CURRICULUM-VITA

Daniel L. Roelke, Professor

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# EDUCATION

1997-98 Post-Doctoral Fellow, Consortium of Oceanographic Research and Education, Naval Research Laboratory, Stennis Space Center, Mississippi.

1993-97 Ph.D. Oceanography, Texas A&M University, TX

1990-93 M.S. Oceanography, Texas A&M University, TX

1985-89 B.S. Earth Science, Minor in Chemistry, Millersville University, PA

# PROFESSIONAL EXPERIENCE

*Primary appointments*

2011-P Professor, Department of Wildlife and Fisheries Sciences and Department of Oceanography, Texas A&M University.

2004-11 Associate Professor, Department of Wildlife and Fisheries Sciences and Department of Oceanography, Texas A&M University.

1998-04 Assistant Professor, Department of Wildlife and Fisheries Sciences and Department of Oceanography, Texas A&M University.

*Other positions*

Present

2016-P Guest Editor, *Estuarine, Coastal and Shelf Science*, journal of the Estuarine Coastal Sciences Association (ECSA), United Kingdom.

2015-P Associate Editor, *Marine & Freshwater Research*, journal of the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia.

2012-P Editorial Board, *Marine Science and Technology Bulletin*, published by Canakkale Onsekiz Mart University, Canakkale, Turkey.

2005-P Faculty, Water Management and Hydrologic Sciences, Interdisciplinary Degree Program, Texas A&M University.

2005-P Faculty, Ecology and Evolutionary Biology, Interdisciplinary Research Program, Texas A&M University.

2004-P Faculty, Marine Biology, Interdisciplinary Degree Program, Texas A&M University.

Past

2010-16 Member, National Harmful Algal Blooms Committee, USA.

2007-16 Associate Editor, *The American Naturalist*, journal of the American Society of Naturalists.

2013-15 Executive Committee, Institute of Applied Mathematics and Computational Sciences, Texas A&M University.

2011-15 Member, Institute for Applied Mathematics and Computational Science, Texas A&M University and King Abdullah University of Science and Technology, Saudi Arabia.

2012 Visiting Scientist, School of the Environment, University of Technology Sydney, Australia.

2012 Visiting Scientist, Department of Marine Sciences, University of the Aegean, Greece.

2010-11 Associate Chair, Ecology and Evolutionary Biology, Interdisciplinary Research Program, Texas A&M University.

2008-11 Faculty Senator, Texas A&M University.

2006 Visiting Scientist, US Environmental Protection Agency, Western Ecology Division, Hatfield Marine Science Center, Oregon.

2005-08 Board Member, Texas River and Reservoir Management Society.

# HONORS/AWARDS

2015 Invited to serve a 1st term on the editorial board of *Marine and Freshwater Research*

2015 Recipient of the Texas A&M University Wildlife and Fisheries Sciences Department “Outstanding Graduate Teaching” Award

2015 Recipient of the Texas Chapter American Fisheries Society “Fisheries Education” Award

2014 Invited to serve a third term on the editorial board of *The American Naturalist*

2014 Nominated for the Texas Chapter American Fisheries Society Education Award (did not receive)

2013 Re-elected to the National Harmful Algal Bloom Committee (USA)

2010 Nominated for Vice-Chancellor’s Award for Excellence in Research (Texas A&M University, College of Agriculture and Life Sciences) (did not receive)

2010 Elected to the National Harmful Algal Bloom Committee (USA)

2010 Invited to serve a second term on the editorial board of *The American Naturalist*

2009 Invited to serve as “Opponent” in the dissertation defense of Andreas Brutemark (E. Graneli, Chair), University of Kalmar Sweden

2009 Invited to organize a special session for the 30th Annual Conference of the Society of Environmental Toxicology and Chemistry (SETAC), New Orleans, LA, USA focused on ecohydrology and the fate of phycotoxins

2008 Invited to write a chapter for the multivolume Treatise on Estuarine and Coastal Science (vol. 9, Elsevier) focused on incidence of hypoxia in coastal waters

2008 Elected to the Faculty Senate, Texas A&M University

2007 Invited to join the editorial board of *The American Naturalist*

1998 Invited to participate in the International Council for the Exploration of the Sea: Young Scientists Conference on Marine Ecosystem Perspectives (limited to 2 participants per country)

1997 Awarded a Consortium of Oceanographic Research and Education (CORE) Postdoctoral Fellow

# MEMBERSHIPS/SOCIETIES

Present

1999-P Coastal and Estuarine Research Federation (CERF)

1994-P Association for the Sciences of Limnology and Oceanography (ASLO)

Past

2003-2016 American Society of Naturalists

1998-00, 14-16 American Fisheries Society, Texas Chapter

2012-14 Phycological Society of America

2009-10 Society of Environmental Toxicology and Chemistry

1999-08 Texas River and Reservoir Management Society

1993 Honor Society of Phi Kappa Phi

*PUBLICATIONS*

*Underlined name* indicates author was a graduate student at the time of research

*Double underlined name* indicates author was an undergraduate or held a B.S. at the time of research

*Peer-reviewed journal articles*

81. Grover, J.P., **D.L. Roelke**, B.W. Brooks. 2017. Population persistence in flowing-water habitats: Conditions where flow-based management of harmful algal blooms works, and where it does not. Ecological Engineering. 99: 172-181.

80. **Roelke, D.L.**, H-P. Li, C.J. Miller-DeBoer, G.M. Gable, S.E. Davis. 2016. Regional shifts in phytoplankton succession and primary productivity in the San Antonio Bay System (USA) in response to diminished freshwater inflows. Marine and Freshwater Research. 67: 1-15.

79. **Roelke, D.L.**, A. Barkoh, B.W. Brooks, J.P. Grover, K.D. Hambright, J.W. La Claire II, P.D.R. Moeller, R. Patino. 2016. A chronicle of a killer alga in the west: Ecology, assessment and management of *Prymnesium parvum* blooms. Hydrobiologia. 764: 29–50.

78. Hitchcock, J.N., S.M. Mitrovic, W.L. Hadwen, **D.L. Roelke**, I.O. Grownsand A.M. Rohlfs. 2016. Terrestrial dissolved organic carbon subsidizes estuarine zooplankton: an in-situ mesocosm study. Limnology and Oceanography. 61: 254-267.

77. Pinckney, J.L., A. Quigg, **D.L. Roelke**, 2016 Interannual and seasonal patterns of estuarine phytoplankton diversity in Galveston Bay, Texas, USA. Estuaries and Coasts. *Accepted*.

76. Smeti, E., S. Spatharis, **D.L. Roelke**. 2016. Spatial averaging and disturbance lead to high productivity in aquatic metacommunities. Oikos. 125: 812-820.

75. **Roelke, D.L.**, S. Spatharis. 2015. Phytoplankton succession in recurrently fluctuating environments. PLoS ONE. 10(3): 1-17. doi:10.1371/journal.pone.0121392.

74. **Roelke, D.L.**, S. Spatharis. 2015. Phytoplankton assemblage characteristics in recurrently fluctuating environments. PLoS ONE. 10(3): 1-25. doi:10.1371/journal.pone.0120673.

73. Davis, S.L., **D.L. Roelke**, B.W. Brooks, V.M. Lundgren, F. Withrow, W.C. Scott. 2015. Rotifer−*Prymnesium parvum* interactions: role of lake bloom history on rotifer adaptation to toxins produced by *P. parvum*. Aquatic Microbial Ecology. 75: 55-68.

72. Dorado, S., T. Booe, J. Steichen, A.S. McInnes, R. Windham, A. Shepard, A.E.B. Lucchese, H. Preischel, J.L. Pinckney, S.E. Davis, **D.L. Roelke** and A. Quigg. 2015. Towards an understanding of the interactions between freshwater inflows and phytoplankton communities in a subtropical estuary in the Gulf of Mexico. PLoS ONE. 10(7): 1-23. doi:10.1371/journal.pone.0130931.

71. Lundgren, V.M., **D.L. Roelke**, B.W. Brooks, E. Granéli, S.L. Davis, T. Baty, W.C. Scott. 2015. *Prymnesium parvum* invasion success into coastal bays of the Gulf of Mexico: Galveston Bay case study. Harmful Algae. 43: 31-45.

70. Smeti, E., **D.L. Roelke**, G. Gremion, J.M. Linhart, D.B. Danielidis, S. Spatharis. 2015. Potential mechanisms of coexistence between two globally important *Pseudo-nitzschia* (Bacillariophyta) species. Hydrobiologia. 762: 89-101.

69. Winemiller, K.O., C. Montaña, **D.L. Roelke**, J.B. Cotner, J.V. Montoya, L. Sanchez, M.M. Castillo, and C.A. Layman. 2014. Pulsing hydrology determines top-down control of basal resources in a tropical river-floodplain ecosystem. Ecological Monographs. 84: 621–635.

68. Witmer, A.D., **D.L. Roelke**. 2014. Human interference prevents recovery of infaunal beach communities from hurricane disturbance. Ocean and Coastal Management. 87: 54-60.

