MIRNA VAZQUEZ ROSAS LANDA

As a postdoctoral fellow at the Baker Lab⁷, I am studying the oceans microbial communities with a focus in their metabolic and phylogenetic diversity.

My interest in bioinformatics and genomics took me to my first postdoc at the Genomics and transcriptomics lab at the INECOL². Where I used the pan genome paradigm to design a method to identify a phytopathogenic fungus that was killing trees at the Mexican-US border.

I did my Ph.D. at the Ecology Institute at the UNAM³ in Mexico City. During this time, I studied the landscape genomics of a rare lineage of Vibrionaceae isolated from Cuatro Cienegas⁴, llooking for the genes that could explain the adaptation to this ultra-oligotrophic environment.

I enjoy teaching and sharing knowledge, and I love the R community. I started using R when I became part of the CDSB⁵ and Rladies community⁶ and then a co-organizer of RLadies Xalapa⁷, a safe place for minorities to learn how to code.



2017 2012

Ph.D. in Sciences

National Autonomous University of Mexico, Ecology Institute. • Mexico City, MX

- Title: Patterns of diversification and adaptation of the Vibrionaceae family. The case of Cuatro Cienegas.
- · Advisor: Dr. Valeria Souza Saldivar.
- Description: I examined the evolutionary footprints of local adaptation in the genomes of bacteria isolated from a highly oligotrophic environment in Cuatro Cienegas (CCB). Mexico. I obtained 200 axenic isolates of Vibrionaceae, a group of bacteria with a cosmopolitan distribution, from several ponds around the CCB aquatic system. I identified the patterns of genetic variation among Vibrionaceae isolates, looking for signals of adaptation to structured (Water column) and non-structured (Sediments) environments within the ponds; I analyzed whether the recombination patterns were associated with these environments or constrained to the lineage history. Since several members of Vibrionaceae possess pathogenic relatives. I also evaluate the hypothesis that the members of Vibrionaceae isolated from Cuatro Cienegas (CCB) had no pathogenic genomic elements, under the assumption that bacteria from CCB rarely get into contact with other bacteria, like oceanic Vibrionaceae.

B.Sc. in Biology

2011 2007

National Autonomous University of Mexico, FES Iztacala

• Mexico City, MX



View this CV online at: https:// mirnavazquez.netlify.app/media /resume.html

CONTACT

- ➡ mirna@austin.utexas.edu
- **1** ORCID
- E Google Scholar
- **MirnaVRL**
- O MirnaVRL
- **Ø** MirnaVRL

LANGUAGE SKILLS

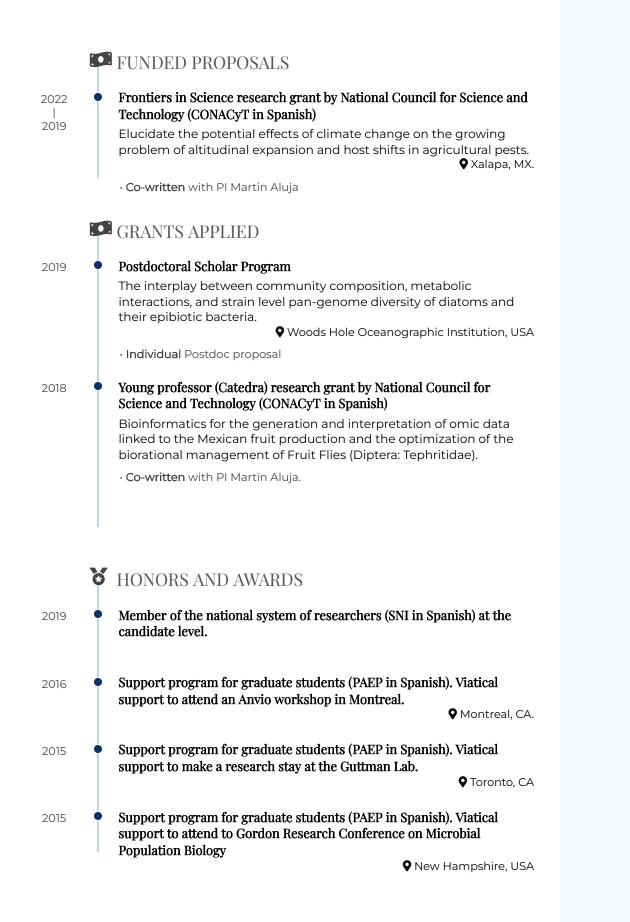


Made with the R package pagedown.

