

CARMEN G. MONTAÑA

Department of Biological Sciences
Sam Houston State University
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EDUCATION

Ph.D. Wildlife and Fisheries Sciences –2012– Texas A&M University, College Station, TX

MSc. Wildlife and Fisheries Management – 2004– Universidad Nacional de los Llanos Occidentales Ezequiel Zamora (UNELLEZ), Venezuela

B.A. Environmental Sciences, major Natural and Renewal Resources – 2001– Universidad Nacional de los Llanos Occidentales Ezequiel Zamora (UNELLEZ), Venezuela

Current Appointment

August 2015-present Department of Biological Sciences, Sam Houston State University, TX
Visiting Assistant Professor in Biology

PROFESSIONAL EXPERIENCE

Lecturer – August 2015 – Present – Department of Biological Sciences, Sam Houston State University

Post-Doctoral Research Associate – 2013-2015 – Department of Applied Ecology, North Carolina State University, NC

Lecturer – 2015 – Invited lecturer, Course in Stable Isotopes Analysis in Ecology. Mexico.

Post-Doctoral Research Associate – 2012-2013 – Department of Wildlife and Fisheries, Texas A&M University, TX

Lecturer – 2013 – Invited lecturer, Community Ecology Class. Department of Wildlife and Fisheries, Texas A&M University

Fisheries Consultant Specialist – 2006– National Institute of Fisheries and Aquaculture (Venezuela)

TEACHING EXPERIENCE

Sam Houston State University, Department of Biological Sciences

Contemporary Biology (Fall 2015, Spring - Fall 2016)

General Ecology (Spring-Fall 2016)

Texas A&M University, Department of Wildlife and Fisheries Sciences

Ichthyology (Spring 2010)

Natural History of the Vertebrates (Fall 2010)

UNELLEZ-Guanare, Department of Natural and Renewal Resources, Venezuela

Freshwater fishes (2001-2006)

PUBLICATIONS (* = Undergraduate Student, ^ = Graduate Student)

