

Weston Hugh Nowlin

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Current Position and Educational History

Professor, Department of Biology, Texas State University, San Marcos, Texas
September 2016 – Present

Director, Aquatic Station (Freeman Aquatic Biology Building), Department of
Biology, Texas State University, San Marcos, Texas
September 2016 – Present

Director, Aquatic Resources Master's Degree Program, Department of Biology,
Texas State University, San Marcos, Texas
September 2012 – 2021

Associate Professor, Department of Biology, Texas State University, San Marcos,
Texas
September 2011 – August 2016

Assistant Professor, Department of Biology, Texas State University, San Marcos,
Texas
September 2005 – August 2011

Postdoctoral Research Scholar, Department of Zoology, Miami University,
Oxford, Ohio
January 2004 – August 2005
Advisor – Michael J. Vanni

Ph.D., Biology, University of Victoria, Victoria, British Columbia
December 2003, Advisor – Asit Mazumder

Master of Science, Biology, Texas Christian University, Fort Worth, Texas
December 1998, Advisor – Ray W. Drenner

Bachelor of Arts, Biology, Austin College, Sherman, Texas
May 1996, Advisor – Peter Schulze

Research Interests

Ecosystem and Community Ecology
Aquatic Ecology (lakes, reservoirs, rivers, wetlands)
Biogeochemistry
Ecotoxicology

Articles in Peer-Reviewed Journals

*****, **†**, **‡** and **§** denote PhD, Masters, undergraduates, and technicians in my lab, respectively

McCormack, MA, WH Nowlin, and J Dutton. *Accepted pending revision*. Effect of trophic position on mercury concentrations in bottlenose dolphins (*Tursiops truncatus*) from the Northern Gulf of Mexico. *Ecotoxicology*.

Nair, P*, PH Diaz, and WH Nowlin. 2021. Interactions at surface – subterranean ecotones: structure and function of food webs within spring orifices. *Oecologia*. 196: 235-248.

Rodibaugh, KR†, JC Becker*, G Timmins§, and WH Nowlin. 2020. Physicochemical and carbon quantity–quality gradients equally influence bacterial carbon metabolism across an arid riverscape. *Journal of Freshwater Ecology*. 54:677-696.

Nair, P*, M Huertas, and WH Nowlin. 2020. Metabolic responses to long-term food deprivation in subterranean and surface amphipods. *Subterranean Biology*. 33:1-15.

Nair, P*, MA Worsham§, MA, AH Everett‡, R Gibson, and WH Nowlin. 2019. Sexual dimorphism in three species of *Heterelmis* Sharp (Coleoptera: Elmidae). *The Coleopterists Bulletin*. 73:1075-1083.

Ortega-Rodriguez, C, MM Chumchal, RW Drenner, J Kennedy, WH Nowlin, B Barst, D Polk, M Hall, E Williams, K 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. *Environmental Toxicology and Chemistry*. 38:2503-2508.

Zawalski, R†, WH Nowlin, A Grubh, K Cottenie, and AN Schwalb. 2018. Distinctive macroinvertebrate communities in a subtropical river network. *Journal of Freshwater Ecology*. 34:135-150.

Olson, J, J Robertson, TM Swannack, RF McMahon, WH Nowlin, and AN Schwalb. 2018. Dispersal of zebra mussels (*Dreissena polymorpha*) downstream of an invaded reservoir. *Aquatic Invasions*. 13:199-209.

Becker, JC*, KJ Rodibaugh†, D Hahn, and WH Nowlin. 2017.

Bacterial carbon metabolism and biogeography in a sub-tropical riverscape. *Hydrobiologia*. 792:209-226.

- Hutchins, BT, AS Engel, WH Nowlin, and BF Schwartz. 2016. Chemolithoautotrophy supports subterranean food webs and affects diversity and stability in groundwater communities. *Ecology*. 97:1530-1542.
- Diaz, PH[†], MRJ Forstner, and WH Nowlin. 2015. Survey of aquatic macroinvertebrates of a national wetland area in Bastrop County, Texas. *Texas Journal of Science*. 64:57-72.
- Diaz, PH[†], JN Fries, TH Bonner, MA Alexander, and WH Nowlin. 2015. Mesohabitat associations of the threatened San Marcos salamander (*Eurycea nana*) across its geographic range. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 25:307-321.
- Datri, CW[†], CL Pray[†], Y Zhang, and WH Nowlin. 2015. Nutrient enrichment scarcely affects ecosystem impacts of a non-native herbivore in a spring-fed river. *Freshwater Biology*. 60:551-562. (In Special Issue: *Synthesizing ecosystem-level effects of consumer-driven nutrient dynamics in fresh waters*).
- Hutchins, BT, BF Schwartz, and WH Nowlin. 2014. Morphological and trophic specialization in a subterranean amphipod assemblage. *Freshwater Biology*. 59:2447-2461.
- Becker, JC^{*}, KJ Rodibaugh[†], BJ Labay, TH Bonner, Y Zhang, and WH Nowlin. 2014. Physiographic gradients determine nutrient concentrations more than land use in a Gulf Slope (USA) system. *Freshwater Science*. 33:731-744.
- Brown, DJ, WH Nowlin, E Ozel, I Mali, D Episcopo, MC Jones, MR Forstner. 2013. Comparison of short term low, moderate, and high severity fire impacts to aquatic and terrestrial ecosystem components of a southern USA mixed pine/hardwood forest. *Forest Ecology and Management*. 312:179-192.
- Capps, KA, CL Atkinson, A Rugetski, C Baxter, KS Boersma, CC Carey, PB McIntyre, JW Moore, WH Nowlin, and CC Vaughn. 2012. Organized oral session: Impacts of species addition and species loss on ecosystem function in freshwater systems. *Bulletin of the Ecological Society of America*. 93:402-408.
- Jones, TA, MM Chumchal, RW Drenner, GN Timmins[§], and WH Nowlin. 2012. Bottom-up nutrient and top-down fish impacts on contaminant flux from aquatic ecosystems. *Environmental Toxicology and Chemistry*. 32:1-7.

- Brown, DR, B DeVold, WH Nowlin, and M Forstner. 2012. Ants in Houston toad habitat: annual activity and responses to canopy cover and fire. *Journal of Fish and Wildlife Management*. 3:870-876.
- Scott, SE, CL Pray[†], WH Nowlin, and Y Zhang. 2012. Effects of native and introduced consumers on stream ecosystem function. *Aquatic Sciences*. 74:793-808.
- Henderson, BL, MM Chumchal, RW Drenner, PH Diaz[†], and WH Nowlin. 2012. Mercury contamination of macroinvertebrates from grassland ponds with and without fish. *Environmental Toxicology and Chemistry*. 31:870-876.
- Becker, JC^{*}, AW Groeger, WH Nowlin, MM Chumchal, and D Hahn. 2011. Spatial variability in the speciation and bioaccumulation of mercury in an arid subtropical reservoir ecosystem. *Environmental Toxicology and Chemistry*. 30:2300-2311.
- Pound, KL, TH Bonner, WH Nowlin, and DG Huffman. 2011. Trophic ecology of a nonnative population of suckermouth catfishes (*Hypostomus*) in a central Texas spring-fed stream. *Environmental Biology of Fishes*. 90:277-285.
- Davies, JM, WH Nowlin, B Matthews, and A Mazumder. 2010. Temporal discontinuity of nutrient limitation in plankton communities. *Aquatic Sciences*. 72:393-402.
- Smith, A[†], A Abuzeineh^{*}, MM Chumchal, TH Bonner, and WH Nowlin. 2010. Mercury contamination of the fish community of a semi-arid and arid river system: Spatial variation and the influence of environmental gradients. *Environmental Toxicology and Chemistry*. 29:1762-1772.
- Caston CB[†], WH Nowlin, A Gaulke, and MJ Vanni. 2009. The relative importance of heterotrophic bacteria to pelagic ecosystem dynamics varies with reservoir trophic state. 2009. *Limnology and Oceanography* 54:2143-2156.
- Pray, CL^{*}, WH Nowlin, and MJ Vanni. 2009. Deposition and decomposition of periodical cicadas (Homoptera: Cicadidae) in woodland aquatic systems. *Journal of the North American Benthological Society* 28:181-195.
- Nowlin, WH, MJ Vanni and LH Yang. 2008. Comparing resource pulses in aquatic and terrestrial systems. *Ecology* 89:647-659.
- Nowlin, WH, MJ González, MHH Stevens, MJ Vanni, MW Fields and JJ Valente. 2007. Allochthonous subsidy of periodical cicadas affects dynamics and stability of pond communities. *Ecology* 88:2174-2186.
- Nowlin, WH, J-M Davies and A Mazumder. 2007. Planktonic phosphorus

pool sizes and cycling efficiency in coastal and interior British Columbia lakes. *Freshwater Biology* 52: 860-877.