67. **Roelke, D.L.**, H-P. Li, N.J. Hayden, C.J. Miller, S.E. Davis, A. Quigg, Y. Buyukates. 2013. Co-occurring and opposing freshwater inflow effects on phytoplankton biomass, productivity and community composition of Galveston Bay, USA. Mar. Ecol. Progress. Ser. 477: 61-76.

66. Grover, J.P., **D.L. Roelke**, B.W. Brooks, G.M. Gable, M.T. Neisch, N.J. Hayden, T.W. Valenti, Jr., K.N. Prosser, G.D. Umphres, N.C. Hewitt. 2013. Ammonium treatments to suppress toxic blooms of *Prymnesium parvum* in a subtropical lake of semi-arid climate: results from *in situ* mesocosm experiments. Water Research. 47: 4274-4285.

65. Lundgren, V.M., **D.L. Roelke**, J.P. Grover, B.W. Brooks, K.N. Prosser, W.C. Scott, C.A. Laws, G.D. Umphres. 2013. Interplay between ambient surface water mixing and manipulated hydraulic flushing: Implications for harmful algal bloom mitigation. Ecological Engineering. 60: 289-298.

64. Umphres IV, G.D., **D.L. Roelke**, M.D. Netherland. 2013. The potential algaecide flumioxazin has little effect on growth, survival and feed conversion of the bluegill sunfish *Lepomis macrochirus*. Aquaculture. 380-383: 80-83.

63. **Roelke, D.L.**, S. Spatharis, S.M. Mitrovic. 2012. A new hydrology: effects on ecosystem form and functioning. Can. J. Fish. Aquat. Sci. 69:1377-1379.

62. **Roelke, D.L.**, B.W. Brooks, J.P. Grover, G.M. Gable, L. Schwierzke-Wade, N.C. Hewitt. 2012. Anticipated human population and climate change effects on algal blooms of a toxic haptophyte in the south-central USA. Can. J. Fish. Aquat. Sci. 69:1389-1404.

61. Granéli, E., B. Edvardsen, **D.L. Roelke**, J.A. Hagström. 2012. The ecophysiology and bloom dynamics of *Prymnesium* spp. Harmful Algae. 14:260-270.

60. Grover, J.P., **D.L. Roelke**, B.W. Brooks. 2012. Modeling of plankton community dynamics characterized by algal toxicity and allelopathy: A focus on historical *Prymnesium parvum* blooms in a Texas reservoir. Ecological Modelling. 227:147-161.

59. Hayden, N.J., **D.L. Roelke**, B.W. Brooks, J.P. Grover, M.T. Neisch, T.W. Valenti, Jr., K.N. Prosser, G.M. Gable, G.D. Umphres, N.C. Hewitt. 2012. Beyond hydraulic flushing: Deep water mixing takes the harm out of a haptophyte bloom. Harmful Algae. 20:42-57.

58. Neisch, M.T., **D.L. Roelke**, B.W. Brooks, J.P. Grover, M.P. Masser. 2012. Stimulating effect of *Anabaena* sp. exudate on *Prymnesium* *parvum*. Journal of Phycology. 48:1045-1049.

57. Prosser, K.N., T.W. Valenti Jr., N.J. Hayden, M.T. Neisch, N. Hewitt, G.D. Umphres, G.M. Gable, J.P. Grover, **D.L. Roelke**, B.W. Brooks. 2012. Low pH preempts bloom development of a toxic haptophyte. Harmful Algae. 20:156-164.

56. Umphres IV, G.D., **D.L. Roelke**, M.D. Netherland. 2012. A chemical approach for the mitigation of *Prymnesium parvum* blooms. Toxicon. 60:1235-1244.

55. **Roelke, D.L.**, R.H. Pierce. 2011. Effects of inflow on harmful algal blooms – some considerations. Journal of Plankton Research. 33: 205-210.

54. **Roelke, D.L.**, J.P. Grover, B.W. Brooks, J. Glass, D. Buzan, G.M. Southard, L. Fries, G.M. Gable, L. Schwierzke-Wade, M. Byrd, J. Nelson. 2011. A decade of fish-killing *Prymnesium parvum* blooms in Texas: Roles of inflow and salinity. Journal of Plankton Research. 33: 243-254.

53. Brooks, B.W., J.P. Grover, **D.L. Roelke**. 2011. *Prymnesium parvum*, An emerging threat to inland waters. Environmental Toxicology and Chemistry (featured article). 30: 1955-1964.

52. Grover, J.P., K.W. Crane, J.W. Baker, B.W. Brooks, **D.L. Roelke**. 2011. Spatial variation of harmful algae and their toxins in flowing-water habitats: a theoretical exploration. Journal of Plankton Research. 33: 211-228.

51. James, S.V., T.W. Valenti, **D.L. Roelke**, J.P. Grover, B.W. Brooks. 2011. Probabilistic ecological assessment of microcystin-LR: A case study of allelopathy to *Prymnesium parvum*. Journal of Plankton Research. 33: 319-332.

50. James, S.V., T.W. Valenti, K.N. Prosser, J.P. Grover, **D.L. Roelke**, B.W. Brooks. 2011. Sunlight amelioration of *Prymnesium parvum* acute toxicity to fish. Journal of Plankton Research. 33: 265-272.

49. Schwierzke-Wade, L., **D.L. Roelke**, B.W. Brooks, J.P. Grover, T.W. Valenti Jr. 2011. *Prymnesium parvum* bloom termination: Role of hydraulic dilution. Journal of Plankton Research. 33: 309-318.

48. Spatharis, S., **D.L. Roelke**, P.G. Dimitrakopoulos, G.D. Kokkoris. 2011. Analyzing the (mis)behavior of Shannon index in eutrophication studies using field and simulated phytoplankton assemblages. Ecological Indicators. 11: 697-703.

47. **Roelke D.L.**, Eldridge P.M. 2010. Losers in the ‘Rock-Paper-Scissors’ game: The role of non-hierarchical competition and chaos as biodiversity sustaining agents in aquatic systems. Ecological Modelling. 221: 1017-1027.

46. **Roelke, D.L.**, G.M. Gable, T.W. Valenti, J.P. Grover, B.W. Brooks, J.L. Pinckney. 2010. Hydraulic flushing as a *Prymnesium parvum* bloom-terminating mechanism in a subtropical lake. Harmful Algae. 9: 323–332.

45. **Roelke, D.L.**, L. Schwierzke, B.W. Brooks, J.P. Grover, R.M. Errera, T.W. Valenti Jr., J.L. Pinckney. 2010. Factors influencing *Prymnesium parvum* population dynamics during bloom formation: Results from in-lake mesocosm experiments. Journal of American Water Resources Association. 46: 76-91.

44. Brooks, B.W., S.V. James, T.W. Valenti Jr., F. Urena-Boeck, C. Serrano, J.P. Berninger, L. Schwierzke, L.D. Mydlarz, J.P. Grover, **D.L. Roelke**. 2010. Comparative toxicity of *Prymnesium parvum* in inland waters. Journal of American Water Resources Association. 46: 45-62.

43. Dharmasiri, U., M.A. Witek, A.A. Adams, J.K. Osiri, M.L. Hupert, T.S. Bianchi, **D.L. Roelke**, S.A. Soper. 2010. Enrichment and detection of *Escherichia coli* O157:H7 from water samples using an antibody modified microfluidic chip. Analytical Chemistry. 82: 2844-2849.

42. Eldridge, P.M., **D.L. Roelke**. 2010. Origins and scales of hypoxia on the Louisiana shelf: importance of seasonal plankton dynamics and river nutrients and discharge. Ecological Modelling. 221: 1028-1042.

41. Grover J.P., J.W. Baker, **D.L. Roelke**, B.W. Brooks. 2010. Mathematical models of population dynamics of *Prymnesium parvum* in inland waters. Journal of American Water Resources Association. 46: 92-107.

40. Schwierzke, L., **D.L. Roelke**, B.W. Brooks, J.P. Grover, T.W. Valenti, Jr., M. Lahousse, C.J. Miller, J.L. Pinckney. 2010. *Prymnesium parvum* population dynamics during bloom development: a role assessment of grazers and virus. Journal of American Water Resources Association. 46: 63-75.

39. Valenti, Jr., T.W., S.V. James, M. Lahousse, K.A. Schug, **D.L. Roelke**, J.P. Grover, B.W. Brooks. 2010. A mechanistic explanation for pH-dependent ambient aquatic toxicity of *Prymnesium parvum* Carter. Toxicon. 55: 990-998.

38. Valenti, Jr., T.W., S.V. James, M. Lahousse, K.A. Schug, **D.L. Roelke**, J.P. Grover, B.W. Brooks. 2010. Influence of pH on amine toxicity and implications for harmful algal bloom ecology. Toxicon. 55: 1038–1043.

37. Baker, J.W., J.P. Grover, R. Ramachandrannair, C. Black, T.W. Valenti, Jr., B.W. Brooks, **D.L. Roelke**. 2009. Growth at the edge of the niche: an experimental study of the harmful alga *Prymnesium parvum*. Limnology and Oceanography. 54: 1679–1687.