- Ou C., **C.G. Montaña** & K.O. Winemiller. *In review*. Body size–trophic position relationships among fishes of the Lower Mekong Basin. *Royal Society Open Science*
- Arbour J.A, **C.G. Montaña**, K.O. Winemiller, A. Pease , M. Soria-Barreto, J. Cochran-Biederman & H. López-Fernández. *In review*. Feeding Ecology and Functional Diversification in Neotropical cichlids. *Functional Ecology*
- Montaña, C.G.**, C.M. Schalk & ^E. Cunha. *In review*. Intraspecific and interspecific variation in stoichiometry of fishes in Piedmont streams of North Carolina. *Hydrobiologia*
- Schalk C.M., **C.G. Montaña** & L.A. Fitzgerald. *In review*. Species packing, functional traits, and community organization of tropical frogs. *Oecologia*
- Schalk C.M., **C.G. Montaña**, L.A. Fitzgerald & K.O Winemiller. *In review*. Trophic plasticity, environmental gradients, and food web structure of tropical pond communities. *Freshwater Biology*
- Allgeier J., C.A Layman, **C.G. Montaña**, S. Buhler, R. Appaldo & A. Rosemond. *In review*. Shifting nutrient baselines: eutrophication and fishing synergistically alter the structure of seagrass communities. *PLOS Biology*
- Ceneviva-Bastos M., **C.G. Montaña**, C.M. Schalk, L. Casatti & P.B. Camargo. *In review*. Responses of aquatic food webs to the addition of structural complexity and basal resource diversity in degraded Neotropical streams. *Austral Ecology*
- Layman C.A., J. Allgeier & **C.G. Montaña**. 2016. Mechanistic evidence of enhanced production on artificial reefs: A case study in a Bahamian seagrass ecosystem. *Ecological Engineering* 95:574-579
- Schalk, C.M., **C.G. Montaña** & *L.E. Springer. 2015. Morphological diversity and community organization of desert anurans. *Journal of Arid Environments* 122:132-140
- Montaña, C.G.**, Layman C.A. & K.O. Winemiller. 2015. Species-area relationship within benthic habitat patches of a tropical floodplain river: an experimental test. *Austral Ecology* 40:331-336
- Willis S.C., K.O. Winemiller, **C.G. Montaña**, P. Reiss, J. Macrander, I.P. Farias & G. Ortí. 2015. Population genetics of the speckled peacock bass (*Cichla temensis*): implications for management of South America’s most important sportfishery. *Conservation Genetics* 16:1345-1357
- Winemiller, K.O., **C.G. Montaña**, D.L. Roelke, J.B. Cotner, J.V. Montoya, L. Sanchez, M.M. Castillo & C.A. Layman. 2014. Pulsing hydrology determines top-down control of basal resources by fish and meiofauna in a tropical river-floodplain ecosystem. *Ecological Monographs* 84(4):621-635
- Montaña, C.G.**, K.O. Winemiller & A. Sutton. 2014. Intercontinental comparison of fish ecomorphology: null model tests of community assembly at the patch scale in rivers. *Ecological Monographs* 84(1): 91–107
- Schalk, C.M., **C.G. Montaña** & *M. Libson. 2014. Reproductive strategies of two Neotropical killifish, *Austrolebias vanderbergi* and *Neofundulus ornatipinnis* (Cyprinodontiformes: Rivulidae) in the Bolivian Gran Chaco. *Revista de Biología Tropical* 62(1):109-117
- Montaña, C.G.** & K.O. Winemiller. 2013. Evolutionary convergence in Neotropical cichlids and Nearctic centrarchids: evidence from morphology, diet and stable isotope analysis. *Biological Journal of Linnean Society* 109:146-164
- López-Fernández, H., K.O. Winemiller, **C.G. Montaña** & R.L. Honeycutt. 2012. Diet-morphology correlations in the radiation of South American Geophagine Cichlids (Perciformes: Cichlidae: Cichlinae). *PlosOne* 7(4):e33997
- Schalk, C.M. & **C.G. Montaña**. 2012. *Liophis peocilogyrus* (Yellow-bellied Liophis): Diet and foraging behavior. Natural history notes. *Herpetological Review* 43(1):148

