

RYAN S. KING

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Department of Biology
Center for Reservoir and Aquatic Systems Research
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RESEARCH INTERESTS

Freshwater science to inform policy | community and ecosystem ecology | ecological thresholds | terrestrial-aquatic linkages | eco-stats

EDUCATION

Doctor of Philosophy, Ecology. December 2001
Department of the Environment, Duke University, Durham, NC
Dissertation: Dimensions of invertebrate assemblage organization across a phosphorus-limited Everglades landscape. *Advisor*: Curtis J. Richardson.
Master of Environmental Management, Water Resources Management. May 1996
Nicholas School of the Environment, Duke University
Thesis: Spatial and diel variability in the availability of flying insects as duckling food in prairie pothole wetlands of North Dakota. *Advisor*: Robert G. Qualls.
Bachelor of Science, Biology, *summa cum laude*. August 1994
Harding University, Searcy, AR
Thesis: Relationship between rainbow trout food habits and benthic macroinvertebrates in the Greer's Ferry Tailwater, AR. *Advisor*: Ronald Doran.

PROFESSIONAL EXPERIENCE

Professor, Department of Biology, Baylor. 2014 – .
Graduate Program Director, Department of Biology, Baylor. 2012 – .
Associate Professor, Department of Biology, Baylor. 2009 – 2014.
Visiting Scholar, Institute for the Environment, University of North Carolina. 2010.
Assistant Professor, Department of Biology, Baylor University. 2004 – 2009.
Ecologist, Smithsonian Environmental Research Center, Edgewater, MD. 2001–2004.
Research Associate, Duke Wetland Center, Nicholas School of the Environment, Duke University. 1996–2001
NNEMS Fellow, Wetland Function Group, Mid-Continent Ecology Division, United States Environmental Protection Agency, Duluth, MN. 1995 – 1996.

COURSES TAUGHT

Advanced Ecological Data Analysis (BIO 5413). Lecture/lab, 4 credits
Stream Ecology (BIO 5405). Lecture/lab. 4 credits
Research Methods in Biology II (BIO 5202). Active learning lecture. 2 credits
Visualizing Data in R (BIO 5100). Graduate seminar, 1 credit.
Field Methods in Stream Ecology (BIO 5100). Graduate seminar, 1 credit.
Taxonomy of Aquatic Insects (BIO 5100). Graduate seminar, 1 credit.
Aquatic Biology (BIO 4406). Lecture/lab, 4 credits
Modern Concepts of Bioscience II (BIO 1306). Lecture. 3 credits

**PROFESSIONAL
ACTIVITIES**

Subject-Matter Editor, *Ecological Applications*, 2013 – .

Ad-hoc Subject-Matter Editor, *Ecological Applications*. 2011, 2012

Associate Editor, *Journal of the North American Benthological Society*. 2003–2006.

Manuscript Referee: *Annals of the Entomological Society of America*; *Aquatic Microbial Ecology*; *Archiv für Hydrobiologie*; *Biogeochemistry*; *Ecological Applications*; *Ecological Monographs*; *Ecology*; *Ecology Letters*; *Ecology of Freshwater Fish, Ecosystems*; *Environmental Entomology*; *Environmental Management*; *Environmental Science:Nano*; *Environmental Science & Technology*; *Freshwater Science*; *Frontiers in Ecology and Evolution*; *Global Change Biology*; *Hydrobiologia*; *Journal of Applied Ecology*; *Journal of Environmental Quality*; *Journal of Environmental Statistics*; *Journal of Great Lakes Research*; *Journal of the North American Benthological Society*; *Landscape Ecology*; *Lakes and Reservoirs: Research and Management*; *Limnology and Oceanography*; *Methods in Ecology and Evolution*; *Nature:Scientific Reports*; *North American Journal of Fisheries Management*; *Oikos*; *Plant Ecology*; *PLoS One*, *Proceedings of the National Academy of Sciences*; *Science of the Total Environment*; *Soil Science Society of America Journal*; *Southeastern Naturalist*; *Transactions of the American Fisheries Society*, *Wetlands*

Board of Directors, Society for Freshwater Science, 2011 – 2012.

Executive Committee, North American Benthological Society. 2009 – 2011.

Scientific Society Member: Society for Freshwater Science, Ecological Society of America, American Society for Limnology and Oceanography

Proposal Referee/Grant Panelist: National Science Foundation, US Environmental Protection Agency, Earthwatch Institute.

Science Panel, Utah Lake Water Quality Study. Utah Dept. of Env. Quality, Division of Water Quality, Salt Lake City/Provo, UT. 2018-2021.

Discussion Leader, Gordon Research Conference: *Urbanization, Water, and Food Security*. Leader of “Integrated Environmental Assessment” session. Hong Kong University of Science and Technology, 21-26 July 2019.

Expert Witness, (9) Sierra Club, Inc. and Conservation Law Foundation, Inc. v. Granite Shore Power LLC; GSP Merrimack LLC; and Public Service Company of New Hampshire d/b/a Eversource Energy, Case No. 19-cv-216 (District of New Hampshire); 11/2019 – present **(8)** Sierra Club v. Southeastern Coal Co., LLC, US District Court, Huntington, WV. 10/2018 – present. **(7)** Sierra Club v. Red River Coal Co., LLC. US District Court, VA. 11/2017- present. **(6)** Ohio Valley Environmental Coalition and Sierra Club, v. Fola Coal Company, LLC., US District Court, Huntington, WV. 8/1/2016 – 6/1/2017 **(5)** Ohio Valley Environmental Coalition, West Virginia Highlands Conservancy, and Sierra Club, v. Fola Coal Company, LLC. Civil Action No. 2:13-cv-5006. US District Court, Huntington, WV. Jan-Aug. 2014. **(4)** Ohio Valley Environmental Coalition, West Virginia Highlands Conservancy, and Sierra Club, v. Elk Run Coal Company, Inc., and Alex Energy, Inc, US District Court, Huntington, WV. May-Jan 2014 **(3)** Sierra Club et al. v. USACOE & Highland Mining Co, US District Court, Huntington WV. April-May 2012. **(2)** Sierra Club et al v. Fola Coal LLC, Civ. No. 2:10-cv-01199, Apr-Jun 2011. **(1)** Sierra Club v. Patriot Mining; State Environmental Board, Charleston, WV, December 2010

Steering Committee Member, *State of Alaska’s Salmon and People* synthesis working group, National Center for Ecological Analysis and Synthesis (NCEAS). 2016—2018.

Workgroup Member, John Wesley Powell Center for Analysis and Synthesis Working Group, "Analyses of contaminant effects in freshwater systems: synthesizing abiotic and biotic stream datasets for long-term ecological research", 2019-2021; Big 12 Water Workshop, Lawrence, KS, Nov 2014; Expert Workgroup

on Nutrient Indicators in Streams, USEPA, Washington, DC, April 2013; Healthy Watersheds, US EPA, 2010; Texas Instream Flow Desktop Methodology, Texas Commission on Environmental Quality. 2007 – 2008; Tiered Aquatic Life Use (TALU), Subhumid Agricultural Plains (SAP), US Environmental Protection Agency Region 6. 2006 – 2009. Regional Technical Advisory Group (RTAG), Nutrient Criteria, US Environmental Protection Agency Region 6. 2004 – .; Maryland Biological Stream Survey, Maryland Department of Natural Resources, Annapolis, MD. 2003-2004; Biological Assessment of Wetlands Workgroup (BAWWG), US Environmental Protection Agency, Washington, DC. 1997–2001. **Peer-Review Consultant**, United States Environmental Protection Agency “State of Science” publications and State Numeric Nutrient Criteria documents. Reviews conducted through Versar, Inc., Springfield, VA and Tetra Tech, Owings Mills, MD. 2000–2001, 2003, 2007, 2009-2013.

