

RODRIGO MONJARAZ RUEDAS

Department of Biology
San Diego State University
San Diego, CA 92182
rmonjarazruedas@sdsu.edu, monroderik@gmail.com
phone: +1 (619) 381-4574

INCOMING POSITION

November 2024 **Assistant Curator of Entomology**, (Arachnids and SRE taxa)
Natural History Museum of Los Angeles County (NHMLA).
Supervisor: Dr. Luis Chiappe.

CURRENT POSITION

2020-Present Postdoctoral Research Fellow
Department of Biology, San Diego State University, San Diego, California, USA.
Advisor: Dr. Marshal Hedin.

EDUCATION

2019 Universidad Nacional Autónoma de México, Biology Institute.
PhD. Biological Science (Molecular Systematics and Evolution)
Doctoral dissertation: “Systematics of the genus *Stenochrus* Chamberlin, 1922 (Schizomida: Hubbardiidae)”
Nominated to the Alfonso Caso Medal.
Graduated with honors
Advisor: Dr. Oscar Francke

2015 Universidad Nacional Autónoma de México, Biology Institute.
MS, Biological Science (Taxonomy and Systematics)
Master's Thesis: “Systematic revision of genus *Mayazomus* Cokendolpher and Reddell, 1995 (Schizomida: Hubbardiidae)”
Nominated to the Alfonso Caso Medal
Graduated with honors
Advisor: Dr. Oscar Francke

2012 Universidad Nacional Autónoma de Mexico, Science Faculty.
BS, Biology
Undergraduate Thesis: “Catalogue of schizomids (Arachnida: Schizomida) of the Colección Nacional de Arácnidos (CNAN), UNAM”.
Advisor: Dr. Alejandro Valdez Mondragon

PROFESSIONAL POSITIONS

2020-Present Department of Biology, San Diego State University, San Diego, California, USA.
Postdoctoral Research Fellow
Phylogenomic, spatial phylogenetics and conservation prioritization in trapdoor spiders (and kin) of the California Floristic Province

Supervisor: Dr. Marshal Hedin.

- 2019-2020 Science Faculty, Universidad Nacional Autónoma de México.
Lecturer, Undergrad Professor
Section: Systematic Biology
- 2012-2013 Arachnids Collection, Biology Institute, UNAM.
Assistant Collections Manager
Curation of Pedipalpi data bases and *Latrodectus* GIS.

PUBLICATIONS

- Monjaraz-Ruedas, R.** 2012. A new species of the schizomid genus *Stenochrus* (Schizomida: Hubbardiidae) from Mexico. *Zootaxa*. 3334: 63–68
- Monjaraz-Ruedas, R.** 2013. A new species of Protoschizomus (Schizomida: Protoschizomidae) from a cave in Guerrero, Mexico. *The Journal of Arachnology*. 41: 420–424
- Monjaraz-Ruedas, R. & Francke, O. F.** 2015. Taxonomic revision of the genus *Mayazomus* Reddell & Cokendolpher, 1995 (Schizomida: Hubbardiidae), with description of five new species from Chiapas, Mexico. *Zootaxa*. 3915: 451–490.
- Monjaraz-Ruedas, R. & Francke, O. F.** 2016. Systematics of the genus *Mayazomus* (Arachnida: Schizomida): the relevance of using continuous characters and pedipalp setae patterns to schizomid phylogenetics. *Zoological Journal of the Linnean Society*. 176: 781–805.
- Monjaraz-Ruedas, R., Francke, O. F., & Cokendolpher, J. C.** 2016. Three new species of *Agastoschizomus* (Arachnida: Schizomida: Protoschizomidae) from North America. *Revista Mexicana de Biodiversidad*. 87: 337–346.
- Monjaraz-Ruedas, R., Francke, O. F., Cruz-López, J. A., & Santibañez-López, C. E.** 2016. Annuli and setal patterns in the flagellum of female micro-whipscorpions (Arachnida: Schizomida): Hypotheses of homology across an order. *Zoologischer Anzeiger*. 263: 118–134.
- Monjaraz-Ruedas, R., Francke, O. F., & Santibañez-López, C. E.** 2017. The morphological phylogeny of the family Protoschizomidae revisited (Arachnida: Schizomida): setal characters, fossil and paraphyletic genera. *The Journal of Arachnology*. 45: 99–111.
- Monjaraz-Ruedas, R., & Francke, O. F.** 2017. A new genus of Schizomids (Arachnida: Schizomida: Hubbardiidae) from Mexico, with notes on its systematics. *Systematics and Biodiversity*. 15: 399–413.
- Monjaraz-Ruedas, R., & Francke, O. F.** 2018. Five new species of *Stenochrus* (Schizomida: Hubbardiidae) from Oaxaca, Mexico. *Zootaxa*. 4374: 189–214.
- Monjaraz-Ruedas, R., Prendini, L. & Francke, O. F.** 2019. Systematics of the short-tailed whipscorpion genus *Stenochrus* Chamberlin, 1922 (Schizomida: Hubbardiidae), with descriptions of six new genera and five new species. *Bulletin of the American Museum of Natural History*. 435: 1–91.