- Willis, S.C., H. López-Fernández, **C.G. Montaña**, I.P. Farias & G. Orti. 2012. Species-level phylogeny of ‘Satan’s perches’ based on discordant gene trees (Teleostei: Cichlidae: *Satanoperca* Günther 1862). *Molecular Phylogenetics and Evolution* 63:789-808
- Montaña, C.G.**, C.M. Schalk & D.C. Taphorn. 2012. First record of Van den Berg's Pearlfish, *Austrolebias vanderbergi* Huber, 1995 (Cyprinodontiformes, Rivulidae) in Bolivia with comments on its diet and reproductive biology. *Check List* 8:589-591
- Ou, C., **C.G. Montaña**, K.O. Winemiller & K.W. Conway. 2011. *Schistura diminuta*, a new miniature loach from the Mekong River drainage of Cambodia (Teleostei: Nemacheilidae). *Ichthyological Explorations of Freshwaters* 22(3):193-200
- Montaña, C.G.**, C.A. Layman & K.O. Winemiller. 2011. Gape size influences seasonal patterns of piscivore diets in three Neotropical rivers. *Neotropical Ichthyology* 9(3):647-665
- Montaña, C.G.**, S. Choudhary & K.O. Winemiller. 2011. Seasonal dynamics of fisheries in the Ganges River, Bhagalpur, India. *Fisheries Management and Ecology* 18:282-296
- Montaña, C.G.**, C.A. Layman & D.C. Taphorn. 2011. Inventario de la ictiofauna del Caño La Guardia, afluente del río Capanaparo (cuenca del Orinoco), estado Apure, Venezuela. *Biota Colombiana* 11(1-2):75-88
- Montaña, C.G.** & K.O. Winemille. 2010. Local-scale habitat influences morphological diversity of species assemblages of cichlid fishes in a tropical floodplain river. *Ecology of freshwater Fish* 19:216-227
- Willis, S.C., M. Numes, **C.G. Montaña**, I.P. Farias, G. Orti & N.R. Lovejoy. 2010. The Casiquiare River acts a corridor between the Amazons and Orinoco river basins: biogeographic analysis of the genus *Cichla*. *Molecular Ecology* 19:1014-1030
- Layman, C. A., **C.G. Montaña** & J. E. Allgeier. 2010. Linking community assembly and rates of water level change in river littoral habitats. *Aquatic Ecology* 44:269–273
- Montaña C.G.** & K.O. Winemiller. 2009. Comparative feeding ecology and habitats use of *Crenicichla* species (Perciformes: Cichlidae) in a Venezuelan floodplain river. *Neotropical Ichthyology* 7:267-274
- Montaña, C.G.**, C.A. Layman & D.C. Taphorn. 2008. Comparison of fish assemblages in two littoral habitats in a Neotropical morichal stream in Venezuela. *Neotropical Ichthyology* 6(4):577-582
- Montaña, C.G.** 2008. Cichlids in a Neotropical Blackwater Floodplain River-Cinaruco River, Venezuela. Part I: Overview. *Buntbarsche Bulletin* 248:11-16
- Montaña, C.G.**, H. López-Fernández & D.C. Taphorn. 2008. A new species of the genus *Crenicichla* (Perciformes: Cichlidae) from Ventuari River, Upper Orinoco River, Amazonas State, Venezuela. *Zootaxa* 1856:3340
- Post, D.M., D.A. Arrington, C.A. Layman, G. Takimoto, J. Quattrochi & **C.G. Montaña**. 2007. Getting to the fat of the matter: model, methods and assumptions for dealing with lipids in stable isotopes analysis. *Oecologia* 152:179-189
- Layman, C.A., D.A. Arrington, **C.G. Montaña**. & D.M. Post. 2007. Can stable isotope ratios provide for community-wide measures of trophic structure? *Ecology* 86(9): 2530-2535
- Willis, S.C., M. Numes, **C.G. Montaña**, I.P. Farias & N.R. Lovejoy. 2007. Systematics, biogeography, and evolution of *Cichla* (Perciformes: Cichlidae) with insight into the origin of tropical freshwater fish diversity in South America. *Molecular Phylogenetics and Evolution* 44: 291-307
- Montaña, C.G.**, D.C. Taphorn, C.A. Layman & C. Lasso. 2007. Distribución, alimentación y reproducción de tres especies de pavones *Cichla* spp. (Perciformes, Cichlidae) en la cuenca baja del río Ventuari, Estado Amazonas, Venezuela. *Memoria de la Fundación La Salle de Ciencias Naturales* 165: 83-102
- Taphorn, D.C., **C.G. Montaña** & P. Buckup. 2006. *Characidium longum* (Characiformes: Crenuchidae): A New Species of Fish from Venezuela. *Zootaxa* 1247:1-12