ACADEMIC APPOINTMENTS, SERVICE, AND AWARDS

Outstanding Professor Award, Baylor University, 2014.
Graduate Program Director, Dept. of Biology, Baylor University. June 2012 – .
Principal Investigator and Director of the Baylor Experimental Aquatic Research (BEAR) stream facility at the Lake Waco Wetlands. 2005 – .
Co-Chair, Global Change Biology Assistant Professor search committee, Dept. of Biology, Baylor. 2018- 2019
STEM Graduate Curriculum Committee, Baylor University, 2018 - .
Task Force on Academics Support and Recitations, Baylor University, 2019-2020
Excellent Reviewer Citation, *Freshwater Science*, 2017 & 2019.
Co-chair, Aquatic Microbial Ecology Assistant Professor search committee, Dept. of Biology, Baylor. 2019-20;
Co-chair, Global Change Biology Assistant Professor search committee, Dept. of Biology, Baylor. 2018-19.
Member, Environmental Scientist Assistant Professor search committee, Dept. of Env. Sci, Baylor, 2018-19.
Member, Limnology Assistant/Associate Professor search committee, Dept. of Biology, Baylor. 2015-16.
Member, Department Chair search committee, Department of Biology, Baylor University. 2011-2015.
Member, Committee on Improving Doctoral Productivity in Arts & Sciences STEM Departments. 2015-17.
Member, Immunology Assistant Professor search Committee, Dept. of Biology, Baylor, 2014-15.
Chair, Microbial Ecology Assistant Professor search committee, Dept. of Biology, Baylor, 2011-2012.
Outside member, Departmental Tenure Committee, Environmental Science (2 faculty). 2008-2016.
Interim Graduate Program Director, The Institute of Ecological, Environmental, and Earth Sciences. 2008-2009
Adjunct Faculty Appointment, Graduate Program in Ecology, Duke University. 2012–
Graduate Committee, Department of Biology, Baylor University. 2006 – 2008.
Library Committee, Department of Biology, Baylor University. 2004 – 2007
Webpage Committee, Department of Biology, Baylor University. 2004 -- .
Director, Native Plant Sale, Baylor Biological Honor Society (Tri-Beta), Baylor University. 2008–2011.
Advisor, Delta Phi Omega national sorority, Baylor University. 2008-2013.

PUBLICATIONS

bold=member of King lab

**=students or postdocs*

- Robbins, C. J.***, A. D. Yeager*, **S.C. Cook***, R.D. Doyle, J. Maurer, C.M. Walker, **J.A. Back**, D.F. Whigham, and **R.S. King**. 2020. Low-level dissolved organic carbon subsidies drive a dramatic trophic upsurge in a boreal stream. *Freshwater Biology* <https://doi.org/10.1111/fwb.13478>
- Avellan, A., Simonin, M., Anderson, S.M., Geitner, N.K., Bernhardt, E.S., Castellon, B*, Colman, B.P., Hochella, M, **King, R. S.**, Matson, C. W., **Perrotta, B. G.***, Richardson, C. J., Unrine, J., Wiesner, M, and Lowry, G.V. .2020. Seasonal biogeochemical cycling and fate of copper- and gold-based engineered nanomaterials of contrasting metastability in a simulated freshwater wetland. *Environmental Science & Technology* <https://dx.doi.org/10.1021/acs.est.9b05097>
- Perrotta, B. G.***, M. Simonin, **J. A. Back**, S. M. Anderson, C. M. Bergemann, B. T. Castellon*, B. P. Colman, C. W. Matson, E. S. Bernhardt, and **R. S. King**. Engineered nanoparticles increase nutrient excretion rates of primary consumers. *Under revision (Environmental Science & Technology)*
- Burket, SB*, **Wright, MV***, **Baker, LF***, Chambliss, CK, **King, RS**, Matson, CW, Brooks, BW. Periphyton, bivalves and fish in effluent-dependent stream mesocosms differentially accumulate pharmaceuticals *Under review*
- Cook, S. C.***, **J. A. Back**, and **R. S. King**. Compensatory dynamics of stream algae nonlinearly break down with increasing nutrient enrichment. *Under review.*
- Robbins, C. J.**, **J.A. Back**, and **R. S. King**. Temporal patterns of stream bioavailable dissolved organic carbon vary with anthropogenic sources. *Under review.*
- Wright, M.V.***, D.E. Hunt, C.W. Matson, **L.F. Baker***, B.T. Castellon*, **J.R. McCluskey***, Z. Wang, P.S. Watkins*, and **R.S. King**. Fish grazing amplifies effects of algal exposure to TiO₂NP and alters periphyton community composition. *Under review*
- Hiatt, D.L.***, **S.C. Cook***, **J.A. Back***, and **R.S. King**. Phosphorus enrichment drives rapid responses in alkaline phosphatase activity and carbon:phosphorus ratios in riverine periphyton: a coupled field-gradient and mesocosm experiment. *Under review*
- Walker, C. M., D. F. Whigham, S. Bentz, J. Argueta, **R. S. King**, M. C. Rains, C. Simenstad, C. Guo, S. J. Baird, A. Bang, C. Field. Linking landscape attributes to salmon in the Kenai Lowlands, Alaska: Using science to communicate sustainability to user communities. *Under review.*
- Robbins, C.J.***, Matthaeus, W.* , **Cook, S.***, **Housley, L.H.***, Robison, S*, Garbarino, M.* , Lebrun, E.* , Raut, S.* , Tseng, C.* , and **R. S. King**. 2019. Leaf-litter species identity influences whole-stream nutrient dynamics. *Freshwater Biology* 64:2247-2259
- Hiatt, D. L.***, **J. A. Back**, and **R. S. King**. 2019. Effects of stream velocity and phosphorus concentrations on alkaline phosphatase activity and carbon:phosphorus ratios in periphyton. *Hydrobiologia* 826:173-182.
- Liu, J.* , M. Simms, S. Song, **R.S. King**, and G. Cobb. 2018. Physiological Effects of Copper Oxide Nanoparticles and Arsenic on the Growth and Life Cycle of Rice (*Oryza sativa japonica*). *Environmental Science & Technology*. 52 (23), 13728-13737
- Geitner, N.K., Cooper, J.L., Avellan, A., Castellon, B. T.* , **Perrotta, B.***, Bossa, B, Simonin, M., Bernhardt, E. S., Lowry, G. V., Matson, C. W., **King, R. S.**, Unrine, J., Wiesner, M., and Hsu-Kim, H. 2018. Size-Based Differential Transport, Uptake, and Mass Distribution of CeO₂ Nanoparticles in Wetland Mesocosms. *Environmental Science & Technology* 52:9768-9776.
- Colman, B. P., **L. F. Baker***, **R. S. King**, C. W. Matson, J. M. Unrine, S. M. Marinakos, D. E. Gorka, and E. S. Bernhardt. 2018. Dosing not the dose: comparing chronic and pulsed silver nanoparticle exposures. *Environmental Science & Technology* 52:10048-10056.

