* 138:381-398.

150. **Rose, K.A**., J. Fiechter, E.N. Curchitser, K. Hedstrom, M. Bernal, S. Creekmore, A. Haynie, S. Ito, S. Lluch-Cota, B.A. Megrey, C. Edwards, D. Checkley, T. Koslow, S. McClatchie, and F. Werner. 2015. Demonstration of a fully-coupled end-to-end model for small pelagic fish using sardine and anchovy in the California Current. *Progress in Oceanography* 138:348-380.

151. Xu, Y., **K.A. Rose**, F. Chai, F.P. Chavez, and P. Ayón. 2015. Does spatial variation in environmental conditions affect recruitment? A study using a 3-D model of Peruvian anchovy. *Progress in Oceanography* 138:417-430.

152. Ito, S., **K.A Rose**, B.A. Megrey J. Schweigert, D. Hay, F.E. Werner, and M. N. Aita. 2015. Geographic variation in Pacific herring growth in response to regime shifts in the North Pacific Ocean. *Progress in Oceanography* 138:331-346.

153. Curchister, E.N., **K.A. Rose**, S.Ito, M. Peck., and M.J. Kishi. 2015. Combining modeling and observations to better understand marine ecosystem dynamics. *Progress in Oceanography* 138:327-330.

154. Fiechter, J., D.D. Huff, B.T. Martin, D.W. Jackson, C.A. Edwards, **K.A. Rose**, E.N. Curchitser, K.S. Hedstrom, S.T. Lindley, and B.K. Wells. 2015. Environmental conditions impacting juvenile Chinook salmon growth off central California: An ecosystem model analysis. *Geophysical Research Letters* 42:2910-2917.

155. Collie, J., L. Botsford, A. Hastings, I. Kaplan, J. Largier, P. Livingston, E. Plaganyi, **K. Rose**, B. Wells, and F. Werner. 2016. Ecosystem models for fisheries management: finding the sweet spot. *Fish and Fisheries* 17:101-125.

156. Sable, S.E. and **K.A. Rose**. 2016. Simulating predator-prey dynamics of walleye and yellow perch in Oneida Lake: a comparison of structured community models. In: *Oneida Lake: Long-term Dynamics of a Managed Ecosystem and its Fishery* (Mills, E.L., Rudstam, L.G., Jackson, J.R., Stewart, D.J., eds.) American Fisheries Society, Bethesda, MD, pp. 453-474

157. Rutherford, E.S., and **K.A. Rose.** 2016. Individual-based model analysis of walleye and yellow perch population dynamics in response to changing ecosystem conditions. In: *Oneida Lake: Long-term Dynamics of a Managed Ecosystem and its Fishery* (Mills, E.L.,

Rudstam, L.G., Jackson, J.R., Stewart, D.J., eds.), American Fisheries Society, Bethesda, MD, pp. 427-452.

158. Cowan, J.H., and **K.A. Rose**. 2016. Oil and gas platforms in the Gulf of Mexico: their relationship to fish and Fisheries. In: *Fisheries and Aquaculture in the Modern World* Mikkola, H., ed.). Intech Publishing. Rijeka, Croatia.

159. Adamack, A.A., **K.A. Rose**, and C. Cerco. Simulating the effects of hypoxia on bay anchovy in the Chesapeake Bay using coupled hydrodynamic, water quality, and individual-based fish models. In press. In: *Modeling Coastal Hypoxia: Numerical Simulations of Patterns, Controls and Effects of Dissolved Oxygen Dynamics* (D. Justic, K.A. Rose, K. Fennel, and R. Hetland, eds.), Springer, New York, NY.

160. Kolesar, S.E., **K.A. Rose**, and D.L. Brietburg. In press. Hypoxia effects within an intraguild predation food web of *Mnemiopsis leidyi* ctenophores, larval fish, and copepods. In: *Modeling Coastal Hypoxia: Numerical Simulations of Patterns, Controls and Effects of Dissolved Oxygen Dynamics* (D. Justic, K.A. Rose, K. Fennel, and R. Hetland, eds.) Springer, New York, NY.

161. Fiechter, J., L.A. Huckstadt, **K.A. Rose**, and D.P. Costa. 2016. A fully coupled ecosystem model to predict the foraging ecology of apex predators in the California Current. *Marine Ecology Progress Series* 556: 273-285.

162. Larsen, L.G., M.B. Eppinga, P. Passalacqua, W.M. Getz, **K.A. Rose**, and M. Liang. 2016. Appropriate complexity landscape modeling. *Earth Science Reviews* 160: 111-130.

163. **[in review]** Kimmerer, W.J., and **K.A. Rose**. Individual-based modeling of delta smelt population dynamics in the upper San Francisco Estuary. III. Effects of entrainment mortality and changes in prey. *Transactions of the American Fisheries Society*.

164. **[in review]** Loboschefsky, E., A. Massoudieh, T. Sommer, **K. Rose**, and F. Loge. Individual-based modeling of the striped bass (*Morone saxatilis*) population in the San Francisco Bay estuary and delta. *Transactions of the American Fisheries Society*.