NATURAL HISTORY NOTES, BOOK CHAPTERS & TECHNICAL REPORTS

- Montaña, C.G.**, M. Cenevica-Bastos & C.M. Schalk. 2014. New vertebrate prey for the aquatic salamander *Amphiuma means* (Caudata: Amphiumidae). *Herpetology Notes* 7:755-756
- Schalk, C.M., **C.G. Montaña**, J.L. Klemish & E.R. Wild. 2014. On the Diet of the Frogs of the Ceratophryidae: Synopsis and New Contributions. *South American Journal of Herpetology* 9:90-105
- K.O. Winemiller, **Montaña C.G.**, C. Krabbenhoft, K. Conway & K. Mayes. 2014. *Flow dependent species: life history and habitat associations in Texas Gulf Coast rivers*. Technical Report prepared to Texas Park and Wildlife Department (USA) by Texas A&M University.
- K.O. Winemiller, R.I. Pizano & **Montaña C.G.** 2014. *Findings on environmental flow needs in the lower Neches River to mitigate effects of climate change on its ecology*. 2014. Technical Report prepared to Big Thicket National Preserve, US National Park Service by Texas A&M University
- Schalk, C.M. & **C.G. Montaña**. 2011. *Ceratophrys cranwelli* (Cranwell's Horned Frog): Diet. *Herpetological Review* 42(3):409-410
- Montaña, C.G.** 2008. *Cichla ocellaris* del Río Cuyuni. In: J.P Rodríguez & F. Rojas-Suárez. *Libro Rojo de Peces amenazados de Venezuela*. Provita, Caracas
- Montaña, C.G.**, D.C. Taphorn, C.A. Layman & C.A. Lasso. 2005. Ecology and Conservation of Peacock Cichlids (*Cichla* spp.) in lower Ventuari River, Amazonas State, Venezuela. RAP Bulletin of Biological Assessment. Conservation International. Washington DC, USA
- Montaña, C.G.**, D.C. Taphorn, L. Nico, C.A. Lasso, O. Leon-Mata, A. Giraldo, O.Lasso-Alcala, C. DoNascimento & N. Milan. 2005. Fishes of the Ventuari River Basin, Amazonas state (Venezuela): Results of BioCentro, Fundacion La Salle and Fundacion Tierra Parima Research's. RAP Bulletin of Biological Assessment. Conservation International. Washington DC, USA

STUDENTS SUPERVISED

Undergraduate students

- Kelsey Kralman** – Spring 2016-present. Sam Houston State University
- Claro Navarro** (Abroad from Brazil) – Summer-Fall 2014. North Carolina State University
- Laura Springer** – 2012-2013. Texas A&M University
- Monica Libson** – 2009-2012. Texas A&M University

External graduate students

- Edgar Abraham Aragón Flores** – Spring 2016 to Summer 2020 – Ph.D. student. Department of Biodiversity and Conservation at Colegio de la Frontera Sur (ECOSUR), Mexico.
- Elford Liverpool** – Fall 2016 to Fall 2020 – Ph.D. student. University of Guyana, East Coast Demerara, Guyana

HONOR & AWARDS

- Outstanding Fisheries Worker Award**. Texas Chapter of the American Fisheries Society. 2012
- Vice Chancellor's Award in Excellence**. Texas A&M University. 2011
- Clark Hubbs Student Research Award**. Texas Chapter of the American Fisheries Society. 2011
- Outstanding Ph.D student Award**. Texas A&M University. 2009

GRANTS & FELLOWSHIPS

2016. World Wildlife Fund (\$10,000). Co.PI with E. Liverpool, D.C. Taphorn and H. López-Fernández.
2016. EURECA FAST Grant, Sam Houston State University (\$8,000). Co-PI with C.M. Schalk and C.W. Hargrave.

2016. Faculty Research Grant (FRG), Sam Houston State University (\$5,000). Co-PI with C.W. Hargrave 2016
- 2016-18 ECOSUR- [Southeast Ecological Research Center-Mexico] (\$ 160,000)
- 2011 Tom Slick Graduate Research Fellowship Award, Texas A&M University (\$32,000)
- 2011 GPEF- Travel and Presentation Grant, Dep. WFSC, Texas A&M University (\$500)
- 2010 GPEF Travel and Presentation Grant, Dep. WFSC, Texas A&M University (\$300)
- 2009 P.E.O International Women Fellowship (\$10,000)
- 2008 American Cichlid Association, ACA Paul V. Loiselle Conservation Fund (\$1,500)
- 2008 Ecology and Evolutionary Biology Travel Grant, Texas A&M University (\$600)
- 2008 GPEF Travel and Presentation Grant. Dep. WFSC, Texas A&M University (\$300)
- 2007 Neotropical Grassland Conservancy-Francis Smith Remembrance Grant (\$500)
- 2003 Neotropical Grassland Conservancy, Research award (\$500)
- 2002 Foundation Cisneros, Logistic & Research grant (\$1,000)
- 2001 U.S. Fisheries & Wildlife Services. Graduate Fellowship (\$2,500)