- Simonin, M., B. Colman, S. Anderson, **R. S. King**, M. Ruis, A. Avellan, C. Bergemann, **B. Perrotta***, N. Geitner, M. Ho, B. de la Barrera, C. J. Richardson, M. Wiesner, Mark and E. H. Bernhardt. 2018. Emerging contaminants catalyze regime shifts in a wetland ecosystem experiment. *Ecological Applications* 28:1435-1449.
- Taylor, J. M.***, **J. A. Back***, B. W. Brooks, and **R. S. King**. 2018. Spatial, temporal, and experimental: three study-design cornerstones for establishing defensible numeric criteria for freshwater ecosystems. *Journal of Applied Ecology* 55:2114-2123.
- LeBrun, E. *, **R.S, King, J. A. Back**, and S. Kang. 2018 A metagenome-based investigation of gene relationships for non-substrate associated microbial P cycling in the water column of streams and rivers. *Microbial Ecology* 76:856-865.
- LeBrun, E. S. *, D.L.Taylor, **R.S, King, J. A. Back**, and S. Kang. 2018. Rivers may constitute an overlooked avenue of dispersal for terrestrial fungi. *Fungal Ecology* 32:72-79
- Wright, M. V.***, C. W. Matson, **L.S. Baker**, B. T. Castellon*, P. S. Watkins* and **R S. King**. 2018. Titanium dioxide nanoparticle exposure reduces algal biomass and alters algal assemblage composition in wastewater effluent-dominated stream mesocosms. *Science of the Total Environment* 626: 357-365
- Cook, S. C.***, **L. H. Housley***, **J. A. Back**, and **R. S. King**. 2018. Freshwater eutrophication sharply reduces temporal beta diversity. *Ecology* 99: 37-46.
- LeBrun, E. S. *, **R. S. King, J. A. Back**, and S. Kang. 2018. Microbial community structure and function decoupling across a phosphorus gradient in streams. *Microbial Ecology* 75: 64-73.
- Hiatt, D.***, **J. A. Back**, **P. Kostka***, D. F. Whigham, M. C. Rains, C. M. Walker, R. D. Doyle, and **R. S. King**. 2017. Catchment-scale alder cover controls nitrogen fixation in boreal headwater streams. *Freshwater Science* 36: 523-532.
- Whigham, D. F., Walker, C. M., Maurer, J., Baird, S. J., **King, R. S.**, Keuskamp, J., Neal, P. 2017. Watershed influences on the structure and function of riparian wetlands associated with headwater streams - Kenai Peninsula, Alaska. *Science of the Total Environment* 599:124-134.
- Robbins, C. J.***, **King, R. S.**, Yeager, A. D.*, Walker, C. M., **Back, J. A.**, Doyle, R. D., Whigham, D. F. 2017. Low-level addition of dissolved organic carbon increases basal ecosystem function in a boreal headwater stream. *Ecosphere* 8:1-15, e01739
- Kornis, M., D. Breitburg, R. Balouskus, D. M. Bilkovic, L. A. Davias, S. Giordano, K. Heggie, A.H. Hines, J. M. Jacobs, T. E. Jordan, **R. S. King**, C. J. Patrick, R. D. Seitz, H. Soulen, D. E. Weller, D. F. Whigham and J. Uphoff. 2017. Linking the abundance of estuarine fish and mobile shellfish in nearshore waters to shoreline hardening and land cover. *Estuaries and Coasts* 21:1:23
- Callahan, M. K., D. F. Whigham, M. C. Rains, **R. S. King**, C. M. Walker, J. R. Maurer, and S. J. Baird. 2017. Nitrogen subsidies from hillslope alder stands to streamside wetlands and headwater streams, Kenai Peninsula, Alaska. *Journal of the American Water Resources Association* 53:478-492
- Taylor, J. M.***, **J.A. Back***, B.W. Brooks, and **R. S. King**. 2016. Consumer-mediated nutrient recycling is influenced by interactions between nutrient enrichment and the anti-microbial agent triclosan. *Freshwater Science* 35: 856–872.
- King, R. S.**, M. Scoggins, and A. Porras. 2016. Stream biodiversity is disproportionately lost to urbanization when flow permanence declines: evidence from southwestern North America. *Freshwater Science* 35:340-352. DOI: 10.1086/684943.
- Baker, L. F.***, **R. S. King**, J. M. Unrine, G. V. Lowry, and C. W. Matson. 2016. Press or pulse exposures determine the environmental fate of cerium nanoparticles in

- stream mesocosms. *Environmental Toxicology and Chemistry* 35: 1213–1223; DOI: 10.1002/etc.3261
- King, R. S.**, R. A. Brain, **J. A. Back**, C. Becker, **M.V. Wright***, V. T Djomte*, W. C Scott*, S. R. Virgil, B. W. Brooks, A. J. Hosmer, and C. K Chambliss. 2016. Effects of pulsed atrazine exposures on autotrophic community structure, biomass, and production in field-based stream mesocosms. *Environmental Toxicology and Chemistry* 35:660-675. DOI: 10.1002/etc.3213
- Voss, K.*, **R. S. King**, and E. H. Bernhardt. 2015. From a line in the sand to a landscape of decisions: A Hierarchical Diversity Decision Framework (HiDDeF) for estimating and communicating biodiversity loss along anthropogenic gradients. *Methods in Ecology and Evolution* 6:795-805. DOI: 10.1111/2041-210X.12379
- Labay, B.J., D. A. Hendrickson, A. E. Cohen, T. H. Bonner, **R. S. King**, L.J. Kleinsasser, G. W. Linam, and K. O. Winemiller. 2015. Can Species Distribution Models Aid Bioassessment when Reference Sites are Lacking? Tests Based on Freshwater Fishes. *Environmental Management* 56:835-846. DOI: 10.1007/s00267-015-0567-0.
- Pease, A. A., **J. M. Taylor***, K. O. Winemiller, and **R. S. King**. 2015. Functional trait diversity and trait-environment relationships in central Texas stream fish assemblages: implications for biomonitoring. *Hydrobiologia* 753:265-283. DOI 10.1007/s10750-015-2235-z. (cover photo, *Etheostoma spectabile*, by RS King).
- Ray, J. W.***, M. Husemann*, **R. S. King**, and P. D. Danley. 2015. Life at the leading edge: genetic impoverishment of the spotted bass, *Micropterus punctulatus*, at its Western edge *Environmental Biology of Fishes* 98:1823-1832. DOI 10.1007/s10641-015-0400-x.
- Dekar, M. P.***, **C. McCauley***, **J. W. Ray***, and **R. S. King**. 2014. Differential survival, competition, and recruitment among cyprinids exposed to chronic heat stress in experimental streams. *Transactions of the American Fisheries Society* 143:1028-1036
- Callahan, M.K., M. C. Rains, J. C. Bellino, C. M. Walker, D. F. Whigham and **R. S. King**. 2014. Trends and controls of surface water temperatures in headwater streams in two common geomorphic settings, Kenai Peninsula. *Journal of the American Water Resources Association* 51:84-98. DOI: 10.1111/jawr.12235
- Taylor, J. M.***, **R.S. King**, A. A. Pease, and K.O. Winemiller. 2014. Nonlinear responses of stream ecosystem structure to low level phosphorus enrichment. *Freshwater Biology* 59:969-984.
- King, R.S.** and M.E. Baker. 2014. Use, misuse, and limitations of Threshold Indicator Taxa Analysis (TITAN) for natural resource management. pp 231-254 In: G. Guntenspergen (editor), *Application of Threshold Concepts in Natural Resource Decision Making*, Springer.
- Richardson, C. J. and **R. S. King**. 2013. A primer on sampling plant communities in wetlands. pp 197-224 In: *Methods in Biogeochemistry of Wetlands*. Soil Science Society of America.
- Back, J.A.***, and **R. S. King**. 2013. Sex and size matter: Ontogenetic patterns of nutrient content of aquatic insects. *Freshwater Science* 32:837-848
- Baker, M.E., and **R. S. King**. 2013. Of TITAN and straw men: an appeal for greater understanding of community data. *Freshwater Science* 32:489-506.
- Lang, D.A.***, **R.S. King**, and J.T. Scott. 2012. Divergent responses of biomass and enzyme activities suggest differential nutrient limitation in stream periphyton. *Freshwater Science* 31:1096-1104.
- Husemann, M.*, **J. W. Ray***, **R. S. King**, **E. Hooser***, and P.D. Danley. 2012. Comparative biogeography reveals differences in population genetic structure of five species of stream fishes. *Biological Journal of the Linnean Society* DOI: 10.1111/j.1095-8312.2012.01973.x