- Cruz-López, J. A., **Monjaraz-Ruedas, R.** & Francke, O. F. 2019. Turning to the dark side: Evolutionary history and molecular species delimitation of a troglomorphic lineage of armoured harvestman (Opiliones: Stygnopsidae). *Arthropod Systematics and Phylogeny*. 77: 285–302.
- Monjaraz-Ruedas, R.**, Francke, O. F. & Prendini, L. 2020. Integrative systematics untangles evolutionary history of *Stenochrus* (Schizomida, Hubbardiidae), a neglected junkyard genus of North American short-tailed whipscorpions. *Biological Journal of the Linnean Society*. 130: 458–459.
- Monjaraz-Ruedas, R.**, Prendini, L. & Francke, O. F. 2020. First species of *Surazomus* (Schizomida: Hubbardiidae) from North America illuminate biogeography of short-tailed whipscorpions in the New World. *Arthropod Systematics and Phylogeny*. 78(2): 245–263.
- Cruz-López, J. A., **Monjaraz-Ruedas, R.** Colmenares, P. A. & Francke, O. F. 2021. Historical biogeography of a neglected family of armoured harvestmen (Opiliones: Laniatores: Icaleptidae) with the first record and a new genus for tropical Mesoamerica. *Invertebrate Systematics*. 35: 493–513.
- Francke, O. F., **Monjaraz-Ruedas, R.**, Cruz-López, J. A. 2021. Biodiversity of Huautla Cave System, Oaxaca, Mexico. *Diversity*. 13: 429.
- Monjaraz-Ruedas, R.**, Francke, O. F. & Prendini, L. 2022. World Travelers: parthenogenesis and ecological tolerance enable multiple colonization events by the widespread short-tailed whipscorpion, *Stenochrus portoricensis* (Schizomida: Hubbardiidae). *Insect Systematics and Diversity*. 6(1): 7, 1–17.
- Monjaraz-Ruedas, R.**, Mendez, R.W., Hedin, M. 2023. Species delimitation, biogeography, and natural history of dwarf funnel web spiders (Mygalomorphae, Hexurellidae, *Hexurella*) from the United States / Mexico borderlands. *Zookeys*. 1167: 109–157.
- Monjaraz-Ruedas, R.**, Starret, J., Dean Leavitt, D., Hedin, M. 2024. Broken ring speciation in California mygalomorph spiders (Nemesiidae, Calisoga). *The American Naturalist*. 204(1): 55–72. <https://doi.org/10.1086/730262>
- Monjaraz-Ruedas, R.**, Starret, J., Newton, L., Bond, J., Hedin, M. 2024. Population genomics diversity and differentiation in trapdoor spiders and relatives (Araneae, Mygalomorphae). *Molecular Ecology*.

MANUSCRIPTS IN PREPARATION

Monjaraz-Ruedas, R., Starret, J., Hays, T., Jochim, E., Bond, J., Hedin, M. Spatial phylogenetics of mygalomorph spiders of the California Floristic Province, with emphasis on lineage definitions. (In preparation).

Monjaraz-Ruedas, R., Sukumaran, J., Hedin, M. Species delimitation of Tawny Dwarf Tarantulas (Mygalomorphae, Megahexuridae, *Megahexura*) using information theory and supervised machine learning for evaluating alternative hypotheses (In preparation).

Monjaraz-Ruedas, R. Hedin, M. *mappuce* a new python wrapper for automatization workflows involving read mapping focused on UCE data (In preparation).

Hedin M., M. J. Ramírez, **R. Monjaraz-Ruedas**. Phylogenomics of North American cybaeid spiders (Araneae, F. Cybaeidae), including the description of new taxa from the Klamath Mountains Geomorphic Province (In Preparation).

