Cristian Román-Palacios

Curriculum Vitae



Contact information

- o Email: cromanpa94@email.arizona.edu
- o Institution: University of Arizona
- o Mobile: (+1) 520 288 5856
- O Homepage: http://cromanpa94.github.io/cromanpa/

Professional appointments

- 2021 Assistant professor of Practice, University of Arizona, School of Information.
- 2021 Staff researcher, University of California, Los Angeles, Pl. Dr. Aradhna Tripati.

Education

- 2016-2020 **Ph.D. in Ecology and Evolution**, *The University of Arizona, Tucson*, Advisor: Dr. John J. Wiens.
- 2016–2019 MS in Ecology and Evolution, The University of Arizona.
- 2011–2015 **BS in Biology**, *Universidad del Valle*, Cali, Colombia, **Highest Honors**.

Research Interests

Evolution, Climate change, Bioinformatics, and Biostatistics

Grants and scholarships (total funding: \$86,750)

- 16. **2021** Early Career Fellow, Center for Diverse Leadership in Science at the University of California, Los Angeles (**\$5,000 USD**). Pl: **Cristian Román-Palacios**.
- 15. **2020** Robert W. Hoshaw Memorial Award (Department of Ecology and Evolutionary Biology University of Arizona, Tucson) (**\$5,000 USD**). Pl: **Cristian Román-Palacios**.
- 14. **2020** University of Arizona, College of Science 2020 Graduate Award in Scholarship (**\$1,000** USD). Pl: Cristian Román-Palacios.
- 13. 2020 Galileo Circle Scholarship (\$1,000 USD). Pl: Cristian Román-Palacios.
- 12. **2018–2019** Data Science Fellowship The University of Arizona libraries (**\$1,000 USD**). Pl: **Cristian Román-Palacios**.
- 11. **2018** Systematics Research Fund (The Linnean Society and the Systematics Association) (\$1,600 USD). PI: Cristian Román-Palacios.
- 10. **2018** William A Calder III Memorial Scholarship (Department of Ecology and Evolutionary Biology University of Arizona, Tucson) (**\$4,200 USD**). Pl: **Cristian Román-Palacios**.
- 9. 2018 Society of Systematic Biologists Evolution 2018 Travel Grant (\$500 USD).

- 8. **2018** Biodiversity Information Standards TDWG Meeting (New Zealand) (**\$2,000 USD**). **Declined**
- 7. **2017** AGA funds (American Genetics Association) towards organizing the VI Colombian meeting in evolution (\$10,000 USD). PI: Yherson Frachesco Molina-Henao, Diego Hernandez, Rosario Castañeda, Cristian Román-Palacios, Jose Julian Tavera.
- 6. **2017** SSE funds (Society for the Study of Evolution) towards organizing the VI Colombian meeting in evolution (**\$6,000 USD**). PI: Yherson Frachesco Molina-Henao, Diego Hernandez, Rosario Castañeda, **Cristian Román-Palacios**, Jose Julian Tavera.
- 5. **2017** SMBE funds (Society for Molecular Biology and Evolution) towards organizing the VI Colombian meeting in evolution (**\$25,000 USD**). PI: Yherson Frachesco Molina-Henao, Diego Hernandez, Rosario Castañeda, **Cristian Román-Palacios**, Jose Julian Tavera.
- 4. **2017-2018** Banco de la Republica, Colombia (**\$6,000 USD**). Pl: **Cristian Román-Palacios**, Ranulfo Gonzalez-Obando, Heiber Cardenas-Henao, Sergio Helap.
- 3. 2016 National Science Foundation. R Methods in Macroevolution Workshop (\$750 USD).
- 2. **2015-2016** Programa Jóvenes Investigadores e Innovadores "Virginia Gutiérrez de Pineda" (\$7,700 USD).
- 1. **2011-2016** Awards for Outstanding Academic Achievement, School of Natural and Exact Sciences, Universidad del Valle, Colombia (ca. \$10,000 USD).