- Bernhardt, E. S., B. D. Lutz, **R. S. King**, A. M. Helton, C. A. Carter, J. P. Fay, D. Campagna, J. Amos. 2012. How many mountains can we mine? Assessing the regional degradation of Central Appalachian rivers by surface coal mining. *Environmental Science & Technology* 46: 8115–8122
- Ray, J.W.***, M. Husemann*, **R. S. King**, and P. D. Danley. 2012. Genetic analysis reveals dispersal of Florida bass haplotypes from reservoirs to rivers in central Texas. *Transactions of the American Fisheries Society* 141:1269–1273
- Stanley, C. E.***, **J. M. Taylor***, and **R. S. King**. 2012. Coupling fish community structure with instream flow and habitat connectivity between two hydrologically extreme years. *Transactions of the American Fisheries Society* 141:1000-1015.
- Taylor, J. M.***, **J. A. Back***, T. W. Valenti*, and **R. S. King**. 2012. Fish-mediated nutrient cycling and benthic microbial processes: Can consumers influence stream nutrient cycling at multiple spatial scales? *Freshwater Science* 31:928-944.
- Studds, C. E., W. V. DeLuca, M. E. Baker, **R. S. King**, and P. P. Marra. 2012. Land cover and rainfall interact to shape waterbird community composition. *PLoS One* 7:e35969, doi:10.1371/journal.pone.0035969.
- King, R. S.**, C. M. Walker, D. F. Whigham, S. Baird, and **J. A. Back***. 2012. Catchment topography and wetland geomorphology drive macroinvertebrate community structure and juvenile salmonid distributions in southcentral Alaska headwater streams. *Freshwater Science* 31:341-364.
- Whigham, D. W., C. M. Walker, **R. S. King**, and S. Baird. 2012. Multiple scales of influence on wetland vegetation associated with headwater streams in Alaska, USA. *Wetlands* 10.1007/s13157-012-0274-z.
- Taylor, J. M.*, **J. A. Back***, and **R. S. King**. 2012. Grazing minnows increase benthic autotrophy and enhance response of periphyton elemental composition to experimental phosphorus additions. *Freshwater Science* doi 10.1899/11-055.1.
- Walker, C. M., **R. S. King**, Whigham, D. W, and S. Baird. 2012. Landscape and wetland influences on headwater stream chemistry in the Kenai Lowlands, Alaska. *Wetlands* 32:301-310.
- Dekar, M.P.***, **R. S. King**, C. M. Walker, D. W. Whigham, and **J. A. Back***. 2012. Allochthonous inputs from grass-dominated wetlands support juvenile salmonids in headwater streams: evidence from stable isotopes of carbon, hydrogen, and nitrogen. *Freshwater Science* 31:121-132
- Shaftel, R. S.***, **R. S. King**, and **J. A. Back***. 2012. Alder cover drives nitrogen availability in Kenai Peninsula headwater streams, Alaska. *Biogeochemistry* 107:135-148
- King, R. S.**, M. E. Baker, P. F. Kazyak, and D. E. Weller. 2011. How novel is too novel? Stream community thresholds at exceptionally low levels of watershed urbanization. *Ecological Applications*. 21:1659-1678, doi:10.1890/10-1357.1. *Faculty of 1000 (recommended)*
- Pease, A. A*, **J. M. Taylor***, **R. S. King**, and K. O. Winemiller. 2011. Multiscale environmental influences on fish community structure in central Texas streams. *Transactions of the American Fisheries Society* 140:1409-1427.
- Valenti, T. W.*, **J.M. Taylor***, **J.A. Back***, **R.S. King**, and B. W. Brooks. 2011. Hydrological and nutrient influences on diel pH in wadeable streams: Implications for ecological risk assessment of ionizable contaminants. *Integrated Environmental Assessment and Management* DOI: 10.1002/ieam.202.
- Shaftel, R. S.***, **R. S. King**, and **J. A. Back***. 2011. Breakdown rates, nutrient quality, and macroinvertebrate colonization of bluejoint grass litter in headwater streams of the Kenai Peninsula, Alaska. *Journal of the North American Benthological Society* 30:386-398.
- King, R. S.** and M. E. Baker. 2011. An alternative view of ecological community thresholds and appropriate analyses for their detection. *Ecological Applications* doi:10.1890/10-0882.1 ^equal contributors

- King, R. S.**[^] and M. E. Baker.[^] 2010. Considerations for analyzing ecological community thresholds in response to anthropogenic environmental gradients. *Journal of the North American Benthological Society* 29:998-1008. [^]Joint first-authors,
- Dodds, W.K., W. H. Clements, K. Gido, B. Hilderbrand, and **R. S. King**. 2010. Thresholds, breakpoints, and nonlinearities in aquatic ecosystems as related to management. *Journal of the North American Benthological Society* 29:988-997.
- Baker, M. E.[^] and **R. S. King**[^]. 2010. A new method for identifying and interpreting biodiversity and ecological community thresholds. *Methods in Ecology and Evolution* 1:25-37. [^]Joint first-authors,
- Whigham, D.F., M. C. Whigham, I. Feller, W. Rodriguez, and **R. S. King**. 2009. Ecological characteristics of *Batis maritima* in Florida and Belize. *Smithsonian Contributions to Marine Sciences* 38: 491-499.
- Fulton, B. A.*, R. A. Brain, S. Usenko, **J. A. Back***, **R. S. King**, and B. W. Brooks. 2009. Influence of N and P concentrations and ratios on *Lemna gibba* growth responses to triclosan in laboratory and stream mesocosm experiments. *Environmental Toxicology and Chemistry* 28:2610-2621
- Scott, J. T.***, **D. A. Lang***, **R. S. King**, and R. D. Doyle. 2009. Nitrogen fixation and phosphatase activity in periphyton growing on nutrient diffusing substrata: Evidence for differential nutrient limitation in stream benthos. *Journal of the North American Benthological Society* 28:57-68.
- DeLuca, W. V., C. Studds, **R. S. King**, P. P. Marra. 2008. Coastal development and the integrity of estuarine waterbird communities: threshold responses and the importance of scale. *Biological Conservation* 141:2669-2678.
- Richardson, C. J., **R. S. King**, S. S. Qian, P. Vaithyanathan, R. G. Qualls, and C. A. Stow. 2008. Response to comment on “Estimating ecological thresholds for phosphorus in the Everglades”. *Environmental Science & Technology* 42: 6772-6773.
- Back, J. A.***, **J. M. Taylor***, **R. S. King**, E. Hintzen*, and K. Fallert*. 2008. Ontogenetic differences in mayfly stoichiometry influence growth rates in response to phosphorus. *Fundamental and Applied Limnology (Archiv fur Hydrobiologie)* 171:233-240.
- Scott, J. T.***, **J. A. Back***, **J. M. Taylor***, and **R. S. King**. 2008. Does nutrient enrichment decouple algal-bacterial production in periphyton? *Journal of the North American Benthological Society* 27:332-334.
- King, R. S.** and C. J. Richardson. 2008. Macroinvertebrate responses along a gradient of long-term nutrient additions and altered hydroperiod. Pp 277-320 In: *The Everglades Experiments: Lessons for Ecosystem Restoration (Ecological Studies 201)*, C. J. Richardson. New York. Springer-Verlag.
- King, R. S.** and C. J. Richardson. 2008. Macroinvertebrate and fish responses to experimental P additions in Everglades sloughs. Pp 477-504 In: *The Everglades Experiments: Lessons for Ecosystem Restoration (Ecological Studies 201)*, C. J. Richardson. New York. Springer-Verlag.
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- Qian, S. S., **R. S. King**, and C. J. Richardson. 2003. Two statistical methods for the detection of environmental thresholds. *Ecological Modelling* 166:87-97.
- King, R. S.** and C. J. Richardson. 2002. Evaluating subsampling approaches and macroinvertebrate taxonomic resolution for wetland bioassessment. *Journal of the North American Benthological Society* 21:150-171.
- King, R. S.**, K. T. Nunnery, and C. J. Richardson. 2000. Macroinvertebrate assemblage response to highway crossings in forested wetlands: implications for biological assessment. *Wetlands Ecology and Management* 8:243-256.
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- King, R. S.** and J. C. Brazner. 1999. Coastal wetland insect communities along a trophic gradient in Green Bay, Lake Michigan. *Wetlands* 19:426-437.
- King, R. S.** and D. A. Wrubleski. 1998. Spatial and diel availability of flying insects as potential duckling food in prairie wetlands. *Wetlands* 18:100-114.