Nowlin, WH, RW Drenner, KR Guckenberger, M Lauden, T Alonso, JE Fennell and JL Smith. 2006. Gape limitation, prey size refuges and the top-down impacts of piscivorous largemouth bass in shallow pond ecosystems. *Hydrobiologia* 563: 357-369.

Chumchal, M, WH Nowlin, RW Drenner and S Mann. 2005. Biomass-dependent effects of common carp on water quality in shallow ponds. *Hydrobiologia* 545: 271-277.

Nowlin, WH, JL Evarts and MJ Vanni. 2005. Release rates and potential fates of nitrogen and phosphorus from sediments in a eutrophic reservoir. *Freshwater Biology* 50: 301-322.

Davies, J-M, WH Nowlin and A Mazumder. 2004. Temporal changes in nitrogen and phosphorus co-deficiency in plankton in lakes of coastal and interior British Columbia. *Canadian Journal of Fisheries and Aquatic Sciences* 61: 1538-1551.

Nowlin, WH, J-M Davies, RN Nordin and A Mazumder. 2004. Effects of water level fluctuation and short-term climate variation on thermal and stratification regimes of a British Columbia reservoir and lake. *Lake and Reservoir Management* 20: 91-109.

Davies, J-M, WH Nowlin and A Mazumder. 2004. Variation in temporal [¹⁴C] plankton photosynthesis among warm monomictic lakes of coastal British Columbia. *Journal of Plankton Research* 26: 763-778.

Nowlin, WH, and RW Drenner. 2000. Context-dependent effects of bluegill on experimental mesocosm communities. *Oecologia* 122: 421-426.

Technical Publications

Spafard, MA, WH Nowlin, J-M Davies and A Mazumder. 2002. A morphometric atlas of selected lakes in southern British Columbia: Vancouver Island, Saltspring Island and the Kooteney region. National Sciences and Engineering Research Council (NSERC), Industrial Research Chair Program, Environmental Management of Drinking Water, University of Victoria.

Awarded External Funding Support (in US\$D)

Quantifying drivers of native and non-native aquatic species abundance and distribution in drought- and flood prone Texas basins. WH Nowlin, A Schwalb,

BF Schwartz, and T Hardy. US Army Corps of Engineers. October 2020 – September 2023. \$7,489,899

Intra- and interspecies variability in mercury accumulation in young-of-the-year and juvenile sharks. Texas Parks and Wildlife Department. 2020 – 2022. \$99,964

Further Examination of Factors Affecting Pupation in the Endangered Comal Springs Riffle Beetle. WH Nowlin. United States Fish and Wildlife Service. Awarded December 2019. \$75,000

Food Webs and Trophic Structure of the Groundwater Ecosystem Supporting Barton Springs and Austin Blind Salamanders. BF Schwartz, WH Nowlin, A Engel, B Hutchins, A Paterson, V Castillo, and A Cottrell. City of Austin. 2019 - 2021. \$79,926

Factors Affecting Pupation in the Endangered Comal Springs Riffle Beetle. WH Nowlin. United States Fish and Wildlife Service. Awarded December 2018. \$92,097

Population Genetics of the Endangered Comal Springs Dryopid Beetle (*Stygoparnus comalensis*). WH Nowlin, BF Schwartz, and C Nice. Texas Parks and Wildlife Department – Section 6 Grant. Awarded January 2019. \$59,598

Trophic Ecology and Environmental Tolerances of the Endangered Comal Springs Dryopid Beetle (*Stygoparnus comalensis*). WH Nowlin and BF Schwartz. Texas Parks and Wildlife Department – Section 6 Grant. Awarded November 2018. \$64,515

San Solomon Springs Invertebrate Community Study. WH Nowlin. Texas Parks and Wildlife Department. Awarded 2017. \$49,858

Sessom Creek Sediment Export Study. BF Schwartz, WH Nowlin, T Hardy, J Jeong, J. Wolfe. Edwards Aquifer Authority (Edwards Aquifer Habitat Conservation Plan). Received December 2017. \$156,306

Evaluation of the Life History of the Comal Springs Riffle Beetle: Egg to Adult. E. Oborny, WH Nowlin, R. Gibson, and D. Sada. Edwards Aquifer Authority (Edwards Aquifer Habitat Conservation Plan; in cooperation with BIO-WEST, Inc.). Received January 2016. \$50,000

Evaluation of the Long-Term, Elevated Temperature and Low Dissolved Oxygen Tolerances of the Comal Springs Riffle Beetle. WH Nowlin and BF Schwartz. Edwards Aquifer Authority (Edwards Aquifer Habitat Conservation Plan). Received January 2016. \$93,034

Evaluation of the Trophic Status and Functional Feeding Group Status of the Comal Springs Riffle Beetle. WH Nowlin and D Hahn. Edwards Aquifer

Authority (Edwards Aquifer Habitat Conservation Plan). Received January 2016. \$69,354

Development of Habitat Suitability Criteria for Benthic Macroinvertebrates in the Lower Guadalupe River. A Schwalb and WH Nowlin. Texas Parks and Wildlife Department. Received August 2015. \$26,000

Status Assessment and Ecological Characterization of the Texas Troglotic Water Slater, *Lircelous smithii*. BF Schwartz, WH Nowlin, and CC Nice. Texas Parks and Wildlife - State Wildlife Grant Program. Received May 2015. \$74,049

Development of Husbandry and Captive Propagation Techniques for Invertebrates Covered Under the Edwards Aquifer Habitat Conservation Plan Proposal. Edwards Aquifer Authority (Edwards Aquifer Habitat Conservation Plan). Received February 2015. \$108,552

Effects of Suspended Sediments on Texas Wild Rice, Other Macrophytes, and Macroinvertebrates. TB Hardy, WH Nowlin, and P Williamson. Edwards Aquifer Authority (Edwards Aquifer Habitat Conservation Plan). January 2015. \$75,000

Comal Springs Riffle Beetle Habitat Connectivity Under Variable Flow Conditions. E. Oborny, WH Nowlin, and R. Gibson. Edwards Aquifer Authority (Edwards Aquifer Habitat Conservation Plan; in cooperation with BIO-WEST, Inc.). January 2015. \$38,498

Determination of Limitations of Comal Springs Riffle Beetle Plastron Use During Low Flow Conditions. WH Nowlin, BF Schwartz, TB Hardy, and R. Gibson. Edwards Aquifer Authority (Edwards Aquifer Habitat Conservation Plan). Received June 2014. \$48,467

Upper San Marcos River Watershed Protection Plan. WH Nowlin and B Schwartz. Texas Commission on Environmental Quality/United States Environmental Protection Agency 319(h) Grant. Received January 2013. \$30,000

Establishment of the Upper San Marcos River Observing System. B Schwartz (PI), WH Nowlin (PI), TH Bonner (Co-PI), T Hardy (Co-PI), and A Sansom (Co-PI). Exceptional Line Item in the State of Texas Budget (2009 – 2011). Received February 2010. \$1,200,000

Ecological Values and Ecosystem Services of Watersheds in the Lower Rio Grande River. TH Bonner (PI), WH Nowlin (Co-PI), and T Hardy (Co-PI). United States Department of Agriculture (Sustainable Agricultural Water Conservation in the Rio Grande Project). Received July 2009. \$85,000

Effects of Invasive Species on the Biogeochemistry of Hyporheic Water from Sandbars: A Comparison Restored and Unrestored Areas in Big Bend National

Park. WH Nowlin (PI), K Urbanczyk (Co-PI), and J Bennett (Co-PI). United States Department of Agriculture (Sustainable Agricultural Water Conservation in the Rio Grande Project). Received July 2009. \$37,843

Spring Lake Nutrient Sources Identification and Nutrient Management Plan. WH Nowlin (PI), B Schwartz (Co-PI), and A Sansom (Co-PI). Texas Commission on Environmental Quality/United States Environmental Protection Agency 319(h) Grant. Received March 2009. \$293,689

Project Flowing Waters. J Westerlund (PI), T. Bonner (Co-PI), WH Nowlin (Co-PI), R. Earl (Co-PI), and P. Guettner (Co-PI). National Science Foundation: Graduate Teaching Fellows in K-12 Education (GK-12). Received January 2008. \$2,320,660