36. Miller, C.J., S.E. Davis, **D.L. Roelke**, H-P. Li, M.J. Driffill. 2009. Factors influencing algal biomass in intermittently-connected, subtropical coastal ponds. Wetlands. 29: 759-771.

35. **Roelke D.L.** and P.M. Eldridge. 2008. Mixing of supersaturated assemblages and the precipitous loss of species. The American Naturalist. 171:162-175.

34. Errera, R.M., **D.L. Roelke**, R. Kiesling, B.W. Brooks, J.P. Grover, L. Schwierzke, F. Ureña-Boeck, J.W. Baker, J.L. Pinckney. 2008. The effect of imbalanced nutrients and immigration on *Prymnesium parvum* community dominance and toxicity: Results from in-lake microcosm experiments, Texas, USA. Aquatic Microbial Ecology. 52: 33-44.

33. Miller, C.J., **D.L. Roelke**, S.E. Davis, H-P. Li, G. Gable. 2008. The role of inflow magnitude and frequency on plankton communities from the Guadalupe Estuary, Texas, USA: Findings from microcosm experiments. Estuarine, Coastal, and Shelf Science. 80: 67-73.

32. **Roelke D.L.**, R. Errera, R. Kiesling, B.W. Brooks, J.P. Grover, L. Schwierzke, F. Ureña-Boeck, J. Baker, J.L. Pinckney. 2007. Effects of nutrient enrichment on *Prymnesium parvum* population dynamics and toxicity: Results from field experiments, Lake Possum Kingdom, USA. Aquatic Microbial Ecology. 46:125-140.

31. **Roelke D.L.**, T. Zohary, K.D. Hambright. J.V. Montoya, 2007. Alternative states in the phytoplankton of Lake Kinneret, Israel (Sea of Galilee). Freshwater Biology. 52:399-411.

30. Baker, J.W., J.P. Grover, B.W. Brooks, F. Ureña-Boeck, **D.L. Roelke**, R.M. Errera, R. Kiesling. 2007. Growth and toxicity of *Prymnesium parvum* (Haptophyta) as a function of salinity, light and temperature. Journal of Phycology. 43:219-227.

29. Grover, J.P., J.W. Baker, F. Ureña-Boeck, B.W. Brooks, R. Errera, **D.L. Roelke**, R.L. Kiesling. 2007. Laboratory tests of ammonium and barley straw extract as agents to suppress abundance of the harmful alga *Prymnesium parvum* and its toxicity to fish. Water Research. 41: 2503-2512.

28. **Roelke D.L.**, J. Cotner, J.V. Montoya, C. Del Castillo, S. Davis, J. Snider, G. Gable, K.O. Winemiller. 2006. Optically determined sources of allochthonous organic matter and metabolic characterizations in a tropical oligotrophic river and associated lagoon. Journal of the North American Benthological Society. 25:185-197.

27. Cotner, J., J.V. Montoya, **D.L. Roelke**, K.O. Winemiller. 2006. Seasonally variable riverine production in the Venezuelan llanos. Journal of the North American Benthological Society. 25:171-184*.*

26. Montoya, J.V., **D.L. Roelke**, K.O. Winemiller, J. Cotner, J. Snider. 2006. Hydrological seasonality and benthic algal biomass in a Neotropical floodplain river. Journal of the North American Benthological Society. 25:157-170*.*

25. Winemiller, K.O., J.V. Montoya, **D.L. Roelke**, C. Layman, J. Cotner. 2006. Seasonally varying impact of detritivorous fishes on the benthic ecology of a tropical floodplain river. Journal of the North American Benthological Society. 25:250-262*.*

24. Buyukates, Y., **D.L. Roelke**. 2005. Influence of pulsed inflows and nutrient loading on zooplankton and phytoplankton community structure and biomass in microcosm experiments using estuarine assemblages. Hydrobiologia. 548:233-249.

23. Buyukates, Y., **D.L. Roelke**. 2005. Investigating system characteristics of a Southeast Texas wetland: Nutrient and plankton dynamics of a tidal creek in lower Nueces Delta. Journal of Applied Sciences. 5:820-828.

22. Fejes, E.M., **D.L. Roelke**, G. Gable, J.L. Heilman, K.J. McInnes, D.A. Zuberer. 2005. Microalgal productivity, community composition, and pelagic food web dynamics in a sub-tropical, turbid salt marsh isolated from freshwater inflow. Estuaries. 28:96-107.

21. **Roelke, D.L.**, Y. Buyukates, M. Williams, and J. Jean. 2004. Interannual variability in the seasonal plankton succession of a shallow, warm-water lake. Hydrobiologia. 513: 205-218.

20. Heinsch, F.A., J.L. Heilman, K.J. McInnes, D.R. Cobbs, D.A. Zuberer, and **D.L. Roelke**. 2004. Carbon dioxide exchange in a high marsh on the Texas Gulf Coast: Effects of freshwater availability. Agricultural and Forest Meteorology. 125:159-172.

19. Murdock, J., **D.L. Roelke**, and F. Gelwick. 2004. Interactions between flow, periphyton, and nutrients in a heavily impacted urban stream: Implications for stream restoration effectiveness. Ecological Engineering. 22:197-207.

18. **Roelke, D.L.**, S. Augustine, and Y. Buyukates. 2003. Fundamental predictability in multispecies competition: The influence of large disturbance. The American Naturalist. 162: 615-623.

17. Fejes, E., J. Birnbaum, F. Gelwick, and **D.L. Roelke**. 2003. Vertical distribution of herbivorous zooplankton in a well-mixed lake system where the main predator is a non-selective filter-feeding fish. Journal of Freshwater Ecology. 18:333-336.

16. **Roelke, D.L.**, and Y. Buyukates. 2002. Dynamics of phytoplankton succession coupled to species diversity as a system-level tool for study of *Microcystis* population dynamics in eutrophic lakes. Limnology and Oceanography. 47: 1109-1118.

15. Bontempi, P., S. Davis, C. Del Castillo, **D. Roelke**, and K. Winemiller. 2002. Transformation of allochthonus dissolved organic carbon in a tropical blackwater river as measured by fluorescence analysis: Application to foodweb ecology. SPIE 16. 6 p. *electronic journal*.

14. **Roelke, D.L.** and Y. Buyukates. 2001. The diversity of harmful algal bloom-triggering mechanisms and the complexity of bloom initiation. Human and Ecological Risk Assessment. 7:1347-1362.

13. Van Dolah, F.M., **D.L. Roelke**, and R. Greene. 2001. Health and ecological impacts of harmful algal blooms: Risk assessment needs. Human and Ecological Risk Assessment. 7:1329-1345.

12. **Roelke, D.L.** 2000. Copepod food-quality threshold as a mechanism influencing phytoplankton succession and accumulation of biomass, and secondary productivity: A modeling study with management implications. Ecological Modelling. 134:245-274.

11. **Roelke, D.L.**, P.M. Eldridge, L.A. Cifuentes. 1999. A model of phytoplankton competition for limiting and non-limiting nutrients: Implications for development of estuarine and nearshore management schemes. Estuaries. 22:92-104.

10. **Roelke, D.L.**, C. D. Kennedy, A.D. Weidemann. 1999. Use of discriminant and fourth-derivative analyses with high-resolution absorption spectra for phytoplankton research: Limitations at varied signal to noise ratio and spectral resolution. Gulf of Mexico Science. 17:17-28.

9. **Roelke, D.L.**, L.A. Cifuentes, P.M. Eldridge. 1997. Nutrient and phytoplankton dynamics in a sewage impacted gulf coast estuary: A field test of the PEG-model and Equilibrium Resource Competition theory. Estuaries. 20:725-742.

8. Villareal, T.A., **D.L. Roelke**, G.A. Fryxell. 1994. Occurrence of the toxic diatom *Nitzschia pungens f. multiseries* in Massachusetts Bay, Massachusetts, U.S.A. Marine Environmental Research. 37:417-423.

7. **Roelke, D.L.**, S.M. Sogard. 1993. Gender-based differences in the habitat selection and activity level in the northern pipefish (*Syngnathus fuscus*). Copeia 2:496-500.

6. Kang, S-H., G.A. Fryxell, **D.L. Roelke**. 1993. *Fragilariopsis cylindrus* (Grunow) Krieger compared with other species of the diatom Family Bacillariaceae in Antarctic marginal ice edge zones. In, Progress in Diatom Studies Contributions to Taxonomy, Ecology, and Nomenclature. Sims, P.A. (ed.). Beiheftzur Nova Hedwigia. 106:335-352.

5. Villac, M.C., **D.L. Roelke**, F.P. Chavez, L.A. Cifuentes, G.A. Fryxell. 1993. *Pseudonitzschia australis* Frenguelli and related species from the west coast of the U.S.A.: Occurrence and domoic acid production. Journal of Shellfish Research. 12:457-465.

4. Villac, M.C., **D.L. Roelke**, T.A. Villareal, G.A. Fryxell. 1993. Comparison of two domoic acid producing diatoms: a review. Hydrobiologia. 269/270:213-224.

