

## **CURRICULUM VITA**

**Dr. Ray W. Drenner**

Emeritus Professor  
Biology Department  
Texas Christian University  
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### **EDUCATIONAL HISTORY**

1968-72, University of Kansas. B.A. in Biology  
1972-77, University of Kansas. Ph.D. in Biology

### **DEPARTMENTAL CHAIR**

2003-2015

### **PRESENT POSITION**

Emeritus Professor  
Biology Department, Texas Christian University

### **COURSES**

Contemporary Issues in Biology (Biol 10003)  
Ecology and the Environment (Biol 30403)  
Ecology of Lakes and Streams (Biol 50703)  
Scientific Presentations (Biol 60001)

### **AWARDS**

2000 Dean's Teaching Award, Texas Christian University  
2004 Chancellor's Award for Distinguished Teaching, Texas Christian University  
2005 Distinguished Service Award, American Society of Limnology and Oceanography  
2009 Outstanding Fisheries Worker Award, Texas Chapter, American Fisheries Society  
2013 Dow Chemical Award for Innovation in Mercury Science, International Conference on  
Mercury as a Global Pollutant, Edinburgh, Scotland

### **GRADUATE THESES DIRECTED**

1. Steven R. McComas. 1980. Feeding mechanics and competitive interactions of Mississippi silversides (*Menidia audens*) and brook silversides (*Labidesthes sicculus*). Master of Science.
2. John R. Mummert. 1983. Gill raker morphology and the filtering efficiency of the gizzard shad (*Dorosoma cepedianum*). Master of Science.

3. Scott B. Taylor. 1984. Selective particle ingestion and phytoplankton community impact of a planktivorous cichlid. Master of Science.
4. Robert J. Trebatoski. 1985. The impacts of bluegill (Lepomis macrochirus and largemouth bass (Micropterus salmoides) on phytoplankton community structure. Master of Science.
5. K. David Hambright. 1985. Zooplankton community response to planktivorous bluegill (Lepomis macrochirus) and piscivorous largemouth bass (Micropterus salmoides). Master of Science.
6. Holli F. Lancaster. 1988. Experimental tank study of the main and interaction effects of phosphorus and mosquitofish (Gambusia affinis) on a pond community. Master of Science.
7. Xavier Lazzaro. 1991. Co-advisor, Ph.D. Dissertation (Dissertation research conducted at T.C.U. Experimental Mesocosm Facility), Ohio State University.
8. Robert M. Baca. 1993. Do the effects of piscivorous largemouth bass cascade to the plankton? Master of Science.
9. Stacy J. Basham. 1994. Effects of tilapia and insects on phosphorus cycling in mesocosms: A mass balance approach. Master of Science.
10. Don J. Day. 1994. Phosphorus and nitrogen removal by an ecological filtration system. Master of Science.
11. Regina Steinkamp. 1995. Stonerollers and the cycling of phosphorus and nitrogen. Master of Science.
12. Kirsten L. Gallo. 1995. Responses of macrophyte communities to fertilization and omnivorous fish. Master of Science.
13. C. Michael Edwards. 1996. Use of mark-recapture and electrofishing CPUE to estimate densities of largemouth bass. Master of Science.
14. Kirk R. Guckenberger. 1998. Gape-limited piscivory and its effects on prey fish assemblages. Master of Science.
15. Weston H. Nowlin. 1998. Effects of bluegill on experimental microcosm communities in the presence and absence of a fish assemblage. Master of Science.
16. Chris Conley. 1999. Effects of lead on phosphorus removal by an ecological water treatment system. Master of Science.

17. Matthew M. Chumchal. 2003. Effects of common carp on water quality. Master of Science.
18. William C. McClain. 2005. Mercury concentrations in seven species of fish from Lake Meredith, Texas. Master of Science.
19. Amanda Davis. 2005. Mercury concentrations in largemouth bass in North Texas reservoirs. Master of Science.
20. Jaron Hill. 2007. Use of preserved museum fish to evaluate mercury contamination in two Oklahoma rivers. Master of Science.
21. Bradley Blackwell. 2008. Mercury contamination of macroinvertebrates in ephemeral grassland ponds. Master of Science.
22. Stephen M. Drenner. 2008. Crustacean zooplankton community structure in temporary and permanent ponds in a Texas grassland. Master of Science.
23. Christina Jones (Co-advisor with Dr. M. Chumchal). 2013. Mercury contamination of fish in the Mississippi River Valley. Master of Science.
24. Beth Tweedy (Co-advisor with Dr. M. Chumchal). 2013. Effects of fish on mercury transport by emerging insects. Master of Science.
25. Gary Cocke (Co-advisor with Dr. M. Chumchal). 2013. Top down and bottom up effects on emergent insect mercury flux from experimental ponds. Master of Science.
26. Taylor Jones (Co-advisor with Dr. M. Chumchal). 2013. Top down and bottom up effects on emergent insect mercury flux from experimental mesocosms. Master of Science.
27. Kimberly Adams (Co-advisor with Dr. M. Chumchal). 2014. Effectiveness of fish consumption advisories for mercury in the South Central US. Master of Science.
28. Gretchen Gann (Co-advisor with Dr. M. Chumchal). 2014. Risk to birds from mercury-contaminated spiders at Caddo Lake. Master of Science.
29. Cleveland Powell (Co-advisor with Dr. M. Chumchal). 2014. Mercury contamination in aquatic and terrestrial consumers from Caddo Lake. Master of Science.
30. Frank Greenhill (Co-advisor with Dr. M. Chumchal). 2015. Insect emergence from temporary and permanent ponds: Response to drying. Master of Science.
31. Edward Williams (Co-advisor with Dr. M. Chumchal). 2016. Seasonal odonate emergence in fish and fishless ponds and the flux of methyl mercury. Master of Science.

32. Celeste Ortega-Rodriguez (Co-advisor with Dr. M. Chumchal). 2017 Mercury contamination of shoreline spiders. Master of Science.

33. Christopher Gerstle (Co-advisor with Dr. M. Chumchal). 2018. Health risks of mercury-contaminated fish to piscivorous birds in the South Central U.S. Master of Science.

34. Thomas Thalhuber (Co-advisor with Dr. M. Chumchal). 2019. Mercury flux in odonates and its risk to nesting Red-winged Blackbirds. Master of Science.

35. Madeline Hannappel (Co-advisor with Dr. M. Chumchal). 2019. Mercury contamination of terrestrial spiders along shorelines of grassland ponds. Master of Science.

36. Ryan Seymour (Co-advisor with Dr. M. Chumchal). 2020. Mercury contamination of recreationally-caught fish in the southeastern United States. Master of Science.

37. Lexi Freeman (Co-advisor with Dr. M. Chumchal). 2022. Effects of seasonality and pond permanence on insect emergence from grassland ponds. Master of Science.

38. Andrew Todd (Co-advisor with Dr. M. Chumchal). 2022. Effects of spider taxa and body size on mercury contamination of riparian spiders: implications for the use of spiders as sentinels. Master of Science.

## **GRANTS FUNDED**

### **A. Extramural**

1. Drenner, R.W., Agency for International Development, United States State Department, 1980-1983, Lake Manzalah, Egypt and Lake Kinneret, Israel: Scientific Basis for Lake Management, \$149,000.

2. Drenner, R.W., S. Threlkeld and M. McCracken, National Science Foundation, 1982-1984, Experimental Analysis of Direct and Indirect Grazing Impacts of Filter-Feeding Fish on Phytoplankton Community Structure, \$82,000.

3. Drenner, R.W., G.L. Vinyard, M. Gophen and U. Pollinger, National Science Foundation, 1985-1987, Selective Planktivory of the Galilee Saint Peter's Fish and Its Impact on the Plankton Community of Lake Kinneret, Israel, \$150,000.