The source code is available on github.com/nstrayer/cv.

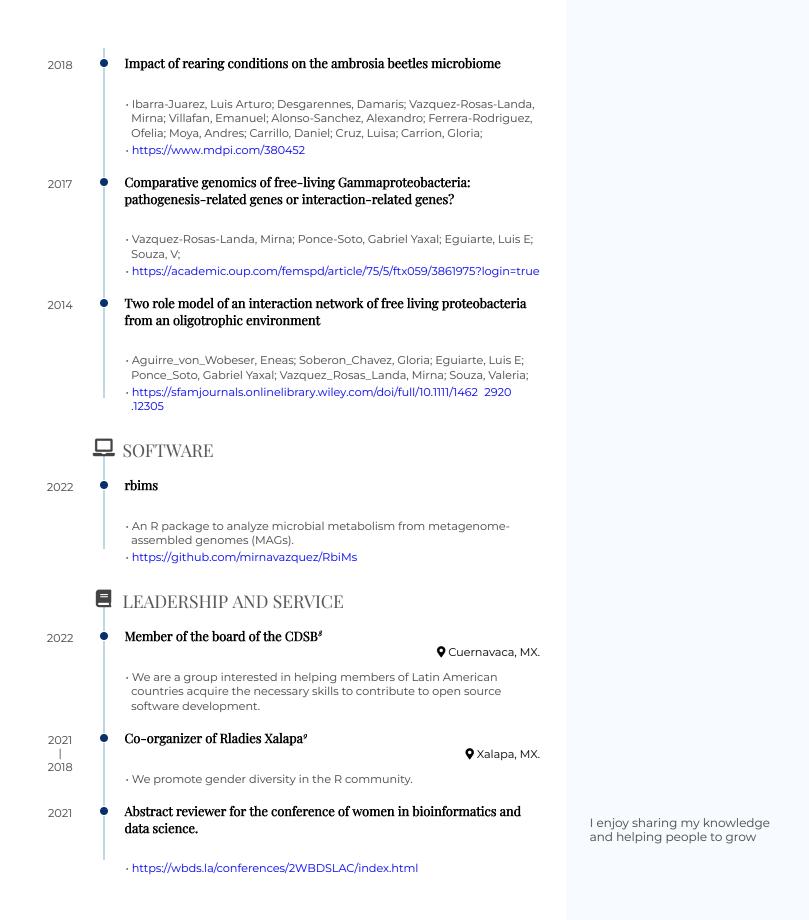
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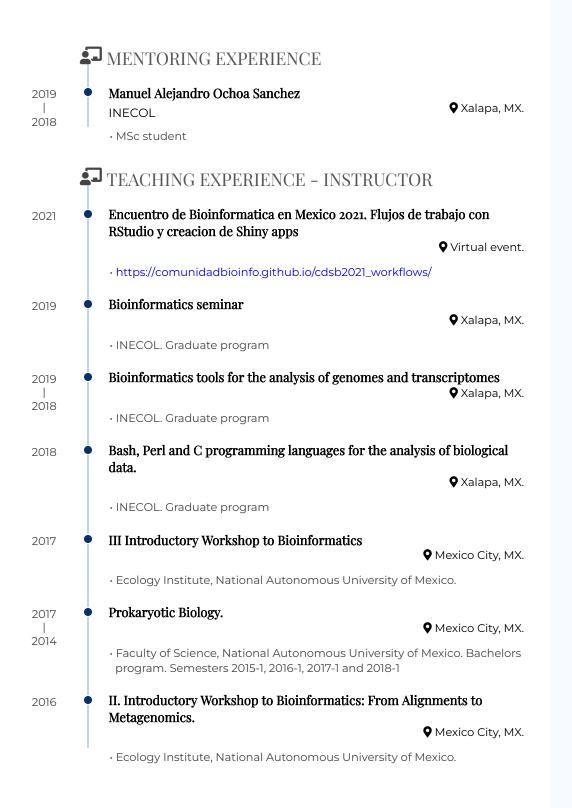
ļ	RESEARCH EXPERIENCE
current	Postdoctoral fellow
 2020	The University of Texas at Austin, Marine Microbial Ecology Lab Q Austin, USA.
	 Currently studying the ecology and evolution of microbes by understanding their metabolism, using metagenomics. Advisor: Brett Baker
2020	Postdoctoral fellow
 2017	Ecology Institute, A.C. Genomics and transcriptomics lab ^Q Xalapa, MX.
2017	• I studied the interaction among plants-insects-microbes I designed a diagnosis system to identify Fusarium Kuruoshio using genomics I studied the defense mechanisms of Persea americana var. Hass to the attack of the Mexican Fruit Fly, using transcriptomics I analyzed the microbiome of the Mexican Fruit Fly.
	Advisor: Martin Aluja and Enrique Ibarra-Laclette
2015	• Guest Research
	The University of Toronto. Guttman Laboratory of Pathogen Genomics and Evolution Toronto, CA
	 Realized the pan-genome analysis of the genomes that I used for my PhD thesis.
	• Advisor: David Guttman
2014	• Guest Research
	National Laboratory of Genomics for Biodiversity
	 I learned how to assemble and annotate genomes. Advisor: Enrique Ibarra-Laclette
2011	• Guest Research
	Center for Research and Advanced Studies of the National
	Polytechnic Institute Virapuato, MX
	 I designed a bacteria that was capable of sensing the arsenic concentrations in water.
	• Advisor: Agustino Martinez Antonio