3. Buck, K.R., L. Uttal-Cooke, C.H. Pilskaln, **D.L. Roelke**, M.C. Villac, G.A. Fryxell, L.A. Cifuentes, F.P. Chavez. 1992. Autoecology of *Pseudonitzschia australis*, a domoic acid producer from Monterey Bay, California. Marine Ecology Progress Series. 84:293-302.

2. Dickey, R.W., G.A. Fryxell, H.R. Granade, **D.L. Roelke**. 1992. Detection of marine toxins, okadoic acid and domoic acid, in shellfish and phytoplankton in the Gulf of Mexico. Toxicon. 30:355-359.

1. Fryxell, G.A., S.A. Garza, **D.L. Roelke**. 1991. Auxospore formation in the Antarctic clone *Nitzschia subcurvata* Hasle. Diatom Research. 6:235-245.

*Peer-reviewed book chapters*

3. Roelke, D.L. and S.R. Manning. 2016. *Prymnesium parvum* Carter • Golden algae. Harmful Algal Bloom Compendium, S. Shumway (Ed.), Elsevier. Accepted.

2. Roelke, D.L., B.W. Brooks, J.P. Grover. 2012. *Prymnesium parvum* blooms in south-central USA: Concerns of climate change and population growth. K.A. Pagou and G.M. Hallegraeff (Eds.), Proceedings of the 14th International Conference on Harmful Algae. Intergovernmental Oceanographic Commission of UNESCO, pp. 102-104.

1. Eldridge, P.M., D.L. Roelke. 2011. Hypoxia in waters of the coastal zone: Causes, effects, and modeling approaches. In: Wolanski, E. and McLusky D.S. (eds.) Treatise on Estuarine and Coastal Science, Vol. 9, pp. 193–215. Waltham: Academic Press.

*Agency-reviewed technical reports*

9. Roelke, D.L. 2016. Invasive *Prymnesium parvum*. Invasive Species Compendium (ISC), Centre for Agriculture and Bioscience International (CABI), online datasheet: <http://www.cabi.org/isc/datasheet/121720>

8. Roelke, D.L., B.W. Brooks, J.P. Grover, V.M. Lundgren. 2013. Golden Algae control: Efficacy of hydraulic manipulations in coves of Lake Granbury. ERDC/EL CR-13-1, U.S. Army Engineer Research and Development Center, Vicksburg, MS. 110 pages.

7. Roelke, D.L., Brooks, B.W., Grover, J.P., Kalisek, D.M. and Harris, B.L. 2012. Approaches to Golden Algae Control: In-Lake Mesocosm Experiments, ERDC/EL CR-12-1, U.S. Army Engineer Research and Development Center, Vicksburg, MS. 62 pages.

6. Harris, B.L., D.L. Roelke, J.P. Grover, B.W. Brooks. 2010. Lake Granbury and Lake Whitney Assessment Initiative. Texas Water Resource Institute, Technical Report 392 (prepared for US Department of Energy). 109 pages.

5. Quigg A., D.L. Roelke, S.E. Davis. 2009. Freshwater inflows and the health of Galveston Bay: influence of nutrient and sediment load on the base of the food web. Final Report to the Texas Coastal Management Program (GLO Contract No. 08\_007). 49 pages.

4. Buyukates, Y., D.L. Roelke. 2005. Management tools for aquatic systems: The role of periodic hydraulic disturbances on planktonic communities. Texas Water Resource Institute, Technical Report 285. 27 pages.

3. Winemiller, K.O., A. Chin, S.E. Davis, D.L. Roelke, L.M. Romero, B. Wilcox. 2005. Caddo Lake, Texas inflows study: Summary Report. The Nature Conservancy/Caddo Lake Institute. 102 pages.

2. Winemiller, K.O., A. Chin, S.E. Davis, D.L. Roelke, L.M. Romero, B. Wilcox. 2005. Caddo Lake, Texas inflows study: Annotated bibliography. The Nature Conservancy/Caddo Lake Institute. 53 pages.

1. Roelke, D.L., S. Augustine, and Y. Buyukates. 2003. Directing the Fall of Darwin’s “Grain in the Balance”: Manipulation of Hydraulic Flushing as a Potential Control of Phytoplankton Population Dynamics. Texas Water Resource Institute, Technical Report 245. 13 pages.

*Editor-reviewed conference proceedings, newsletter articles*

7. Zhang, S., H. Gao, A. Quigg, D.L. Roelke. 2016. Remote sensing of spatial-temporal variations of chlorophyll-a in Galveston Bay, Texas. Proceedings of the State of the Bay Symposium, Galveston Bay Estuary Program. Galveston, Texas. January. Pages 5841 – 5844.

6. Roelke, D.L. and Y. Buyukates. 2000. Prey-quality threshold as a potential triggering mechanism of algal blooms and its sensitivity to varied hydraulic conditions. ICES Cooperative Research Report, Young Scientists Conference on Marine Perspectives. 240:35-36.

5. Weidemann, A.D., C. Moore, L. Jugan, D.L. Roelke. 1998. An in-water, hyperspectral absorption-attenuation meter. Oceanology International 98.

4. Roelke, D.L., G.A. Fryxell, and L.A. Cifuentes. 1993. South Korean oysters gave ASP symptoms. Harmful Algal News. 7:8-9.

3 Roelke, D.L., M.C. Villac, G.A. Fryxell, R.D. Van Putte, K.R. Buck, and F.P. Chavez. 1992. *Pseudonitzschia australis* Frenguelli from Monterey Bay, California: Toxicity in the Bay and culture experiments. Canadian Technical Report of Fisheries and Aquatic Sciences. 1893:19-20.

2. Wright, L.C., S.S. Bates, D.J. Douglas, S. Eddy, R. Forbes, D.L. Roelke, M.G. Scarrett. 1992. The American west coast domoic acid crisis. Proceedings of the Third Canadian Workshop on Harmful Marine Algae. 1893:51-55.

1. Fryxell, G.A., M.E. Reap, D.L. Roelke, L.A. Cifuentes, and D.L. Valencic. 1991. Confirmed presence of a neurotoxin-producing diatom around Galveston, Texas. Proceedings of the Galveston Bay Characterization Workshop. Galveston Bay National Estuary Program. GBNEP-6.

*Book review*

1. Roelke D.L. 2007. Book Review: Ecology of Harmful Algae. Ecological Studies 189. E. Graneli and J.T. Turner (Eds.). Springer-Verlag, Berlin. 413 pages. 2006. **Eos**. 88(30): 4.

# POPULAR PRESS FEATURING ROELKE-LAB RESEARCH

“The hauntingly beautiful underworld of Yucatan cenotes” CSIRO Publishing Facebook page, October 2016, an outreach program of the international journal *Marine and Freshwater Research*.

“Meet a scientist: Daniel Roelke” Conservation Matters, May 2016, an online publication of Texas Water Resources Institute (written by Eva Vigh).

“Protecting the Red Sea’s Coral Reefs” tamuTimes, June 17, 2014, an online publication of Texas A&M University. Also featured in the College of Agriculture and Like Sciences Newsletter posted on June 12, 2014 (written by Angel Futrell).

“Lower lake to bring more algae” – Hood County News (regional newspaper), June 15, 2011. Also, online article brief - “Golden algae will thrive with low lake levels”

“Texas scientists publish needed golden algae research” - New Waves, Texas Water Resources Institute's E-Newsletter, Agrilife Research and Extension, Texas A&M University, April 2011.

“Battling golden algae Results suggest preventative lake management approaches – tx H2O, Publication of the Texas Water Research Institute, 2011.

“Toxic and Deadly Working to manage algae in Lake Granbury” – tx H2O Special Edition, Publication of the Texas Water Research Institute, 2011.

“Researchers Identify What Makes Deadly Algae More Toxic” - Science Daily, Online Publication (http://www.sciencedaily.com), November 11, 2009.

“Researchers Identify What Makes Deadly Algae More Toxic” - New Waves, Texas Water Resources Institute's E-Newsletter, Agrilife Research and Extension, Texas A&M University, December 4, 2009

“More Than A Drop In The Bucket”, True Maroon, Publication of Texas A&M University Associate of Former Students, September Issue, 2009.

“A golden opportunity”, tx H2O, Publication of the Texas Water Research Institute, Texas, 2008.

“Researchers study harmful golden algae”, The Lariat online, Publication of Baylor University, April 18, 2008.

“Study Identifies Variables That Contribute to High Golden Algae Blooms; Awarded, New Grant”, Baylor In the News, April 8, 2008.

“Researchers Cast for Answers to Algae Problems”, Lifescapes, Publication of the College of Agriculture and Life Sciences, Spring Issue, 2007.

“Group trying to prevent widespread lake pollution”, Hood County News Online, March 29, 2006.

“Texas Researchers Casting for Answers to Stop Alga Problem in Texas Lakes”, AgNews, Publication of TAMU Ag Program, Oct. 6, 2006. (http://agnews.tamu.edu/dailynews/stories/WFSC/Oct0606a.htm)

“What’s the Plan: Groups tackling water quality problems on Lake Granbury”, tx H2O, Publication of the Texas Water Research Institute, Texas, 2006.