GRANTS AND CONTRACTS

- Smithsonian Institution Conservation Commons, Working Land and Seascapes Amplification & Innovation Grant Program. *Salmon and People Vulnerabilities*. D.F. Whigham (PI), CM Walker (co-PI), and **RS King** (co-PI). \$81,000. 2020-2021.
- United States Geological Survey, John Wesley Powell Center for Analysis and Synthesis. *Analyses of contaminant effects in freshwater systems: synthesizing abiotic and biotic stream datasets for long-term ecological research*. D. K. Jones, Jason R. Rohr, PIs. **R.S. King**, E. S. Bernhardt, et al., co-PIs. Travel support for multiple workshops Colorado Water Science Center, Ft. Collins, CO. 2019-2021.
- City of Austin. *Refinement of environmental tolerance values and identification of diatom community thresholds in response to stressors of concern in the Austin metropolitan area*. **R. S. King**. 2019-2020, \$51,000 (independent contract direct to R.S. King, Titan EcoLogical Analytics).
- Smithsonian Institution. Salmon and People: Downstream effects of headwater streams on food webs that support juvenile salmon. **R.S. King**. \$19,544. 9/1/19-12/31/20.
- Save Our Springs Alliance, *Bioassessment of Hill Country streams prior to approval of new municipal wastewater discharges*. **R.S. King (PI), J.A. Back**. \$34,500, 4/1/19-3/31/20.
- US Fish and Wildlife Service, Alaska State Wildlife Fund. *Downstream effects of headwater stream productivity on juvenile salmonids and stream macroinvertebrate communities in the Kenai Lowlands, Year 2*. **R. S. King**, \$98,700, 2017-2018.
- National Center for Ecological Analysis and Synthesis (NCEAS), Nautilus, and the Gordon and Betty Moore Foundation. *State of Alaska's Salmon and People*. C.M. Walker, **R. S. King**, M. C. Rains, S. Simenstad, and D. F. Whigham (PIs, steering committee members). \$200,000. 2016—2018.
- US Fish and Wildlife Service, Alaska State Wildlife Fund. *Downstream effects of headwater stream productivity on juvenile salmonids and stream macroinvertebrate communities in the Kenai Lowlands*. **R. S. King**, \$47,000, 2016-2017.
- Oklahoma-Arkansas Joint Study Committee. *Oklahoma Scenic Rivers Joint Phosphorus Study*. **R.S. King**. \$600,000. 2014-2016.
- National Science Foundation, *Center for Environmental Implications of Nanomaterials*. C.W. Matson and **R. S. King**. \$400,000. 2014-2019.
- Syngenta, Inc. *Effects of Pulsed Atrazine Exposures on Aquatic Plant Communities Using Field-Based Simulated Streams*. **R. S. King** (PI), B. W. Brooks, and C. K. Chambliss. \$1,150,000. 2014-2015.
- US Fish and Wildlife Service, Alaska State Wildlife Fund. *Genetic variation of populations of juvenile coho salmon and Dolly Varden within and among river basins on the lower Kenai Peninsula*. P.D. Danley and **R. S. King**, \$99,879. 2013-2014.
- City of Austin. *Physiographic classification of catchments for refining biological assessment of Austin streams*. **R.S. King**. \$34,000. 2012-2014.
- Alaska Sustainable Salmon Fund. *Juvenile salmon use of headwater streams as rearing habitat*. C. Walker, **R. S. King**, D. F. Whigham, \$315,000-. 2012-2015.
- Alaska Sustainable Salmon Fund. *Tools for ecosystem-based management of wetlands on the Kenai Lowlands, Alaska: Understanding upland-wetland-stream connection*. C. Walker, **R. S. King**, D. F. Whigham, M. Rains. \$299,824. 2010-2012.
- University Research Committee (URC), Baylor University. *Using stable hydrogen isotopes to identify energy pathways in small streams of the Kenai Peninsula, Alaska*. **R.S. King (PI)**. \$7,500. 2009-2010

- Texas Commission on Environmental Quality (TCEQ). *Development of biological indicators of nutrient enrichment for application to Texas streams, phase II*. **R.S. King (PI)**. \$34,000. 2008-2009.
- U. S. EPA Science to Achieve Results (STAR) Fellowship. **Jason M. Taylor** (mentor, **R.S. King**). \$111,000. 2008-2010.
- U. S. EPA – Regional Wetlands Grant Program via Alaska Department of Fish and Game. *Headwater stream wetland settings and shallow ground water influence: relationships to juvenile salmon habitat on the Kenai Peninsula, Alaska*. C. Walker (PI), **R. S. King (co-PI)**, D. F. Whigham (co-PI), M. Rains (co-PI). \$139,997. 2007-2009.
- Texas Commission on Environmental Quality (TCEQ). *Development of biological indicators of nutrient enrichment for application to Texas streams*. **R.S. King (PI)**. \$46,769. 2007-2008.
- Texas Commission on Environmental Quality (TCEQ) via Texas A&M University. *Refinement and Validation of Habitat Quality Indices (HQI) and Aquatic Life Use (ALU) Indices for Application to Assessment and Monitoring of Texas Surface Waters*. K. Winemiller (PI), **R.S. King (co-PI)**. \$385,500. 2006-2009.
- U. S. EPA – Water Quality Cooperative Agreement Program. *Linking observational and experimental approaches for the development of regional nutrient criteria for Wadeable Streams*. **R. S. King (PI)** and B. W. Brooks (co-PI). \$155,000. 2006-2007.
- U.S. EPA – Science to Achieve Results (STAR) Program via Smithsonian Environmental Research Center (D. E. Weller, SERC PI). *A watershed classification system for improved monitoring and restoration: landscape indicators of watershed impairment*. **R. S. King (PI)**, Baylor subcontract) \$20,116. 2006.
- U. S. EPA – Regional Wetlands Grant Program via Alaska Fish and Game Department. *The functional significance of low-order streams and associated riparian wetlands in supporting fish and invertebrate populations in the Kenai Lowlands, Alaska: Attributing the Kenai Lowlands Wetland Management Tool*. C. Walker (PI), D. F. Whigham (co-PI), **R. S. King (co-PI)**. \$81,630. 2006-2007.
- Baylor University – University Research Committee. *Influence of riparian wetlands on sources and quality of food for juvenile salmon in headwater streams of southeast Alaska*. \$6,000. **R. S. King (PI)**. 2006-2007.
- Altria Group, Inc. – 2004 Environment/Water Conservation. *Baylor Experimental Aquatic Research support grant*. **R. S. King (PI)**, B. W. Brooks, R. D. Doyle. \$35,000. 2005-2006.
- Baylor University – Faculty Research Investment Program. *A flow-injection autoanalysis system to support multidisciplinary aquatic research at Baylor*. \$15,000. **R. S. King (PI)**, B. W. Brooks, R. D. Doyle. 2004-2005.
- U.S. EPA – Science to Achieve Results (STAR) Program via Smithsonian Environmental Research Center (D. F. Whigham, SERC PI). *Ecological and socioeconomic indicators for integrated assessment of aquatic ecosystems of the Atlantic Slope*. **R. S. King (PI)**, Baylor subcontract). \$19,953. 2005.
- Center for Transportation and the Environment Graduate Fellowship. *A functional and biological assessment of wetland ecosystem response to highways: before, during, and after construction*. \$15,000. **R. S. King**. 1999-2000.
- U. S. EPA — National Network for Environmental Management Studies Fellowship. *The effects of sedimentation, turbidity, and vegetation microhabitat structure on availability of emerging insects as duckling food in prairie wetlands*. \$6,000. **R. S. King**. 1995.

**PRESENTATIONS
(FIRST AUTHOR
ONLY)**

- King, R.S., Robbins, C. J., A. D. Yeager, S.C. Cook, R.D. Doyle, J. Maurer, C.M. Walker, J.A. Back, D.F. Whigham. Low-level dissolved organic carbon subsidies drive a trophic upsurge in a boreal stream. Texas Chapter of the American Fisheries Society Meeting, Waco, TX, January 2020.
- King, R.S., M. E. Baker, and E. S. Bernhardt. Translating multimetric indices into tax-specific biodiversity losses. Society for Freshwater Science Annual Meeting, Salt Lake City, UT, June 2019.
- King, R. S. Scenic rivers, nuisance algae, and interstate politics: The Oklahoma-Arkansas Joint Phosphorus Study. Biology Seminar Series, University of North Texas, Denton, TX. March 2019 **(Invited)**
- King, R. S. Scenic rivers, nuisance algae, and interstate politics: The Oklahoma-Arkansas Joint Phosphorus Study. National Numeric Nutrient Criteria Workshop, US EPA, Dallas, TX. September 2018 **(Invited)**
- King, R. S. Too much of a good thing? Identifying phosphorus thresholds for reducing nuisance and harmful algal blooms in freshwater ecosystems. Department of Biology Seminar Series, Baylor University. August 2018. **(Invited)**
- King, R. S. Chronic phosphorus enrichment presses stream ecosystems into a nuisance filamentous algae regime. Society for Freshwater Science Annual Meeting, Detroit, MI, May 2018.
- King, R. S. The Oklahoma-Arkansas Joint Phosphorus Study. Arkansas Water Resources Center Annual Meeting, Fayetteville, AR (University of Arkansas), July 2017 **(Invited)**.
- King, R. S. The Oklahoma-Arkansas Joint Phosphorus Study: A framework for developing numeric nutrient criteria for streams and rivers. U.S. EPA National Nutrient Criteria Webinar, June 2017. **(Invited)**
- King, R. S. Scenic Rivers, Nuisance Algae, and Interstate Politics: The Oklahoma-Arkansas Joint Phosphorus Study. Oklahoma Clean Lakes and Watersheds Association annual meeting, Stillwater, OK (Oklahoma State Univ). April 2017 **(Invited, Plenary Speaker)**
- King, R. S. Oklahoma-Arkansas Scenic Rivers Joint Study: Presentation of the Final Report. Public meeting of the Scenic Rivers Joint Study Committee, Tulsa, OK. December 2016.
- King, R. S. Oklahoma-Arkansas Scenic Rivers Joint Study: Presentation of the Draft Final Report. Public meeting of the Scenic Rivers Joint Study Committee, Tulsa, OK. November 2016.
- King, R. S. Oklahoma-Arkansas Scenic Rivers Joint Study: Project Status Report. Public meeting of the Scenic Rivers Joint Study Committee, Tulsa, OK. September 2016.
- King, R. S. Scenic Rivers, Nuisance Algae, and Interstate Politics: The Oklahoma-Arkansas Joint Phosphorus Study. University Program in Ecology, Duke University, NC. October 2016 **(Invited, selected by students)**.
- King, R. S. Oklahoma-Arkansas Scenic Rivers Joint Study: Project Status Report. Public meeting of the Scenic Rivers Joint Study Committee, Tulsa, OK. August 2016.
- King, R. S. Oklahoma-Arkansas Scenic Rivers Joint Study: Project Status Report. Public meeting of the Scenic Rivers Joint Study Committee, Tulsa, OK. June 2016.
- King, R. S., M. Scoggins, and A. Porras. Stream biodiversity is disproportionately lost to urbanization when flow permanence declines: evidence from southwestern North America. Society for Freshwater Science Annual Meeting, Sacramento, CA. May 2016
- King, R. S. Oklahoma-Arkansas Scenic Rivers Joint Study: Project Status Report. Public meeting of the Scenic Rivers Joint Study Committee, Langley, OK. April 2016.