Building adaptive capacity and the ecological values of watersheds of the Lower Brazos River Basin – TH Bonner (PI), WH Nowlin (Co-PI), Y Zhang (Co-PI) and V Lopes (Co-PI) in cooperation with The Nature Conservancy of Texas. The Houston Foundation. Received January 2008. \$600,000

Bigclaw River Shrimp in San Marcos River: Invasive Species' Impact. Y Zhang (PI) and WH Nowlin (Co-PI). Texas Parks and Wildlife - State Wildlife Grant Program. Received October 2007. \$68,640

Trophic ecology and habitat associations of the threatened San Marcos salamander (*Eurycea nana*) – WH Nowlin (PI), JN Fries (Co-PI) and ML Alexander (Co-PI). United States Geological Survey. Received May 2007. \$25,844

Sources and pathways of energy and nutrients supporting the Rio Grande biotic community - WH Nowlin (PI) and TH Bonner (Co-PI). United States Department of Agriculture (Sustainable Agricultural Water Conservation in the Rio Grande Project). Received March 2006. \$90,404

Reproductive Ecology and Culture Techniques of the Devil's River Minnow - WH Nowlin (Single PI). United States Fish and Wildlife Service Cooperative Agreement. Received June 2006. \$8,000

Invasion of Suckermouth Catfish in the San Marcos River Ecosystem – WH Nowlin (PI) and TH Bonner (Co-PI). United States Fish and Wildlife Service, Collaborative Conservation Project Award Initiative (CCPAI). Received March 2006. \$5,000

Awarded Internal Funding Support

Transfer of Mercury and Methylmercury Across Ecosystem Boundaries in Arid River Landscapes - WH Nowlin (Single PI). Texas State University Research Enhancement Program. Received December 2007. \$7,984

Ecosystem engineering and nutrient cycling effects of native and exotic species in the San Marcos River ecosystem - Y Zhang (PI) and WH Nowlin (Co-PI). Texas State University Research Enhancement Program Grant. Received December 2006. \$16,000

The Relative Importance of Bacteria and Algae in Reservoir Carbon Cycling – WH Nowlin (Single PI). Texas State University Research Enhancement Program Grant. Received December 2005. \$6, 940

Presentations at Professional Meetings

*, †, ‡ and § denote PhD, Masters, undergraduates, and technicians in my lab, respectively

Nair, P, WH Nowlin, and PH Diaz. 2018. Interactions at the interface: Examining food webs at surface-subterranean ecotones in spring ecosystems. *Annual Meeting of the Ecological Society of America*. New Orleans, Louisiana. Oral presentation.

Chumchal, MM, RW Drenner, L Campbell, R Haro, M Sandheinrich, WH Nowlin. 2017. The path to the dark side: bottom-up and top-down impacts on insect-mediated contaminant flux from aquatic ecosystems. *13th International Conference on Mercury as a Global Pollutant*. Providence, Rhode Island. Oral presentation.

Worsham, MR§, PR Nair*, WH Nowlin, R Gibson, and BF Schwartz. 2016. The effect of selection and phenotype of response to light in subterranean, epigeal, and interstitial Crangonyctidae. *International Conference on Subterranean Biology (organized by International Society for Subterranean Biology)*. Fayetteville, Arkansas. Oral presentation.

Nowlin, WH, LA Loney†, BF Hutchins, and BF Schwartz. 2016. Ecological stoichiometry and consumer-driven nutrient recycling in a subterranean aquatic community. *International Conference on Subterranean Biology (organized by International Society for Subterranean Biology)*. Fayetteville, Arkansas. Oral presentation.

Nair, PR*, WH Nowlin, and PH Diaz†. 2016. Estimating the trophic ecology of aquatic invertebrates using stable isotopes. *International Conference on Subterranean Biology (organized by International Society for Subterranean Biology)*. Fayetteville, Arkansas. Oral presentation.

Hutchins, BT, AS Engel WH Nowlin, and BF Schwartz. 2016. Biodiversity, stability, and trophic complexity in the Edwards Aquifer, United States: The influence of chemolithoautotrophy on stygobiont community structure. *International Conference on Subterranean Biology (organized by International Society for Subterranean Biology)*. Fayetteville, Arkansas. Oral presentation.

Hutchins, BT, WH Nowlin, LA Loney†, AS Engel, and BF Schwartz. 2016. Invertebrate diversity effects on nutrient use and nutrient recycling in groundwater systems. *Association for the Sciences of Limnology and Oceanography Annual Meeting*. Santa Fe, New Mexico. (Invited presentation). Oral presentation.

Zawalski, R†, WH Nowlin and A Schwab. 2016. Meta-community structuring of macroinvertebrates in the Guadalupe Basin, Texas. *Society for Freshwater Science Annual Meeting*. Sacramento, California. Poster presentation.

Nowlin, WH, AP Swink†, and BF Schwartz. 2016. Factors affecting phosphorus uptake in karst rivers in central Texas. *Society for Freshwater Science Annual Meeting*. Sacramento, California. Oral presentation.

Swink, AP†, WH Nowlin and BF Schwartz. 2016. A meta-analysis of P uptake rates in lotic ecosystems: influence of local conditions on global patterns. *Society for Freshwater Science Annual Meeting*. Sacramento, California. Oral presentation.

Becker, JC*, WH Nowlin, and MM Chumchal. 2015. Spatial and temporal variability in fish mercury concentrations from a large river system. *Society for Environmental Toxicology and Chemistry North America 36th Annual Meeting*. Salt Lake City, Utah. Oral presentation.

Nowlin, WH, CL Pray†, AP Swink†, and J Perkin. 2015. Contributions of native and non-native fishes to nutrient cycling in a spring-fed river. *Southern Division of the American Fisheries Society (Invited presentation)*. Savannah, Georgia. Oral presentation.

Swink, AP†, WH Nowlin, and BF Schwartz. 2014. Factors influencing phosphorus uptake in karstic spring-fed rivers in central Texas, USA. *South Central Regional SETAC Meeting*. San Marcos, Texas. Oral presentation.

Nowlin, WH, LA Loney†, BT Hutchins, and BF Schwartz. 2014. Stoichiometry, consumer driven nutrient recycling, and food web structure in a subterranean aquifer stygobiont community. *Joint Aquatic Sciences Meeting*. Portland, Oregon. Oral presentation.

Becker, JC*, KJ Rodibaugh†, BJ Labay, FP Lash, TH Bonner, Y Zhang, and WH Nowlin. 2014. Concordance and spatial autocorrelation between macroinvertebrate and fish communities is controlled by environmental gradients in a gulf-slope river ecosystem. *Joint Aquatic Sciences Meeting*. Portland, Oregon. Oral presentation.

Becker, JC*, KJ Rodibaugh†, BJ Labay, FP Lash, TH Bonner, Y Zhang & WH Nowlin. 2014. Landscape-Level Patterns of macroinvertebrate and fish

communities are controlled more by environmental gradients than trophic interactions in a gulf-slope river system. *Joint meeting of the Indiana chapters of the American Fisheries Society and The Wildlife Society*. Muncie, Indiana. Oral presentation.

Chumchal, MA, RW Drenner, B Backwell, WG Cocke, B Henderson, T Jones, WH Nowlin, and B Tweedy. 2013. Bottom-up nutrient and top-down fish impacts on methylmercury flux from aquatic ecosystems: a synthesis of recent studies. *143rd Annual Meeting of the American Fisheries Society*. Little Rock, Arkansas. Oral presentation.

Loney, LA†, WH Nowlin, B Hutchins, B Schwartz. 2013. Ecosystem consequences for extinction of aquatic subterranean species in the Edwards Aquifer, Texas. *International Conference for Graduate Student Research*. San Marcos, Texas. Poster presentation.

Becker, JC*, WH Nowlin, and D Hahn. 2013. Biogeography and ecosystem function of major aquatic bacterial groups in a Gulf Slope (TX) river system. *Texas Academy of Science*. Kerrville Texas. Oral presentation.

Swink, AP†, WH Nowlin, and BF Schwartz. 2013. Storm mediated changes in nitrogen and phosphorus uptake length in a spring fed river. *Texas Academy of Science*. Kerrville Texas. Poster presentation.

Swink, AP†, WH Nowlin, and BF Schwartz. 2013. Storm-mediated changes in phosphorus uptake in a spring fed river. *Annual Great Plains Limnology Conference*. Fayetteville, Arkansas. Poster presentation.