4. Drenner, R.W., K.D. Hoagland, J.D. Smith and W.J. Barcellona, FMC Corporation, 1987-1988, Experimental Microcosm Study of the Effects of a Sediment-Bound Pyrethroid Insecticide on Gizzard Shad and Plankton, \$51,469.

5. Drenner, R.W. and J.D. Smith, National Science Foundation, 1989-1991, Responses of Plankton Biomass Across Gradients of Fish Density and Lake Trophic State: Experimental Test of the Fish x Lake Trophic State Interaction Hypothesis, \$150,000.

6. Hoagland, K.D. and R.W. Drenner, Texas Water Resources Institute, 1989-1990, Freshwater Community Response to Mixtures of Agricultural Pesticides: Synergistic Effects of Atrazine and Bifenthrin, \$24,200.
7. Drenner, R.W. Tarrant County Water Control and Improvement District, 1991-1994, Experimental Evaluation of Biomanipulation as a Technique to Improve the Water Quality of Fort Worth's Balancing Reservoirs, \$37,079.
8. Drenner, R.W. Tarrant County Water Control and Improvement District, 1991-1994, Experimental Study of the Nutrient Removal Efficiency of a Periphyton-Fish Filtration System, \$126,889.
9. Drenner, R.W. U.S. Army Corps of Engineers, 1993, Survey of Macrophyte and Fish Community Responses to the Fish and Nutrient Treatments: a Pond Experiment, \$4,800.
10. Drenner, R.W. U.S. Army Corps of Engineers, 1995, Coupling of the Limnetic and Benthic Zones of Lakes by Omnivorous Fish, \$30,000.
11. Drenner, R.W. Tarrant Regional Water District, 1998-2003, Study of Water Quality of the Balancing Reservoir, \$51,371.
12. Weinburgh, M. and R. W. Drenner. Teacher Quality Grants Program, Enhancing Teacher Change Through Partnership, 2003. Bransom-Hommel Water Project \$77,000.
13. Weinburgh, M. and R. W. Drenner. Texas Higher Education Coordinating Board. 2004. Contemporary Issues in Biology, \$285,000.
14. Weinburgh, M. and R. W. Drenner. Teacher Quality Grant Program. 2004. Biology: Opportunities for Learning and Teaching. \$90,295.
15. Chumchal, M. and R. Drenner. Caddo Lake Institute. 2012. Watershed-Level Patterns of Mercury Contamination in the Caddo Lake Watershed and Other Areas of North Texas: Phase 1, \$5,000.
16. M. Slattery, Primary Investigator. TCU-University of Oxford-NextEra Energy Wind Research Initiative, Wind Turbine Impacts on Birds and Bats;
  - a. \$123,633 subaward for: Analysis of mercury contamination in largemouth bass awarded to M. Chumchal and R. Drenner, 2009-2010.
  - b. \$6,585 subaward for: Bottom-up nutrient and top-down fish impacts on contaminant flux from aquatic ecosystems. to M. Chumchal and R. Drenner, 2011.

- c. \$8,856.12 subaward for: Effects of fish on mercury transport out of experimental ponds by invertebrates to M. Chumchal and R. Drenner, 2012.
- d. \$10,000 subaward for: Analysis of Hg contamination in fish from the Southeastern U.S. to M. Chumchal and R. Drenner, 2014.

## **B. Intramural**

Drenner, R.W., Texas Christian University Research Foundation, 1977-2020, 35 grants supporting experimental and field studies at the TCU Mesocosm Facility, TRWD Eagle Mountain Fish Hatchery, Caddo Lake, LBJ National Grasslands and Trinity River. \$124,000.

Chumchal, M.M. and R.W. Drenner. 2014-2015. Effects of pond permanence on insect-mediated mercury flux from ponds in the Great Plains. \$28,409. TCU Invests in Scholarship Grant.

## **ARTICLES PUBLISHED**

### **A. Refereed publications**

1. Drenner, R.W., J.R. Strickler and W.J. O'Brien. 1978. Capture probability: the role of zooplankton escape in the selective feeding of planktivorous fish. *Journal of Fisheries Research Board of Canada* 35: 1370-1373.
2. Camin, J.H. and R.W. Drenner. 1978. Climbing behavior of larval rabbit ticks (Haemaphysalis leporispalustris). *Journal of Parasitology* 65: 905-909.
3. Drenner, R.W. and F.B. Cross. 1981. A natural hybrid fish, Percina maculata and P. caprodes, from Kansas. *Transactions of the Kansas Academy of Science* 84: 61-62.
4. Drenner, R.W., G.L. Vinyard, W.J. O'Brien, J.R. Triplett and J. Wagner. 1981. The zooplankton community of LaCygne Lake: a cooling pond in Kansas. *The Southwestern Naturalist* 26: 243-249.
5. Drenner, R.W., G.L. Vinyard, M. Gophen and S.R. McComas. 1982. Feeding behavior of the cichlid, Sarotherodon galilaeum: selective predation on Lake Kinneret zooplankton. *Hydrobiologia* 87: 17-20.
6. Drenner, R.W., W.J. O'Brien and J.R. Mummert. 1982. Filter-feeding rates of gizzard shad. *Transactions of the American Fisheries Society* 111: 210-215.
7. Vinyard, G.L., R.W. Drenner and D.A. Hanzel. 1982. Feeding success of hatchery-reared kokanee salmon when presented with zooplankton prey. *Progressive Fish Culturist* 44: 37-39.
8. McComas, S.R. and R.W. Drenner. 1982. Species replacement in a reservoir fish community: silverside feeding mechanics and competition. *Canadian Journal of Fisheries and Aquatic Sciences* 39: 815-821.

9. Drenner, R.W., F. deNoyelles, Jr. and D. Kettle. 1982. Selective impact of filter-feeding gizzard shad on zooplankton community structure. *Limnology and Oceanography* 27: 965-968.
10. Gophen, M., R.W. Drenner and G.L. Vinyard. 1983. Fish introductions into Lake Kinneret: call for concern. *Fisheries Management* 14: 43-45.
11. Gophen, M., R.W. Drenner and G.L. Vinyard. 1983. Cichlid stocking and the decline of the Galilee Saint Peter's fish (Sarotherodon galilaeus) in Lake Kinneret, Israel. *Canadian Journal of Fisheries and Aquatic Sciences* 40: 983-986.
12. Drenner, R.W., S.F. Taylor, X. Lazzaro, and D. Kettle. 1984. Particle grazing and plankton community impact of an omnivorous cichlid. *Transactions of the American Fisheries Society* 113: 397-402.
13. Drenner, R.W., J.R. Mummert, F. deNoyelles, Jr., and D. Kettle. 1984. Selective particle ingestion by a filter-feeding fish and its impact on phytoplankton community structure. *Limnology and Oceanography* 29: 941-948.
14. DeMarco, V.G., R.W. Drenner and G.W. Ferguson. 1985. Maximum prey size of an insectivorous lizard Sceloporus undulatus garmani. *Copeia* 1985: 1077-1080.
15. Hambright, K.D., R.J. Trebatoski, R.W. Drenner and D. Kettle. 1986. An experimental study of the impacts of bluegill (Lepomis macrochirus) and largemouth bass (Micropterus salmoides) on pond community structure. *Canadian Journal of Fisheries and Aquatic Sciences* 43: 1171-1176.
16. Mummert, J.R. and R.W. Drenner. 1986. Effect of fish size on the filtering efficiency and selective particle ingestion of a filter-feeding clupeid. *Transactions of the American Fisheries Society* 115: 522-528.
17. Drenner, R.W., S.T. Threlkeld, and M.D. McCracken. 1986. Experimental analysis of the direct and indirect effects of an omnivorous filter-feeding clupeid on plankton community structure. *Canadian Journal of Fisheries and Aquatic Sciences* 43: 1935-1945.
18. Drenner, R.W., K.D. Hambright, G.L. Vinyard, M. Gophen, and U. Pollinger. 1987. Experimental study of size-selective phytoplankton grazing by a filter-feeding cichlid and the cichlid's effect on plankton community structure. *Limnology and Oceanography* 32: 1138-1144.
19. Drenner, R.W., G.L. Vinyard, K.D. Hambright, and M. Gophen. 1987. Particle ingestion by Galilee Saint Peter's fish is not affected by removal of gill rakers and microbranchiospines. *Transactions of the American Fisheries Society* 116: 272-276.
20. Threlkeld, S.T. and R.W. Drenner. 1987. An experimental mesocosm study of residual and contemporary effects of an omnivorous, filter-feeding, clupeid fish on plankton community structure. *Limnology and Oceanography* 32: 1331-1341.