INVITED TALKS

- 2016 – Fish, Fisheries, and food webs in changing environments. Red Temática Biología, Manejo y Conservación de Fauna Nativa en Ambientes. Santiago de Querétaro, Querétaro, México
- 2016 – Fish assemblage structure and food web dynamics in freshwater ecosystems. Clemson University Clemson, South Carolina.
- 2015 – Ecological connectivity in freshwater ecosystems. Invited speaker, Department of Biodiversity Conservation at Colegio de la Frontera Sur (ECOSUR), Mexico
- 2014 – Community assembly in freshwater systems and ecomorphological convergence. Department of Wildlife and Fisheries, Texas A&M University. College Station, TX

CONFERENCE PRESENTATIONS (last 5 years)

Oral presentations

- 2016 – **C.G. Montana**, M. Soria-Barreto, R. Rodiles-Hernández & K.O. Winemiller Food web dynamics in a Mesoamerica floodplain river. Joint Meeting of Ichthyologists and Herpetologists, New Orleans, LA
- 2015 – **Montaña C.G.**, C.A. Layman & C.M. Schalk. Elemental stoichiometry of stream consumers and basal sources along a rural to urban gradient. Postdoctoral Research Symposium. North Carolina State University. Raleigh, NC
- 2014 – **Montaña C.G.**, *et al.* Hydrology and habitat mediate top-down effects of fishes and meiofauna on basal resources in a tropical river ecosystem. Postdoctoral Research Symposium, North Carolina State University. Raleigh, NC
- 2013 – **Montaña C.G.**, C.A. Layman & K.O. Winemiller. Gape size influences seasonal patterns of piscivore diets in three Neotropical rivers. Texas Chapter American Fisheries Society, Conroe, TX
- 2012 – **Montaña C.G.** & K.O. Winemiller. Are Neotropical cichlids and Nearctic centrarchids ecologically convergent? Evidence from morphological, dietary and isotope analysis. Ecological Integration Symposium. Texas A&M University, College Station, TX
- 2012 – **Montaña C.G.** & K.O. Winemiller. Morphological patterns in tropical and temperate assemblages of perciform fishes. Texas Chapter American Fisheries Society, Galveston, TX
- 2011 – **Montaña C.G.** & K.O. Winemiller. Ecomorphology and habitat use in temperate floodplain centrarchid fishes. Ecological Integration Symposium. College Station, TX

2011 –**Montaña C.G.** & K.O. Winemiller. Ecomorphological correlates in temperate floodplain centrarchid fishes. Texas Chapter American Fisheries Society, San Marcos, TX