2012	•	Scholarship from CONACyT to perform a PhD. at the Ecology Institute, UNAM.	
		• Mexico City, MX	
2010	•	Scholarship of Academic Excellence for Student Mobility, UNAM, and Coca-Cola to study for one year at the Complutense University of Madrid at the faculty of science. Madrid, ES	
	8	PUBLICATIONS	
2022	•	Integrating proteomics and metabolomics approaches to elucidate the ripening process in white Psidium guajava	
		• Monribot-Villanueva, Juan L; Altuzar-Molina, Alma; Aluja, Martin; Zamora- Briseno, Jesus Alejandro; Elizalde-Contreras, Jose M; Bautista-Valle, Mirna V; de Los Santos, Jiovanny Arellano; Sanchez-Martinez, Daniela E; Rivera- Resendiz, Francisco J; Vazquez-Rosas-Landa, Mirna;	
		https://www.sciencedirect.com/science/article/pii/S0308814621016629	
2021	•	Design of a diagnostic system based on molecular markers derived from the Ascomycetes pan-genome analysis: the case of Fusarium Dieback disease	
		 Vazquez-Rosas-Landa, Mirna; Sanchez-Rangel, Diana; Hernandez- Dominguez, Eric E; Perez-Torres, Claudia-Anahi; Lopez-Buenfil, Abel; de Jesus Garcia-avila, Clemente; Carrillo-Hernandez, Edgar-David; Castaneda-Casasola, Cynthia-Coccet; Rodriguez-Haas, Benjamin; Perez- Lira, Josue; https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0246079 	
2021	•	Metagenomic Survey of the Highly Polyphagous Anastrepha ludens Developing in Ancestral and Exotic Hosts Reveals the Lack of a Stable Microbiota in Larvae and the Strong Influence of Metamorphosis on Adult Gut Microbiota	
		 Aluja, Martin; Zamora-Briseno, Jesus Alejandro; Perez-Brocal, Vicente; Altuzar-Molina, Alma; Guillen, Larissa; Desgarennes, Damaris; Vazquez- Rosas-Landa, Mirna; Ibarra-Laclette, Enrique; Alonso-Sanchez, Alexandro G; Moya, Andres; https://www.frontiersin.org/articles/10.3389/fmicb.2021.685937/full 	