“Texas’ Natural Lake: Research to help restore environmental flows to Caddo Lake”, tx H2O, Publication of the Texas Water Research Institute, 2006.

“Texas Gold Rush: Scientists seek to understand and control golden algae”, tx H2O, Publication of the Texas Water Research Institute, Texas, 2005.

“Caddo Studied”, Newspaper Article, Marshall News Messenger, May 5, 2005.

“Texas the State of the Water, Finding a Balance: Narrated by Walter Cronkite”, Documentary, Texas Parks and Wildlife, Aired February 3, state wide on PBS stations, 2005.

“Reports indicate golden algae no longer active”, Newspaper Article, Lake Country Sun, May 23, 2003.

“Who Will Win”, Internet news report, Scientific American, May 29, 2001.

GRANTS AND CONTRACTS

# Extramural Funds

($-number is the total award and (%-number) is the proportion of funds directly coming to the Roelke lab)

2016-17 Water quality in sink-hole lakes (cenotes) of the Yucatan, Mexico, with C. Munster, Yucatan Initiative, Consejo Nacional de Ciencia y Tecnología (abbreviated CONACYT) and AgriLife Research Texas A&M University, $15,000 (100%) – Lead-*PI*.

2016 Spatiotemporal variation in plankton assemblages and water quality parameters in Lake Conroe, Texas, San Jacinto River Authority, $16,859 (100%) – sole-*PI*

2015-17 Relationships between inflows, nutrient loading, phytoplankton and dissolved oxygen in two bay systems of the western Gulf of Mexico: A numerical modeling study, with A. Quigg, Texas Commission on Environmental Quality, $322,825 ($278,489, 86%). – lead*-PI*

2015-16 A Prototype Information System for Monitoring and Predicting Phytoplankton Productivity over Galveston Bay, with H. Gao, NOAA Coastal Management Program, $95,475 ($16,607, 17%). – *co-PI*

2015-16 Phytoplankton assemblage composition and productivity in the middle-Trinity River, Texas Water Development Board, $35,570 (100%). – *Principal Investigator*

2015 Efficacy of Flumioxazin as a golden algae bloom inhibitor, NuFram Inc., $10,000 (100%) – sole-*PI*.

2014-15 Mechanisms for bloom formation of *Karenia breve* and *Prymnesium parvum* in Texas bays. National Fish and Wildlife Foundation, Conservation Scholars Program, $36,416.00 (100%). – *Principal Investigator*

2014-15 The relative roles of niche and neutral mechanisms in controlling phytoplankton genetic and morphological diversity – “ECOGENE”, Greek Secretariat of Research and Technology (GSRT) as an Action of Excellence through the European Union, $472,290 ($30,000, 6%) - *Investigator*

2012-13 Coupling water-column bio-optics and coral reef ecology to predict the impacts of climate change and coastal zone development on the Red Sea – beginning steps in research, with Jay Walton, Christian Voolstra, Cornelia Roder. TAMU Institute for Applied Mathematics and Computational Science, King Abdullah University of Science and Technology, $40,000 ($40,000, 100%). – *Lead PI*

2011-12, Golden Algae Control: Efficacy of Cove Manipulations, with J. Grover, B. Brooks, US Army Corps of Engineers, $300,000 ($208,335, 69%). *- Lead PI*

2010-14 Mathematical modeling in ecology, subprogram of KAUST Global Research Partnership: TAMU Institute for Applied Mathematics and Computational Science*,* with J. Walton (lead PI), King Abdullah University of Science and Technology, $1,600,000 ($65,000, 4%). – *collaborating scientist*

2010-11, Testing approaches to Golden Algae control: In-lake mesocosm experiments, with J. Grover, B. Brooks, US Army Corps of Engineers, $450,000 ($289,502, 64%). *- Lead PI*

2008-09, Water Quality Program for Lakes Granbury, Whitney and Waco, TX, with J. Grover, B. Brooks, US Department of Energy, $424,848 ($215,000, 51%). *- Lead PI*

2007-09, Refining a Predictive Understanding of Physical, Chemical and Biological Factors Influencing *Prymnesium parvum* Population Dynamics*,* with B. Brooks, J. Grover, Texas Parks and Wildlife Department, $490,445 ($200,000, 41%). *- co-Lead PI*

2007-09, Freshwater inflows: influence of nutrient and sediment load on our ability to define beneficial flows for Galveston Bay, with A. Quigg, S. Davis, Texas Sea Grant, $281,012 ($20,000, 7%). *- co-PI*

2007-08, Pan-Caribbean Climate Change and Marine Ecosystem Management Program - Marine Ecosystem Assessment and Management, TAMU sub-team (Planning Period), with S. Davis, A. Filippi, Stanford Family, $164,449 ($50,000, 30%). *- co-PI*

2007-08, Phytoplankton Responses to Freshwater Inflows in the Trinity-San Jacinto Estuary, with A. Quigg, S. Davis, Texas Water Development Board, $32,000 ($10,000, 31%). *- co-PI*

2007-08, Phytoplankton Responses to Freshwater Inflows in Galveston Bay, with A. Quigg, S. Davis, Galveston Bay Estuaries Program, $70,021 ($20,000, 29%). *- co-PI*

2007-08, Freshwater inflows and the health of Galveston Bay: influence of nutrient and sediment load on the base of the food web, with A. Quigg, S. Davis, NOAA Coastal Management Program, $94,704 ($30,000, 32%). *- co-PI*

2007, Antigua and Barbuda Coastal and Marine Ecosystem Management Program – Marine Ecosystem Assessment and Management, TAMU sub-team (Interim Period), with S. Davis, A. Filippi, Stanford Family, $100,000 ($30,000, 30%). *- co-PI*

2006-07, Lake Granbury Water Quality Assessment, with B. Brooks, J. Grover, S. Davis, R. Kiesling, US Department of Energy, $384,800 ($200,000, 52%). *- Lead PI*

2006-07, Advancing the predictive understanding of bloom formation and toxicity in *Prymnesium parvum,* with J. Grover, B. Brooks , R. Kiesling, Texas Parks and Wildlife Department, $529,023 ($200,000, 38%). *- co-Lead PI*

2004-06, Reduced Freshwater Inflows and Productivity in the Guadalupe Estuary: Use of High-Resolution Spatial Mapping, with S. Davis, Texas Sea Grant (award number NA16RG1078), $208,746 ($104,000, 50%). *- co-Lead PI*

2004-06, Bridging the Gap Between Plankton Dynamics and Spatial Variability in Water Quality in the Guadalupe Estuary (Texas): The Importance of Freshwater Pulses, with S. Davis, National Institute Water Resources/U.S. Geological Survey, National Competitve Grant Program (award number 03HQGR0122), $233,953 ($115,000, 49%). *- co-Lead PI*

2004-06, Monitoring ecosystem health with bioindicators: mapping seasonal changes in primary productivity & the primary producers in Galveston Bay, with A. Quigg, S. Davis, Coastal Management Program, $70,000 ($23,000, 33%). *- co-PI*

2004-06, Use of High-Resolution Spatial Mapping to Estimate Plankton Response to Freshwater Inflows Entering Galveston Bay: Importance to Watershed Development and Ecosystem Health, with S. Davis, J. Pinckney, Galveston Bay Estuaries Program (582-4-65034), $131,717 ($50,000, 38%). *- co-PI*

2004-05, Developing a predictive understanding of *Prymnesium parvum* toxic bloom formation and its control, with R. Kiesling, B. Brooks, J. Grover, Texas Parks and Wildlife Department, $565,000 ($200,000, 35%). *- co-Lead PI*

2004-05, Developing inflow recommendations for Caddo Lake, TX, with K. Winemiller, S. Davis, A. Chin, B. Wilcox, The Nature Conservancy, $67,000 ($7,000, 10%). *- co-PI*

2003-06, Undergraduate Research in Biodiversity and Ecological Processes in Fluctuating Environments, with R.L. Honeycutt, J. Bonner, R. Autenrieth, J. Bickam, and C. Page, National Science Foundation, Division of Environmental Biology (EEC-9912278), $268,397 ($53,000, 20%). *- co-PI*

2000-03, Productivity and Structure of a Coastal Wetland: Response to Fluctuating Freshwater Inflow, with J.L. Heilman, K.J. McInnes, and D.A. Zuberer, U.S. Department of Agriculture, National Research Initiative (00-35101-9275), $215,000 ($100,000, 46%). *- co-Lead PI*

2001-04, Variable Effects of Nutrients, Productivity, Consumption, and the Flood Pulse on Floodplain River Ecosystems, with K.O. Winemiller and J.B. Cotner, National Science Foundation, Ecology/Ecosystems Program (DEB-0089834), $318,000 ($109,000, 34%). *- co-PI*

2000-02, Undergraduate Research in Biodiversity and Ecological Processes in Fluctuating Environments, with R.L. Honeycutt, J. Bonner, T. Lacher, and R. Autenrieth, National Science Foundation, Division of Environmental Biology (EEC-9912278), $194,760 ($38,952, 20%). *- co-PI*