Poster presentations

- 2016 –**Montaña C.G.**, C.A. Layman & C.M. Schalk. Intraspecific and interspecific variation in stoichiometry of fishes in Piedmont streams of North Carolina. Joint Meeting of Ichthyologists and Herpetologists. New Orleans, LA
- 2016 –**K. Kralman***, **C.G. Montaña**, C.M. Schalk & D. J. Leavitt. Non-native species and novel niches: Using morphology to understand ecological invasions. Undergraduate Research Symposium, Sam Houston State University
- 2015 –Schalk C.M.,* **C.G. Montaña**, L.A. Fitzgerald & K.O. Winemiller. Trophic plasticity of tropical tadpoles along environmental gradients. The Statistics and Zoology Graduate Student Research Symposium, North Carolina State University, Raleigh, NC
- 2015 –Schalk C.M.* & **C.G. Montaña**. Community assembly of anurans in the Bolivian Gran Chaco: A morphological approach. The Statistics and Zoology Graduate Student Research Symposium, North Carolina State University, Raleigh, NC
- 2015 –Schalk C.M. *, **C.G. Montaña** & N.L. Smolensky. Intercontinental convergence of arid adapted amphibians. Joint Meeting of Ichthyologists and Herpetologists. Albuquerque, NM
- 2014 –Schalk C.M. *, **C.G. Montaña**, L.A. Fitzgerald & K.O. Winemiller. Trophic plasticity of tropical tadpole ecomorphs. Joint Meeting of Ichthyologists and Herpetologists. Albuquerque, NM
- 2012 –.Springer L.*, C.M. Schalk, **C.G. Montaña** & A. Fields. Morphological diversity of Chihuahuan Desert anurans. Ecological Integration Symposium, College Station, TX. Awarded 2nd place, Undergraduate Poster
- 2012 –**Montaña C.G.** & K.O. Winemiller. Are Neotropical cichlids and Nearctic centrarchids ecologically convergent? Evidence from morphological, dietary and isotope analysis. Ecological Integration Symposium. Texas A&M University, College Station, TX
- 2011 –**Libson M.** *, **C.G. Montaña** & C.M. Schalk. Reproductive biology of two annual killifishes in the Bolivian Gran Chaco. Ecological Integration Symposium. Texas A&M University, College Station, TX. Awarded 1st place
- 2011 –**Montaña C.G.** & K.O. Winemiller. Habitat-associated morphology of cichlid and centrarchid species assemblages: Tropical and Temperate convergence in percomorph fishes? Ecological Society of America. Austin, TX
- 2011 –**Montaña C.G.** & C.M. Schalk. Community structure of ponds along environmental gradients in the Bolivian Gran Chaco. Ecological Integration Symposium. College Station, TX

SERVICE TO PROFESSION

Reviewer: Biological Journal of the Linnean Society, Ecology of Freshwater Fish, Hydrobiologia, Journal of Fish Biology, Revista Mesoamericana de la Conservación, Pan-American Journal of Aquatic Sciences, Aquaculture, Aquarium, Conservation & Legislation-International Journal of the Bioflux Society, Wetlands, Neotropical Ichthyology, Revista de Biología Tropical, Endangered Species Research Journal, Journal of Applied Ecology

Editorial board (Ecology): Neotropical Ichthyology

DEPARTMENTAL/UNIVERSITY SERVICE

Co-chair Ecological Integration Symposium Organizing Committee, Texas A&M University, 2010

Symposia Volunteer experience, Student Research Week. Texas A&M University, 2012
Ecological Society of America. Austin, TX. Volunteer – 2011
Community Outreach, BioBlitz. Team leader fish group. Texas A&M University, yearly from
2007 - 2012

FIELD RESEARCH

2016-2018 – *Guyana*– Impacts of mining on fish diversity and food webs
2015-2018 – Mexico– Food web connectivity in the Usumacinta River
2013- 2015 – North Carolina (USA) – Fish communities, food webs in Piedmont streams
2007-2011 – Texas (USA) – Fish community, food webs, environmental flows
2011 – Bolivia– Community ecology of anurans and fishes, food webs ecology
2010 – Cambodia– Fish community structure and food webs in Mekong River
2009 – Peru– Fish community structure and food webs
2001-2006 – Venezuela– Orinoco River and tributaries, Research assistant Natural science
Museum, UNELLEZ, Guanare
2007 – Miami (USA). Research Assistant, tagging and monitoring fishes in the Loxahatchee
River

PROFESSIONAL AFFILIATIONS

Neotropical Ichthyology Association, NI-(2003-present)
American Society of Ichthyologists and Herpetologists, ASIH-(2001-present)
American Cichlid Association, ACA-(2007-present)
Texas Chapter of the American Fisheries Society, TCAFS (2007-present)
American Fisheries Society, AFS (2007-present)
Ecological Society of America, (2010-present)

ADDITIONAL SKILLS

Multivariate statistics (PC-Ord, PRIMER, R, SPSS, JMP)
Fish collecting techniques (seining, electrofishing, gill netting, larval fish collecting)
Museum curation techniques
Spanish (native language) and English proficiency (writing, reading and speaking)