Becker, JC*, WH Nowlin, and D Hahn. 2012. Spatial patterns in microbial diversity in a large river system. *Annual Great Plains Limnology Conference*. Fayetteville, Arkansas. Oral presentation.

Rodibaugh, KJ†, WH Nowlin and JC Becker*. 2012. Bacterially Mediated Carbon and Nutrient Dynamics in a Highly Impacted River System. *Annual Great Plains Limnology Conference*. Fayetteville, Arkansas. Oral presentation.

Nowlin, WH, C LeBeouf†, S Scott, CL Pray†, and Y Zhang. 2012. Invasion potential and ecosystem-level impacts of non-native fishes in a riverine system. *Ecological Society of America*. Portland, Oregon. (Invited presentation in a Special Session). Oral presentation.

Abuzeineh, AA*, JR Troy, MM Chumchal, MC Green, and WH Nowlin. 2012. Transfer of mercury across ecosystem boundaries in arid streams. *Ecological Society of America*. Portland, Oregon. Oral presentation.

Nowlin, WH, CL Pray†, SE Scott, CM LeBoeuf†, KL Pound and Y Zhang. 2012. Ecosystem-level consequences of the addition of invasive suckermouth catfish (Loricariidae) to riverine ecosystems. *Society for Freshwater Science*.

Louisville, Kentucky. (Invited presentation in a Special Session). Oral presentation.

Becker, JC*, WH Nowlin BJ Labay, and KJ Rodibaugh†. 2012. Influence of land-use and physiography on nutrient concentration in a large river system. *Society for Freshwater Science*. Louisville, Kentucky. Oral presentation.

Chumchal, MM, TA Jones, RW Drenner, WH Nowlin, and GN Timmins§. 2012. Bottom-up nutrient and top-down fish impacts on contaminant flux from aquatic ecosystems. *Society for Freshwater Science*. Louisville, Kentucky. Oral presentation.

Abuzeineh, AA*, JR Troy, MM Chumchal, MC Green, and WH Nowlin. 2011. Transfer of mercury across ecosystem boundaries in arid streams. *Society of Environmental Toxicology and Chemistry*. Boston, Massachusetts. Poster presentation.

Becker, JC*, WH Nowlin, KJ Rodibaugh†, and BJ Labay. 2011. Influence of land use at multiple spatial scales on nutrients and ecosystem function in a large river system. *4th Oklahoma-Texas Aquatic Research Group and Great Plains Limnological Conference*. University of Oklahoma Biological Station, Lake Texoma, Oklahoma. Oral presentation.

Rodibaugh, KJ†, WH Nowlin and JC Becker*. 2011. Bacterially mediated carbon and nutrient dynamics in a highly impacted river system. *4th Oklahoma-Texas Aquatic Research Group and Great Plains Limnological Conference*. University of Oklahoma Biological Station, Lake Texoma, Oklahoma. Oral presentation.

Bean, PT, WH Nowlin, and TH Bonner. 2011. Trophic ecology of the Guadalupe Bass, *Micropterus treculii*. *American Fisheries Society*. Seattle, Washington. Oral presentation.

McMillan, S., TH Bonner, WH Nowlin, and JN Fries. 2011. Reproductive ecology of two sympatric cyprinids in the Rio Grande basin, Texas. *American Fisheries Society*. Seattle, Washington. Oral presentation.

Hardy, T, W. Nowlin, B. Schwartz, and T. Bonner. 2011. San Marcos River Observing System. *American Fisheries Society*. Seattle, Washington. Oral presentation.

Hardy, T.B., W.H. Nowlin, B. Schwartz, and T. Bonner. 2011. San Marcos Observing System: Integrating Physical, Chemical, and Biological Data at High Resolution Spatial and Temporal Scales. *American Fisheries Society*. Seattle, Washington. Oral presentation.

Abuzeineh, A.A.*, W. H. Nowlin, A. Smith†, T. C. Heard, and T. H. Bonner. 2011. Organic matter sources supporting communities of an arid and semi-arid

riverine system: The lower Rio Grande drainage. *Ecological Society of America*, Austin, Texas. Oral presentation.

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*, Austin, Texas. Oral presentation.

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. Oral presentation.

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. *10th International Conference on Mercury as a Global Pollutant*, Halifax, Nova Scotia, Canada. Oral presentation.

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*, Denton, Texas. Oral presentation.

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*, Denton, Texas. Oral presentation.

Becker, J.C. *, W.H. Nowlin, K.J. Rodibaugh†, and B.J. Labay. 2011. Influence of land use at multiple spatial scales on nutrients and ecosystem function in a large river system. *Ecological Society of America*, Austin, TX. Oral presentation.

Rodibaugh, K.J. †, W.H. Nowlin and J.C. Becker*. 2011. Bacterially Mediated Carbon and Nutrient Dynamics in a Highly Impacted River System. *Ecological Society of America*, Austin, TX. Oral presentation.

Abuzeineh, A.A. *, W. H. Nowlin, A. Smith†, T. C. Heard, and T. H. Bonner. 2011. Organic matter sources supporting communities of an arid and semi-arid riverine system: The lower Rio Grande drainage. *Ecological Society of America*, Austin, Texas. Oral presentation.

Becker, J.C. *, W.H. Nowlin, K.J. Rodibaugh†, and B.J. Labay. 2011. Influence of land use at multiple spatial scales on nutrients and ecosystem function in a large river system. *ASLO*, San Juan, Puerto Rico. Oral presentation.

Rodibaugh, K.J. †, W.H. Nowlin and J.C. Becker*. 2011. Bacterially Mediated Carbon and Nutrient Dynamics in a Highly Impacted River System. *ASLO Aquatic Science*, San Juan, Puerto Rico. Poster presentation.

Bonner, T. H., J. F. Westerlund, W. H. Nowlin, and R. A. Earl. 2010. Graduate training through Project Flowing Waters at Texas State University: quantifying benefits to participating graduate students. *NSF GK-12 Western Region Annual Meeting*. Denver, Colorado. Oral presentation.

Nowlin, WH, J Westerlund, TH Bonner, and R Earl. 2010. Graduate training through Project Flowing Waters: Challenges at Texas State University. *Ecological Society of America*, Pittsburgh, Pennsylvania. Oral presentation.

Lash, FP, Y Zhang, WH Nowlin, and TH Bonner. 2010. Impacts of land use in the lower Brazos River on benthic macroinvertebrate diversity. Joint *ASLO (Advancing the Sciences of Limnology and Oceanography)* and *North American Benthological Society (NABS) Annual Meeting*, Santa Fe, New Mexico. Oral presentation.

Nowlin, WH, CL Pray†, SE Scott, CM LeBoeuf†, KL Cohen, and Y Zhang. 2010. Ecosystem-level impacts of invasive suckermouth catfish (Loricariidae) on a spring-influenced river. Joint *ASLO (Advancing the Sciences of Limnology and Oceanography)* and *North American Benthological Society (NABS) Annual Meeting*, Santa Fe, New Mexico. Oral presentation.

Henderson, BL, MM Chumchal, RW Drenner, PH Diaz†, Y Deng, and WH Nowlin. 2010. Mercury contamination of macroinvertebrates from ponds with and without fish at the LBJ National Grassland, Texas USA. Joint *ASLO (Association for the Sciences of Limnology and Oceanography)* and *North American Benthological Society (NABS) Annual Meeting*, Santa Fe, New Mexico. Poster presentation.

Becker, JC*, WH Nowlin, KJ Rodibaugh†, and BJ Labay. 2010. Spatial patterns of nutrient concentration and ecosystem function in a western Gulf slope river system. Joint *ASLO (Association for the Sciences of Limnology and Oceanography)* and *North American Benthological Society (NABS) Annual Meeting*, Santa Fe, New Mexico. Oral presentation.

LeBoeuf, CM†, Y Zhang, and WH Nowlin. 2010. The effects of invasive species and eutrophication on riverine nutrient dynamics. *Southwestern Association of Naturalists (SWAN) Annual Meeting*, Junction, Texas. Oral presentation.

Park, A, M Sawey, MM Chumchal, RW Drenner, Y Deng, J Wadlington, and WH Nowlin. 2010. Spatial variation of Hg, ¹⁵N, and ¹³C in sediment and macroinvertebrates in Caddo Lake. *Texas Academy of Science Annual Meeting*, Stephenville, Texas. Oral presentation.