21. Vinyard, G.L., R.W. Drenner, M. Gophen, U. Pollinger, D.L. Winkelman, and K.D. Hambright. 1988. An experimental study of the plankton community impacts of two omnivorous filter-feeding cichlids, Tilapia galilaea and Tilapia aurea. Canadian Journal of Fisheries and Aquatic Sciences 45: 685-690.
22. Drenner, R.W., S.T. Threlkeld, J.D. Smith, J.R. Mummert and P. Cantrell. 1989. Interdependence of phosphorus, fish, and site effects on phytoplankton biomass and zooplankton. Limnology and Oceanography 34: 1315-1321.
23. Lancaster, H.F. and R.W. Drenner. 1990. Experimental mesocosm study of the separate and interaction effects of phosphorus and mosquitofish (Gambusia affinis) on plankton community structure. Canadian Journal of Fisheries and Aquatic Sciences 47: 471-479.
24. Guest, W.C., R.W. Drenner, S.T. Threlkeld, F.D. Martin and J.D. Smith. 1990. Effects of gizzard shad and threadfin shad on zooplankton and young-of-year white crappie production. Transactions of the American Fisheries Society 119: 529-536.
25. Drenner, R.W., J.D. Smith, J.R. Mummert and H.F. Lancaster. 1990. Responses of a eutrophic pond community to separate and combined effects of N:P supply and planktivorous fish: a mesocosm experiment. Hydrobiologia: 208:161-167.
26. Guest, W.C. and R.W. Drenner. 1990. Relationship between the feeding of blueback herring and the zooplankton of a Texas reservoir. Hydrobiologia 209:1-6.
27. Drenner, R.W. and J.D. Smith. 1991. Biomass-dependent effects of mosquitofish on zooplankton, chlorophyll and the size distribution of particulate phosphorus. Verh. Internat. Verein. Limno. 24:2382-2386.
28. Hambright, K.D., R.W. Drenner, S.R. McComas and N.G. Hairston, Jr. 1991. Gape-limited piscivores, planktivore size refuges, and the trophic cascade hypothesis. Arch. Hydrobiol. 121:389-404.
29. Lazzaro, X., R. W. Drenner, R. A. Stein and J. D. Smith. 1992. Planktivores and plankton dynamics: effects of fish biomass and planktivore type. Can. J. Fish Aquat. Sci. 49: 1466-1473.
30. Hoagland, K.D., R.W. Drenner, J.D. Smith and D. Cross. 1993. Freshwater community responses to mixtures of agricultural pesticides: effects of atrazine and bifenthrin. Environ. Toxicol. Chem. 12: 627-637.
31. Drenner, R.W., K.D. Hoagland, J.D. Smith, W.J. Barcello, P.C. Johnson, M.A. Palmieri, and J.F. Hobson. 1993. Effects of sediment-bound bifenthrin on gizzard shad and plankton in experimental tank mesocosms. Environ. Toxicol. Chem. 12: 1297-1306.



32. Baca, R.M. and R.W. Drenner. 1995. Do the effects of piscivorous largemouth bass cascade to the plankton? *Hydrobiologia* 316:139-151.
33. Drenner, R.W., J.D. Smith, and S.T. Threlkeld. 1996. Lake trophic state and the limnological effects of omnivorous fish. *Hydrobiologia* 319:213-223.
34. Drenner, R.W., D.J. Day, S.J. Basham, J.D. Smith and S.I. Jensen. 1997. Ecological water treatment system for removal of phosphorus and nitrogen from polluted water. *Ecological Applications* 7:381-390.
35. Drenner, R.W., K.L. Gallo, C.Michael Edwards, K.E. Rieger and E.D. Dibble. 1997. Common carp affect turbidity and angler catch rates of largemouth bass in ponds. *North American Journal of Fisheries Management* 17: 1010-1013.
36. Edwards, C.M., R.W. Drenner, K.L. Gallo and K.E. Regier. 1997. Estimation of population density of largemouth bass in ponds using mark-recapture and electrofishing catch-per-effort. *North American Journal of Fisheries Management* 17: 719-725.
37. Drenner, R.W., K.L. Gallo, R.M. Baca, and J.D. Smith. 1998. Synergistic effects of nutrient loading and omnivorous fish on phytoplankton biomass. *Canadian Journal of Fisheries and Aquatic Sciences* 55: 2087-2096.
38. Drenner, R.W. and A. Mazumder. 1999. Microcosm experiments have limited relevance for community and ecosystem ecology: comment. *Ecology* 80: 1081-1085.
39. Drenner, R.W. and K.D. Hambright. 1999. Review: Biomanipulation of fish assemblages as a lake restoration technique. *Archive Hydrobiologia* 146: 129-165.
40. Rectenwald, L.L. and R.W. Drenner. 2000. Nutrient removal from wastewater effluent using an ecological water treatment system. *Environmental Science and Technology* 34: 522-526.
41. Nowlin, W. H. and R.W. Drenner. 2000. Context-dependent effects of bluegill in experimental mesocosm communities. *Oecologia* 2000: 122: 421-426.
42. Drenner, R.W. and K.D. Hambright. 2002. Piscivores, trophic cascades, and lake management. *The Scientific World* 2: 284-307.
43. Drenner, R.W., R.M. Baca, J.S. Gilroy, M.R. Ernst, D.J. Jensen and D.H. Marshall. 2002. Community responses to piscivorous largemouth bass; a biomanipulation experiment. *Lake and Reservoir Management* 18: 44-51.
44. Chumchal, M. and R. W. Drenner. 2004. Interrelationships between phosphorus loading and common carp in the regulation of phytoplankton biomass. *Archiv fur Hydrobiologie* 161: 147-158.

45. Chumchal, M. W. Nowlin, R. Drenner and S. Mann. 2005. Biomass-dependent effects of common carp on water quality in shallow ponds. *Hydrobiologia* 545: 271-277.
46. Drenner, R. W., M. Chumchal, D. Marshall, J. Owens and M. Ernst. 2005. Changes in water quality following renovation of a water supply reservoir. *Verh. Internat. Verein. Limnol.* 29: 979-981.
47. Nowlin, W.H., R.W. Drenner, K.R. Guckenberger, M.A. Lauden, G.T. Alonso, J.E. Fennell and J.L. Smith. 2006. Gape limitation, prey size refuges and the top-down impacts of piscivorous largemouth bass in shallow pond ecosystems. *Hydrobiologia* 563: 357-369.
48. McClain, W.C., M.M. Chumchal, R.W. Drenner, L.W. Newland. 2006. Mercury concentrations in fish from Lake Meredith, Texas: Implications for the issuance of fish consumption advisories. *Environmental Monitoring and Assessment* 123: 249-258.
49. Chumchal, M.M., R.W. Drenner, B. Fry, K.D. Hambright, and L.W. Newland. 2008. Habitat-specific differences in mercury concentrations in a top predator from a shallow lake. *Transactions of the American Fisheries Society* 137:195–208.
50. Blackwell, B. and R. W. Drenner. 2009. Mercury contamination of macroinvertebrates in fishless grassland ponds. *The Southwestern Naturalist* 54:468-474.
51. Drenner, S.M., S.I. Dodson, R.W. Drenner, and J.E. Pinder III. 2009. Crustacean zooplankton community structure in temporary and permanent grassland ponds. *Hydrobiologia* 632:225-233.
52. Hill, J.J, M. M. Chumchal, R.W. Drenner, J.E. Pinder III and S. M. Drenner. 2010. Use of preserved museum fish to evaluate historical and current mercury contamination in fish from two rivers in Oklahoma, USA. *Environmental Monitoring and Assessment*, 161: 509-516.
53. Chumchal, M.M., R.W. Drenner, D.R. Cross and K. D. Hambright. 2010. Mercury contamination of three species of forage fish from Caddo Lake, Texas, USA. *Journal of Environmental Sciences* 22:1158-1163.
54. Drenner, R.W., M.M. Chumchal, S.P. Wentz, M. McGuire and S. M. Drenner. 2011. Landscape-level patterns of mercury contamination of fish in North Texas, USA. *Environmental Science and Chemistry* 30: 2041-2045.
55. Henderson, B.L., M.M. Chumchal, R.W. Drenner, Y.Deng, P.Diaz, W.H. Nowlin. 2012. Effects of fish on mercury contamination of macroinvertebrate communities of grassland ponds, *Environmental Toxicology and Chemistry* 31: 870-876.