Awards

- 4. **2021** Early Career Fellow, Center for Diverse Leadership in Science at the University of California, Los Angeles.
- 3. **2020** University of Arizona, College of Science 2020 Graduate Award in Scholarship. **"For impressive contributions to the literature (over 20 papers on a range of topics, many first authored)"** among more than 1,000 graduate students in 20 departments.
- 2. **2015** Best national score in the Colombian education exam. Biology section (Icfes Saber-Pro).
- 1. **2011-2016** Award for Outstanding Academic Achievement, School of Natural and Exact Sciences, Universidad del Valle. I only paid student fees throughout college.

Publications

- 29. **Cristian Román-Palacios**, April M. Wright, and Josef C. Uyeda (2021). treedata.table: A wrapper for data.table that enables fast manipulation of large phylogenetic trees matched to data. PeerJ, 9: e12450.
- 28. Xiao-Yu, Zhu, Shi-Yang Wu, S. Y., Yi-Juao Liu, Chris R. Reardon, **Cristian Román-Palacios**, Zheng Li, Zhu-Qing He. A new species of whip spider, Weygoldtia hainanensis sp. nov., from Hainan, China (Arachnida: Amblypygi: Charinidae). Zootaxa, 5082(1), 65-76.
- 27. Xiao-Yu Zhu, Yi-Jiao, Liu, Yun, Bai, **Cristian Román-Palacios**, Zheng Li, Zhu-Qing He. Goniurosaurus chengzheng sp. nov., a new species of Leopard Gecko from Guangxi, China (Squamata: Eublepharidae). Zootaxa 996(3), 540–554, doi:10.11646/zootaxa.4996.3.8.
- 26. **Cristian Román-Palacios**, Cesar A. Medina, Shing H. Zhan, Michael S. Barker. Animal chromosome counts reveal similar range of chromosome numbers but with less polyploidy in animals compared to flowering plants. **Journal of Evolutionary Biology**, doi:10.1111/jeb.13884.
- 25. Robert N Ulrich, Maxence Guillermic, Julia Campbell, Abbas Hakim, Rachel Han, Shayleen Singh, Justin D Stewart, **Cristian Román-Palacios**, Hannah M Carroll, Ilian DeCorte, Rosaleen E

- Gilmore, Whitney Doss, Aradhna Tripati, Justin B Ries, Robert A Eagle. 2021. Patterns of element incorporation in calcium carbonate biominerals recapitulate phylogeny for a diverse range of marine calcifiers. **Frontiers in Earth Science, section Geochemistry**, doi:10.3389/feart.2021.641760.
- 24. Tania Hernandez-Hernandez*, Elizabeth C. Miller*, **Cristian Román-Palacios***, and John J. Wiens*. 2021. Speciation across the Tree of Life. **Biological Reviews**, doi:10.1111/brv.12698. *Equal contribution
- 23. Elizabeth C. Miller*, and **Cristian Román-Palacios***. 2021. Evolutionary time explains the global distribution of freshwater fish diversity. **Global Ecology and Biogeography**, 30:749-763, doi:10.1111/geb.13253.
 - *Equal contribution
- 22. Xiao-Yu Zhu, Guang-Yu Chen, **Cristian Román-Palacios**, Zheng Li, Zhu-Qing He. 2020. *Goniurosaurus gezhi*, a new gecko species from Guangxi, China (Squamata: Sauria: Eublepharidae). **Zootaxa**, 4852:211–222.
- 21. **Cristian Román-Palacios***, Yherson F. Molina*, and Michael S. Barker. 2020. Polyploidy increases overall diversity despite higher turnover than diploids in the Brassicaceae. **Proceedings of the Royal Society of London**, 287:20200962.
 - *Equal contribution
- 20. **Cristian Román-Palacios**, and John J. Wiens. 2020. Recent responses to climate change reveal the drivers of species extinction and survival. **Proceedings of the National Academy of Sciences of the United States of America**, 117:4211–4217.
 - **Recommended in Faculty Opinions (former Faculty1000).
 - **Featured in stories on several news and science related sites. These include news outlets in the U.S. (e.g. CNN, USA Today, CBS News, Yahoo News, AOL, MSN, Fox News, New York Post, New York Daily News, Arizona Daily Star [with interview], Miami Herald, Kansas City Star, Indianapolis Star, Sacramento Bee, Charlotte Observer, and Detroit Free Press, Salt Lake Tribune), and other countries including the United Kingdom (Daily Mail, The Independent, The London Economic, The Irish Sun, Metro), India (Tribune India, India Times Post, Outlook India, The Week, Canindia, ProKerala), Australia (10Daily), France (Slate, Free, Futura-Science), Italy (Galileo), Spain (La Vanguardia), Sweden (ETC), Poland (Polish Press Agency), Russia (Life), Slovenia (Delo), Bulgaria (Novinite), Brazil (Galileu), and Latin America (infosurhoy). Featured on science websites including Popular Science (with interview), Wildlife.org (with interview), Futurity, IFL Science, ZME Science, SciTech Daily, Muy Interesante (Spain), and the NSF News site. Interview for the climate magazine The Grist. Interview on podcast The Climate Pod. TV interview on KVOA (Tucson; lead story). Radio interview on BBC World Service.
- 19. **Cristian Román-Palacios**, Joshua Scholl, and John J. Wiens. 2019. Evolution of diet across the animal Tree of Life. **Evolution Letters**, 4:339–347.
 - **Featured in a news story in **Science**, and other science-related websites (**phys.org**, **Science Daily**, and **UA News**. Newspaper column in **Södermanlands Nyheter**. Radio interview on **Arizona Science**.
- 18. Andreas Meyer, **Cristian Román-Palacios**, and John J. Wiens. 2018. BAMM gives misleading results in simulated and empirical datasets. **Evolution**, 72:2257–2266.
- 17. Alfonso N. Garcia-Aldrete, Nancy S. Carrejo, Julian Mendivil, Nadia Calderón, Oscar Saenz, Jefferson Panche, **Cristian Román-Palacios**, and Ranulfo Obando-Obando. 2018. Checklist of 'Psocoptera' (Psocodea) of Colombia and identification key to families. **Dugesiana**, 25:77-103.
- Cristian Román-Palacios, and John J. Wiens. 2018. The Tortoise and the Finch: testing for island effects on diversification using two iconic Galápagos radiations. Journal of Biogeography, 45:1701–1702.