BL Henderson, MM Chumchal, RW Drenner, PH Diaz†, Y Deng, and WH

Nowlin. 2010. Mercury concentration in macroinvertebrates from grassland ponds with and without fish communities. *Texas Academy of Science Annual Meeting*, Stephenville, Texas. Oral presentation.

WH Nowlin, CL Pray†, SE Scott, CM LeBoeuf†, KL Cohen, TH Bonner, and Y Zhang. 2010. Ecosystem-level impacts of invasive suckermouth catfish (Loricariidae) on the San Marcos River, Texas. *Texas Chapter of the American Fisheries Society*, Athens, Texas. Oral presentation.

Smith, A†, WH Nowlin, M. Chumchal, and A Abuzeineh*. 2010. Mercury contamination of the fish community of a semi-arid and arid river system: spatial variation and the influence of environmental gradients. *Texas Chapter of the American Fisheries Society*, Athens, Texas. Oral presentation.

JC Becker*, AW Groeger, MM Chumchal, WH Nowlin, and D Hahn. 2010. Spatial variability in the distribution and bioaccumulation of mercury in a subtropical reservoir system. *Texas Chapter of the American Fisheries Society*, Athens, Texas. Oral presentation.

Becker, JC*, AW Groeger, MM Chumchal, and WH Nowlin. 2009. Distribution and bioaccumulation of mercury in a subtropical reservoir system. *Society for Environmental Toxicology and Chemistry (SETAC) – North America, 29th Annual Meeting*, New Orleans, Louisiana. Poster presentation.

Smith, A†, WH Nowlin, MM Chumchal, and A Abuzeineh*. 2009. Mercury contamination of the Rio Grande fish community: influence of spatial variation and food web structure. *South Central Chapter of the Society of Environmental Toxicology and Chemistry (SETAC Annual Meeting)*, San Marcos, Texas. Oral presentation.

Nowlin, WH, CB Caston†, A Gaulke, and MJ Vanni. 2009. Stoichiometry and limitation of bacteria and phytoplankton along a productivity gradient. *ASLO (Advancing the Sciences of Limnology and Oceanography)*, Nice, France. Poster presentation.

Westerlund, J.F., TH Bonner, WH Nowlin, and RA Earl. 2008. NSF GK-12: Project Flowing Waters. *North Central Association for Science Teacher Education, (NC-ASTE)*, Winona, Minnesota. Oral presentation.

Smith, A†, WH Nowlin, MM Chumchal, and A Abuzeineh*. 2008. Mercury contamination of the Rio Grande fish community: influence of spatial variation and food web structure. *Society for Environmental Toxicology and Chemistry (SETAC) – North America, 29th Annual Meeting*, Tampa, Florida. Poster presentation.

Smith, A†, WH Nowlin, MM Chumchal, and A Abuzeineh*. 2008. Mercury contamination of the Rio Grande fish community: influence of spatial variation

and food web structure. *Oklahoma-Texas Aquatic Research Group/Great Plains Limnology Conference*, Kingston, Oklahoma. Oral presentation.

Pray, CL†, SE Scott, WH Nowlin, and Y Zhang. 2008. Ecosystem engineering effects of native and non-native consumers in a river ecosystem. *Oklahoma-Texas Aquatic Research Group/Great Plains Limnology Conference*, Kingston, Oklahoma. Oral presentation.

Diaz, PH* and WH Nowlin. 2008. Influence of productivity, size, and hydroperiod on aquatic macroinvertebrates in isolated wetlands. *Oklahoma-Texas Aquatic Research Group/Great Plains Limnology Conference*, Kingston, Oklahoma. Oral presentation.

Caston, CB†, WH Nowlin, A Gaulke, and MJ Vanni. 2008. Nutrient cycling in pelagic ecosystems: The relative importance of heterotrophic bacteria and phytoplankton changes along a trophic gradient. *Oklahoma-Texas Aquatic Research Group/Great Plains Limnology Conference*, Kingston, Oklahoma. Oral presentation.

Becker, JC†, AW Groeger, MM Chumchal, and WH Nowlin. 2008. Distribution and bioaccumulation of mercury in a subtropical reservoir system. *Oklahoma-Texas Aquatic Research Group/Great Plains Limnology Conference*, Kingston, Oklahoma. Oral presentation.

Nowlin, WH, CB Caston†, A Gaulke, and MJ Vanni. 2008. Stoichiometry and nutrient limitation of bacterio- and phytoplankton across a reservoir productivity gradient: implications for competition intensity. *Oklahoma-Texas Aquatic Research Group/Great Plains Limnology Conference*, Kingston, Oklahoma. Oral presentation.

Smith, A†, WH Nowlin, MM Chumchal, and A Abuzeineh*. 2008. Mercury contamination of the Rio Grande fish community: influence of spatial variation and food web structure. *South Central Chapter of the Society of Environmental Toxicology and Chemistry (SC-SETAC) Annual Meeting*, Clear Lake, Texas. Poster presentation.

Becker, JC†, AW Groeger, MM Chumchal, and WH Nowlin. 2008. Distribution and bioaccumulation of mercury in a subtropical reservoir system. *South Central Chapter of the Society of Environmental Toxicology and Chemistry (SC-SETAC) Annual Meeting*, Clear Lake, Texas. Poster presentation.

Caston, CB† and WH Nowlin. 2007. Does the relative importance of bacteria in reservoir nutrient cycling vary with productivity? *Texas River and Reservoir Management Society (TRRMS) and South Central Society of Environmental Toxicology and Chemistry (SC-SETAC)*, Nacogdoches, Texas. Oral presentation.

Cohen, KL, TH Bonner, and WH Nowlin. 2007. Food habits of the non-indigenous suckermouth catfish in the San Marcos River, Texas: A concern for

spring endemics? *American Fisheries Society*, San Francisco California. Oral presentation.

Cohen, KL, TH Bonner, and WH Nowlin. 2007. Food habits of the non-indigenous suckermouth catfish in the San Marcos River, Texas: a concern for spring endemics? *Texas Chapter of the American Fisheries Society*, Lake Jackson, Texas. Oral presentation.

Nowlin, WH, A Gaulke, and MJ Vanni. 2007. The relative importance of bacteria and algae in pelagic nutrient cycling of reservoir ecosystems. *ASLO (Association for the Sciences of Limnology and Oceanography)*, Santa Fe, New Mexico. Poster presentation.

Davies, JM, WH Nowlin, B Matthews and A Mazumder. 2006. A temporal discontinuity of nutrient deficiency and limitation, the role of deficiency in cyanobacterial bloom formation. *ASLO (Association for the Sciences of Limnology and Oceanography)*, Victoria, British Columbia. Oral presentation.

Nowlin, WH, MHH Stevens, M.J. Vanni, M.J. Gonzalez, and M.W. Fields. 2005. Effects of a pulsed allochthonous subsidy from a 17-year periodical cicada emergence on woodland pond communities. *Oklahoma – Texas Aquatic Research Group and Texas River and Reservoir Management Society Meeting*, Oklahoma Biological Station, Kingston, Oklahoma. Oral presentation.

Valente, JJ, MJ Gonzalez, WH Nowlin, MJ Vanni, MW Fields, and MHH Stevens. 2005. Effects of the 17-year periodical cicada emergence on zooplankton communities in woodland ponds. *Ecological Society of America*, Montréal, Quebec. Poster presentation.

Pauly, L, MW Fields, C Koenig, C. Hwang and WH Nowlin. 2005. Allochthonous input effects on the bacterial community of an aquatic mesocosm. *Ecological Society of America*, Montréal, Quebec. Oral presentation.

Nowlin, WH, MHH Stevens, M.J. Vanni, M.J. Gonzalez, J.J. Valente and M.W. Fields. 2005. Effects of a pulsed allochthonous subsidy from a 17-year periodical cicada emergence on woodland pond communities. *Ecological Society of America*, 2005, Montréal, Quebec. Symposium: Resource pulses in space and time: Linking species, communities, and ecosystems, *Ecological Society of America*, Montréal, Quebec. Oral presentation.

Pray, CL, WH Nowlin, MJ Vanni, MHH Stevens, MJ González, MW Fields. 2005. Deposition and decomposition of litter associated with the emergence of 17-year periodical cicadas in woodland ponds and streams. *Ecological Society of America*, Montréal, Quebec. Poster presentation.

Nowlin, WH, J-M Davies and A Mazumder. 2004. The relative importance of “new” and “recycled” phosphorus sources in lakes of varying trophic in British

Columbia, Canada. *Ecological Society of America*, Portland, Oregon. Oral presentation.

