

## STUART C. WILLIS

Harte Research Institute, TAMU-CC  
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### Education and Training

Post-doc	Harte Research Institute, Texas A&M University-Corpus Christi
2014- Present	Emphasis: Marine Population Genomics Advisor: John Gold
Ph.D. Biology 2011	University of Nebraska-Lincoln Emphasis: Ecology, Evolution, and Behavior Advisor: Guillermo Ortí
M.S. Zoology 2006	University of Manitoba Emphasis: Ecology and Systematics Advisor: Nathan Lovejoy
B.S. Wildlife & Fisheries Science 2003	Texas A&M University <i>Summa Cum Laude</i> and Foundation Honors Advisor: Kirk Winemiller

### Peer-reviewed Publications (14 journal articles)

- Gold, J.R., S. C. Willis, M. A. Renshaw, A. Buentello, H. J. Walker, Jr., J.B. Puritz, C. M. Hollenbeck, & G. Voelker. In Press. Phylogenetic relationships of tropical eastern Pacific snappers (Lutjanidae) inferred from mitochondrial DNA sequences. *Systematics and Biodiversity*.
- Willis, S.C., K.O. Winemiller, C.G. Montaña, J. Macrander, P. Reiss, I.P. Farias, & G. Ortí. In Press. Population genetics of the speckled peacock bass (*Cichla temensis*), South America's most important inland sport fishery. *Conservation Genetics*.
- López-Fernández, H., J. Arbour, S.C. Willis, C. Watkins, R.L. Honeycutt, & K.O. Winemiller. 2014. Morphology and efficiency of a specialized foraging behaviour, substrate sifting, in Neotropical cichlid fishes. *PLOS One* 9 (3).
- Willis, S.C., I.P. Farias, & G. Ortí. 2014. Testing mitochondrial capture and deep coalescence in Amazonian cichlid fishes (Cichlidae: *Cichla*). *Evolution* 68 (1): 256-268.
- Willis, S.C., I.P. Farias, & G. Ortí. 2013. Multi-locus estimates of the species tree for the Amazonian peacock basses (Cichlidae: *Cichla*): Reduced variation does not prevent the inference of species-level phylogenies. *Molecular Phylogenetics and Evolution* 69 (3): 479-490.
- Betancur-R. R, Broughton RE, Wiley EO, Carpenter K, López JA, Li C, Holcroft NI, Arcila D, Sanciangco M, Cureton II JC, Zhang F, Buser T, Campbell MA, Ballesteros JA, Roa-Varon A, Willis SC, Borden WC, Rowley T, Reneau PC, Hough DJ, Lu G, Grande T, Arratia G, Ortí G. 2013. The Tree of Life and a New Classification of Bony Fishes. *PLOS Currents Tree of Life*.
- Willis, S.C., J. Macrander, I.P. Farias, & G. Ortí. 2012(b). Simultaneous delimitation of species and quantification of interspecific hybridization in Amazonian peacock cichlids (genus *Cichla*) using multi-locus data. *BMC Evolutionary Biology* 12:96.
- Willis, S.C., H. López-Fernández, I.P. Farias, & G. Ortí. 2012(a). Species-level phylogeny of 'Satan's perches' based on discordant gene trees (Teleostei: Cichlidae: *Satanoperca* Günther 1862). *Molecular Phylogenetics and Evolution* 63(3): 798-808.
- Macrander, J., S.C. Willis, S. Gibson, G. Ortí, & T. Hrbek. 2012. Polymorphic microsatellite loci for the Amazonian Peacock Basses, *Cichla orinocensis* and *C. temensis*, and cross-species amplification in other *Cichla* species. *Molecular Ecology Resources*.
- Carvalho-Costa, L.F., N.M. Piorski, S.C. Willis, P.M. Galetti Jr., & G. Ortí. 2011. Molecular systematics of the Neotropical shovelnose catfish genus *Pseudoplatystoma* Bleeker 1862 based on nuclear and mtDNA markers. *Mol. Phylogenet. Evol.* 59(1): 177-94.
- Willis, S.C., M. Nunes, C. Montaña, I.P. Farias, G. Ortí, & N. Lovejoy. 2010. The Casiquiare River acts as a dispersal corridor between the Amazonas and Orinoco River basins: Biogeographic analysis of the genus *Cichla*. *Molecular Ecology* 19: 1014-1030.

- Willis, S.C., M. Nunes, C. Montaña, I.P. Farias, & N. Lovejoy. 2007. Systematics, biogeography, and evolution of the Neotropical peacock basses *Cichla* (Perciformes: Cichlidae). *Mol. Phylogenet. Evol.* 44: 291-307.
- Renno, J.-F., N. Hubert, J.P. Torrico, F. Duponchelle, J. Nunez Rodriguez, C. Garcia Davila, S.C. Willis, & E. Desmarais. 2006. Phylogeography of *Cichla* (Cichlidae) in the upper Madeira basin (Bolivian Amazon). *Mol. Phylogenet. Evol.* 41: 503-510.
- Willis, S.C., K.O. Winemiller, & H. López-Fernández. 2005. Habitat structural complexity and morphological diversity of fish assemblages in a Neotropical floodplain river. *Oecologia* 142(2): 284-295.