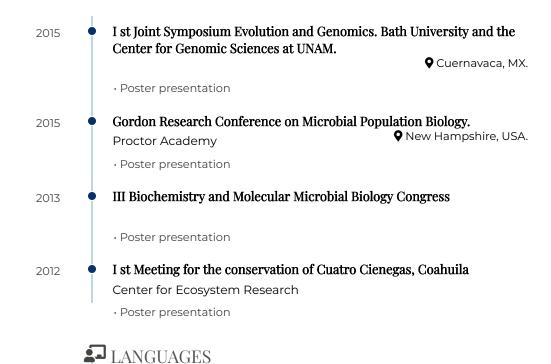
2020	• Population genomics of Vibrionaceae isolated from an endangered oasis reveals local adaptation after an environmental perturbation
	 Vazquez-Rosas-Landa, Mirna; Ponce-Soto, Gabriel Yaxal; Aguirre-Liguori, Jonas A; Thakur, Shalabh; Scheinvar, Enrique; Barrera-Redondo, Josue; Ibarra-Laclette, Enrique; Guttman, David S; Eguiarte, Luis E; Souza, Valeria; https://bmcgenomics.biomedcentral.com/articles/10.1186/s12864_020 06829_y
2020	• Evidence for succession and putative metabolic roles of fungi and bacteria in the farming mutualism of the ambrosia beetle Xyleborus affinis
	 Ibarra-Juarez, Luis Arturo; Burton, MAJ; Biedermann, PHW; Cruz, L; Desgarennes, Damaris; Ibarra-Laclette, Enrique; Latorre, Amparo; Alonso- Sanchez, Alexandro; Villafan, Emanuel; Hanako-Rosas, Greta; https://journals.asm.org/doi/full/10.1128/mSystems.00541 20
2020	• A first glimpse of the mexican fruit fly anastrepha ludens (Diptera: Tephritidae) antenna morphology and proteome in response to a proteinaceous attractant
	 Ruiz-May, Eliel; Altuzar-Molina, Alma; Elizalde-Contreras, Jose M; Arellano-de Los Santos, Jiovanny; Monribot-Villanueva, Juan; Guillen, Larissa; Vazquez-Rosas-Landa, Mirna; Ibarra-Laclette, Enrique; Ramirez- Vazquez, Monica; Ortega, Rafael; https://www.mdpi.com/1422_0067/21/21/8086
2019	• Genomic signals of adaptation towards mutualism and sociality in two ambrosia beetle complexes
	 Blaz, Jazmin; Barrera-Redondo, Josue; Vazquez-Rosas-Landa, Mirna; Canedo-Texon, Anahi; Aguirre von Wobeser, Eneas; Carrillo, Daniel; Stouthamer, Richard; Eskalen, Akif; Villafan, Emanuel; Alonso-Sanchez, Alexandro; https://www.mdpi.com/2075 1729/9/1/2
2018	• How divergent is the Cuatro Cienegas oasis? Genomic studies of microbial populations and niche differentiation
	 Gomez-Lunar, Zulema; Vazquez-Rosas-Landa, Mirna; Ponce-Soto, Gabriel Yaxal; Moreno-Letelier, Alejandra; Olmedo-alvarez, Gabriela; Eguiarte, Luis E; Souza, Valeria; https://link.springer.com/chapter/10.1007/978 3 319 93423 5_5