- King, R. S. Oklahoma-Arkansas Scenic Rivers Joint Study: Project Status Report. Public meeting of the Scenic Rivers Joint Study Committee, Langley, OK. October 2015.
- King, R. S. et al. Dramatic ecosystem response to low-level carbon additions in a boreal headwater stream. Conference on Biological Stoichiometry, Trent Univ., Peterborough, Ontario, Canada. June 2015.
- King, R. S. Oklahoma-Arkansas Scenic Rivers Joint Study: Project Status Report. Public meeting of the Scenic Rivers Joint Study Committee, Tahlequah, OK. April 2015.
- King, R. S. P flows downstream. Duke University Wetland Center 25th Anniversary Career Symposium, Durham, NC. February 2015 **(Invited)**
- King, R. S. P flows downstream: Decades of legal battles between Oklahoma and Arkansas culminate in Baylor-led study. Environmental Health Sciences Speaker Series, Baylor University. January 2015 **(Invited)**.
- King, R. S. Scenic Rivers Joint Phosphorus Study: An overview. Oklahoma Scenic Rivers Commission Board of Directors public meeting, Tahlequah, OK. December 2014.
- King, R. S. Too much where it shouldn't be, not enough left for the future: Phosphorus, food, water, and you. Beta Beta Beta Biology Honor Society, Baylor University. November 2014 **(Invited)**.
- King, R. S., R.A. Brain, J.A. Back, V. Toteu Djomte*, W. C. Scott*, S. R. Virgil*, M. V. Wright*, B. W. Brooks, C. Becker, A. J. Hosmer, and C. K. Chambliss. Effects of pulsed atrazine exposures on autotrophic community structure, biomass, and production in field-based stream mesocosms. SETAC North America Meeting, Vancouver, Canada. November 2014
- King, R. S. Oklahoma-Arkansas Scenic Rivers Joint Study: Project Status Report. Public meeting of the Scenic Rivers Joint Study Committee, Tulsa, OK. October 2014.
- King, R. S. Oklahoma-Arkansas Scenic Rivers Joint Study: An overview. Illinois River Watershed Symposium, West Siloam Springs, Arkansas. October 2014 **(Invited)**
- King, R. S., C. M. Walker, A. D. Yeager*, C. J. Robbins*, S. C. Cook*, J. R. Maurer, R. D. Doyle, and D. F. Whigham. From microbes to salmonids: Dramatic ecosystem response to low-level dissolved organic carbon additions in an Alaskan headwater stream. Joint Aquatic Sciences Meeting (JASM), Portland, OR, May 2014.
- King, R. S. A framework for developing regional nutrient criteria for Wadeable streams. American Fisheries Society National Meeting, Little Rock Arkansas, September 2013.
- King, R. S. A framework for developing regional nutrient criteria for Wadeable streams. North Carolina Forum on Nutrient Over-enrichment, Raleigh, NC. May 2012. **Invited.**
- King, R. S. and M. E. Baker. Multiple lines of evidence for nonlinear community responses to novel environmental gradients. Society for Freshwater Science meeting, Louisville, KY. May 2012
- King, R. S. Fishes of central Texas streams: diversity, distribution, and their responses to drought and pollution. 2012 H.O.T. H2O Lecture Series, hosted by Heart of Texas Master Naturalists, Lake Waco Wetland Center, April 2012. **Invited.**
- King, R. S. Ecosystem thresholds in response to low level phosphorus enrichment in subtropical limestone streams, Texas. Jackson School of Geosciences Seminar Series, U. of Texas at Austin, April 2011. **Invited.**
- King, R. S. Synchronous changes in periphyton autotrophy, carbon:nutrient ratios, and species composition reveal stream ecosystem thresholds at low levels of

- phosphorus enrichment. Smithsonian Environmental Research Center, Edgewater, MD. December 2010 **(Invited)**.
- King, R. S. An alternative view of ecological community thresholds and appropriate analyses for their detection. UNC Institute for the Environment, Chapel Hill, NC. November 2010 **(Invited)**.
- King, R. S. Wetlands are strongly linked to headwater stream ecosystems in the Kenai Lowlands, Alaska. Duke University Wetland Center Speaker Series, Durham, NC. November 2010. **(Invited)**
- King, R. S. Effects of urbanization on stream communities. Kachemak Bay Research Reserve seminar series, Homer, AK. October 2010. **(Invited)**
- King, R. S. Linking observational and experimental approaches for the development of regional nutrient criteria for wadeable streams. Texas Parks and Wildlife Regional Directors meeting, Buda, TX. June 2010. **(Invited)**
- King, R. S, and M. E. Baker. Considerations for analyzing ecological community thresholds in response to anthropogenic environmental gradients. Joint meeting of ASLO/NABS, Santa Fe, NM. June 2010.
- King, R. S. Linking observational and experimental approaches for the development of regional nutrient criteria for wadeable streams. Regional Technical Advisory Group (RTAG) for nutrient criteria, EPA Region 6, Dallas, TX. February 2010. **(Invited)**
- King, R. S. Linking observational and experimental approaches for the development of regional nutrient criteria for wadeable streams. Webcast and conference call presentation to regional nutrient coordinators from all EPA regions and headquarters. October 2009. **(Invited)**
- King, R. S. Wetland linkages to juvenile salmon habitat in headwater streams of the Kenai lowlands, Alaska. Dept of Biology Seminar Series, Baylor University. September 2009. **(Invited)**
- King, R. S., and M. E. Baker. Threshold Indicator Taxa Analysis (TITAN): A simple method for identifying and interpreting ecological community thresholds. 57th Annual Meeting of the North American Benthological Society, Grand Rapids, MI. May 2009.
- King, R. S. Watershed urbanization and ecological community thresholds in streams. Department of Wildlife and Fisheries Seminar, Texas A & M University, College Station, TX. November 2008 **(Invited)**.
- King, R. S. Attack of the clones! Urbanization thresholds and *Phragmites* invasion of North American tidal wetlands. Ecological Thresholds Workshop, USGS/NPS, Duluth, MN. April 2008. **(Invited)**
- King, R. S. Additive indicator species on environmental gradients: a new technique for estimating ecological thresholds. Ecological Thresholds Workshop, USGS/NPS, Duluth, MN. April 2008. **(Invited)**
- King, R. S., J. A. Back, C. M. Walker, S. Baird, and D. F. Whigham. Wetland linkages to juvenile salmonids and macroinvertebrate communities in headwater streams of the Kenai Peninsula, Alaska. Department of Biology, Southwestern University, Georgetown, TX. November 2007. **(Invited)**
- King, R. S. Nutrient and habitat criteria in central Texas streams: new perspectives. Subhumid Agricultural Plains TALU workgroup meeting, USGS, Austin, TX. November 2007. **(Invited)**
- King, R. S., J. A. Back, C. M. Walker, S. Baird, and D. F. Whigham. Wetland geomorphic linkages to juvenile salmonids and macroinvertebrate communities in headwater streams of the Kenai lowlands, Alaska. 55th Annual Meeting of the North American Benthological Society, Columbia, SC. June 2007.
- King, R. S. Watershed urbanization, nutrient enrichment, and ecological thresholds in streams. Special symposium on urbanization and water resources. Joint meeting of the Texas River and Reservoir Management Society (TRRMS) and Society of