- **Highlighted as **Editor's Choice**.
- 15. **Cristian Román-Palacios**, Rosario Castañeda, and Jose Julian Tavera. 2018. When did *Anolis* lizards diverge? A comparison of multiple dating strategies. **Molecular Phylogenetics and Evolution**, 127:655-668.
- 14. **Cristian Román-Palacios**, Jakob Damgaard, Cheng, Lanna, Felipe Ferraz Figueiredo Moreira, Tom A. Weir, and Herbert Zettle. 2018. Molecular phylogeny of sea skaters and their freshwater relatives (Hemiptera: Heteroptera: Gerridae: Halobatinae). **Journal of Insect Systematics and Evolution**, 51:139–240.
- 13. **Cristian Román-Palacios**, and Alejandro Valencia-Zuleta. 2018. On the Data Deficient amphibians from Colombia. **Revista de Biologia Tropical**, 66:1272-1281.
- 12. **Cristian Román-Palacios**, Yherson Franchesco Molina-Henao, and Ranulfo Gonzalez-Obando. 2017. On the divergence of Psocidae (Psocodea, Psocomorpha): Fossils or biogeography. **Boletin del Museo de Entomologia de la Universidad del Valle**, 17:37-46.
- 11. **Cristian Román-P**, Sara Fernández–Garzón, Alejandro Valencia–Zuleta, Andrés F. Jaramillo–Martínez, and Ronald A. Viáfara–Vega. 2017. Lista anotada de la herpetofauna del departamento del Quindío, Colombia. **Biota Colombiana**, 18:251-281.
- Cristian Román-Palacios, Sara Fernandez-Garzon, Jenny Johana Gallo-Franco, Alan Giraldo-Lopez, Monica Hernandez-Lopez, Jun Ishida-Castañeda, and Wilmar Bolivar-Garcia. 2017. Uso de microhábitat por anuros en un fragmento de bosque seco intervenido del Magdalena medio, Guarinocito, Colombia. Boletín Científico Centro De Museos Museo De Historia Natural, 20:181-196.
- Cristian Román-Palacios, and Cesar Román Valencia. 2017. Dieta y reproducción de Bryconamericus caucanus (Characiformes: Characidae) en La Venada, Río Quindío, Colombia. Revista MVZ Córdoba, 2:1-17.
- 8. **Cristian Román-Palacios**, Alfonso Neri García-Aldrete, and Ranulfo Gonzalez Obando. 2016. Historical biogeography of Thyrsophorini psocids and description of a new Neotropical species of *Thyrsopsocopsis* (Psocodea: Psocomorpha: Psocidae). **European Journal of Entomology**, 194:1-16.
- 7. **Cristian Roman-Palacios**, Ranulfo Obando-Gonzalez, and Alfonso Neri Aldrete. 2016. Uncovering the diversity of the neotropical genus *Elaphopsocus* ('Psocoptera': Psocidae: Amphigerontinae): from one to ten species. **Zootaxa**, 4162:373-380.
- 6. **Cristian Román-Palacios**, and Alfonso N. García Aldrete. 2015. A new Neotropical genus of Blastini (Psocodea:'Psocoptera': Psocidae: Amphigerontiinae). **Zootaxa**, 4000:392-396.
- 5. Daniela Moraga Lopez, and **Cristian Román-Palacios**. 2015. Information criteria on multimodel selection of parametric regression: Biological applications. **Revista Comunicaciones en Estadística**, 8:45-57.
- 4. **Cristian Román-Palacios**, Ranulfo Gonzalez Obando, and Alfonso N. Garcia Aldrete. 2015. The genus *Elaphopsocus* Roesler (Psocodea:'Psocoptera': Psocidae) with six new species from Brazil and Colombia. **Zootaxa**, 3957:151–168.
- 3. **Cristian Román-Palacios**, and Cesar Román Valencia. 2015. Hábitos tróficos de dos especies sintópicas de carácidos en una quebrada de alta montaña en los Andes de Colombia. **Revista Mexicana de Biodiversidad**, 86:1–7.
- 2. **Cristian Román-Palacios**, Alfonso N. García Aldrete, and Ranulfo Gonzalez-Obando. 2014. *Elaphopsocoides*, a new genus of Psocidae (Psocodea: 'Psocoptera') from Valle del Cauca, Colombia. **Zootaxa**, 3873:93–100.
- Cristian Román-Palacios, Cesar Román Valencia, and Donald C. Taphorn. 2014. Trophic and reproductive ecology of a neotropical characid fish *Hemibrycon brevispini* (Teleostei: Characiformes). Caldasia, 36:289–304.