**PRESENTATIONS (since 2005, Invited unless otherwise noted)**

***Co-author on an additional >100 presentations given by others - since 2005***

1. Two invited talks: One fish two fish, red fish, blue fish: It sounds so simple so why are fish population dynamics so complex? (Public presentation) and Fish population dynamics and fisheries management as complex systems (University-wide seminar). University of Alaska's Complex Systems Lecture Series, Anchorage, AK, April 2005.

2. Environmental impacts of offshore LNG terminals. The Energy Council's Liquefied Natural Gas/Compressed Natural Gas Workshop, Biloxi, MS, April 2005.

3. Use of modeling to separate the effects of multiple stressors on fish populations. Workshop on Predicting the Effects of Overfishing, Eutrophication, and Disease on Estuarine Fish Assemblages. Smithsonian Environmental Research Center, Edgewater, MD, May 2005.

4. Multi-authored collaborative papers: the future is now and we need to catch up. American Fisheries Society 135th Annual Meeting, Anchorage, AK, September 2005.

5. Complexity in forage species population dynamics and management. American Fisheries Society 135th Annual Meeting, Anchorage, AK, September 2005 (contributed).

6. Population modeling: If it is so hard and unpleasant, then why do we do it? or How to be distrusted but popular. Annual Workshop of the Environmental Water Account of the CALFED Program. Sacramento, CA. Dec 2005.

7. Geographic variation in fish growth and population responses to regime shifts in the north pacific: a comparison of herring and saury using NEMURO.FISH, a coupled fish bioenergetics and NPZ model. PICES/GLOBEC Symposium on Climate Variability and Ecosystem Impacts on the North Pacific: A Basin-Scale Synthesis, Honolulu, Hawaii, April 2006.

8. Forecasting using full life-cycle biophysical models: is it enough to search for patterns in disparate time scales, space scales, and life histories? Skill Assessment for Coupled Biological/Physical Models of Marine Systems Workshops, Chapel Hill, NC, July 2006.

9. Towards coupling sardine and anchovy to the NEMURO lower trophic model. PICES 15th Annual Meeting, Yokohama, Japan, October 2006.

10. Complex systems theory, post-modernism, and science and scientists in the CALFED era. 4$^{th}$ Biennial CALFED Science Conference, Sacramento, CA, October 2006 (Plenary talk)

11. Red fish, blue fish, one Fish, two Fish - why are fish populations so complex?, School of Marine Sciences Seminar Series, University of Maine, November 2006.

12. Modeling the effects of hypoxia on fish. NOAA's Ecological Impacts of Hypoxia on Living Resources Workshop, Stennis, MS, March 2007.

13. Modeling the ecological effects of endocrine active compounds on fish: scaling from individuals to populations. International Science Forum on Computational Toxicology, Research Triangle Park, NC, May 2007.

14. Modeling hypoxia effects on Chesapeake Bay fish. CheMS'08: Chesapeake Modeling Symposium, Annapolis, MD, May 2008.

15. Experiences with trying to coupled hydrodynamic, NPZ and fish models. Advances in Marine Ecosystem Modelling Research Symposium, Plymouth, England, June 2008 (Keynote Talk)

16. Coupling hydrodynamic, NPZ, and fish models: can the biology and people keep up with the computers? Workshop on Bridging the Gap between Lower and Higher Trophic Levels, Plymouth, England, June 2008.

17. Physics to fishers modeling: a proof of principle using sardine and anchovy in the California Current. Workshop on applying IPCC-class models of global warming to fisheries prediction, Princeton University, NJ, June 2009.

18. End-to-end models: can the people and biology keep up with the computers? Ecosystem Studies of Sub-Arctic Seas (ESSAS) Annual Science Meeting, Seattle, WA, June 2009.

19. Does hypoxia cause population-level effects in Gulf of Mexico fish? Workshop to Coordinate Gulf of Mexico Hypoxic Zone Research, February 2010, Bay St. Louis, MS, February 2010.

20. Can end-to-end models be assembled from existing models? End-to-End Modeling Workshop, Woods Hole, MA, April 2010.

21. End-to-end models: should we? can we? what is new? ESSAS Annual Science Meeting, Reykjavik, Iceland, September 2010.

22. Two invited talks: From climate to physics to fisheries: a demonstration of an end-to-end model for the California Current System, and Including fleet models in an end-to-end modeling framework. MARIFISH-ICES Joint Workshop on Integrated Ecosystem Modelling, Barcelona, Spain, November 2010.

23. Comparative analysis of stressors affecting delta smelt population dynamics: implications of a spatially-explicit individual-based model. Annual Meeting of the American Fisheries Society, Seattle, WA, September 2011 (contributed).

24. Two invited talks: Session S8 (Linking migratory fish behavior to end-to-end models) and Session S9 (How well do our models really work and what data do we need to check and improve them?). 2011 PICES Annual Science Meeting, Khabarovsk, Russia, October 2011.