1999-04, Water Quality Monitoring of Lake Somerville, TX, US Army Corps of Engineers, $118,682 (100%). - sole PI

1999-02, Health of a Texas Estuary: Influence of Freshwater Inflow and Nutrient Loading, Texas Sea Grant (NA86RG0058), $47,697 (100%). - sole PI

# TEACHING

(*year class was offered and student evaluations on a scale of 0-5 are shown in parentheses*)

WFSC 404, Aquatic Ecosystems

(15-4.76, 16-4.70)

WFSC 414, Ecology of Lakes and Rivers - formerly called Limnology

(98-4.07, 99-4.32, 00-4.74, 01-4.64, 02-4.23, 03-4.76, 04-4.15, 06-4.60, 08-n/a [PICA failure], 10-4.58, 11-4.88, 13-4.73)

WFSC 418, Ecology of the Coastal Zone

(05-4.51, 07-4.90, 09-4.96, 11-4.71, 13-4.80)

WFSC 449, Professional Aspects of Aquatic Sciences

(14-5.00, 15-4.74)

WFSC 484, Undergraduate Internships

(see list of students in ‘Student Supervision’ section)

WFSC 611, Estuarine Ecology

(03-4.79, 07-4.89, 08-4.73, 09-4.96, 10-4.62, 12-4.46, 14-4.67)

WFSC 621, Aquatic Ecology - formerly called Lower Foodweb Dynamics of Aquatic Ecosystems cross-listed with OCNG 629

(99-4.75, 00-4.49, 01-4.67, 05-4.90)

WFSC 685, Chaos in Plankton Ecosystems

(02-4.81)

UPAS, 181 Killer Algae: Ecology and Management (First Year Seminars through the Dean of Undergraduate Programs)

(09-quality of freshman seminars in this program are not evaluated)

Guest lectures

WFSC 101, Introduction to Wildlife and Fisheries Sciences (1998-2001, 2015-16)

MATH 442, Mathematical Modeling (2011, 2012, 2013)

MATH 469, Mathematical Biology (2012, 2013)

# STUDENT SUPERVISION

*Graduate Students, Chair or co-Chaired Committee*

2014-P, Cagle, Sierra (M.S., Wildlife and Fisheries Sciences)

2013-P, Bloomer, Tymon (M.S., Wildlife and Fisheries Sciences)

2013-P, Méndez-Jiménez, Adriana (Ph.D., Wildlife and Fisheries Sciences)

2013-P, Withrow, Frances (M.S., Wildlife and Fisheries Sciences)

2012-14, Davis, Stephen (M.S., Wildlife and Fisheries Sciences)

2011-P, Muhl, Rika (Ph.D., Wildlife and Fisheries Sciences)

2010-14, Smeti, Evangelia (Ph.D., Department of Marine Sciences, U. Aegean, Greece)

2010-12, Umphres, George (M.S., Wildlife and Fisheries Sciences)

2010-14, Neisch, Michael (M.S., Wildlife and Fisheries Sciences)

2009-11, Hayden, Natanya (M.S., Wildlife and Fisheries Sciences)

2008-11, Hewitt, Natalie (M.S., Wildlife and Fisheries Sciences)

2004-09, Hsiu-Ping Li (Ph.D., Wildlife and Fisheries Sciences – transferred, finished under Santschi)

2004-07, Miller, Carrie (M.S., Wildlife and Fisheries Sciences)

2004-07, Gable, George (M.S., Wildlife and Fisheries Sciences)

2003-05, Errera, Reagan (M.S., Wildlife and Fisheries Sciences)

2001-08, Montoya Ceballos, Jose (Ph.D., Wildlife and Fisheries Sciences)

2000-03, Fejes, Elizabeth (M.S., Wildlife and Fisheries Sciences)

2000-02, Murdock, Justin (M.S., Wildlife and Fisheries Sciences)

1998-03, Buyukates, Yesim (Ph.D., Wildlife and Fisheries Sciences,)

*Graduate Students, Member of Committee*

2015-P Xiao Shen (M.S., Civil Engineering - TAMU)

2015-P Gesundheit, Pablo (Ph.D., WFSC, TAMU)

2015-P Preischel, Hannah (M.S., Oceanography -TAMUG)

2015-P Yang, Mingyue (Ph.D., WMHS, TAMU)

2013-P Sandoval, Christopher (M.S., Wildlife and Fisheries Sciences, TAMU)

2010-P Burgess, Allyson (M.S., Oceanography -TAMUG)

2010-16 Rose, Emily (Ph.D., Biology Department, TAMU)

2010-13 Chouly, Ou (Ph.D., Wildlife and Fisheries Sciences, TAMU)

2009-15, Weaver, Carolyn (Ph.D., TAMUG)

2008-11, Miller, Carrie (Ph.D., Biology Department, University of Oklahoma)

2008-12, Leavitt, Daniel (Ph.D., Wildlife and Fisheries Sciences, TAMU)

2006-12, Steichen, Jamie (Ph.D., TAMUG)

2005-09, Knight, Trevor (M.S., Wildlife and Fisheries Sciences, TAMU)

2004-07, Baker, Jason (Ph.D., University of Texas, Arlington)

2003-07, Hoehinghouse, David (Ph.D., Wildlife and Fisheries Sciences)

2003-07, Papadopoulos, Anthony (Ph.D., Wildlife and Fisheries Sciences)

2002-04, Romigh, Melissa (M.S., Wildlife and Fisheries Sciences)

2002-04, Salazar , Alicia (M.S., Oceanography)

2000-02, Lumson, Beth (M.S., Oceanography)

2000-04, Fletcher, William (M.S., Oceanography)

2000-03, Charbonnet, Danielle (M.S., Agricultural Engineering)

1999-04, Layman, Craig (Ph.D., Wildlife and Fisheries Sciences)

1999-02, Healy, Brian (M.S., Wildlife and Fisheries Sciences)

1999-06, Cramer, Nicholas (M.S., Soil and Crop Science)

1998-02, Ornolfsdottir, Erla (Ph.D., Oceanography)

1998-02, Arrington, Albrey (Ph.D., Wildlife and Fisheries Sciences)

1998-02, Heinsch, Faith-Ann (Ph.D., Soil and Crop Science)

*Substituted Into Committee*

2013 Mendoza, Maria (M.S., Wildlife and Fisheries Sciences)

1998 Wilson, Amela (Ph.D., Electrical Engineering)

*Graduate Council Representative for Committee*

2000-03, Scherer, Andrew (Ph.D., Anthropology)

1998-03, Van Tassel, William (Ph.D., Health Education)

*Undergraduate Student Research and Mentoring*

2016 Stuart Clark (WFSC, Texas A&M University, only mentored)

2016 Brittany Stamps (WFSC, Texas A&M University, only mentored)

2016 Alexis Baker (WFSC, Texas A&M University, only mentored)

2016 Johnston, Jacob (WFSC, Texas A&M University, only mentored)

2015 Alvarado, Genaro (WFSC, Texas A&M University, only mentored)

2015 Thompson, John (WFSC, Texas A&M University, only mentored)

2015 Haile, Margaret (WFSC, Texas A&M University)

2014-15 Gwinn, Jesse (WFSC, Texas A&M University)

2013 Hailey Bodiford (MATH, Texas A&M University, TX)

2013 Danielle Rogers (MATH, Texas A&M University, TX)

2012 Frances Withrow (MATH, Texas A&M University, TX)

2011-12, Baty, Tomas (Texas A&M University, TX)

2009-10, Neisch, Michael (Texas A&M University, TX)

2007-10, Umphres, George (Texas A&M University, TX)

2006, Dean, Patrick (AGLS 105, Texas A&M University, TX)

2006, Vendrell-Velez, Rebecca (AGLS 105, Texas A&M University, TX)

2005, Martinez, Alexis (New Mexico Tech, NM)

2003-04, Gable, George (Texas A&M University, TX)

2003, Fong, Allison (University of Rhode Island, RI)

2003, Hurley, Leah (University of Akron, OH)

2005, Ludwig, Merissa (Texas A&M University, TX)

2003-05, Snider, Jennifer (Texas A&M University, TX)

2001-02, Augustine, Sarah (Texas A&M University, TX)

2001, Birnbaum, Jenny (University of Texas at Austin, TX)

2000, Jean, Jason (University of Texas at Austin, TX)

2000, Williams, Michael (Mercyhurst College, PA)

# TRAINING AND MENTORING OF OTHER PROFESSIONALS

2015-P, Bhattacharyya, Joydeb (Postdoc, Ph.D. from Calcutta University, India)

2013-14, Gao, Huilin (Assistant Professor, Civil Engineering)

2013-14, Linhart, Jean Marie (Assistant Professor, Central Washington University)

2012-13, Witmer, Angela (Lecturer, Georgia Southern University, GA)

2012-13, Lungren, Veronica (Postdoc, Ph.D. from Linnaeus University, Sweden)

2012-14, Spatharis, Sophia (Lecturer, Glasgow University, Scotland)

2011-12 Kutlu, Banu (Assistant Professor, Tunceli University, Turkey).

