

Guido A. Herrera-R | CV

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Education

- **Ph.D. Ecology & Evolutionary Biology** **2020 -**
The University of Tennessee *Knoxville, TN*
Advisor: Dr. Xingli Giam
- **M.Sc. Modeling of Ecological Systems** **2016 - 2018**
University of Toulouse III Paul Sabatier *Toulouse, France*
Honors (1st year) & Highest Honors (2nd year)
Thesis: Combined effects of climate change and fragmentation by dams in Andean Amazon fishes. Advisor: Dr. Pablo A. Tedesco
- **B.Sc. Biology** **2011 - 2015**
Pontifical Javeriana University *Bogotá, Colombia*
Thesis: High endemism areas of fishes in the Colombian Andean Orinoco region inferred from species distribution models Advisor: Dr. Javier A. Maldonado-Ocampo†

Research and work experience

- **Laboratory Assistant** **Oct 2018 - Dec 2019**
Tropical Rivers Lab, Florida International University *Miami, FL*
Supporting remote sensing of water quality under the Amazon Citizen Science Project
Supervisor: Dr. Elizabeth Anderson
- **Research Assistant** **Jun - Sep 2018**
Ecology & Biological Diversity Lab, Toulouse University III *Toulouse, France*
Measuring fish functional traits from photos and updating a global trait database
Supervisors: Dr. Sébastien Brosse & Dr. Pablo A. Tedesco
- **Research Assistant** **October 2015**
Humedales Foundation *Bogotá, Colombia*
Fish diversity characterization in the EMGESA campus around Mambita, Colombia
Supervisor: Dr. Saúl Prada-Pedrerros
- **Intern** **Jun - Aug 2015**
REU in Tropical Ecology & Evolution *El Verde Field Station, Puerto Rico*
Project: Factors regulating the distribution and abundance of Sicydium (Gobiidae: Perciformes) in headwater streams within El Yunque National Forest, Puerto Rico.
Advisor: Dr. Pedro J. Torres
- **Intern** **Jan - June 2014**
Ichthyology Lab, Pontifical Xavierian University *Bogotá, Colombia*
Curatorial assistant from the fish collection at the Natural History Museum
Supervisor: Dr. Javier A. Maldonado-Ocampo†
- **Volunteer** **July 2013**
Ecosystem Ecology Lab, Florida International University *Miami, FL*
Sample processing and mesocosms installation
Supervisor: Dr. Jhon Kominoski

Teaching and mentoring experience

- **Graduate Teaching Assistant** Jan 2020 -
EEB 471, BIOL 102, 150 and 159 The University of Tennessee
- **Mentor** May 2019
INSTARS program Society for Freshwater Science
- **Undergraduate Teaching Assistant** Jan - July 2015
Vertebrate Zoology Course, Professor: Dr. Saúl Prada-Pedrerros Pontifical Xavierian University
Preparation of lab classes, fieldwork planning and student evaluation
- **Tutor** July 2014 - July 2015
Writing Center, Professor: Blanca González Pontifical Xavierian University
Supervising writing process of students in diverse topics (Economy, Engineering, Law, ect.)
- **Undergraduate Teaching Assistant** July - Dec 2014
Invertebrate Zoology Course, Professor: Dr. Dimitri Forero Pontifical Xavierian University
Preparation of lab classes and student evaluation.

Coursework

- **The University of Tennessee:** *CORE: Evolution* [EEB 511. 3 CTS], *CORE: Ecology* [EEB 509. 3 CTS], *Phylogenetic methods* [EEB 587, 3 CTS], *Advanced Topics: Meta-Analysis for Ecology and Evolution* [EEB 681, 3 CTS], *Advanced Mathematical Ecology I* [EEB 681, 3 CTS].
- **University of Toulouse III:** *Data analysis in ecology* [AnEco, 3 ECTS], *Temporal analysis for ecology* [ATÉ, 3 ECTS], *Detection and characterization of Ecological Patterns* [DeCaPE, 3 ECTS], *Modeling and In-Depth Numerical Analysis* [MANA, 3 ECTS], *Informatic tools for science* [OtIS, 3 ECTS], *Dynamical Systems in Ecology* [SysDynE, 3 ECTS].
- **Developing essential grant and funding skills for conservation** 2017
International Congress for Conservation Biology Cartagena, Colombia
- **Applied statistics and graphics with R (Rwizard)** 2015
Pontifical Xavierian University Bogotá, Colombia
- **Fundamentals in species distribution modeling and analysis** 2014
Partners for the Conservation of the Colombian Amazon Bogotá, Colombia
- **Factors affecting aquatic communities in the Orinoco** 2013
Colombian Ichthyology Association Bogotá, Colombia

Skills

- **Computer Programming:** R (Proficient), Scilab/Matlab, Python (Basics), \LaTeX (Proficient).
- **GIS Software:** ArcGIS (Proficient), QGIS (Proficient), GRASS (Proficient).
- **Statistics:** Multivariate analyses, Species Distribution Models, Machine Learning, Mixed Models, Hypothesis testing.
- **Languages:** English (TOEFL IBT: 102), Spanish (Native), French (Fluent).
- **Diving:** SCUBA Open Water Diver.
- **Field work:** Fishes and water quality sampling in tropical streams in Colombia (Bogotá river and Piedmont Orinoco) and Puerto Rico (El Yunque National Forest and Rio Piedras river)

Submitted Publications

Woods, T., Carrasco, L., Zhu, G., **Herrera-R**, G. A., Kaz, A., Niemeyer, J. C., ... Giam, X. (Submitted). *Trends and opportunities in freshwater community science across spatial scales*.