56. Drenner, R.W., M.M. Chumchal, C.M. Jones, Christopher M. B. Lehmann, David A. Gay, David I. Donato. 2013. Effects of mercury deposition and coniferous forests on the mercury contamination of fish in the south central United States, *Environmental Science and Technology* 47: 1274-1279.
57. Jones, T.A., M.M. Chumchal, R.W. Drenner, G.N. Timmins, W.H. Nowlin. 2013. Bottom-up nutrient and top-down fish impacts on mercury flux from aquatic ecosystems, *Environmental Toxicology and Chemistry* 32: 612–618.
58. Tweedy, B.N., R.W. Drenner, M.M. Chumchal, J.H. Kennedy. 2013. Effects of fish on emergent insect-mediated flux of methyl mercury across a gradient of contamination, *Environmental Science and Technology* 47: 1614-1619.
59. Speir, S.L., M.M. Chumchal, R.W. Drenner, W.G. Cocke, M.E. Lewis, H.J. Whitt. 2014. Methylmercury and stable isotopes of nitrogen reveal a terrestrial spider consumes emergent aquatic insects. *Environmental Toxicology and Chemistry* 33: 2506-2509.
60. Gann, G.L, C.H. Powell, M.M. Chumchal and R.W. Drenner. 2015. Hg-contaminated terrestrial spiders pose a potential risk to songbirds at Caddo Lake (Texas/Louisiana, USA). *Environmental Toxicology and Chemistry* 34: 303-306.
61. Chumchal, M.M. and R.W. Drenner. 2015. An environmental problem hidden in plain sight? Small human-made ponds, emergent insects, and mercury contamination of biota in the Great Plains. *Environmental Toxicology and Chemistry* 34: 1197-1205.
62. Adams K.J., R.W. Drenner, M.M. Chumchal, D.I. Donato. 2016. Disparity between state fish consumption advisory systems for methyl mercury and U.S. Environmental Protection Agency Recommendations: A case study of the south central U.S. *Environmental Toxicology and Chemistry*, 35:247-251.
63. Chumchal, M.M., R.W. Drenner, K.J. Adams. 2016. Abundance and size distribution of permanent and temporary farm ponds in the southeastern Great Plains. *Inland Waters*, 6: 258-264.
64. Chumchal, M.M., R.W. Drenner, F. Greenhill, J. Kennedy, A. Courville, C. Gober, A. Courville and L. Lossau. 2017. Recovery of aquatic insect-mediated methylmercury flux from ponds following drying disturbance. *Environmental Toxicology and Chemistry* 36:1986-1990.
65. Williams, E., M.M. Chumchal, R.W. Drenner and J. Kennedy. 2017. Seasonality of odonate-mediated methyl mercury flux from permanent and semi-permanent ponds and potential risk to red-winged blackbirds (*Agelaius phoeniceus*). *Environmental Toxicology and Chemistry* 36: 2823-2832.

66. Chumchal, M.M., R.W. Drenner, M.N. Hall, D.K. Polk, E.B. Williams, C.L. Ortega-Rodriguez, J.H. Kennedy. 2018. Seasonality of dipteran-mediated methyl mercury flux from ponds, *Environmental Toxicology and Chemistry* 37: 1846-1851.
67. Gerstle, C., R.W. Drenner and M. M. Chumchal. 2018. Spatial patterns of mercury contamination and associated risk to piscivorous wading birds of the south central United States. *Environmental Toxicology and Chemistry* 38: 160-166.
68. Ortega-Rodriguez, C., M. M. Chumchal, R. W. Drenner, J. H. Kennedy, W. H. Nowlin, B. D. Barst, D. K. Polk, M. N. Hall, E. B. Williams, K. C. Lauck, A. Santa-Rios and N. Basu, 2019. Relationship between methylmercury contamination and proportion of aquatic and terrestrial prey in diets of shoreline spiders. *Environmental Toxicology and Chemistry* 38:2503-2508.
69. Chumchal, M.M. and R.W. Drenner. 2020. Ecological Factors Controlling Insect-Mediated Methylmercury Flux from Aquatic to Terrestrial Ecosystems: Lessons Learned from Experimental Studies in Mesocosms and Ponds. In: *Contaminants and Ecological Subsidies: The Land-Water Interface*. J.M. Kraus, D.M. Walters and M.A. Mills, eds. Springer.
70. Hannappel, M.P., M.M. Chumchal, R.W. Drenner, J.H. Kennedy, B.D. Barst, J. M. Castellini, A.R. Nolan, F. M. Willoughby and L.P. Trauffler. 2021. Effect of body size on methyl mercury concentrations in shoreline spiders: Implications for their use as sentinels, *Environmental Toxicology and Chemistry* 40:1149-1154.
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## **B. Non-refereed publications**

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## **PAPERS PRESENTED AT SCHOLARLY MEETINGS**

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2. Drenner, R.W. and W.J. O'Brien. 1976. The feeding mechanics of gizzard shad, Dorosoma cepedianum. Annual Meeting of the Great Plains Limnology Association, University of Missouri, Columbia.
3. Drenner, R.W. and J.H. Camin. 1977. The role of climbing behavior in the host-specificity of larval rabbit ticks (Haemaphysalis leporispalustris). Central States Entomological Society Meeting, University of Nebraska, Lincoln.
4. Drenner, R.W., J.R. Strickler and W.J. O'Brien. 1977. Zooplankton-escape from planktivorous fish. Annual Meeting of the American Society of Limnology and Oceanography, East Lansing, Michigan.
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6. Drenner, R.W. 1977. Capture probability: The role of zooplankton escape in the selective feeding of planktivorous fish. Annual Meeting of the Great Plains Limnology Association, University of Oklahoma Biological Station, Lake Texoma.
7. Drenner, R.W. 1978. The feeding mechanics of gizzard shad. Annual Meeting of the Texas Academy of Science, Texas Tech University, Lubbock.
8. Drenner, R.W. and S.R. McComas. 1979. Fish predation and its effect on the zooplankton community of a reservoir. Winter Meeting of the American Society of Limnology and Oceanography, Corpus Christi, Texas.
9. McComas, S.R. and R.W. Drenner. 1979. The feeding mechanics of two atherinid fish. Annual Meeting of the Texas Academy of Science, University of Texas at Arlington.
10. Drenner, R.W. and S.R. McComas. 1979. The roles of fish size-selectivity and zooplankton escape abilities in the selective feeding and impact of planktivorous fish. Annual Meeting of the Texas Academy of Science, University of Texas at Arlington.
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97. Sawey, M.R., M.M. Chumchal, R.W. Drenner, and J.E. Pinder III. 2008. Habitat-specific differences in mercury concentrations of Mississippi grass shrimp from Caddo Lake, Texas. South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, Houston, Texas.