In preparation, submitted, and preprints

- 5. **Cristian Román-Palacios**, Daniela Moraga-Lopez, and John J. Wiens. 2020 (positive reviews at Ecology Letters). Explaining the paradox of freshwater biodiversity.
- 4. Chinmay Hemant Joshi, **Cristian Román-Palacios**, and John J. Wiens. 2020 (submitted, Evolution). Haplodiploidy and the evolution of eusociality in insects.
- 3. Cristian Román-Palacios, Hannah M. Carroll, Alexandrea J. Arnold, Randy J. Flores, Sierra V. Petersen, Karen A. McKinnon, and Aradhna Tripati. 2021 (positive reviews at Geochemistry, Geophysics, Geosystems). A bayesian linear mixed model on the calibration of the 'clumped isotope' paleothermomether. Preprint available: https://www.essoar.org/doi/10.1002/essoar.10507995.1
- 2. Valentina Sarria-Rodríguez, Ranulfo Gonzalez-Obando, Nelson Rivera, Heiber Cardenas-Henao and **Cristian Román-Palacios**. 2020 (Under Review). Holarctic lineages cannot not inform diversity and evolution in Tropics the barklice family Psocidae as a case study. Under review in (**Molecular Phylogenetics and Evolution**).
- 1. **Cristian Román-Palacios**, and Alejandro Valencia-Zuleta. 2020 (submitted). Hybridization increases species richness by triggering diversification rates in a global radiation of passerine birds (target journal **Evolution**).