NOMINATIONS

2021-2024 Sistema Nacional de Investigadores, CONACyT, Mexico
Candidate to National Researcher

GRANTS and FELLOWSHIPS

- 2023-2024 Texas Parks & Wildlife Department, U.S.A.
M. Hedin, R. Monjaraz-Ruedas
Cave invertebrate phylogenomics and databasing \$200K USD.
- 2020-2022. Consejo Nacional de Ciencia y Tecnología (CONACYT), Mexico
International Postdoctoral Fellowship.
- 2018 American Arachnological Society, U.S.A.
Vincent Roth fund for Systematics Research. \$750 USD
- 2017 Richard Gilder Graduate School, AMNH, U.S.A.
Theodore Roosevelt Grant. \$2,000 USD
- 2016 American Arachnological Society, U.S.A.
Student Travel Grant. \$500 USD
- 2016 Richard Gilder Graduate School, AMNH, U.S.A.
Collection Study Grant. \$1,175 USD
- 2015-2019. Consejo Nacional de Ciencia y Tecnología (CONACYT), Mexico
Postgraduate National Fellowship, PhD
- 2013-2015. Consejo Nacional de Ciencia y Tecnología (CONACYT), Mexico
Postgraduate National Fellowship, MS

AWARDS

- 2024 American Arachnological Society,
Norman Platnick Award for Taxonomic Research,
- 2024 Universidad Nacional Autónoma de México.
Alfonso Caso Medal. Highest decoration awarded to the best PhD project in the Entire Biological Sciences Program.
- 2019 Biology Institute, UNAM, Students symposium 2019
2nd Place for the best Oral Presentation “Flash Modality”

- 2018 Biology Institute, UNAM, 3rd Students symposium
1st Place under PhD category for the best Oral Presentation
- 2016 Asociación Mexicana de Sistemática de Artrópodos.
1st Place at graduate level for the best poster presentation
- 2012 Biology Institute, UNAM, Mexico
3rd Place at Undergraduate level for the best poster presentation

TEACHING AND MENTORING

Teaching

- 2024 San Diego State University
Guest Lecturer
BIOL 526 - Terrestrial Arthropod Biology, “Chelicerata”.
- 2022 San Diego State University
Guest Lecturer
BIOL 526 - Terrestrial Arthropod Biology, “Chelicerata”.
- 2021 San Diego State University
Guest Lecturer
BIOL 526 - Terrestrial Arthropod Biology, “Chelicerata”.
- 2019-2020 Science Faculty, Universidad Nacional Autónoma de México.
Undergrad Professor
Section: Systematic Biology
- 2018 Biological science postgraduate program, Biology Institute, UNAM, Mexico
Guest Lecturer
Section: Order Schizomida and Cave arachnid diversity
- 2017 Facultad de Estudios Superiores Iztacala, UNAM, Mexico
Guest Lecturer
Section: Chelicerates: Schizomida and Palpigradi.
- 2016 Centro Interpretativo Ecológico, Gómez Farías, Tamaulipas, Mexico
Arachnids workshop
Section: Order Palpigradi, Ricinulei and Schizomida.
- 2014 Science Faculty, UNAM, Mexico
Arachnids workshop
Section: Order Schizomida and Thelyphonida.

Student advising

- 2020-Present San Diego State University
Wet lab, Library prep., Bioinformatics, Phylogenomics

Undergrads: Lydia Irons, Emma Stivers, Loren Rose, Grant Wass
Graduate students: Ben Gibson (MS), Toby Hays (MS)

2020-Present CICESE, Baja California, Mexico,
Biogeography of *Phidippus* (Salticidae)
Graduate students: Luis Carlos Hernández (PhD)

2017-2019 Arachnid Collection, Biology Institute, UNAM, Mexico
Molecular phylogenetics and Wet lab
Graduate students: Daniela Ble Carrasco (MS), Dariana Guerrero (PhD)

RESERCH VISITS

2024 Cave Invertebrates Collection, Texas Memorial Museum.
University of Texas Biodiversity Collections.
Host: Dr. Alex Wild

2017 American Museum of Natural History, NY, U.S.A.
Invertebrate Zoology, Molecular Arachnids Lab.
Host: Dr. Lorenzo Prendini