Mazumder, A, R Nordin, B Matthews, J-M Davies, WH Nowlin, PC Furey, C Meays and K Broersma. 2004. Integrated water and watershed management for sustainable clean and healthy water. *The International Congress of Limnology (SIL)*, Helsinki, Finland. Oral presentation.

Nowlin, WH, J-M Davies and A Mazumder. 2002. Effects of seasonal drawdown on a drinking water reservoir: response of pelagic phosphorus pathways. *American Society of Limnology and Oceanography*, Victoria, British Columbia, Canada. Oral presentation.

Mazumder, A, Y Liang, J-M Davies, WH Nowlin, P Furey and B Matthews. 2002. Loss of ecosystem and watershed quality: a serious threat to sustainable clean and healthy drinking water. *American Society of Limnology and Oceanography*, Victoria, British Columbia, Canada. Oral presentation.

Davies, J-M, WH Nowlin and A Mazumder. 2002. Phytoplankton nutrient status: implications of plankton size. *American Society of Limnology and Oceanography*, Victoria, British Columbia, Canada. Oral presentation.

Nowlin, WH, J-M Davies and A Mazumder. 2002. Effects of seasonal drawdown on a drinking water reservoir: responses of pelagic phosphorus pathways. *Society of Canadian Limnologists*, Vancouver, British Columbia, Canada. Oral presentation.

Nowlin, WH, RW Drenner, M Chumchal, and S Mann. 2000. Biomass-dependent effects of common carp on water quality: Implications for biomanipulation of Texas reservoirs. *American Society of Limnology and Oceanography*, Copenhagen, Denmark. Oral presentation.

Basu, BK, Y Liang, P Caron, J-M Davies, WH Nowlin and A Mazumder. 2000. Environmental management of drinking water: An ecosystem and watershed approach. *American Society of Limnology and Oceanography*, Copenhagen, Denmark. Poster presentation.

Drenner, RW, JL Smith, S Mann, M Chumchal, JM Fennell, WH Nowlin and CE Edwards. 2000. Estimating the densities of common carp and their biomass-dependent effects on ponds. *Texas Chapter of the American Fisheries Society*, Bossier City, Louisiana, USA. Oral presentation.

Mazumder, A, BK Basu, Y Liang, P Caron, J-M Davies and WH Nowlin. 2000. The environmental management of drinking water: an overview of the NSERC-IRC program at the University of Victoria. *Society of Canadian Limnologists*, Fredericton, New Brunswick, Canada. Oral presentation.

Drenner, RW, WH Nowlin, KR Guckenberger, M Lauden, JE Fennell and JL Smith. 1999. Effects of piscivorous largemouth bass on water quality. *Texas River and Reservoir Management Society*, College Station, Texas, USA. Oral presentation.

Nowlin, WH and RW Drenner. 1998. Effects of bluegill on experimental mesocosm communities in the presence and absence of a fish assemblage. *Texas River and Reservoir Management Society/North Texas Limnology Group*, Denton, Texas, USA. Oral presentation.

Nowlin, WH and RW Drenner. 1998. Effects of bluegill on experimental mesocosm communities in the presence and absence of a fish assemblage. *American Society of Limnology and Oceanography/Ecological Society of America*, St. Louis, Missouri, USA. Poster presentation.

Conference Proceedings (Refereed)

Mock, L. BF Schwartz, WH Nowlin, BT Hutchins, T Hardy, TH Bonner. 2011. The role of metrology in monitoring and preserving the water quality in the Edwards Aquifer in Central Texas. *Proceedings of the 2011 National Conference of Standards Laboratories International (NCSLI) Symposium*. August 21-25, 2011, National Harbor, MD.

Hardy, TB, WH Nowlin, BF Schwartz, TH Bonner, Timothy. 2011. Implementation of the San Marcos River Observing System: a Spatially Explicit Delineation of a Spring System based on Physical, Hydrologic, Chemical, and Biological Monitoring. *Proceedings of the: 8th International Symposium on Ecohydraulics*, Seoul, Korea, September 12-16, 2010.

Invited Seminars

Good Water Group

Lake Highlands Group

The Good Water Master Naturalists of Williamson County – October 2018. The ecology of spring-associated and subterranean organisms in Texas: A brief introduction to organisms in the Edwards Plateau and Edwards Aquifer.

Highland Lakes Master Naturalists – October 2018. The ecology of spring-associated and subterranean organisms in Texas: A brief introduction to organisms in the Edwards Plateau and Edwards Aquifer.

Highland Lakes Master Naturalists – March 2018. The ecology of spring- and subterranean organisms in Texas: A brief introduction to organisms in the Edwards Plateau and Edwards Aquifer.

The Good Water Master Naturalists of Williamson County – October 2016. Use of benthic invertebrates as water quality indicators *and* Stygbionts of the Edwards Aquifer, Texas.

The University of Texas at Austin Grotto Group – November 2016. The effect of selection and phenotype of response to light in subterranean, epigeal, and interstitial amphipods.

The Good Water Master Naturalists of Williamson County – October 2016. Use of benthic invertebrates as water quality indicators *and* Stygbionts of the Edwards Aquifer, Texas.

The Good Water Master Naturalists of Williamson County – October 2015. Use of benthic invertebrates as water quality indicators.

Edwards Aquifer Authority Board of Directors Meeting – June 2015. Overview of invertebrate refugia research covered under the Edwards Aquifer Habitat Conservation Plan.

Department of Biology, University of Oklahoma – February 2015. Looking Beyond Boundaries: Aquatic Ecosystems and Food Webs Across Landscapes.

Texas Commission on Environmental Quality, Annual Surface Water Quality Workshop - October 2014. Nutrient cycling in riverine ecosystems: Influence of large-scale spatial gradients and implications for setting numerical criteria for Texas.

University of Southern Mississippi, Department of Biological Science – November 2012. Creatures great and small: The role of organisms in riverine nutrient cycling.

University of North Texas, Department of Biological Science – January 2012. Creatures great and small: The role of organisms in ecosystem nutrient dynamics.

The University of Texas – Austin, School of Biological Sciences, Section of Integrative Biology – April 2010. Creatures great and small: The importance of organisms in ecosystem nutrient dynamics.

Austin College, Department of Biology, Sherman, Texas – October 2006. Picoplankton, piscivores and periodical cicadas: research in aquatic ecology.

Texas State University, Aquatic Biology Society, San Marcos, Texas – October 2005. Effects of a pulsed allochthonous subsidy from a 17-year periodical cicadas emergence on woodland pond communities.

Miami University, Department of Zoology, Oxford, Ohio – Miami Department of Zoology REU program speaker, July 2005. The effects of 17-year periodical

cicadas on woodland aquatic ecosystems: An overview of summer research in the Miami ECO-REU program.

Bowling Green State University, Department of Biological Sciences, Bowling Green, Ohio – January 2005. The relative importance of “new” and “recycled” phosphorus sources in lakes of varying trophy in British Columbia, Canada.

Students Directed and Advised

Graduate Student Theses and Dissertations Directed

Robichaux, Kayla. TBD. MS – Wildlife Ecology. Proposal.

Nair, Parvathi R. Ecophysiology and food web dynamics of spring-associated and stygofaunal organisms in a karst aquifer: Implications for future water development in the Edwards Aquifer. PhD – Aquatic Resources, Texas State University. Proposal.

Noreika, Nina. Invertebrate community structure and habitat associations in the arid Davis Mountains region of west Texas. MS – Aquatic Resources, Texas State University. Completed May 2019.

Zawalski, Rebecca. Meta-community structuring of invertebrate communities in a large and complex river basin. MS – Population and Conservation Biology, Texas State University. Co-advised with A Schwalb. Completed December 2018.

Carrol, Áine. Linking historical changes in fish community structure to alteration of ecosystem function. MS – Aquatic Resources, Texas State University. Completed May 2018.

Krupka, Nathan J. Relationship between stygobiont diversity and ecosystem function in a karst aquifer. Texas State University, MS – Aquatic Resources. Completed December 2018.

Hoesel, Kerstin L. Effects of invasive floating vegetation on the nutrient dynamics of a spring-influenced ecosystem. MS – Aquatic Resources, Texas State University. On leave of absence.

Loney, Lauren A. Nutrient recycling and stoichiometry of stygobiont invertebrates in a karst aquifer system. MS – Aquatic Resources, Texas State University. Completed May 2016.