2005-08, Schwierzke-Wade, Leslie (Research Associate, B.S. from Texas A&M University, TX)

# SERVICE AT TEXAS A&M UNIVERSITY

*Department-level*

2016-P Committee Member, rubric post-tenure evaluation develop

2016-P Faculty Mentor, Kevin Conway (Associate Professor)

2016-P Faculty Mentor, Jessica Yorzinski (Assistant Professor)

2016 Chair, Departmental Strategic Plan revision

2016-P Committee Member, Fish Ecologist Search

2004-13, 16-P Committee Member, Promotion and Tenure Committee

2013-P Committee Member, Legacy Committee

2012-P Committee Member, WFSC Faculty Advisory Board

2013-16 Chair, Promotion and Tenure Committee

2001-07, 09-16 Committee Member, Undergraduate Affairs

2015 Committee Member, Application Selection, Applied Biodiversity Sciences Conservation Scholars Program

2015 Committee Member, Avian Wetland Ecologist Search

2014 Committee Member, Large Mammal Ecologist Search

2013-14 Analyst, within university and national departmental assessments through Academic Analytics software

2013-14 Contributing Developer, electronic tool for assessing Faculty Achievement Reports auto-linked to a Faculty Evaluation Matrix for use during annual evaluations

2012-14 Subcommittee Chair, Fisheries Undergraduate Curriculum Revision, Subcommittee of the WFSC Undergraduate Affairs Committee

2006-13 Faculty Mentor, Mariana Mateos (Assistant Professor)

2011-12 Committee Member, WFSC Department Head Search

2010-12 Faculty Mentor, Thom DeWitt (Associate Professor)

2009-10 Advisor, Graduate Student Departmental Seminar Series Committee

2008-10 Committee Member, Extension and Research Facilitation

2008-09 Committee Member, Support Staff Search

2007-08 Chair, Quantitative Ecologist Search

2004-07 Chair, Departmental Seminar Series

2005 Committee Member, Biocomplexity Scientist Search - *rescinded*

2005 Committee Member, Department Name Change

2004-05 Committee Member, Kleberg Chair Search

2004-05 Committee Member, Microbiologist Search (Soil and Crop Sciences)

1998-01 Committee Member, Graduate Program Enhancement Fund

*College-level (COALS and Geosciences)*

2013 Committee Participant, Graduate Program Council deliberations on implementation and impacts of Ecology and Evolutionary Biology Interdepartmental Ph.D. Degree Program

2010-11 Committee Member, Texas Sea Grant Director Search Committee

2008 Ex-officio Advisor, Agriculture Program Faculty Advisory Committee

2007 Chair, Agriculture Program Faculty Advisory Committee

2005 Chair, TAES Science Roadmap Attainment Indicators, Agriculture Program Faculty Advisory Subcommittee

2005-06 Committee Member, Agriculture Program Faculty Advisory Committee

2003 Committee Member, Association of Former Students Distinguished Teaching Awards

*University-level*

2015 Participant, TAMU Strategic Planning Forums: Message for Departmental Representatives: Primary obstacles that will inhibit attainment of objectives and thus vision, and opportunities on which to capitalize to achieve objectives and vision.

2010-11 Associate Chair, Ecology and Evolutionary Biology, Interdisciplinary Research Program

# 2008-11 Faculty Mentor, Colleague Circle Mentors Program

# 2009-11 Graduate Student Assessment Committee, Marine Biology Interdisciplinary Program

# 2009 Committee Chair, Bush Excellence Award for Faculty in Public Service

# 2008-11 Faculty Senator, Texas A&M University Faculty Senate

Legislative Affairs Committee (2008-2011)

International Programs Committee (2008-10)

Elections Committee (2008-09, 2010-2011)

# 2008 Committee Member, Bush Excellence Award for Faculty in Public Service

# OTHER PROFESSIONAL SERVICE

*Editorship*

2016-P Guest Editor, *Estuarine, Coastal and Shelf Systems*, journal of the Estuarine Coastal Sciences Association (ECSA), United Kingdom, special issue from ECSA conference in Bremen, Germany, September 2016.

2015-P Associate Editor, *Marine & Freshwater Research*, journal of the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia. (listed previously)

2012-P Editorial Board, *Marine Science and Technology Bulletin*, published by Canakkale Onsekiz Mart University, Canakkale, Turkey. (listed previously)

2007-16 Associate Editor, *The American Naturalist*, journal of the American Society of Naturalists. (listed previously)

*National Committee*

2010-16 Member, National Harmful Algal Blooms Committee, USA. (listed previously)

*Organized Symposia and Dedicated Journal Issues*

2012-13 Co-organizer, session titled “Plankton Ecology-Phytoplankton”, Association for the Sciences of Limnology and Oceanography, New Orleans (February, 2013).

2012-13 Co-Organizer of an international workshop, “Red Sea Center Research and Collaborations”, workshop series supported through King Abdullah University of Science and Technology (KAUST), Saudi Arabia (May, 2013).

2011 Co-Organizer of an international workshop, “Ecosystem Modeling, Simulation and Assessment - Assessing Effects of Climate Change and Human Population Growth on Natural Living Resources: The Red Sea as a Model Case Study”, workshop series supported through King Abdullah University of Science and Technology (KAUST), Saudi Arabia. College Station, TX, September.

2010-12 Lead-Organizer of a special issue of the *Canadian Journal of Fisheries and Aquatic Sciences* showcasing themed papers under the titled section “A new hydrology: inflow effects on ecosystem form and functioning” (volume 69).

2010-11 Lead-Organizer of special session and Moderator, “A New Hydrology: Inflow effects on ecosystem form and functioning”, Annual Conference of the American Society of Limnology and Oceanography, Aquatic Sciences, San Juan, Puerto Rico. February.

2009-11 Lead-Organizer of a special issue of the Journal of Plankton Research, Oxford University Press, titled “Effects of inflow on harmful algal blooms” (volume 33, number 2, 11 papers).

2009-09 Lead-Organizer of special session and Moderator, “Ecohydrology, eutrophication and salinization of aquatic systems, and the function and fate of phycotoxins”, 30th Annual Conference of the Society of Environmental Toxicology and Chemistry (SETAC), New Orleans, LA, USA. November.

*Expert Recognition*

2014 Session Moderator, “Biogeography, dispersal and colonization”, 17th Workshop of the International Association of Phytoplankton Taxonomy and Ecology. Kastoria, Greece. September.

2014 Panelist and Reviewer. National Aeronautics and Space Administration, Pre-Aerosol, Clouds, and Ocean Ecosystem Program. Washington D.C. May.

2010 Workshop Participant. Texas Wildlife Management Plan – Harmful Algal Bloom Update Workshop, Texas Parks and Wildlife Department. Austin, TX. February.

2009 Workshop Participant. Texas Wildlife Management Plan – Harmful Algal Bloom Update Workshop, Texas Parks and Wildlife Department. Corpus Christi, TX. November.

2009 Opponent, Ph.D. defense of Andreas Brutemark, “Contribution of phagotrophy by microalgae to carbon flow in marine food webs”, University of Kalmar, Sweden. August.

2009 Speaker, “Joining a Community of Learners and Scholars”, First Year Seminar Program, New Student Conference program, Texas A&M University, TX, USA. June.

2009 Panelist, “How to get into graduate school”, Texas A&M Chapter of the Wildlife Society, Texas A&M University, TX, USA. March.

2008 Panelist, “Early career development”, 35th Annual Great Plains Limnology Conference & 3rd Triennial Oklahoma-Texas Oklahoma Biological Station, OK, USA. September.

2008 Steering Committee Member, Joint Great Plains Limnology and Oklahoma-Texas Aquatics Research Group Conference, Oklahoma Biological Station. October.

2006 Panelist, “NOAA/Center for Sponsored Coastal Ocean Research/Coastal Ocean Program's South Florida Research and Monitoring Program”, Larry Pugh (Program Director). Marathon Key, FL, USA. January.

2004 Panelist, “NOAA Monitoring and Event Response for Harmful Algal Bloom (MERHAB) program”, Washington, DC, USA. January.

2004 Session Moderator, “Neotropical River Ecology”, 89th Annual Meeting of the Ecological Society of America, Portland, OR, USA. August.

1999 Panelist, “Academic Job Search for Graduate Students”, Workshop of the Texas A&M University Career Center, College Station, TX, USA. October.

1999 Session Moderator, High School National Ocean Sciences Bowl. College Station, TX, USA. February.

# INVITED SEMINARS

2016 Daniel Roelke and Sierra Cagle, Towards an understanding of linkages between Lake Conroe water quality and water treatment plant operation, San Jacinto River Authority

2016 Huilin Gao, Daniel Roelke, Freshwater Inflows, Phytoplankton Productivity, and Coastal Ecosystem Sustainability – a Modeling and Remote Sensing Perspective, Texas Master Naturalist, Houston/Galveston

2016 Daniel Roelke, Rika Muhl, Joydeb Bhattacharyya, Fragility of biodiversity sustaining mechanisms: A focus on neutrality, lumpy coexistence and non-hierarchical competition, Glasgow University, UK.