Peer-Reviewed Publications

- Brosse, S., Charpin, N., Su, G., Toussaint, A., **Herrera-R**, G. A., Tedesco, P. A., & Villéger, S. (2021). Fishmorph: a global database on morphological traits of freshwater fishes. *Global Ecology and Biogeography*, 30(12), 2330–2336.
- Duponchelle, F., Isaac, V. J., Rodrigues Da Costa Doria, C., Van Damme, P. A., **Herrera-R**, G. A., Anderson, E. P., ... Agudelo, E., et al. (2021). Conservation of migratory fishes in the Amazon basin. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 31(5), 1087–1105.
- Gibson, N., Green, E., **Herrera-R**, G. A., Love, S., Turner, S., Weatherton, M., ... Shershen, E., et al. (2021). Toward an ecology of disasters: a primer for the pursuit of ecological research on disasters. *Ecology and Society*, 26(4).
- Herrera-R**, G. A., Oberdorff, T., Anderson, E. P., Brosse, S., Carvajal-Vallejos, F. M., Frederico, R. G., ... Maldonado-Ocampo, J. A., et al. (2020). The combined effects of climate change and river fragmentation on the distribution of Andean Amazon fishes. *Global Change Biology*, 26(10), 5509–5523.
- Encalada, A. C., Flecker, A. S., Poff, N. L., Suárez, E., **Herrera-R**, G. A., Rios-Touma, B., ... Anderson, E. P. (2019). A global perspective on tropical montane rivers. *Science*, 365(6458), 1124–1129.
- Angarita, H. [Héctor], Wickel, A. J., Sieber, J., Chavarro, J., Maldonado-Ocampo, J. A., **Herrera-R**, G. A., ... Purkey, D. (2018). Basin-scale impacts of hydropower development on the Mompós Depression wetlands, Colombia. *Hydrology and Earth System Sciences*, 22(5), 2839.
- Urbano-Bonilla, A., Ballen, G. A., **Herrera-R**, G. A., Zamudio, J., Herrera-Collazos, E. E., DoNascimento, C., ... Maldonado-Ocampo, J. A. (2018). Fishes of the cusiana river (meta river basin, colombia), with an identification key to its species. *ZooKeys*, (733), 65.
- DoNascimento, C., Herrera-Collazos, E. E., **Herrera-R**, G. A., Ortega-Lara, A., Villa-Navarro, F. A., Oviedo, J. S. U., & Maldonado-Ocampo, J. A. (2017). Checklist of the freshwater fishes of Colombia: a Darwin Core alternative to the updating problem. *ZooKeys*, (708), 25.
- Herrera-R**, G. A., Murcia-Castillo, M. A., & Prada-Pedrerros, S. (2016). First record of *Amatitlania nigrofasciata* (Günther, 1867)(Cichliformes: Cichlidae) as introduced species in natural freshwaters of Colombia. *Check List*, 12(4), 1932.

Other publications

- Angarita, H. [H], Santos-Fleishman, A., Rogeliz, C., Campo, F., Narvaez-Campo, G., Delgado, J., ... Jiménez-Segura, L. (2020). *Modificación del hábitat para los peces de la cuenca del río magdalena*. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt.
- García-Alzate, C., DoNascimento, C., Villa-Navarro, F. A., García-Melo, J. E., & **Herrera-R**, G. A. (2020). *Diversidad de peces de la cuenca del río Magdalena, Colombia*. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt.
- Herrera-R**, G. A., Lopez-Casas, S., & Maldonado-Ocampo, J. (2018). *Análisis de vulnerabilidad de especies de peces por pérdida de área de distribución debido al cambio climático en la macrocuenca magdalena-cauca*. The Nature Conservancy, IDEAM.