Everett, Amelia E. Nutrient limitation of algal and bacterial communities across a trophic gradient. MS – Aquatic Resources, Texas State University. Completed May 2015.

Swink, Aaron P. Phosphorus uptake in karstic spring-fed rivers of central Texas. MS – Aquatic Resources, Texas State University. Completed May 2014.

Becker, Jesse C. Biogeochemistry and microbial diversity of a Gulf-slope drainage. PhD – Aquatic Resources, Texas State University. Completed August 2013.

Rodibaugh, Kelly J. Bacterially-mediated carbon dynamics in a highly-impacted river network. MS – Aquatic Resources, Texas State University. Completed December 2012.

Abuzeineh, Alisa A. Cross system transport of organic matter and contaminants in semi-arid and arid lotic ecosystems. PhD – Aquatic Resources, Texas State University. Completed December 2011.

LeBoeuf, Crystal M. The effects of invasive species and eutrophication on the nutrient dynamics of a spring-fed river ecosystem. MS – Aquatic Resources, Texas State University. Completed May 2010.

Diaz, Peter H. Trophic ecology and habitat use of the San Marcos Salamander. Texas State University. MS – Aquatic Resources, Texas State University. Completed May 2010.

Pray, Corey L. Ecosystem impacts of the exotic armored catfish in the San Marcos River. MS – Aquatic Resources, Texas State University. Completed December 2009.

Smith, Alexandra. Spatial distribution and factors affecting Hg levels in food webs of the Rio Grande and Pecos River. MS – Population and Conservation Biology, Texas State University. Completed May 2009.

Caston, Charles B. The relative importance of bacteria and algae in reservoir carbon cycling. MS – Aquatic Resources, Texas State University. Completed May 2008.

Undergraduate Student Projects Directed

Diaz, Peter H. 2006. The influence of productivity, size, and hydroperiod on species richness in geographically isolated wetlands. Texas State University. *Recipient of Francis Rose Undergraduate Research Award 2006 and Winner - Best Undergraduate Speaker at the Texas State University Department of Biology Student Research Colloquium.*

Pray, Corey L. 2004. Deposition and decomposition of periodical cicada detritus in woodland aquatic ecosystems: potential impacts on nutrient cycling. Department of Biology - Miami University, Ohio.

Service as a Member of Dissertation and Thesis Committees

Sanchez, Brittney. Examining seasonal variation of glochidia drift and sampling methods of unionid mussels in Central Texas. MS - Biology, Texas State University. Astrid Schwalb (Chair). Proposal.

Seagroves, Ashely. Unionid mussel host fish identification for future captive breeding conservation effort. MS – Aquatic Resources, Texas State University. Astrid Schwalb (Chair). Proposal.

Hiler, Mark. Delineating the Springshed of Cave Without a Name. MS – Aquatic Resources, Texas State University. Benjamin F. Schwartz (Chair). In process.

Olson, Jenae. Dispersal of zebra mussels (*Dreissena polymorpha*) downstream of an invaded reservoir. MS – Aquatic Resources, Texas State University. Astrid Schwalb (Chair). In process.

Agare, Ovie. Effects of recreation on macroinvertebrates in a spring-fed river. MS – Aquatic Resources, Texas State University. Thom Hardy (Chair). In process.

Jenson, Aubri. Speleogenesis and aquifer development in a coastal carbonate platform: Quintana Roo, Mexico. PhD – Aquatic Resources, Texas State University. Benjamin F. Schwartz (Chair). Proposal.

Crawford, Michelle. Analysis of the effects of suspended sediment and photosynthetically active radiation (PAR) on the vegetative growth of Texas wild rice (*Zizania texana*). PhD – Aquatic Resources, Texas State University. Thom Hardy (Chair). Completed December 2018.

Zappitello, Sarah. Geochemical Clues to Groundwater Sources of the Pedernales River, Texas. MS – Aquatic Resources, Texas State University. Benjamin F. Schwartz (Chair). Completed May 2016.

Markowski, Michael. Using nutrients, sediment, ions, isotopes, and hydrograph separation to quantify conduit-dominated recharge processes in a Trinity Aquifer site: Cave Without a Name. MS – Aquatic Resources, Texas State University. Benjamin F. Schwartz (Chair). Completed May 2015.

Friedman, Duane. Ionic requirements of blue crab, *Callinectes sapidus*, in environments containing low concentrations of total dissolved solids. MS – Aquatic Resources, Texas State University. Joseph Tomasso (Chair). Completed December 2015.

Bilbo, Jacob. The effects of water velocity and sediment composition on competitive interactions between native and invasive species in a spring fed river. MS – Aquatic Resources, Texas State University. Thom Hardy (Chair). Completed August 2015.

Whitney, Suzanne. Examining avian communities in wetlands at multiple spatial extents. PhD – Aquatic Resources, Texas State University. Joe Veech (Chair). Completed May 2015.

Hutchins, Benjamin. The trophic ecology of phreatic karst aquifers. PhD – Aquatic Resources, Texas State University. Benjamin Schwartz (Chair). Completed December 2013.

Tobin, Benjamin. Contributions of karst groundwater to water quality and quantity in a mountain river basin: The Kaweah River, Sequoia and Kings Canyon National Parks, California. PhD – Aquatic Resources, Texas State University. Benjamin Schwartz (Chair). Completed August 2013.

Brown, Donald. Impacts of low, moderate, and high severity fire on herpatofauna and their habitat in a southern USA mixed pine/hardwood forest. PhD – Aquatic Resources, Texas State University. Michael Forstner (Chair). Completed August 2013.

Cocke, William. Top down and bottom up effects on emergent insect mercury flux from experimental ponds. MS - Biology, Texas Christian University. Matthew Chumchal and Ray Drenner (Co-Chairs). Completed May 2012.

Gerard, Brett. Effects of environmental parameters and precipitation dynamics on infiltration and recharge into the Trinity Aquifer of central Texas. MS – Aquatic Resources, Texas State University. Benjamin Schwartz (Chair). Completed December 2012.

Bean, Preston. Introgressive status, population genetic structure, phylogeographic history and individual-level resource specialization of the Guadalupe bass *Micropterus treculii*. – PhD, Aquatic Resources, Department of Biology, Texas State University. Timothy Bonner (Chair). Completed May 2012.

Lash, Frances. Impacts of Land Use on the Habitat and Macroinvertebrate Assemblage of the Tributaries of the Lower Brazos River. MS – Aquatic Resources, Texas State University. Yixin Zhang (Chair). Completed August 2012.

McMillan, Sarah. Reproductive and feeding ecology of two sympatric *Dionda* (Cyprinidae) in the Rio Grande basin, Texas. MS – Aquatic Resources, Texas State University. Timothy Bonner (Chair). Completed May 2011.

Labay, Benjamin. The influence of land use, zoogeographic history, and physical habitat on fish community diversity in the lower Brazos watershed. MS – Aquatic

Resources, Texas State University. Timothy Bonner (Chair). Completed May 2010.

Shattuck, Zachary. Spatiotemporal patterns of fish and aquatic insects in an urbanized watershed of Central Texas. MS – Aquatic Resources, Texas State University. Timothy Bonner (Chair). Completed May 2010.

Scott, Susanna. Effects of native and invasive species on stream ecosystem functioning. MS – Aquatic Resources, Texas State University. Yixin Zhang (Chair). Completed May 2009

Folb, Clara. Reproductive seasons and life histories of three Texas *Percina* (Actinopterygii). MS – Aquatic Resources, Texas State University. Timothy Bonner (Chair). Completed December 2009.

Becker, Jesse. Spatial variation in the speciation and bioaccumulation of mercury in a subtropical reservoir system: Amistad International Reservoir, Texas, USA. MS – Aquatic Resources, Texas State University. Al Groeger (Chair). Completed December 2008.

Meyer, Jaimie. Macroinvertebrate relations with ecoregions and aquifers as influenced by the hydrology and water quality of western Texas spring ecosystems. MS – Aquatic Resources, Texas State University. Glenn Longley (Chair). Completed May 2008.

Heard, Thomas. Spatial and temporal patterns in a Chihuahua Desert fish assemblage. MS – Aquatic Resources, Texas State University. Timothy Bonner (Chair). Completed May 2008.

Cohen, Katrina. Gut content and stable isotope analysis of exotic suckermouth catfishes (*Hypostomus*) in the San Marcos River, Texas: A concern for spring endemics? MS – Aquatic Resources, Texas State University. Timothy Bonner (Chair). Completed May 2008.