98. Drenner, R., M. Chumchal, M. Davis, S. Drenner, P. Mitchell and N. Long. 2009. Coal-fired power plants and spatial variation in mercury contamination of largemouth bass in Texas. Annual Meeting of the Texas Chapter of American Fisheries Society. Fort Worth, Texas.
99. Drenner, R.W., M.M. Chumchal, M. Davis, S.M. Drenner, P.W. Mitchell and N.A. Long. 2009. Coal-Fired Power Plants and Spatial Variation in Mercury Contamination of Largemouth Bass in Texas, USA. 9th International Conference on Mercury as a Global Pollutant, Guiyang, Guizhou, China.
100. Chumchal, M.M., R.W. Drenner, D. Cross, K.D. Hambright. 2009. Species-specific differences in mercury concentration and trophic position of planktivorous fish from Caddo Lake, Texas, USA. 9<sup>th</sup> International Conference on Mercury as a Global Pollutant, Guiyang, Guizhou, China.
101. Drenner, R.W. and M.M. Chumchal. 2009. Spatial variation and mercury contamination of fishes in Texas. Annual Meeting of the South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry. Texas State University, San Marcos.
102. Drenner, R.W., M.M. Chumchal, S.P. Wentz. 2010. Mercury contamination of largemouth bass in Texas. Joint Meeting of the American Society of Limnology and Oceanography and North American Benthological Society, Santa Fe, New Mexico.
103. Drenner, R.W., M.M. Chumchal, S.P. Wentz, M. Davis, and S.M. Drenner. 2010. Mercury contamination of largemouth bass in Texas. North American Lake Management Society Annual Meeting, Oklahoma City, Oklahoma. Invited Presentation.
104. Henderson, B.L., M.M. Chumchal, R.W. Drenner, P. Diaz, Y. Deng, and W.H. Nowlin. 2010. Mercury contamination of macroinvertebrates from ponds with and without fish at the LBJ National Grassland, Texas. Joint Meeting of the American Society of Limnology and Oceanography and North American Benthological Society, Santa Fe, New Mexico.
105. Henderson, B.L., M.M. Chumchal, R.W. Drenner, P. Diaz, Y. Deng, and W.H. Nowlin. 2010. Mercury contamination of macroinvertebrates from ponds with and without fish at the LBJ National Grassland, Texas. Southwestern Association of Naturalists Annual Meeting, Junction, Texas.
106. Henderson, B.L., M.M. Chumchal, R.W. Drenner, P. Diaz, Y. Deng, and W.H. Nowlin. 2010. Mercury contamination of macroinvertebrates from ponds with and without fish at the LBJ National Grassland, Texas. Texas Academy of Science Annual Meeting, Stephenville, Texas.
107. Park, A. J., M.R. Sawey, M.M. Chumchal, R.W. Drenner, Y. Deng, and W.H. Nowlin. 2010. Biomagnification of mercury within the macroinvertebrate community of Caddo Lake. Texas Academy of Science Annual Meeting, Stephenville, Texas.

108. Drenner, R.W., M.M. Chumchal and S.P. Wente, 2011, Landscape-level patterns of mercury contamination of fish in the South Central United States, Ecological Society of America Annual Meeting, Austin, Texas.
109. Drenner, R.W. M.M. Chumchal, S.P. Wente, M. McGuire, and S.M. Drenner, 2011, Landscape-level patterns of mercury contamination of fish in North Texas, 10<sup>th</sup> International Conference on Mercury as a Global Pollutant, Halifax, Nova Scotia, Canada.
110. Henderson, B.L., M.M. Chumchal, R.W. Drenner, P. Diaz, Y. Deng, and W.H. Nowlin, 2011, Mercury contamination of macroinvertebrates from ponds with and without fish, Ecological Society of America Annual Meeting, Austin, Texas.
111. Henderson, B.L., M.M. Chumchal, R.W. Drenner, P. Diaz, Y. Deng, and W.H. Nowlin, 2011, Effects of fish on mercury contamination of macroinvertebrate communities of grassland ponds, Joint Meeting of the Oklahoma-Texas Aquatics Research Group and the Great Plain's Limnology Society, University of Oklahoma Biological Station, Oklahoma.
112. Henderson, B.L., M.M. Chumchal, R.W. Drenner, P. Diaz, Y. Deng, and W.H. Nowlin, 2011, Mercury contamination of macroinvertebrates from ponds with and without fish at the LBJ National Grassland, Texas, 10<sup>th</sup> International Conference on Mercury as a Global Pollutant, Halifax, Nova Scotia, Canada.
113. Henderson, B.L., M.M. Chumchal, R.W. Drenner, P. Diaz, Y. Deng, and W.H. Nowlin, 2011, Mercury contamination of macroinvertebrates from ponds with and without fish at the LBJ National Grassland, Texas, South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, Denton, Texas.
114. Jones T.A., M. M. Chumchal, and R.W. Drenner, 2011, High nutrient conditions promote faster mercury reduction in the tissues of green sunfish (*Lepomis cyanellus*) transplanted from a high- to a low-mercury environment, Texas Academy of Science Annual Meeting, Austin, Texas.
115. Park, A. J., M.R. Sawey, M.M. Chumchal, R.W. Drenner, Y. Deng, and W.H. Nowlin, 2011, Biomagnification of mercury within the macroinvertebrate community of Caddo Lake, South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, Denton, Texas.
116. Chumchal, M.M., T.A. Jones, R.W. Drenner, G.N. Timmins, and W.H. Nowlin, 2012, Bottom-up and top-down impacts on mercury flux from aquatic ecosystems, Society for Environmental Toxicology and Chemistry North America Meeting, Long Beach, California.
117. Chumchal, M.M., T.A. Jones, R.W. Drenner, G.N. Timmins, and W.H. Nowlin, 2012, Bottom-up and top-down impacts on contaminant flux from aquatic ecosystems, Society for Freshwater Science Annual Meeting, Louisville, Kentucky.
118. Chumchal, M.M., T.A. Jones, R.W. Drenner, G.N. Timmins, and W.H. Nowlin, 2012, Bottom-up and top-down impacts on contaminant flux from aquatic ecosystems, Society of Environmental Toxicology and Chemistry-South-Central Regional Chapter, Waco, Texas.