2016 University of Vermont, VT, U.S.A.
Invertebrate Collections, Arachnid collection,
Host: Dr. Ingi Agnarsson

2016 American Museum of Natural History, NY, U.S.A.
Invertebrate Zoology, Arachnid collection.
Host: Dr. Lorenzo Prendini

2014 American Museum of Natural History, NY, U.S.A.
Invertebrate Zoology, Arachnid collection,
Host: Dr. Lorenzo Prendini

SELECTED COFERENCE PRESENTATIONS

2022 2022 American Arachnological Society Meeting. California, USA. [Talk]

2020 VI Latin-American congress of Arachnology. Buenos Aires, Argentina. [Virtual Talk]

2019 Simposio de Estudiantes del IBUANM, Instituto de Biología, Mexico City, Mexico
[Talk]

2018 3er Simposium de Investigacion de Posgrados y Licenciaturas del IBUNAM. Mexico
City, Mexico [Talk]

2016 20th International Congress of Arachnology, Colorado, U.S.A. [Talk]

2016 20th International Congress of Arachnology. Colorado, U.S.A [Poster]

- 2014 IV Latin-American congress of Arachnology. Morelia, México [Talk]
- 2011 11va Semana de Cuevas. Centro Académico Cultural, Querétaro, México. [Talk]
- 2010 10ma Semana de Cuevas. Facultad de Ciencias, Mexico City. Mexico [Talk]

INVITED TALKS

- 2024 “Brown bag lunch” seminar at San Diego Natural History Museum, San Diego, CA, USA.
“Broken ring speciation in California False Tarantulas (Calisoga: Mygalomorphae).”
- 2023 Institutional Seminar Department of Biology, Western Connecticut State University, Connecticut, U.S.A.
“Ring speciation patterns in California Mygalomorphs” [Virtual Talk]
- 2023 Institutional Seminar Department of Entomology and Nematology, University of California, Davis, Davis, U.S.A.
“Ring species, ring of species or broken ring speciation in Californian Calisoga (Mygalomorph) spiders.”
- 2023 Institutional Seminar Centro de Investigaciones Biológicas del Noroeste (CIBNOR), Baja California, Mexico.
“Del Desierto a las montañas: patrones de especiación en dos complejos de arañas migalomorfas.” [Virtual Talk]
- 2023 Institutional Seminar at San Diego Natural History Museum, San Diego, CA USA.
“Re-Branding Taxonomy”.
- 2021 Institutional Seminar Biology Institute, Mexico City, Mexico
“Endemismos de corto rango como modelo para estudios de diversidad y conservación: un ejemplo con el clado Pedipalpi (Arachnida)”. [Virtual Talk]
- 2021 Species Delimitation workshop, Smithsonian Institution Washington, D.C., USA.
“Cryptic diversity in the trapdoor spiders (Mygalomorphae) of the California Floristic Province.” [Virtual talk]
- 2021 Entomology Seminar, Smithsonian Institute, Washington, D.C., USA
“Short-Range endemics as a tool for understanding introduced and parthenogenetic species: A case with Short-tailed Whipscorpions”. [Virtual talk]
- 2017 Facultad de Estudios Superiores Zaragoza, UNAM. Mexico.
“Bioespeleología para el estudio de los arácnidos”

OUTREACH

- 2023 “Brown bag lunch” seminar at San Diego Natural History Museum, San Diego, CA, USA.

“Speaker: A story about exploration, biodiversity discovery, and community engagement”.

- 2023 San Diego State University, Dpt. Biology, San Diego, CA, USA.
“Guided visit to the Arachnology lab to 6th graders”
- 2023 Darwin’s Day exhibition. Zoology Museum San Diego State University. San Diego, CA, USA.
“Volunteer”
- 2022 Eight-Legged Encounters, Bohart Museum, UC Davis, CA, USA.
“Volunteer”
- 2016-2017 ARACNIDOS, an academic organization created for teaching and transmitting knowledge about Arachnids to the general public. Mexico City, Mexico
“Director of Cafe de Ocho”
- 2012 Wise with water contest. Netherlands Embassy and the NUFFIC NESO México.
“Participant project: Water collection in homes of Mexico City”
- 2012 56 encuentro de Ciencias, Artes y Humanidades. Instituto de Biología, UNAM Mexico.
“Speaker”
- 2011 International year of Biodiversity. Mexico City, Mexico
“Volunteer in La milpa biodiversity stand”