### Edited Book Chapters

- Winemiller, K.O. & S.C. Willis. The Vaupes Arch and Casiquiare Canal: Barriers and Passages, Ch. 14 in *Historical Biogeography of Neotropical Freshwater Fishes*, edited by James S. Albert and Roberto E. Reis. University of California Press. 2011.
- Lovejoy, N.R., S.C. Willis & J.S. Albert. Molecular signatures of Neogene biogeographical events in the Amazon fish fauna, Ch. 25 in *Amazonia: Landscape and Species Evolution*, 1st edition. Edited by C. Hoorn and F.P. Wesselingh. Blackwell Publishing. 2010.

### Popular Articles

- Willis, S.C. Fish collections in the Upper Orinoco and Casiquiare of Venezuela: observations on biogeography and ecology. *Buntbarsche Bulletin*, magazine of the American Cichlid Association. Three part series in July, September, and November issues. 2006.

### Fellowships and Grants

- 2009 Doctoral Dissertation Enhancement Grant, National Science Foundation-OISE (\$18,744)
- 2009 UNL School of Biological Sciences Special Funds Research / Travel Grants (\$1,500 / \$500)
- 2009 Milton Mohr Award for Biotechnology, UNL (\$1000)
- 2008 UNL School of Biological Sciences Special Funds Research / Travel Grants (\$1,500 / \$500)
- 2008 UNL Graduate Studies Graduate Fellowship (\$2000)
- 2007 American Society of Ichthyologists and Herpetologists Raney Award (\$1000)
- 2007 UNL School of Biological Sciences Special Funds Research / Travel Grants (\$1,500 / \$500)
- 2006 Sigma Xi Grants-in-Aid of Research (\$500)
- 2006 Society of Systematic Biologists Award for Graduate Student Research (\$1,500)
- 2006 UNL Initiative in Ecology & Evolutionary Analysis Student Research / Travel Grants (\$300 / \$250)
- 2006 UNL School of Biological Sciences Special Funds Research / Travel Grants (\$1,000 / \$500)
- 2005 Life Sciences Interdisciplinary Graduate Recruitment Fellowship, U. Nebraska-Lincoln (\$20,000)
- 2004 Graduate Research Fellowship, National Science Foundation (\$121,500)
- 2003 University of Manitoba Graduate Fellowship (\$12,000 Canadian)

### Awards

- 2007 Best Travelogue Article, Buntebarsche Bulletin, American Cichlid Association
- 2006 UNL School of Biological Sciences Annual Poster Competition Best Student Poster
- 2002 Texas A&M University College of Agriculture and Life Sciences Senior Merit Award
- 2002 Texas A&M University Department of Wildlife and Fisheries Sciences Outstanding Senior
- 1999 National Merit Scholar

### Employment

#### Post-doctoral Research Associate

Harte Research Institute, Texas A&M University-Corpus Christi  
2014-present Marine Genomics Laboratory (J. Gold/D. Portnoy, PIs)

#### DNA Analyst

Harris County Institute of Forensic Sciences  
2012-2014 Forensic Genetics Laboratory

#### Graduate Research Assistant

School of Biological Sciences, University of Nebraska-Lincoln  
2005-2011 Laboratory of Guillermo Orti

### Teaching Assistant

School of Biological Sciences, University of Nebraska-Lincoln  
2010-2011 Course: Introductory Biology Laboratory (BIOS 101L)

### Senior Research Assistant

Dept. Biological Sciences, George Washington University  
2009-2010 Laboratory of Guillermo Orti

### Graduate Research Assistant

Department of Zoology, University of Manitoba  
2003-2005 Laboratory of Nathan Lovejoy

### Research Technician

Dept. Wildlife & Fisheries Sciences, Texas A&M University  
2001-2003 Laboratory of Kirk Winemiller

### Special Education

- 2009 Workshop "Estimating Species Trees," U. Michigan-Ann Arbor
- 2007 Workshop in Applied Phylogenetics, Bodega Bay Marine Lab
- 2005 Workshop on POY (dynamic alignment/phylogeny program), American Museum of Natural History
- 2004 Summer Institute in Statistical Genetics, North Carolina State University