119. Chumchal, M.M., T.A. Jones, R.W. Drenner, G.N. Timmins, and W.H. Nowlin, 2012, Bottom-up and top-down impacts on contaminant flux from aquatic ecosystems, Texas Chapter of the American Fisheries Society Annual Meeting, Galveston, Texas.
120. Drenner, R.W., M.M. Chumchal, S.P. Wentz, C. Jones and D. Donato, 2012, Landscape-level Patterns of Mercury Contamination of Fish in the South Central United States, Association of American Geographers Annual Meeting, New York City, New York.
121. Drenner, R.W., M.M. Chumchal, C. Jones, C. Lehmann, D. Gay and D. Donato, 2012, Landscape-level patterns of mercury contamination in the South Central United States, Eighth National Monitoring Conference, Portland, Oregon.
122. Drenner, R.W., M.M. Chumchal, C. Jones, C. Lehmann, D. Gay and D. Donato, 2012, Landscape-level patterns of mercury contamination in the South Central United States, Society of Environmental Toxicology and Chemistry-South-Central Regional Chapter, Waco, Texas.
123. Park, A, M.M. Chumchal, R. Drenner and T. Morgan, 2012, Effect of watershed land cover on mercury contamination in Big Cypress Watershed, Society of Environmental Toxicology and Chemistry-South-Central Regional Chapter, Waco, Texas.
124. Tweedy, B., R.W. Drenner, M.M. Chumchal, and J. Kennedy, 2012, Effects of Fish on Insect Emergence and Transport of Methyl Mercury from Ponds, Society of Environmental Toxicology and Chemistry-South-Central Regional Chapter, Waco, Texas.
125. Chumchal, M., R. Drenner, B. Blackwell, B. Henderson, T. Jones, B. Tweedy, 2013, Emergent bugs, small ponds, big problem: A synthesis of recent studies examining MeHg contamination of aquatic macroinvertebrates and insect-mediated flux of MeHg from small ponds to terrestrial ecosystems, 11th International Conference on Mercury as a Global Pollutant, Edinburgh, Scotland.
126. Chumchal, M., R. Drenner, B. Blackwell, G. Cocke\*, B. Henderson, T. Jones, W. Nowlin and B. Tweedy, 2013, Bottom-Up Nutrient and Top-Down Fish Impacts on Methylmercury Flux from Aquatic Ecosystems: A Synthesis of Recent Studies, American Fisheries Society Annual Meeting, Little Rock, Arkansas.
127. Drenner, R.W., M.M. Chumchal, C.M. Jones, Christopher M. B. Lehmann, David A. Gay, David I. Donato, 2013, Effects of mercury deposition and coniferous forests on the mercury contamination of fish in the south central United States, 11th International Conference on Mercury as a Global Pollutant, Edinburgh, Scotland.
128. Drenner, R.W., M.M. Chumchal, C.M. Jones, Christopher M. B. Lehmann, David A. Gay, David I. Donato, 2013, Effects of mercury deposition and coniferous forests on the mercury contamination of fish in the south central United States. American Fisheries Society Annual Meeting, Little Rock, Arkansas.

129. Tweedy, B. N., R.W. Drenner, M.M. Chumchal, J.H. Kennedy, 2013, Effects of fish on emergent insect-mediated flux of methyl mercury across a gradient of contamination, Society for Freshwater Science Annual Meeting, Louisville, Kentucky.
130. Tweedy, B. N., R.W. Drenner, M.M. Chumchal, J.H. Kennedy, 2013, MeHg concentrations in a terrestrial spider, the long-jawed orb weaver (*Tetragnatha* sp.) are correlated with MeHg flux in emergent insects, 11th International Conference on Mercury as a Global Pollutant, Edinburgh, Scotland.
131. Adams, K., R.W. Drenner and M.M. Chumchal, 2014, Do fish consumption advisories for mercury adequately protect the public? Texas Academy of Science Annual Meeting, Galveston, Texas.
132. Adams, K., R.W. Drenner and M.M. Chumchal, 2014, Do fish consumption advisories for mercury adequately protect the public? Joint Aquatic Sciences Meeting. Portland, Oregon.
133. Chumchal, M.M. and R.W. Drenner, 2014, Small farm ponds in the Great Plains and the contamination of terrestrial food chains with mercury, Texas Academy of Science Annual Meeting, Galveston, Texas.
134. Chumchal, M.M. and R.W. Drenner, 2014, Small farm ponds in the Great Plains and the contamination of terrestrial food chains with mercury, Joint Aquatic Sciences Meeting, Portland, Oregon.
135. Drenner, R.W., M.M. Chumchal, K. Adams, 2014, Effects of mercury deposition, coniferous forests, and fish size on mercury contamination of game fish in the south central U.S., Texas Academy of Science Annual Meeting, Galveston, Texas.
136. Drenner, R.W., M.M. Chumchal, K. Adams, 2014, Effects of mercury deposition, coniferous forests, and fish size on mercury contamination of game fish in the south central U.S., Joint Aquatic Sciences Meeting. Portland, Oregon.
137. Gann, G., C. Powell, M.M. Chumchal, R. Drenner, 2014, Mercury-contaminated terrestrial spiders pose a potential health risk to songbirds at Caddo Lake, TX/LA, Texas Academy of Science Annual Meeting, Galveston, Texas.
138. Gann, G., C. Powell, M.M. Chumchal, R. Drenner, 2014, Mercury-contaminated terrestrial spiders pose a potential health risk to songbirds at Caddo Lake, TX/LA, Joint Aquatic Sciences Meeting, Portland, Oregon.
139. Powell, C., G. Gann, M.M. Chumchal, R.W. Drenner, 2014, Hg contaminated riparian spiders along three east Texas rivers pose a potential risk to song birds, Texas Academy of Science Annual Meeting, Galveston, Texas.

140. Speir, S., M.M. Chumchal, R.W. Drenner, G. Cocke, M. Lewis, H. Whitt, 2014, Use of methyl mercury as a tracer of aquatic carbon flux to terrestrial consumers, Texas Academy of Science Annual Meeting, Galveston, Texas.
141. Speir, S., M.M. Chumchal, R.W. Drenner, G. Cocke, M. Lewis, H. Whitt, 2014, Use of methyl mercury as a tracer of aquatic carbon flux to terrestrial consumers, Joint Aquatic Sciences Meeting, Portland, Oregon.
142. Chumchal, M.M., K. Adams, R.W. Drenner, D. Donato. 2015. Disparity Between Local Government Fish Consumption Advisory Systems For Methyl Mercury And Federal Government Recommendations: A Case Study Of The South Central U.S. 12th International Conference on Mercury as a Global Pollutant, Jeju, Korea.
143. Chumchal, M.M. and R.W. Drenner. 2015. A conceptual model of the transfer of methyl mercury from small man-made ponds to terrestrial food webs via emergent insects. 12th International Conference on Mercury as a Global Pollutant, Jeju, Korea.
144. Gann, G., C. Powell, M.M. Chumchal, R.W. Drenner. 2015. Mercury-contaminated terrestrial spiders pose a potential risk to songbirds at Caddo Lake (Texas/Louisiana, USA). 12th International Conference on Mercury as a Global Pollutant, Jeju, Korea.
145. Adams, K. J., R.W. Drenner, M.M. Chumchal, and D.I. Donato. 2016. Disparity between state fish consumption advisory systems for methyl mercury and U.S. Environmental Protection Agency recommendations: a case study of the south central U.S. Texas Chapter of the American Fisheries Society Annual Meeting, Kerrville, Texas..
146. Adams, K. J., R.W. Drenner, M.M. Chumchal, and D.I. Donato. 2016. Disparity between state fish consumption advisory systems for methyl mercury and U.S. Environmental Protection Agency recommendations: a case study of the south central U.S. South. Society of Environmental Toxicology and Chemistry-South-Central Regional Chapter. Fort Worth, Texas.
147. Chumchal, M.M., R.W. Drenner, K.J. Adams, F. Greenhill, C. Gober, A. Courville and L. Lossau. 2016. Effect of pond permanence on aquatic insect-mediated flux of methyl mercury to terrestrial ecosystems. Society for Freshwater Science Annual Meeting, Sacramento, California.
148. Chumchal, M.M., R.W. Drenner, K.J. Adams, F. Greenhill, C. Gober, A. Courville and L. Lossau. 2016. Effect of pond permanence on aquatic insect-mediated flux of methyl mercury to terrestrial ecosystems. Texas Chapter of the American Fisheries Society Annual Meeting, Kerrville, Texas.
149. Chumchal, M.M., R.W. Drenner, K.J. Adams, F. Greenhill, C. Gober, A. Courville and L. Lossau. 2016. Effect of pond permanence on aquatic insect-mediated flux of methyl mercury to terrestrial ecosystems. Society of Environmental Toxicology and Chemistry-South-Central Regional Chapter. Fort Worth, Texas.