DIVERSITY & INCLUSION ACTIVITIES

- 2017 ARACNIDOS, Mexico City, Mexico.
“Arac’nota: Cuando abandonar tu hogar te cuesta miles de años: ricinulidos y su actual distribución”.
- 2017 ARACNIDOS, Mexico City, Mexico.
“Arac’nota: Los Guardianes del Inframundo”.
- 2016 Arachnids Outreach tour. “El Cielo”, Centro Interpretativo Ecológico, Gómez Farías, Tamaulipas, Mexico
“Speaker and Panelist in arachnids exhibitions”
- 2011 XI Semana de Cuevas. Centro Academico Cultural, Queretaro, UNAM, Mexico.
“Logistics and organization”
- 2010 X Semana de Cuevas. Facultad de Ciencias, UNAM, Mexico.
“Logistics and organization”

PROFESSIONAL DEVELOPMENT

- 2022 San Diego State University, San Diego, CA, USA.

“Grants and Research Enterprise Writing (GREW) for Postdocs and Research Scientists” [Workshop]

- 2021 Smithsonian Institution, Washington, DC. USA.
“Species Delimitation” [Online Workshop]
- 2020 Data Carpentry as part of the Evolution Community Resources for Early-career Researchers (ECR²)
“Introduction to command line” [Online Workshop]
- 2017 Biology Institute, UNAM, Mexico.
“The use of R packages for their use in comparative phylogenetic methods” [Workshop]
- 2017 Biology Institute, UNAM, Mexico.
“Workshop on the use of Mesquite”
- 2015 Biology Institute, UNAM, Mexico.
“Theory and practice of Molecular lab techniques” [Workshop]
- 2014 Biology Institute, UNAM, Mexico
“Introduction to multivariate statistics” [Workshop]
- 2014 Nature Publishing Group Iberoamérica, Coordinación de la Investigación Científica, UNAM, Mexico.
“Scientific writing and publishing in English” [Workshop]
- 2011 Biology Institute, UNAM, Mexico.
“Barcoding of Arachnids” [Workshop]

BIOLOGICAL COLLECTION MANAGEMENT

SDSU Biodiversity Museum. Maintenance of Mygalomorph, Schizomida Collections and Genomics Lab.

CNAN-IBUNAM, Mexico. Maintenance of Schizomida, Amblipigy and Uropigy collections, as well as *Latroductus* data base maintenance.

AMNH-NY, U.S.A. Maintenance of Schizomida collection.

VT-Natural History Museum, U.S.A. Maintenance of Schizomida collection under supervision of Dr. Ingi Agnarsson.

SERVICE

ad hoc reviewer: Biological Journal of the Linnean Society, Journal of Arachnology, Insects, PlosONE, Revista Ibérica de Aracnología, Zootaxa, Zoological Journal of the Linnean Society, Biotropica, Insect Systematics and Diversity, Taxonomy, Arthropoda, PeerJ, Invertebrate Systematics, Molecular Phylogenetics and Evolution, Systematic Biology.

RESEARCH SKILLS

Laboratory

- DNA extractions
- PCR
- Sanger DNA sequencing
- NGS Library preparation (iTru libraries)
- SEM: Scanning Electron Microphotograph.
- Digital Imaging using Microptix - Visionary Digital BK plus system

Bioinformatics

- Phylogenetics software: TNT, Mr. Bayes, RaxML, MAFFT, Sequencher, Mesquite, BEAST, PAUP, MEGA, IQTree, ASTRAL, etc.
- Population Genetics/Phylogeography: PopArt, Arlequin, BAPS, Structure, RASP, DNAsp, BEAST, ANGSD, etc.
- SIG: gvSIG, DIVA, ArcView, etc.
- Pipelines: Phyluce, GATK, bcftools, samtools, etc.
- HPC Cluster: Torque and SLURM systems
- *Programming languages*: UNIX/Command Line, Python, R.
- Databasing: Excel, Python, R, SQL
- Imaging: Photoshop, Illustrator

Software

- FUSE: Align, Trim and Filter UCE Sequences and Alignments (<https://github.com/rmonjaraz/FUSE>)

Field experience

- Mexico. Extensive work throughout the entire country.
- Belize. Multiple localities including several national parks.
- Guatemala. Multiple localities throughout the country.
- U.S.A. Nevada, California Floristic Province.
- *Certified Cave Diver*
- More than 10 years of experience in vertical techniques (*Speleology and Canyoning*)

LANGUAGES

Spanish: native

English: proficient