	•	TEACHING EXPERIENCE – ASSISTANT	
2019 2018	•	Ethics and Scientific Writing, Arming Proposals Research and Creativity, Innovation and Patent Generation. Valapa, MX.	
		• INECOL. Graduate program	
2017	•	Study of microbial evolution. • Mexico City, MX.	
		• Ecology Institute, National Autonomous University of Mexico. Graduate program. Semester 2017-2.	
	-	WORKSHOPS	
2019	•	Workshop in Advanced Bioinformatics: Comparative Genomics and Evolution Using Data Science.	
		Institute of Mathematics and Institute of Neurobiology. Q Juriquilla, MX.	
2019	•	How to Build and Create Tidy Tools	
		Center for Genomic Sciences Quernavaca, MX.	
		 https://comunidadbioinfo.github.io/post/building tidy tools cdsb- runconf2019/#.XTdh1UNOm94 	
2018	•	Latin American R/Bioconductor Developers Workshop Center for Genomic Sciences Quernavaca, MX.	
		 https://comunidadbioinfo.github.io/post/r bioconductor developers workshop 2018/#.XTdiA0NOm94 	
2018	•	Statistical analysis with RIPICYTSan Luis Potosi, MX.	
2016	•	An Anvio workshop in MontrealThe University of Montreal♥ Montreal, CA.	
		\cdot Taught by Dr. Eren Murat of the University of Chicago	
2012	•	Strategies and Techniques for Analyzing Microbial Population Structure Marine Biological Laboratory Voods Hole Oceanographic Institution	I am constantly learning
		CONFERENCES, TALKS, POSTERS AND SCIENTIFIC OUTREACH	
2021	•	Bioconductor2021 Ø Virtual event	
		• Presented the rbims ¹⁰ package in which I am working on.	

2021	•	useR
		Virtual event
		• Presented the rbims ^{η} package in which I am working on.
2021	•	World Microbial Forum Virtual event
		• Presented the results of the first metagenomics study that I made, where I show the diversity of bacteria that degrade hydrocarbons. Poster here ¹² .
2021	•	MicrobiomeMX
		♥ Virtual event
		 I talked about a diagnosis system to identify the pathogen responsible of the Fusarium Dieback disease
2020	•	RladiesMX
		♥ Virtual event
		• I showed how to use R in microbiology. Conference here ¹³ . Participation on minute 2.42.
2019	•	Plant and Animal Genome conference
		San Diego, USA.
		 Poster presentation of the effects of oviposition in Avocado Hass. Abstract here¹⁴.
2019	•	Not everything that shines is green or bacteria with jellyfish genes
		• Instructor at the program of Promotion of science and technology of young scientists (Fomento a la ciencia y tecnologia de jovenes cientificos in Spanish) with the project: Not everything that shines is green or bacteria with jellyfish genes (No todo lo que brilla es verde o bacterias con genes de medusa) at the Ecology Institute, A.C.
2017	•	VI National Ecological Meeting
		♥ Leon, MX.
		• Oral presentation
2017	•	XL National Meeting of Microbiology ♥ Guadalajara, MX.
		Poster presentation
2016	•	VI Students SymposiumEcology Institute, UNAMQ Mexico City, MX.
		• Oral presentation
2015	•	IV Biochemistry and Molecular Microbial Biology Congress Q Coahuila, MX.
	I	Poster presentation



• Native: Spanish (Mexico)

• Bilingual: English



- 1: https://sites.utexas.edu/baker lab/
- 2: https://www.inecol.mx/personal/index.php/moleculares/139 enrique ibarra laclette
- 3: http://www.ecologia.unam.mx/web/
- 4: https://www.sciencemag.org/news/2020/07/watch threatened pools mexican desert hold clues early life
- 5: https://comunidadbioinfo.github.io
- 6: https://rladies.org
- 7: https://www.meetup.com/rladies xalapa/
- 8: https://comunidadbioinfo.github.io/
- 9: https://www.meetup.com/rladies_xalapa/
- 10: https://github.com/mirnavazquez/RbiMs
- 11: https://github.com/mirnavazquez/RbiMs
- 12: https://twitter.com/MirnaVRL/status/1406971373948440578?s=20
- 13: https://www.youtube.com/watch?v=hKut39SpQoY
- 14: https://pag.confex.com/pag/xxvii/meetingapp.cgi/Paper/37298