150. Drenner, R.W., M.M. Chumchal and K. Adams. 2016. Predicting mercury contamination in game fish in the south central U.S.: interactions between mercury deposition, fish trophic position and fish size. Society for Freshwater Science Annual Meeting. Sacramento, California.
151. Drenner, R.W., M.M. Chumchal and K. Adams. 2016. Predicting mercury contamination in game fish in the south central U.S.: interactions between mercury deposition, fish trophic position and fish size. Society of Environmental Toxicology and Chemistry-South-Central Regional Chapter. Fort Worth, Texas.
152. Drenner, R.W., M.M. Chumchal and K. Adams. 2016. Predicting mercury contamination in game fish in the south central U.S.: interactions between mercury deposition, fish trophic position and fish size. Texas Chapter of the American Fisheries Society Annual Meeting, Kerrville, Texas.
153. Lauck, K., C. Ortega-Rodriguez, M.M. Chumchal, R.W. Drenner, J. Kennedy. 2016. Mercury concentrations in shoreline spiders. Society of Environmental Toxicology and Chemistry-South-Central Regional Chapter. Fort Worth, Texas.
154. Williams, E., M.M. Chumchal, R.W. Drenner, J. Kennedy. 2016. Effects of fish on Odonate-mediated methyl mercury flux from experimental ponds. Society for Freshwater Science, Sacramento, California.
155. Williams, E., M.M. Chumchal, R.W. Drenner, J. Kennedy. 2016. Effects of fish on Odonate-mediated methyl mercury flux from experimental ponds. Society of Environmental Toxicology and Chemistry-South-Central Regional Chapter. Fort Worth, Texas.
156. Drenner, R., M. Chumchal, K. Adams and D. Gay. 2017. Mercury contamination of largemouth bass in the southeastern United States. 13<sup>TH</sup> International Conference On Mercury As A Global Pollutant, Providence, Rhode Island.
157. Chumchal, M., R. Drenner, F. Greenhill, J. Kennedy, A. Courville, C. Gober and L. Lossau. 2017. Recovery of aquatic insect-mediated methylmercury flux from ponds following drying disturbance. 13<sup>TH</sup> International Conference On Mercury As A Global Pollutant, Providence, Rhode Island.
158. Ortega-Rodriguez, C., M. Chumchal, R. Drenner, J. Kennedy, K. Lauck, K. Polk, M. Hall, B. Barst, A. Santa Rios and N. Basu, 2017. Mercury and stable isotopes of nitrogen reveal an aquatic diet for seven taxa of shoreline spiders. 13<sup>TH</sup> International Conference On Mercury As A Global Pollutant, Providence, Rhode Island.
159. Williams, E., R. Drenner, M. Chumchal and J. Kennedy. 2017. Effects of pond permanence and season on odonate-mediated mercury flux and associated risk to nestling red-winged blackbirds. 13<sup>TH</sup> International Conference On Mercury As A Global Pollutant, Providence, Rhode

Island.

160. Chumchal, M. and R. Drenner. 2017. Ecological factors controlling insect-mediated methylmercury flux from aquatic to terrestrial ecosystems: lessons learned from experimental studies in mesocosms and ponds. 13<sup>TH</sup> International Conference On Mercury As A Global Pollutant, Providence, Rhode Island.

161. Drenner, R., M. Chumchal, K. Adams and D. Gay. 2017. Effects of mercury deposition, fish species and fish length category on mercury contamination of game fish in the south central United States. 13<sup>TH</sup> International Conference On Mercury As A Global Pollutant, Providence, Rhode Island.

162. Chumchal, M.M. and R.W. Drenner. 2018. Ecological factors controlling insect-mediated methylmercury flux from aquatic to terrestrial ecosystems. Society for Freshwater Science Annual Meeting, Detroit, Michigan.

161. Drenner, R., M.M. Chumchal, M. Hannappel, S. Weinstein, and C. Gerstle. 2018. Mercury risk to fish in the south-central U.S.: effects of mercury deposition, fish trophic position and fish length. Society for Freshwater Science Annual Meeting, Detroit, Michigan.

162. Gerstle, C. T., R. Drenner, and M.M. Chumchal. 2018. Mercury risk to piscivorous Great Blue Herons in the South Central United States. Texas Chapter of the American Fisheries Society Annual Meeting. College Station, Texas.

163. Hannappel, M., M.M. Chumchal, R. Drenner, S. Weinstein, and C. Gerstle. 2018. Mercury risk to fish in the south-central U.S.: effects of mercury deposition, fish trophic position and fish length. Texas Chapter of the American Fisheries Society Annual Meeting. College Station, Texas.

164. Khan, A., G. Wallace, M.M. Chumchal and R.W.Drenner. 2018. Methylmercury contamination of terrestrial spiders living along the Trinity River. Society of Environmental Toxicology and Chemistry-South-Central Regional Chapter. Junction, Texas.

165. Khan, A., G. Wallace, M.M. Chumchal and R.W.Drenner. 2018. Methylmercury contamination of terrestrial spiders living along the Trinity River. Collin College Undergraduate Interdisciplinary Student Research Conference, Plano, Texas.

166. Chumchal, M.M., C.L. Ortega-Rodriguez, R.W. Drenner, J.H. Kennedy, W.H. Nowlin, B.D. Barst, D. K. Polk, M.N. Hall, E.B. Williams, K.C. Lauck, A. Santa-Rios, and N. Basu. 2019. Relationship between methyl mercury contamination and proportion of aquatic and terrestrial prey in diets of seven taxa of shoreline spiders. 14<sup>th</sup> International Conference on Mercury as a Global Pollutant, Krakow, Poland.

167. Chumchal, M.M., R.W. Drenner, M.N. Hall, D.K. Polk, E.B. Williams, C.L. Ortega-Rodriguez, J.H. Kennedy. 2019. Seasonality of dipteran-mediated methyl mercury flux from ponds, 14<sup>th</sup> International Conference on Mercury as a Global Pollutant, Krakow, Poland.
168. Gerstle, C.T., R.W. Drenner, M.M. Chumchal. 2019. Spatial patterns of mercury contamination and associated risk to piscivorous wading birds of the south central United States. 14<sup>th</sup> International Conference on Mercury as a Global Pollutant. Krakow, Poland.
169. Hannappel MH, RW Drenner, MM Chumchal, JH Kennedy, A Nolan\*\*. 2019. The effect of body size on mercury concentrations of shoreline spiders. 14<sup>th</sup> International Conference on Mercury as a Global Pollutant. Krakow, Poland.
170. Hannappel, M., R.W. Drenner, M.M. Chumchal, J. Kennedy, A. Khan, G. Wallace. 2019. Mud Dauber Nests as sources of spiders in mercury monitoring studies. 14<sup>th</sup> International Conference on Mercury as a Global Pollutant. Krakow, Poland.
171. Thalhuber, T.J., R.W. Drenner, M.M. Chumchal, C.L. Ortega-Rodriguez, J.H. Kennedy, S.L. Speir, W.G. Cocke, M.E. Lewis, H.J. Whitt, W. Zudock and M. Willoughby. 2019. Methylmercury contamination and diet of nestling Red-winged Blackbirds. 14<sup>th</sup> International Conference on Mercury as a Global Pollutant. Krakow, Poland.
172. Hannappel MH, RW Drenner, MM Chumchal, JH Kennedy, A Nolan. 2020. Effect of spider taxa and body size on MeHg concentrations in shoreline spiders: Implications for their use as sentinel species. American Arachnological Society Virtual Conference.
173. Hannappel MH, RW Drenner, MM Chumchal, JH Kennedy, A Nolan. 2020. Effect of spider taxa and body size on MeHg concentrations in shoreline spiders: Implications for their use as sentinel species. Society for Environmental Toxicology and Chemistry SciCon<sub>2</sub> Virtual Conference.
174. Seymour RD, RW Drenner, MM Chumchal, KJ Adams, C.T. Gerstle. 2020 Spatial patterns of methyl mercury contamination of trophy-sized largemouth bass in the southeastern, United States. Annual Meeting of the American Fisheries Society Virtual Conference.
175. Seymour R.D., R.W. Drenner, M.M. Chumchal, K.J. Adams, C.T. Gerstle. 2020 Spatial patterns of methyl mercury contamination of trophy-sized largemouth bass in the southeastern, United States. Society for Environmental Toxicology and Chemistry SciCon<sub>2</sub> Virtual Conference.
176. Thalhuber, T.J., R.W. Drenner, M.M. Chumchal, C.L. Ortega-Rodriguez, J.H. Kennedy, S.L. Speir, W.G. Cocke, M.E. Lewis, H.J. Whitt, W. Zudock, and M. Willoughby. 2020. Methylmercury contamination and diet of nestling Red-winged Blackbirds. Society for Environmental Toxicology and Chemistry SciCon<sub>2</sub> Virtual Conference.