2014 *Prymnesium parvum*: killer invasion into inland waters. Plenary talk for the 17th Workshop of the International Association of Phytoplankton Taxonomy and Ecology. Kastoria, Greece. September 2014.

2013 Aquatic Ecology in the Roelke Lab: Teaching and Research. Fish and Wildlife Department, University of Idaho. December 2013.

2013 Administration is not sexy. Fish and Wildlife Department, University of Idaho. December 2013.

2013 Research and Management Progress in Mitigating and Controlling Toxic Algae Blooms. Aquatic Plant Management Society, San Antonio, TX. July 2013.

2012 Golden algae: A killer in our waters. School of the Environment, University of Technology Sydney. November, Sydney, Australia.

2011 [keynote address] Water quality: The importance of multispecies modeling of plankton environments. Institute for Applied Mathematics and Computational Science (IAMCS), Texas A&M University, College Station, TX. September 2011.

2011 Human Population and Climate Change, Anticipated Effects to Harmful Algal Blooms of Southcentral USA. 51st Annual Meeting of the Aquatic Plant Management Society (APMS), Baltimore, MD. July 2011.

2011 Fish-killing haptophyte blooms in south-central USA: Importance of inflows, threat of climate change, management strategies. Department of Environmental Sciences, Baylor University, Waco, TX. February 2011.

2011 Fish-killing haptophyte blooms in south-central USA: Importance of inflows, threat of climate change, management strategies. Brazos River Authority, Waco, TX. February 2011.

2010 Finding the edge of Ockham's Razor: A need for complexity in plankton modeling. Department of Marine Sciences, University of the Aegean, Greece. November 2010.

2010 Finding the edge of Ockham's Razor: A need for complexity in plankton modeling. Department of Mathematics, Texas A&M University. October 2010.

2010 Finding the edge of Ockham's Razor: A need for complexity in plankton modeling. Department of Oceanography, Texas A&M University. September 2010.

2009 *Prymnesium parvum* blooms in Texas lakes and the importance of instream flows. Yigal Allon Kinneret Limnological Laboratory, Migdal, Israel, August 2009.

2009 *Prymnesium parvum* blooms in Texas lakes and the importance of instream flows. Marine Sciences Centre, University of Kalmar, Kalmar, Sweden, August 2009.

2009 Where have all the mermaids gone? The need for complex models in biodiversity science. Department of Biology Seminar Series, University of Texas at Arlington, Arlington, TX, February 2009.

2009 Factors influencing *Prymnesium parvum* population dynamics during bloom initiation: Results from in-lake mesocosm experiments. Golden Algae Symposium, Texas Parks and Wildlife Department, Fort Worth, TX, January 2009.

2006 Large-scale disturbances and the predictability of complex aquatic ecosystems. Center for Coastal Fisheries and Habitat Research, NOAA, Beaufort, N.C. November 8, 2006.

2006 Hypoxia in the northern Gulf of Mexico: Theoretical considerations regarding phytoplankton assemblage structure and chaos. Department of Marine Science, University of South Alabama, Dauphin Island, Alabama. October 26, 2006.

2006 Hypoxia in the northern Gulf of Mexico: Theoretical considerations regarding phytoplankton assemblage structure and chaos. Department of Oceanography, Oregon State University, Corvallis, Oregon. May 11, 2006.

2006 Large-scale disturbances and the predictability of complex aquatic ecosystems. US EPA, Western Ecology Division, Corvallis, Oregon. March 22, 2006.

2005 Regional species richness and supersaturation: The role of migration and disturbance of chaotic communities. Zoology Department, University of Oklahoma Seminar Series, OK, USA. October 12, 2005.

2004 Complex behavior and community dynamics of plankton assemblages from a semi-arid coastal wetland. Department of Marine Biology Seminar Series, Texas A&M University at Galveston, TX, USA. April 27, 2004.

2004 Complex behavior and community dynamics of plankton assemblages from a semi-arid coastal wetland. Kinneret Limnological Laboratory Seminar Series, Migdal, Israel. February 19, 2004.

2004 Complex behavior and community dynamics of plankton assemblages from a semi-arid coastal wetland. Department of Wildlife and Fisheries Sciences Seminar Series, Texas A&M University, TX, USA. September 2, 2004.

2004 System hysteresis and selection of alternate stable community states: A case study using the 34-year plankton record from Lake Kinneret (Sea of Galilee), Israel. Kinneret Limnological Laboratory Seminar Series, Migdal, Israel. June 29, 2004.

2003 Modeling Complex Behavior Workshop. Oklahoma Biological Station. University of Oklahoma Seminar Series, OK, USA. October 13, 2003.

2002 Deterministic and Chaotic Phytoplankton Dynamics: Management Hopes and Hurdles. Biology Department Seminar Series, Baylor University, TX. Waco, TX, USA. March 27, 2002.

2001 *Prymnesium parvum*, what do we know? "Golden Algae" Workshop to devise research agenda for *Prymnesium* *parvum* research in Texas. Governor's Office and Texas Parks and Wildlife Department. Possum Kingdom, TX, USA. August 21, 2001.

2000 Ecological Indicators of Bloom Development and Preventative Management Approaches. 5th Symposium of the National Health and Environmental Effects Research Laboratory, Environmental Protection Agency. Research Triangle Park, NC, USA. June 6-8, 2000.

1999 Synchronization of Bottom-Up and Top-Down Controls, and "Prey-Quality" Thresholds: A Modeling Study with Management Implications. Young Scientists Conference on Marine Ecosystems Perspectives, International Council for the Exploration of the Sea (ICES). Gilleleje, Denmark. November 20-24, 1999.

1999 Pulsing nutrient discharges and phytoplankton diversity: A proactive HAB management plan. Gulf Ecology Division. Environmental Protection Agency, Gulf Breeze, FL, USA, 1999.

1999 Emerging technologies in hyperspectral optics *in-situ*: Application to harmful algal blooms and mine warfare. Oceanography 50th Anniversary Seminar Series. Department of Oceanography, Texas A&M University, TX, USA. 1999.

1998 Managing aquatic ecosystems: A view into the 21st century. Department of Wildlife and Fisheries Sciences, Texas A&M University, TX, USA. May 12, 1998.

1997 Influence of pulsing nutrient supply on phytoplankton succession and copepod growth. Naval Research Laboratory, Stennis Space Center, MS, USA. September 23, 1997.

1997 Nutrient loading into the Nueces River Estuary, TX: Implications for phytoplankton management. Texas Parks and Wildlife Department, Austin, TX, USA. July 12, 1997.

1993 Amnesic shellfish poisoning: An overview. National Institute of Polar Research, Tokyo, Japan. 1993.

1993 *Crassostrea virginica* Gmelin feeding experiments with two forms of *Pseudonitzschia pungens*: Behavior and toxicity. Inha University, Seoul, South Korea. 1993.

1993 A history of North American domoic acid outbreaks, and their causative organisms. Korean Oceanographic Research and Development Institution, In'chon, South Korea. 1993.

1993 Laboratory and field procedures employed by Greta Fryxell's laboratory for toxic phytoplankton research, 1992. Jinan University, Guangzhou, China. 1993.

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# HOST FOR VISITING SCIENTISTS

2011-12 Banu Kutlu. Assistant Professor. Department of Fisheries, Tunceli University, Tunceli, Turkey.

2005-06 Luzmila Sanchez. Research Scientist. Estación Hidrobiológica de Guayana, Fundación La Salle de Ciencias Naturales. (Guayana's Hydrobiological Station, Natural Resource Foundation).

# OTHER PROFESSIONAL DEVELOPMENT

2016 Recruitment and retention for faculty diversity, search committee training, offered by The Office of the Dean of Faculties, February.

2016 Improving Departmental Climate through Evidence-Based Practices workshop, hosted by ADVANCE LEAD Program and The Office of the Dean of Faculties, January.

2013 Training on use of Academic Analytics for peer-institution analyses.

2009 Integrative Learning Workshop, Texas A&M University, Student Affairs and Academic Affairs, April.

2009 Issues in Creating Equity for Faculty, Joint meeting of the Texas A&M and University of Texas Faculty Senates, Austin, TX, USA.

2009 Faculty Professional Development Series, Is This The Right Time or Not? Preparing for Promotion to Full Professor. Texas A&M University, TX, USA.

2006 Faculty Development Leave (Sabbatical) with the US Environmental Protection Agency, Western Ecology Division, Hatfield Marine Science Center, OR, USA.

2003 Developed a Teaching Portfolio through the Texas A&M University Office of Teaching Excellence, TX, USA.

2002 Training on use of WebCT for distance education delivery.

1993 Certificate of Flow and Imaging Cytometry. Bigelow Laboratory for Ocean Sciences, Boothbay Harbor, ME, USA.

1988 Licensed for Scuba Diving. Y.M.C.A., Millersville, PA, USA.