- Environmental Toxicology and Chemistry (SETAC), SF Austin University, acogdoches, TX. May 2007. **(Invited)**
- King, R. S. Urbanization, nutrients, and ecological thresholds in streams. Biology Seminar, University of North Texas, Denton, TX. April 2007. **(Invited)**
- King, R. S. Nutrient criteria development in central Texas streams. U. S. EPA Region 6, Regional Technical Advisory Group (RTAG), Dallas, Texas. February 2007. **(Invited)**
- King, R. S. Aquatic research at Baylor: nutrient criteria, landscapes, and ecological thresholds. Baylor–USGS roundtable meeting, U. S. Geological Service, Austin, TX. January 2007.
- King, R. S. Urbanization and ecological thresholds in freshwater and estuarine ecosystems. Water Initiative Symposium (campus wide), Utah State University, Logan, UT, November 2006 **(Invited)**.
- King, R. S. and K. O. Winemiller. Developing and refining habitat quality and fish community indices for assessment of surface waters in Texas. Subhumid Agricultural Plains TALU workgroup meeting, USGS, Austin, TX. November 2006. **(Invited)**
- King, R. S. Linking observational and experimental approaches for the development of numerical nutrient criteria in Wadeable streams. TPWD nutrient criteria workgroup, Baylor. October 2006.
- King, R. S. Estimating ecological thresholds for developing tiered aquatic life use (TALU) designations for Wadeable streams. Subhumid Agricultural Plains TALU workgroup meeting, USGS, Austin, TX. October 2005 **(Invited)**.
- King, R. S., M. E. Baker, D. F. Whigham, et al. Watershed urbanization and ecological thresholds in streams: influences of physiography, watershed size, and spatial arrangement of impervious cover. INTECOL–ESA meeting, Montreal, Canada, August 2005
- King, R. S., D. F. Whigham, W. V. DeLuca, et al. Linking watershed land cover to ecological indicators in streams and subestuaries of Chesapeake Bay. 53th Annual Meeting of the North American Benthological Society, New Orleans, LA. May 2005.
- King, R. S., M. E. Baker, D. F. Whigham, et al. Watershed urbanization and biological thresholds in streams: influences of physiography, watershed size and spatial arrangement of impervious cover. Texas River and Reservoir Management Society Meeting, Waco, TX. May 2005.
- King, R. S. Estimating ecological thresholds for the development of numerical nutrient criteria. Special Symposium and Panel Discussion on Nutrient Criteria, South Central Annual Meeting of the Society of Environmental Toxicology and Chemistry, Balcones Springs, TX. May 2005. **(Invited)**
- King, R. S., J. R. Beaman, D. F. Whigham et al. Urbanization of estuarine watersheds is strongly linked to elevated PCBs in white perch. 4th All EaGLes Meeting, U.S. EPA STAR Program, Duluth, MN. September 2004.
- King, R. S., M. E. Baker, D. F. Whigham, et al. Land-use thresholds and stream macroinvertebrate assemblages: influences of physiography, watershed size, and spatial arrangement. 52nd Annual Meeting of the North American Benthological Society, Vancouver, BC, Canada, June 2004.
- King, R. S., D. F. Whigham, et al. Linking watershed land use to ecological indicators in streams and subestuaries of Chesapeake Bay. Versar, Inc., Columbia, Maryland, April 2004 **(Invited)**.
- King, R. S., D. F. Whigham et al. Linking watershed land use to ecological indicators in streams and subestuaries of Chesapeake Bay. Maryland Stream Monitoring Roundtable Meeting, Baltimore, Maryland. February 2004 **(Invited)**.

- King, R. S. Integrating bioassessment and ecological risk assessment for the development of numerical nutrient criteria for surface waters. United States Environmental Protection Agency, National Risk Management Research Laboratory, Ada, OK, February 2004 **(Invited)**.
- King, R. S. Phosphorus enrichment in the Everglades: Linkages among vegetation pattern, resource limitation, and aquatic consumers. Department of Biology, Baylor University, Waco, TX, January 2004 **(Invited)**.
- King, R. S., D. F. Whigham et al. A watershed approach to linking watershed land use to ecological indicators in streams and estuaries. 3rd All EaGLes Meeting, U.S. EPA STAR Program, Bodega Bay, California, December 2003.
- King, R. S., D. F. Whigham et al. Linking watershed land use to ecological indicators in streams and subestuaries of Chesapeake Bay. 6th Annual Baltimore Ecosystem Study Meeting (Baltimore LTER), Baltimore, Maryland, October 2003.
- King, R. S., M. E. Baker, D. F. Whigham et al. Spatial considerations for linking watershed landcover to ecological indicators in streams. Special session on ecological indicators, International Association for Landscape Ecology World Congress, Darwin, Australia, July 2003 **(Invited)**.
- King, R. S., A. H. Hines, S. Grap, and D. F. Craige. Correlates of bivalves and blue crabs in subestuaries of Chesapeake Bay, USA. Annual Meeting of The Crustacean Society, Williamsburg, VA, June 2003.
- King, R. S., M. E. Baker, D. F. Whigham, et al. Influence of spatial factors on linkages among watershed landcover, environmental conditions, and macroinvertebrate assemblages in coastal-plain streams. 51st Annual Meeting of the North American Benthological Society, Athens, GA, May 2003.
- King, R. S., and C. J. Richardson. Detecting changepoints in biological attributes: an approach to developing numerical water-quality criteria. Special session on diagnosing causes of impairment in aquatic ecosystems, 50th Annual Meeting of the North American Benthological Society, Pittsburgh, PA, May 2002
- King, R. S. Dimensions of invertebrate assemblage organization across a phosphorus-limited Everglades landscape. Smithsonian Environmental Research Center's Winter Seminar Series, Edgewater, MD, January 2002 **(Invited)**.
- King, R. S., and C. J. Richardson. Evaluating subsampling approaches and macroinvertebrate taxonomic resolution for wetland bioassessment. 49th Annual Meeting of the North American Benthological Society, LaCrosse, WI. June 2001.
- King, R. S., C. J. Richardson, D. L. Urban, and E. A. Romanowicz. Spatial dependency of vegetation-environment relationships in an anthropogenically influenced wetland landscape. 7th International Symposium of the Biogeochemistry of Wetlands, Durham, NC. June 2001.
- King, R. S., and C. J. Richardson. Evaluating subsampling approaches and macroinvertebrate taxonomic resolution for wetland bioassessment. Assessing the Health of Wetland Life: Policy, Science, and Practice, Orlando, FL. May 2001.
- King, R. S., and C. J. Richardson. Macroinvertebrate and fish responses to experimental P additions in Everglades sloughs. Special session on Everglades restoration, Millennium Wetland Event, INTECOL's 6th Wetland Meeting, Quebec, Quebec, Canada, August 2000.
- King, R. S., and C. J. Richardson. Influence of experimental P additions on invertebrate assemblages in sloughs of the northern Everglades. Society of Wetland Scientists 20th Annual Meeting, Norfolk, VA. June 1999.
- King, R. S., and C. J. Richardson. Invertebrate assemblage response to experimental phosphorus dosing in the Everglades. 47th Annual Meeting of the North American Benthological Society, Duluth, MN. May 1999.
- King, R. S., K. T. Nunnery, and C. J. Richardson. Macroinvertebrate community response to highway crossings in forested wetlands: implications for biological

- assessment. Connections '98: Water Quality, Wetlands, and Transportation, New Bern, NC. September 1998.
- King, R. S., K. T. Nunnery, and C. J. Richardson. A comparison of methods and metrics for assessment of wetland macroinvertebrate community response to highways. 45th Annual Meeting of the North American Benthological Society, San Marcos, TX. June 1997.
- King, R. S., and D. A. Wrubleski. Diel and spatial variability in the availability of flying insects as duckling food in prairie pothole wetlands. 44th Annual Meeting of the North American Benthological Society, Kalispell, MT, USA. June 1996.
- King, R. S., and D. A. Wrubleski. Diel and spatial variability in the availability of flying insects as duckling food in prairie pothole wetlands. U. S. Environmental Protection Agency, Duluth, MN, USA. May 1996.