177. Hannappel, M.P., M.M. Chumchal, R.W. Drenner, J. Kennedy, B.D. Barst and J.M. Castellini. 2021. Mud dauber nests as sources of spiders in mercury monitoring studies, American Arachnological Society Virtual Conference.
178. Hannappel, M.P., M.M. Chumchal, R.W. Drenner, J. Kennedy, B.D. Barst and J.M. Castellini. 2021. Mud dauber nests as sources of spiders in mercury monitoring studies, European Congress on Arachnology Virtual Conference.

#### **INVITED DEPARTMENTAL SEMINARS**

1. Drenner, R.W. 1978. The feeding mechanics of gizzard shad (*Dorosoma cepedianum*). University of Texas at Arlington.
2. Drenner, R.W. 1978. The feeding mechanics of gizzard shad. University of Oklahoma Summer Environmental Program at the Biological Station, Lake Texoma.
3. Drenner, R.W. 1978. The roles of zooplankton escape and fish size-selectivity in the selective feeding of planktivorous fish. Baylor University, Waco, Texas.
4. Drenner, R.W. 1979. Fish-plankton interactions in Lake Texoma. University of Oklahoma Summer Environmental Program at the Biological Station, Lake Texoma.
5. Drenner, R.W. 1980. The role of gizzard shad in lake management. Oklahoma State University, Stillwater.
6. Drenner, R.W. 1981. Feeding ecology of planktivorous fish: Where limnologist meets fisheries biologist. Oakridge National Laboratory, Oakridge, Tennessee.
7. Drenner, R.W. 1982. Cichlid stocking and the fate of the St. Peter's fish in Lake Kinneret, Israel. University of Oklahoma Summer Environmental Program at the Biological Station, Lake Texoma.
8. Drenner, R.W. 1983. Management of the Galilee Saint Peter's fish in Lake Kinneret Israel: Where limnologist meets fisheries biologist. Campbell Lecture, University of Missouri, Columbia.
9. Drenner, R.W. 1983. Gizzard shad, limnetic food webs and lake management. Missouri Department of Conservation, Columbia.
10. Drenner, R.W. 1985. The direct and indirect impacts of a filter-feeding clupeid on plankton community structure: An experimental analysis. North Carolina State University, Raleigh.
11. Drenner, R.W. 1986. Management of Lake Kinneret, Israel: Where limnologist meets fisheries biologist. University of Texas at Arlington.
12. Drenner, R.W. 1991. Environmental effect of bifenthrin: a mesocosm evaluation. University of North Texas, Denton.

13. Drenner, R.W. 1991. Do fish affect the water quality of eutrophic reservoirs? Ohio State University, Columbus, Ohio.
14. Drenner, R.W. 1991. Do fish affect the water quality of eutrophic reservoirs? Baylor University, Waco.
15. Drenner, R.W. 1992. Beware of untested hypotheses: confessions of an ecological chemist. University of Texas, Arlington.
16. Drenner, R.W. 1992. Hypotheses need to be tested before they are accepted: a slimy tale of warm-water fisheries ecology. University of Mississippi, Oxford.
17. Drenner, R.W. 1993. Hypotheses need to be tested: A slimy tale of warm-water fisheries ecology. Departmental Seminar, Southwest Texas State University, San Marcos.
18. Drenner, R.W. 1994. Beware of untested hypotheses: Confessions of an ecological alchemist. Department of Wildlife and Fisheries Sciences, Texas A & M University, College Station.
19. Drenner, R.W. 1994. Beware of untested hypotheses: Confessions of an ecological alchemist. Department of Fisheries and Wildlife, Utah State University, Logan.
20. Drenner, R. W. 1999. The Ups and Downs of Biomanipulation. Department of Biology, University of North Texas, Denton.
21. Drenner, R.W. 2000. The Ups and Downs of Biomanipulation: Confessions of an Ecological Alchemist. Oklahoma State University, Stillwater.
22. Drenner, R.W. 2001. Piscivores, Trophic Cascades and Lake Management. Miami University, Oxford, Ohio
23. Drenner, R. W. 2009. A Texas tale of dirty coal and mercury contamination of fish. Utah State University, Logan.
24. Drenner, R. W. 2010. Mercury contamination of fish in the south-central U.S. University of North Carolina, Greensboro.
25. Drenner, R. W. 2010. Mercury contamination of fish in the south-central U.S. Texas State University, San Marcos.

#### **PANELS AND WORKSHOPS**

University of Oklahoma - City of Norman, Panel on Water Quality of Lakes, 1986.

Chair, Discussion Group, Food web interactions in lakes, National Science Foundation sponsored workshop, Complex Interactions in Lake Communities, University of Notre Dame, 1987



Discussion Leader, Experimental Issues, National Science Foundation sponsored workshop, Water Science and Engineering in River Impoundments, Hancock Biological Station and Murray State University, Kentucky, 1989.

Lecturer at a workshop on "An introduction to experimental limnology" which was sponsored by the Comision Nacional del Agua of Mexico. The workshop was held at Lake Chapala, Mexico in May 1993.

#### **MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS DURING CAREER**

American Fisheries Society

American Society of Ichthyologists and Herpetologists

American Society of Limnology and Oceanography (now Association for the Sciences of Limnology and Oceanography)

Ecological Society of America

International Association of Theoretical and Applied Limnology (now International Society of Limnology)

North American Lake Management Society

Society for Freshwater Science

Texas Chapter of the American Fisheries Society

#### **PROFESSIONAL ACTIVITIES**

Cohost (with Dr. G. Ferguson) of the 60th Annual Meeting of the American Society of Ichthyologists and Herpetologists, Texas Christian University, 1980.

Publicity Committee, Texas Chapter, American Fisheries Society, 1984.

Membership Committee, Ecological Society of America, 1989-1990.

Associate Editor, Transactions of the American Fisheries Society, 1989-1990.

Host, Annual Meeting of the North Texas Limnological Association, Texas Christian University, 1992.

Board of Directors, Texas River and Reservoir Management Society, 1994-1995.

Research Awards Committee, Texas Chapter of the American Fisheries Society, 1995.

Chair, Education Committee, American Society of Limnology and Oceanography, 2002-2004.

NEON Advisory Committee for Domain 11, 2010-2011.

Reviewer for: American Midland Naturalist, American Naturalist, Aquaculture, Archive fur Hydrobiologia, Canadian Journal of Fisheries and Aquatic Sciences, Copeia, Ecology, Ecosystems, Environmental Pollution, Environmental Science and Technology, Environmental

Toxicology and Chemistry, Estuaries and Coasts, Freshwater Science, Great Lakes Fishery Commission, Hydrobiologia, Inland Waters, International Association of Theoretical and Applied Limnology, Journal of Freshwater Ecology, Journal of Plankton Research, Lake and Reservoir Management, Limnology and Oceanography, Marine Biology, National Science Foundation, Oikos, PLOS ONE, Progressive Fish-Culturist, Science, Science of the Total Environment, Southeastern Assoc. of Fish and Wildlife Agencies, Southwestern Naturalist, Texas Academy of Science, Transactions of the American Fisheries Society, U.S. Fish and Wildlife Service.

Last Updated: July 2025