Marfurt, Rebecca. Habitat associations of macroinvertebrates in the Big Bend Reach of the Rio Grande. MS – Aquatic Resources, Texas State University. Timothy Bonner (Chair). Completed December 2007.

Runyan, Dennis. Fish assemblage changes in Gulf Slope drainages; an historical perspective. MS – Aquatic Resources, Texas State University. Timothy Bonner (Chair). Completed May 2007.

Honors and Awards

Texas State University Presidential Award for Scholarly/Creative Activities – Assistant Professor. 2008. Recognized as top researcher among Assistant Professors from across all colleges/schools at the University.

Graduate Student Tuition Fellowship – University of Victoria, Department of Graduate Studies. Received award every semester from September 1999 - September 2003

Student Travel Award – American Society of Limnology and Oceanography (ASLO) Conference 2000 in Copenhagen, Denmark

Outstanding Graduate Student of 1998 – Texas Christian University, Department of Biology

Adkins Research Fellowship to Graduate Students – Texas Christian University, May - September 1997

Professional Service and Activities

Departmental and University Service

Director, Aquatic Station (September 2016 – Present)

Director, Aquatic Resources MS Program (May 2012 – Present)

Member, Graduate Committee (2012 - Present)

Chair, Tenure Tracking Committee (Dr. Schwalb) (2014 - Present)

Chair, Awards Day Committee (2011 - Present)

Member, Tenure Tracking Committee (Dr. Weigum) (2013 - Present)

Current Member - Budget Committee, College Recruiting Committee, and Spring Lake Environmental Committee

Past Membership – Toxicologist Faculty Search Committee (2014), Stream Ecologist Faculty Search Committee (Chair, 2013), Ten-Year Strategic Hiring Plan Committee (Chair, 2013), Lecturer Evaluation Committee (2012 - 2013), Space Committee (2005 – 2007)

Professional Memberships

ASLO (Advancing the Science of Limnology and Oceanography), ESA (Ecological Society of America), Society for Environmental Toxicology and Chemistry (SETAC), NALMS (North American Lake Management Society), SCL (Society of Canadian Limnologists)

Leadership in Professional Societies

Secretary – South Central Regional Chapter of the Society for Freshwater Sciences (formerly NABS), 2014 - Present

President - South Central Chapter of the Society for Environmental Toxicology and Chemistry, 2012-2013

Vice President, South Central Chapter of the Society for Environmental Toxicology and Chemistry, 2010-2011

Board Member, South Central Chapter of the Society for Environmental Toxicology and Chemistry, 2009 – 2016

Manuscript Reviewer

Aquatic Sciences, Aquatic Invasions, Oikos, Southeastern Naturalist, The Coleopterist, Hydrobiologia, Ecology Letters, Environmental Toxicology and Chemistry, Hydrobiologia, Oecologia, Lakes and Reservoirs: Research and Management, Aquatic Conservation: Marine and Freshwater Ecosystems, Limnology and Oceanography, Freshwater Biology, Southwestern Naturalist, American Midland Naturalist, Transactions of the American Fisheries Society, Journal of Applied Biology, Water Resources and Management, Journal of the North American Benthological Society, Lake and Reservoir Management

Research Grant Proposal Reviewer

National Science Foundation (NSF) – Panel Member (2017)
United States Environmental Protection Agency – STAR Program Panel Member (2014)
National Science Foundation (NSF) – Ad hoc proposal reviewer (2007)
Oklahoma Water Resources Center (2012)
Israel Science Foundation (ISF) – Ad hoc proposal reviewer (2005)

Membership on Committees in Professional Organizations

American Society of Limnology and Oceanography
Education Sub-committee of the Education and Human Resources Committee (January 2003 – January 2005) – Program designed to advance education of the scientific fields of limnology and oceanography across a broad range of students from kindergarten to graduate students. Committee activities include creation of web-based courses, education outreach programs, creation of teaching tools and a web-based image library.

Organization of Professional Meetings

Society for Environmental Chemistry and Toxicology, May 2014,
Organization and hosting of the annual meeting of the South Central Chapter of the Society for Environmental Chemistry and Toxicology at Texas State University.

Joint Aquatic Sciences Meeting, Special Session Organizer, 2014, Portland, Oregon – Double trouble: Interactive effects of climate change and other anthropogenic drivers on aquatic ecosystems.

Oklahoma – Texas Aquatic Research Group (OTARG)/Great Plains Limnology Conference (GPLC), October 2011. Organization and hosting of tri-annual meeting at The University of Oklahoma Biological Station.

Society for Environmental Chemistry and Toxicology, May 2009, Organization and hosting of the annual meeting of the South Central Chapter of the Society for Environmental Chemistry and Toxicology at Texas State University.

Joint Ecological Society of America (ESA) and International Congress of Ecology (INTECOL), Symposium Co-Organizer, 2005 Annual Meeting in Montreal, Quebec, Canada – Resource pulses in space and time: Linking species, communities and ecosystems.

American Society of Limnology and Oceanography, Summer 2002 meeting in Victoria, BC, Canada – Organize and coordinate activities for the ASLO Minorities in the Aquatic Sciences (MAS) Program.

Community Service

Scientific Advisory Group Member, Upper San Marcos Watershed Protection Plan Working Group. 2013 – Present.

Technical Science Advisor, Upper San Marcos Coordinating Group (stakeholder group formed as part of the Watershed Protection Plan for the Upper San Marcos). I additionally attended the City of San Marcos Mater Planning Meetings as the group representative.

Research Experience

Miami University Postdoctoral Research Scholar – Miami University
January 2004

Effects of a pulsed nutrient subsidy into streams and ponds associated with an emergence of periodical 17-year cicadas. Funded through a NSF-SGER (Small Grant for Exploratory Research) grant and the NSF REU (Research Experience for Undergraduates) program at Miami University.

Graduate Research Assistant – University of Victoria
September 1999 - December 2003

Research focusing on planktonic phosphorus cycling in lakes of varying productivity. Part of a large NSERC Research Chair program on the Environmental Management of Drinking Water.

Graduate Research Assistant – Texas Christian University
May - September 1998

Biomass dependent effects of common carp (*Cyprinus carpio*) on water quality and plankton communities in experimental ponds.

Graduate Research Assistant – Texas Christian University

May - September 1997

Effects of bluegill (*Lepomis macrochirus*) on plankton, benthic macroinvertebrates and nutrients in the presence and absence of other fish species. Funded by an Adkins Graduate Student Fellowship.

Undergraduate Research Project – Austin College

January - May 1996

Effects of suspended clay on zooplankton reproduction and zooplankton community structure.

Intern – City of Sherman Water Monitoring Lab (Sherman, Texas)

January - February 1996

Analysis of samples of local industry effluents into the city waste water treatment system and samples from within the waste water treatment plant.

Undergraduate Research Assistant – Texas Christian University

May - September 1995

Development of electrofishing model for the estimation of largemouth bass densities.

January Term in Ecuador – Austin College

January 1995

Botanical and natural history field work in tropical mountain and rainforest ecosystems.

Teaching Experience

Texas State University, Department of Biology (September 2005 – Present)

Faculty Instructor of Record:

General Ecology (BIO 4416)

Undergraduate Research (BIO 4299)

Graduate (MS) Research (BIO 5114, 5214, 5314)

Seminar in Aquatic Resources – Stable Isotope Ecology (BIO 7102)

Seminar in Aquatic Resources – Ecological Stoichiometry (BIO 7102)

Seminar in Aquatic Resources – Concepts, Questions, and Controversies in Ecology and Environmental Science (BIO 7102)

Graduate (PhD) Research (BIO 7114, 7214, 7314)

Community and Ecosystem Ecology (BIO 7360R)

Wetlands Ecology (BIO 7422)

Miami University, Department of Zoology (September – December 2004)

Course Lecturer (Postdoctoral):

Fundamentals of Ecology (ZOO 204)

University of Victoria, Department of Biology (September 1999 - September 2002)

Departmental Laboratory Teaching Assistantship:

Principles of Ecology (BIOL 215)

Survey of Invertebrates (BIOL 321)

General Biology (BIOL 190B)

General Biology (BIOL 110)

Mansfield High School, Mansfield, Texas (January - May 1999)

Teacher:

Biology

Integrated Physics and Chemistry

Texas Christian University, Department of Biology (January 1997 - December 1998)

Departmental Laboratory Teaching Assistantship:

Principles of Life Science for Majors (BIOL 105)

Principles of Life Science for Non-Majors (BIOL 100)