Non peer-reviewed publications

- 4. **Cristian Román-Palacios**. 2019. Five tips for nailing your US-based graduate-school applications. **Nature**, 10.1038/d41586-019-00845-z
- 3. **Cristian Román-Palacios**. 2017. P-valores, alpha y beta: ¿Cuanto nos equivocamos en Biologia?. **Boletin del Posgrado en Ciencias Biologia. Universidad del Valle**, 3:24-26.
- 2. **Cristian Román-Palacios**. 2016. ¿Conservan las áreas protegidas la biodiversidad en Colombia?. **Boletin del Posgrado en Ciencias Biologia. Universidad del Valle**, 2:79-82.
- 1. **Cristian Román-Palacios**, and Daniela Moraga Lopez. 2015. Rebuilding the evolutionary and ecological history of the sea skaters *Halobates* spp. (Heteroptera: Gerridae). **PeerJ Preprints**, 3:e1416.

Media coverage

- 2. **Nature Index**. March 2020. *Gemma Conroy*: Front line scientists call for mental health support in the wake of catastrophic ecosystem loss.
- 1. Forbes science. Febrary 2020. Andrew J. Wright Global South Science (to be published online).

Invited talks

- 6. University of California, Los Angeles. 2021. Introduction to R and ggplot2.
- 5. University of California, Los Angeles. 2021. Introduction to biostatistics.
- 4. **Universidad del Valle, Colombia**. 2019. Narrando historias a traves del Arbol de la Vida: Sistematica, Macroevolución y cambio climatico.
- 3. **Universidad del Quindio, Colombia**. 2019. Diversificación en islas, evolución de la dieta y cambio climatico.
- 2. **Universidad Nacional de Colombia, Colombia**. 2019. Narrando historias a traves del Arbol de la Vida: Sistematica, Macroevolución y cambio climatico.
- 1. **Universidad del Valle, Colombia**. 2019. Sistematica, diversificación en islas y extinctiones en gradientes altitudinales.

Software

- 4. 2019. BTOpenNLP. Building and Training models for openNLP. https://github.com/cromanpa94/BTOpenNLP
- 3. **2019**. treedata.table. Phylogenetic data manipulation using data.table. https://github.com/ropensci/treedata.table
- 2. 2019. rBT. An R Wrapper for BayesTraits https://github.com/cromanpa94/rBT
- 1. 2017. rPhylota. An R package https://github.com/cromanpa94/rPHYLOTA

Participation in conferences

- 8. **1er Congreso Latinoamericano de Evolucion**. 2021. Integrante comite cientifico: Filogenia y Biogeografía.
- 7. **Botany**. 2020. Lightning talk (presented by **Michael S. Barker**): Animal chromosome counts reveal similar range of chromosome numbers but with less polyploidy in animals compared to flowering plants.
- 6. **Evolution meeting, Montpellier (France)**. 2018. Poster: On the interplay between diversification rates, hybridization, geography, and sexual selection: a case study with Corvoid birds.
- 5. Congreso de la Sociedad Colombiana de Entomologia, Cali (Colombia). 2018. Plenary Talk: Taxonomia y sistematica de Psocidos neotropicales.
- 4. **Anolis symposium**. 2018. (presented by **Rosario Castañeda**. When did *Anolis* lizards diverge? A comparison of multiple dating strategies.
- 3. **Origins of Adaptive Radiation, Waimea (USA)**. 2018. Poster: The Tortoise and the Finch: testing for island effects on diversification using two iconic Galápagos radiations.
- 2. Colombian National conference on Evolution, Cali (Colombia). 2017. Main organizer.
- 1. **National conference on Evolution, Armenia (Colombia)**. 2015. Poster: Diversification histories in parasitic and free-living lice (Psocodea).

Teaching experience

- 12. 2021-Fall Introduction to Data Mining and Discovery (INFO-523). The University of Arizona.
- 11. **2021-Fall** Introduction to Machine Learning (INFO-521). Co-taught with Dr. Clayton Morrison. The University of Arizona.
- 10. 2020-Fall Marine Biology (ECOL-170). The University of Arizona.
- 9. 2020-Summer Genetics (ECOL-320). The University of Arizona.
- 8. 2020-Spring Introductory Biology (ECOL-182L). The University of Arizona.
- 7. 2019-Fall Marine Biology (ECOL-170). The University of Arizona.
- 6. **2019-Spring** Introductory Biology (ECOL-182L). The University of Arizona.
- 5. 2018-Fall Marine Biology (ECOL-170). The University of Arizona.
- 4. 2018-Spring Introductory Biology (ECOL-182L). The University of Arizona.
- 3. 2017-Fall Marine Biology (ECOL-170). The University of Arizona.