**STUDENTS/POSTDOCS
MENTORED**

Current advisees:

- Daniel Hiatt. Ph. D. candidate, Biology. Fall 2010 – (ABD; employer: National Park Service)
- Brittany Perrotta, Ph.D. candidate, Biology. Fall 2015 –
- Swastika Raut, Ph.D. candidate, Biology. Fall 2015 - . (co-advised with Dr. Sanghoon Kang)
- Zach Moran, Ph.D. student, TIEES. Fall 2019 - .
- Bianca Possamai, Postdoctoral Research Associate, Biology. June 2020-May 2023.

Past advisees:

Graduate students and postdocs

- Stephen C. Cook. 2019. Ph.D., Biology. Spatiotemporal Examination of Benthic Algal and Macroinvertebrate Assemblage Structure Across a Gradient of Phosphorus Enrichment. Current: Postdoctoral associate, University of Oklahoma.
- Moncie V. Wright. 2018. Ph.D., Biology. Interactions Between Titanium Dioxide Nanoparticle Exposure and Grazing Organisms on Periphyton Biomass and Community Composition. Employer: Senior Environmental Consultant, CMD Smith, Inc., Austin, TX.
- Caleb J. Robbins. 2018. Ph.D. Biology. From Landscapes to Streams: The Pattern and Function of Labile Dissolved Organic Carbon. Current Employer: University of Kansas, Postdoctoral Research Associate, NSF Macrosystems Funding under Dr. James Thorp,
- Lauren M. Housley. 2016. M.S., Environmental Biology. Biological Trait Responses of River Macroinvertebrate Assemblages to a Phosphorus Gradient. Employer: North Carolina Department of Environmental Quality, Water Quality Biologist.
- Jeffrey A. Back. 2013. Ph.D., Biology. Effects of stream nutrient enrichment on aquatic insect stoichiometry: importance of life-history traits, sex, and ontogeny. Employer: Center for Reservoir & Aquatic Systems Research, Baylor University, Instrument Specialist.
- Leanne Baker, Ph.D. (University of New Brunswick, 2012). Postdoctoral Research Associate (co-advised with Cole Matson). 2013-14. Current: Univ. of Waterloo.
- Jesse Ray. Ph. D. student, Ecological, Earth, and Environmental Sciences (EEES). 2010-2012. Withdrew to accept permanent position with US Army Corps of Engineers, conservation biologist, Los Angeles, CA.
- Matthew Dekar, Ph. D. (Univ. of Arkansas, 2010). Postdoctoral Research Fellow, Baylor University. June 2010 – May 2012. Employer: U.S. Fish and Wildlife Service, Atlanta, GA. Senior Fisheries Biologist, permanent.
- Pamela Kostka. 2012. M. S., Biology. Grass litter breakdown in Alaskan headwater streams. NEPA specialist, USACOE, Los Angeles, CA.

Jason M. Taylor. 2011. Ph.D. Biology, Baylor. EPA-STAR FELLOW. Incorporating trophic interactions into biological measures of nutrient enrichment in support of numerical thresholds for aquatic life use attainment in wadeable streams. Penultimate employer: Cornell University, Ithaca, NY (Postdoctoral Research Associate). Current employer: USDA National Sedimentation Laboratory, Senior Ecologist (Permanent, Federal).

Rebecca S. Shaftel. 2010. M.S. Biology, Baylor. Alder cover drives nitrogen availability and decomposition of grass litter in salmon-rearing headwater streams, Kenai Peninsula, Alaska. 2010. Employer: Research Associate, Alaska Natural Heritage Program at U. Alaska - Anchorage.

Charles E. Stanley. 2009. M. S. Biology, Baylor. Coupling changes in physical habitat and fish community structure between two interannual extremes in stream discharge. 2009. Employer: Klamath National Forest, California (Field biologist).

David A. Lang. 2007. M. S., Biology, Baylor. Effects of nutrient enrichment on alkaline phosphatase activity and nitrogen fixation potential in stream periphyton. 2007. Employer: U. of Houston, (Lecturer, Dept of Biology).

Undergraduates:

Jemima McCluskey, BS Biology student, honors program.
 Sam Watson, BS University Scholars, research
 Jacob Hamilton, BS EnvSci student, work-study and research.
 Katie Sorenson, BS Biology, work-study.
 Katherine Hooker, BS Biology student (summer undergrad research fellow, 3v90, & work study). 2012-14.
 Cagney McCauley (Biology, B.S. major, Baylor). Summer undergraduate research fellow. 2011.
 Cari Domoney (Biology, B.S. major, Baylor). 2010.
 Katie Zychowski (Biology B.S. major, Baylor). 2009.
 Emily Hooser (Biology B. S. major, Baylor). Summer undergraduate research fellow. 2008 (co-mentored with Dr. Patrick Danley).
 Lindsey Jackson (Biology B.S. major, Baylor). 2008.
 Success Sumpaongoen, B. S., Biology, Baylor. Summer undergraduate research fellow. 2007
 Adolfo Flores, B. S., Biology, Baylor. Summer undergraduate research fellow. 2007
 Jorge Raudales, B. S., Biology, Baylor. 2007
 Nick Harrel, B. S., Biology, Baylor 2005.

Technicians:

Stephen Elser, 2014-16. Current: PhD program, Arizona State University
 Morgan Bettcher, 2014-16. Current: Georgia Dept of Environment
 Katherine Hooker, 2014-15. Current: PhD program, University of Oklahoma
 Byron Griffin, 2014. Current: Science Teacher, Waco ISD Montessori Magnet School
 Justin Grimm, 2006-08 Current: Field Biologist, Brazos River Authority

Graduate and honors thesis committees, current:

Ben Castellon, PhD candidate, BMS
 Aaron Kirkpatrick, PhD student, Biology
 Tori Neises, PhD candidate, Biology
 Rebel Sanders, Ph.D. candidate, Biology
 Jen Godfrey, Ph.D. candidate, Biology
 Michael Davis, Ph.D. student, Biology
 Chase Smith, Ph.D. student, Biology
 Felicia Osburn, Ph.D. student, Biology
 Marco Franco, Ph.D. student, Env. Science

Wang Zhao, Ph.D. student, Geology
Bekah Burket, Ph.D. student, Env. Science
Sunshyne Hendrix, Ph.D. student, Biology
Patrick Charapata, Ph.D. student, Biology
Chi-yen Tseng, Ph.D. student, Env. Science
Aadil Sheikh, Ph.D. student, Biology
Jasmine Stovall, Ph.D. student, Biology
Ashlynn Boedecker, Ph.D. student, Biology

Graduate and honors thesis committees, past:

Casan Scott, PhD, Env. Science, 2019
Erick Lebrun, Ph.D, Biology, 2018
Cansu Cetin, Ph.D. student, Biology
William Matthaeus, M. S., Biology, 2016
Kristofor Voss, Ph.D. Duke University, 2015.
Baoqing Ding, PhD. Biology, Baylor. 2014
Alyse Yeager, M.S. Biology, Baylor 2014
Mo Jia, PhD, Biology, Baylor, 2014.
Martin Husemann, PhD., Biology, Baylor. 2013.
Kraig Martin, PhD, Philosophy, Baylor, 2013.
Kyrie Cameron, B.S. Biology (Honors), Baylor. 2012.
Nick Green, Ph. D. Biology, 2012.
Mary Sides, Ph. D. Biology, Baylor
Sara Sipahioglu, Ph.D. Geology, Baylor.
Jason Berninger, Ph.D., BMS, Baylor. 2011.
Theodore Valenti, Ph. D. EEES, Baylor. 2011.
Barry Fulton, M. S., Environmental Science. 2009.
Jon Thomas, M. S. Biology, Baylor. 2009
Michelle Nemecc. Ph.D. Biology, Baylor. 2008.
Madelon McCall, Ed.D., Baylor. 2008.
Emily Hintzen, M. S. Environmental Studies, Baylor. 2007.
Jacob Stanley. Ph. D., Biology, Baylor. 2007.
Thad Scott. Ph. D., Biology, Baylor. 2006.
Santos Garcia, B. S. Biology (Honors), Baylor. 2006.
Hui Huang, M. S., Biology, Baylor. 2006.
Laura Gallant. M.A., Biology, Baylor. 2006.
Samir Moussa. M.S., Biology, Baylor. 2005.
Robin Bare. M.A., Biology, Baylor. 2005.
Dayo Fadelu. B. S., Biology (Honors), Baylor. 2005