### Presentations

- Willis, S.C., C.M. Hollenbeck, J.B. Puritz, D.S. Portnoy, and J.R. Gold. 2015. Identifying recruitment patterns among silk snapper (*Lutjanus vivanus*) off the west coast of Puerto Rico: challenges and solutions with using ddRADseq-based single nucleotide polymorphisms. Oral Presentation at Joint Meeting of Ichthyologists and Herpetologists, Reno, NV. July.
- Willis, S.C., N. Cummings, J. Puritz, M. Figuerola, D. Portnoy, & J. Gold. 2014. Sources, Sinks, SNPs, and Snappers: Evaluating Puerto Rico MPAs for deep-water snappers. Poster Presentation at Evolution 2014, Raleigh, NC. June.
- Willis, S.C., I.P. Farias, & G. Orti. 2011. Species tree of my favorite taxon: are my data variable enough? Species-level phylogeny of Neotropical peacock cichlids. Oral Presentation at Evolution 2011, Norman, OK. June.
- Willis, S.C., I.P. Farias, & G. Orti. 2011. Discriminating ancient hybridization and ancestral polymorphism using coalescent methods in Amazonian peacock cichlids. Poster Presentation at Evolution 2011, Norman, OK. June.
- Willis, S.C., J. Macrander, I.P. Farias, & G. Orti. 2010. Hybrid species or inaccurate taxonomy in Amazonian peacock cichlids? Oral Presentation at Evolution 2010, Portland, OR, June.
- Willis, S.C., Farias, I.P., & G. Orti. 2009. Molecules in a Neotropical Vertebrate Hybrid Zone: Analysis of the Polyphyletic Butterfly Peacock Cichlid using 12 microsatellites and 24 nuclear loci. Poster Presentation at the Joint Meeting of Ichthyologists and Herpetologists, Portland, OR, July.
- Willis, S.C., Farias, I.P., & G. Orti. 2009. Testing species boundaries and phylogeny in Satan's fishes (Cichlidae) using unlinked gene genealogies. Oral Presentation at the Joint Meeting of Ichthyologists and Herpetologists, Portland, OR, July.
- Willis, S.C., Farias, I.P., & G. Orti. 2009. Testing species boundaries and phylogeny in Satan's fishes (Cichlidae) using unlinked gene genealogies. Oral Presentation at the Midwest Ecology and Evolution Conference, Lincoln, NE.
- Willis, S.C., Montaña, C.G., Farias, I.P., Orti, G. & N.R. Lovejoy. 2008. Molecules in a Neotropical vertebrate hybrid zone: preliminary results from the polyphyletic butterfly peacock bass. Poster at Evolution 2008, Minneapolis, MN.
- Willis, S.C., Nunes, M., Montaña, C.G., Farias, I.P., & N.R. Lovejoy. 2007. Molecular systematics and inferring historical biogeography of Neotropical cichlids. Oral presentation at the Joint Meeting of Ichthyologists and Herpetologists, New Orleans, LA.
- Willis, S.C., Nunes, M., Montaña, C.G., Farias, I.P., & N.R. Lovejoy. 2007. Are historical events testable? Testing historical events using genetic data from Neotropical fishes. Poster at the Joint Meeting of Ichthyologists and Herpetologists, New Orleans, LA.
- Willis, S.C. Phylogenetics and biogeography of tucunaré. 2006. Oral Presentation at the *International Congress on Fish Genetics and XI Brazilian Symposium on Fish Cytogenetics and Genetics*, São Carlos, Brazil.

- Willis, S.C., Nunes, M., Montaña, C.G., Farias, I.P., & N.R. Lovejoy. 2006. Influence of the Casiquiare on biogeography of Neotropical fishes: inferences from the mitochondria of peacock bass. Poster at the *I International Congress on Fish Genetics and XI Brazilian Symposium on Fish Cytogenetics and Genetics*, São Carlos, Brazil.
- Willis, S.C., Nunes, M., Montaña, C.G., Farias, I.P., & N.R. Lovejoy. 2006. Influence of the Casiquiare on biogeography of Neotropical fishes: inferences from the mitochondria of peacock bass. Poster at the *Joint Meeting of Ichthyologists and Herpetologists*, New Orleans, LA, USA.
- Willis, S.C., M. Nunes, C. Montana, I.P. Farias, & N. Lovejoy. 2005. Diversification in the Neotropical cichlid genus *Cichla*. Oral presentation at the *Joint Meeting of Ichthyologists and Herpetologists*, Tampa, FL.
- Willis, S.C., H. López-Fernández, & K.O. Winemiller. 2003. Habitat complexity and fish morphological diversity in a Neotropical river. Oral presentation at the *Joint Meeting of Ichthyologists and Herpetologists*, Manaus, Brazil.

## Professional Activities

### Society Memberships

Society of Systematic Biologists  
 Society for the Study of Evolution  
 American Society of Ichthyologists and Herpetologists  
 Neotropical Ichthyological Association  
 American Fisheries Society  
 American Cichlid Association

### Manuscript Review

*Frontiers, Molecular Phylogenetics and Evolution, Molecular Ecology, Evolution, Conservation Genetics, Journal of Biogeography, Copeia, Ecology of Freshwater Fishes, Biological Journal of the Linnean Society, Fisheries Research, Neotropical Ichthyology*

## Outreach and Leadership

2014-present Harte Research Institute Staff Steering committee member

2010 Science Fair Judge, Lincoln High School, Lincoln, NE

2004-2005 President, Zoology Graduate Student Association, University of Manitoba (2004-2005)

2003 Academy for Future International Leaders - Bush Presidential Library, TAMU

2002-2003 Secretary, American Fisheries Society (AFS) - Texas A&M Univ. Chapter (2002-2003)

2001-2002 Activities Chair, American Fisheries Society (AFS) - Texas A&M Univ. Chapter (2001-2002)

2000-2001 Vice President, American Fisheries Society (AFS) - Texas A&M Univ. Chapter (2000-2001)