- 2. **2017-Spring** Introductory Biology (ECOL-182L). The University of Arizona.
- 1. 2016-Fall Introductory Biology (ECOL-182L). The University of Arizona.

Academic outreach

- 2018–2019 Data carpentry workshop helper. Tucson, AZ
 - 2018 Judge at local science fair. Davis Bilingual Magnet Elementary. Tucson, AZ
 - 2018 Data Science Ambassador for The University of Arizona
 - 2018 Ecology and Evolutionary Biology stand (Science city). Tucson Festival of books. The University of Arizona.
 - 2018 Judge at local science fair. Sam Hughes Elementary School. Tucson, AZ.
 - 2017 Speaker at the Graduate School Information Session organized for ICETEX (Colombia). University of Arizona.

Political outreach

2020 Keynote speaker at Congressman Raúl M. Grijalva's Youth Advisory Council, March 2020

Participation in committees

- 2021 Marshall Foundation/Maria Teresa Velez fellowship committee. The University of Arizona
- 2021 Admissions committee MS in Data Science, School of Information. The University of Arizona
- 2020 College of Science race and climate committee. The university of Arizona
- 2017-2018 College of Science Climate Committee. Rep. for the Ecology and Evolutionary Biology department. The university of Arizona

Advised students

Valentina Sarria Rodriguez. Undergraduate thesis. Systematics and Evolution of Neotropical Psocidae. Universidad del Valle, Colombia/ Honorable mention

Professional service

- 2021 EntomoBrasilis (1 manuscript) Reviewer 2020 Journal of Insect Biodiversity (1 manuscript) Reviewer
- 2020 EntomoBrasilis (2 manuscripts)
- 2019 Mammal Review (1 manuscript) Reviewer
- 2019 Annals of Botany (1 manuscript)
- Reviewer Reviewer
- 2019 American Journal of Botany (1 manuscript)
- 2019 Amphibia-Reptilia (1 manuscript) Reviewer 2018 Molecular Phylogenetics and Evolution (1 manuscript) Reviewer
- 2018–2019 International Journal of Tropical Biology and Conservation (3 manuscripts)
- Reviewer 2017–2019 Biota Colombiana (2 manuscripts) Reviewer
- 2017–2019 EntomoBrasilis (1 manuscripts)

Languages

Spanish Native

Reviewer

Reviewer

English Fluent
Portuguese Basic

Courses and Internships

- 2019 Nantucket phylogeny developeR workshop. Co-taught by April Wright, Josef Uyeda, Klaus Schliep, Claudia Solís-Lemus, and Liam Revell
- 2017 Sanderson's Lab, University of Arizona. Project: Plant height and rates of molecular evolution from transcriptomic data in legumes.
- 2016 Barker's Lab, University of Arizona. Project: Ploidy and diversification in Brassicaceae.
- 2016 Wiens' Lab, University of Arizona. Project: Evolution of diet across the animal Tree of Life.
- 2016 Phylogenetic Comparative Methods (Co-taught by Liam Revell [UMASS], Michael Alfaro [UCLA], Luke Harmon [Uidaho], and Ricardo Betancur [University of Puerto Rico]). Puerto Rico.
- 2015 Zaldívar-Riverón Lab, IB, UNAM, México D.F., México.
- 2015 Garcia-Aldrete Lab, IB, UNAM, México D.F., México
- 2014 Bioinformática y Genómica Computacional, CorpoGen, Bogotá, Colombia.

References

- 2 Aradhna Tripati (atripati@g.ucla.edu)
 - University of California, Los Angeles Los Angeles, California, USA
- 2 John J. Wiens (wiensj@email.arizona.edu)
 - Department of Ecology and Evolutionary Biology, The University of Arizona Tucson, Arizona, USA
- 3 Michael S. Barker(msbarker@email.arizona.edu)
 - Department of Ecology and Evolutionary Biology, The University of Arizona Tucson, Arizona, USA
- 4 Rosemary Gillespie (gillespie@berkeley.edu)
 - Department of Environmental Science, Policy, and Management Berkeley, California, USA