25. Are population-level effects of hypoxia on fish truly small or larger but elusive? 20th Biennial Conference of the Coastal and Estuarine Research Federation, Daytona Beach, FL, November 2011 (contributed).

26. Development of a climate-to-fish-to-fishers model for anchovies and sardines in the California Current: proof-of-principle and exploratory simulation of fishing effects. 6th World Fisheries Congress, Edinburgh, Scotland, May 2012 (contributed).

27. Are population-level effects of hypoxia on fish truly small or larger but elusive? 3rd Annual Hypoxia Coordination Workshop, Bay St. Louis, March 2012.

28. Individual-Based Population Dynamics Model of Delta Smelt: Comparing the Effects of Food versus Entrainment. 2012 Annual Workshop of the Interagency Ecological Program, Folsom, CA, April 2012.

29. Modeling movement of fish over spatial and temporal scales: if fish were dumber and people were smarter. Working Group on Integrative Physical-Biological and Ecosystem Modelling (WG-IPEM), Copenhagen, March 2012.

30. Predicting the Population-Level Effects of Hypoxia on Atlantic Croaker (*Micropogonias undulatus*) in the Northern Gulf of Mexico. Annual Meeting of the American Society of Limnology and Oceanography, New Orleans, February 2013 (contributed).

31. Development of a Climate-to-Fish-to-Fishers Model: Implementation in the eastern Pacific Sardine and Anchovy System. Annual Meeting of the American Society of Limnology and Oceanography, New Orleans, February 2013 (contributed).

32. Some advances in ecosystem modeling: Can the data and people keep up with the computers? Lake Erie – Inland Waters Annual Research Review, Columbus, OH, January 2013 (plenary speaker)

33. Modeling Fish Population Responses to Hypoxia: What Do We Need and What Do We Want. Forum for Gulf of Mexico Hypoxia Research Coordination and Advancement, Stennis, MS, April 2013.

34. Development of a climate-to-fish-to-fishers model: proof-of-principle and exploratory simulations using anchovies and sardines in the California Current, ICES Annual Science Conference, Reykjavik, Iceland, September 2013 (contributed).

35. Six words we should ban unless properly defined: Complexity, Complicated, Validation, Mechanistic, Prediction, and Management. American Fisheries Society, Little Rock, AR, September 2013.

36. Can we better understanding the elusive "competition" and "recruitment variability" using individual-based modeling: a case study using red drum, American Fisheries Society, Little Rock, AR, September 2013.

37. Modeling the effects of diversions: can the biology and data keep up with computers? CEER: Conference on Ecological and Ecosystem Restoration, New Orleans, July 2014.

38. Coupling fish to physics in models: If people were smarter or fish were dumber. Deltares, Delft, Netherlands March 2014.

39. Fisheries modeling: State of the science and challenges, NOAA Workshop on Operational Ecosystem Forecasting, Cambridge, MD, April 2014.

40. Modeling: Diversion effects on fish and best practices, The 5th Annual NOAA/NGI Gulf Hypoxia Research Coordination Workshop, Stennis, MS, July 2014.

41. End-to-End Modeling of Marine Ecosystems: Can the Biology and People Keep up with the Computers? Seminar at the College of Marine Science, University of South Florida, St. Petersburg, FL, October 2014.

42. Ecosystem modeling for fish and shellfish: What to expect? Presentation to the Expert Panel on Diversion Planning and Implementation, Baton Rouge, LA, October 2014.

43. End-to-end modeling of sardine and anchovy in the California Current System. CalCOFI Conference: Predicting the California Current System, La Jolla, CA, December 2014.

44. End-to-end modeling: An emerging tool for ecosystem-based fisheries management. 145th Annual Meeting of the American Fisheries Society, Portland, OR.

45. Modeling the population-level effects of hypoxia on a coastal fish: implications of a spatially-explicit individual-based model. ICES Annual Science Conference, Copenhagen, Denmark, September, 2015.

46. Proposed best modeling practices for fish conservation and ecosystem restoration. 145th Annual Meeting of the American Fisheries Society, Portland, OR, August 2015.

47. Physics to fish – challenges, opportunities, and promise. NOAA's North Atlantic Regional Team (NART) Workshop on "Linking freshwater and ocean dynamics towards integrative ecosystem modeling", Norrie Point, NY, August 2015.

48. Modeling the population-level effects of hypoxia on a coastal fish: implications of a spatially-explicit individual-based model. Ocean Sciences Meeting, New Orleans, February 2016 (contributed).

49. The social aspects of ecological modeling or what they did not teach you in school. International Society of Ecological Modelling Global Conference, Baltimore, MD, May 2016 (plenary speaker)

50. Fisheries science in an era of stakeholder-engaged multi-disciplinary analysis: the "people" part of coupled human-natural systems. 7th World Fisheries Congress, Busan, Korea, May 2016 (keynote speaker).