Service and Appointments

- 2020 - Reviewer:** *Revista de Ecología Aplicada* (1), *Science of the Total Environment* (2).
- 2020 - 2022. Member:** *Science Group - Citizen Science for the Amazon - WCS*.
- 2020. Participant:** *Working Group on Andes-to-Amazon Conservation Targets. Florida International University and WCS*
- 2019 - 2020. Author:** *IPBES National Biodiversity and Ecosystem Services of Colombia*.
- 2018 - 2019. Participant:** *Living Andean Rivers Workshop. Florida International University and Universidad San Francisco de Quito*

Presentations

- 2019.** *Evaluacion de riesgo de extincion de la ictiofauna de la macrocuenca Magdalena-Cauca en un contexto de cambio climatico.* Oral presentation. July 17-19. XV Colombian Ichthyology Congress. Medellin, Colombia.
- 2019.** *Is freshwater migration a mechanism to avoid energetic limitation in Amazonian fishes?.* Oral presentation. May 19-23. Society for Freshwater Science. Salt Lake City, Utah.
- 2019.** *Revealing fish endemism patterns in the Andean Orinoco region in Colombian.* Poster. 5-9 August. IBS Humboldt-Meeting. Quito, Ecuador.
- 2018.** *Freshwater fishes' vulnerability to climate change and fragmentation by dams in the Andean Amazon.* Oral presentation. July 23-26. AQUATROP Congress. Quito, Ecuador.
- 2017.** *Colombian Fish Biodiversity, an integrative insight from the Neotropical collection perspective and the Darwin Core standard.* Poster. October 23-27. II International Symposium on Phylogeny and Classification of Neotropical Fishes. Londrina, Brazil.
- 2017.** *Freshwater fishes' vulnerability to climate change and fragmentation by dams in the Andean Amazon.* Oral presentation. August 14-20. XIV Colombian Ichthyology Congress. Cali, Colombia.
- 2016.** *Fish endemism patterns in Colombian Andean Orinoco region from species distribution models: Implications for their conservation.* Poster. May 21-16. Society for Freshwater Science Meeting 2016. Sacramento, California, United States.
- 2016.** *Factors regulating the distribution and abundance of Sicydium (Gobiidae: Perciformes) in headwater streams within El Yunque National Forest, Puerto Rico.* Oral presentation. May 21-16. Society for Freshwater Science Meeting 2016. Sacramento, California, United States.

Outreach

- 2020.** Blog post. "Por los rios de la Amazonia". Ciencia Ciudadana para la Amazonia.
- 2018.** Infograph. "Peces de agua dulce: El conocimiento progresivo del patrimonio íctico de Colombia". Reporte Biodiversidad 2017.
- 2017.** Reportage. "Luchar a contracorriente para salvar a la guapucha". Revista Pesquisa, No. 35, Marzo-Mayo. 2016.

Honors, grants and awards

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| Graduate Research Award (\$900) | 2022 |
| ◦ Department of Ecology and Evolutionary Biology - The University of Tennessee | |
| Travel Award (\$540) | 2022 |
| ◦ Graduate Student Senate - The University of Tennessee | |
| Simpson Endowment Award (\$1000) | 2022 |
| ◦ Society of Freshwater Science | |
| Graduate Research Award (\$1800) | 2021 |
| ◦ Department of Ecology and Evolutionary Biology - The University of Tennessee | |
| Beagle Memorial Fund Award (\$500) | 2021 |
| ◦ Department of Ecology and Evolutionary Biology - The University of Tennessee | |
| EMERGE Fellowship | 2021-2022 |
| ◦ Society for Freshwater Science | |
| Ph.D. Fellowship (~ \$60000) | 2020-2024 |
| ◦ Ministry of Science, Technology and Innovation from Colombia | |
| Beca TNC: Investigación en sistemas andinos de agua dulce (\$500) | 2019 |
| ◦ Humboldt Meeting 2019 | |

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| <ul style="list-style-type: none"> Travel Award (\$350) WaterHackWeek Workshop 2019 - University of Washington | 2019 |
| <ul style="list-style-type: none"> Training Award - Pre-congress course Freshwater Working Group – Society for Conservation Biology Meeting 2017 | 2017 |
| <ul style="list-style-type: none"> Travel Award (\$600) INSTARS Mentoring Program – Society for Freshwater Science Meeting 2016 | 2016 |
| <ul style="list-style-type: none"> Research Experience for Undergraduates (REU) (\$5500) University of Puerto Rico - Program Tropical Ecology & Evolution | 2015 |
| <ul style="list-style-type: none"> Sponsored Membership International Biogeography Society | 2016 |
| <ul style="list-style-type: none"> Andres Bello Award Ministry of Education from Colombia Exceptional-grade at the national level in the ICFES* Biology section | 2010 |
| <ul style="list-style-type: none"> Best ICFES* score Colegio Gimnasio Mompiano | 2010 |
| *Standardized Test for high school students as requirement for admission to universities in Colombia. | |

Societies and Research teams

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| <ul style="list-style-type: none"> Tropical Rivers Lab Department of Earth and Environment - Florida International University | 2018 - |
| <ul style="list-style-type: none"> Evolution and Biological Diversity Lab (EDB) University of Toulouse Paul Sabatier III | 2017-2018 |
| <ul style="list-style-type: none"> Society for Freshwater Science (SFS) | 2016- |
| <ul style="list-style-type: none"> International Biogeography Society (IBS) | 2016 |
| <ul style="list-style-type: none"> Ichthyology Lab Ecology and Systematics Unit (UNESIS) - Pontifical Xavierian University | 2013 -2018 |
| <ul style="list-style-type: none"> Society for Conservation Biology (SCB) | 2013 - |