

## Diana Aguilar Gómez

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### EDUCATION

#### University of California Berkeley

Fall 2017 - Summer 2023

Center for Computational Biology (CCB)

*Computational Biology PhD*

#### Universidad Nacional Autónoma de México (UNAM)

Fall 2013 - Spring 2017

Center for Genomic Sciences (CCG) and Institute of Biotechnology

*Licenciado en Ciencias Genómicas* (Bachelor in Genomic Science)

GPA: 9.68/10 *Mención Honorífica* (Graduated with Honors)

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### FUNDING AND AWARDS

- Chancellor's Postdoctoral Fellowship Los Angeles, 2023-2025
- Cal NERDS SACNAS Diversity STEM Research Conference Travel Grant Award Berkeley, U.S. 2022
- Graduate Division Conference Travel Grant Berkeley, U.S. 2022
- UC MEXUS-CONACYT Fellowship Berkeley, U.S. 2018-2022
- Fulbright-Garcia Robles Fellowship for Graduate Studies Berkeley, U.S. 2017- 2020
- Community Builder Award from LAGESSES Berkeley, U.S. 2018
- "Movilidad Estudiantil" UNAM Exchange Program Munich, Germany. 2017
- MITACS Globalink Research Award Vancouver, Canada. 2016
- SURP Fellowship "Proyecto 100,000" Ithaca, U.S. 2014
- PRONABES - UNAM Fellowship Mexico. 2013 - 2017

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### EXPERIENCE

*Postdoc Scholar at UCLA*, Department of Ecology and Evolutionary Biology, Los Angeles, U.S.

Supervisor: Dr. Kirk Lohmueller, **August 2023 - present**

- Modeling structural variants and repeats in populations of concern
- Assessing inbreeding depression and survival in Rice's whale
- Selection on *Puma concolor* (mountain lion) genetic rescue (co-advised with Dr. Nielsen)

*PhD Candidate at UC Berkeley*, Center for Computational Biology, Berkeley, U.S.

Supervisor: Dr. Rasmus Nielsen, May 2018 - July 2023

- Map genetic variants underlying color polymorphism in *Oophaga pumilio* (strawberry poison frog)
- Color adaptation in populations of *Phrynocephalus versicolor* (toad-headed lizard)
- Genomic adaptation to free diving in the Haenyeo

*Research Assistant at Helmholtz Zentrum München*, Institute of Functional Epigenetic, Munich, Germany

Supervisor: Dr. Robert Schneider, Sep 2016- Sep 2017

- Single-cell analysis of transcriptional memory in *S. cerevisiae*

#### *Research Student*

UNAM, CCG, Dynamic Genomics Department, Cuernavaca, Mexico

Supervisor: Dr. Diego Cortez, Sep 2015 - Jun 2016

- Male mutation bias in monotremes
- Finding sex chromosomes in *Basiliscus vittatus* (basilisk lizard)

UNAM, CCG, Genomic Engineering Department, Cuernavaca, Mexico

Supervisor: Dr. David Romero, Jan 2015 - Jun 2016

- Double-strand break repair in *Rhizobium etli* (nitrogen-fixing bacteria)

University of British Columbia, Medical Genetics Department, Vancouver, Canada

Supervisor: Dr. Carolyn Brown, Summer 2016

- Finding boundary genes for escape regions in the human inactive X chromosome

Institut de Génétique et de Biologie Moléculaire et Cellulaire, Strasbourg, France

Supervisor: Dr. Robert Schneider, Summer 2015

- ChIP-seq analysis of histone modifications and their link to metabolism

Cornell University, Plant Pathology and Plant-Microbe Biology Section, Ithaca, U.S.

Supervisor: Dr. Rebecca Nelson, Summer 2014

- Develop novel methods to detect endophyte content in the seedlings of maize.

## PUBLICATIONS

1. Yáñez-Cuna, Fares Osam, **Diana Aguilar-Gómez**, Araceli Dávalos, and David Romero. "Prevalent role of homologous recombination in the repair of specific double-strand breaks in *Rhizobium etli*." *Frontiers in Microbiology* 15 (2023): 1333194.
2. **Aguilar-Gómez, Diana**, Yuanting Jin\*, Débora Y. C. Brandt, Tyler A. Square, Jiasheng Li, Zhengxia Liu, Tao Wang, Peter H. Sudmant, Craig T. Miller, Rasmus Nielsen. "Population genomics of variegated toad-headed lizard *Phrynocephalus versicolor* and its adaptation to the colorful sand of the Gobi Desert." *Genome Biology and Evolution* (2022)
3. Chen, Ze-Hui, Ya-Xi Xu, Xing-Long Xie, Dong-Feng Wang, **Diana Aguilar-Gómez**, Guang-Jian Liu, Xin Li et al. "Whole-genome sequence analysis unveils different origins of European and Asiatic mouflon and domestication-related genes in sheep." *Communications Biology* 4, no. 1 (2021): 1-15.
4. Bheda, Poonam, **Diana Aguilar-Gómez**, Igor Kukhtevich, Johannes Becker, Gilles Charvin, Antonis Kirmizis, and Robert Schneider. "Microfluidics for single-cell lineage tracking over time to characterize transmission of phenotypes in *Saccharomyces cerevisiae*." *STAR protocols* (2020): 100228
5. Bheda, Poonam, **Diana Aguilar-Gómez**, Nils B. Becker, Johannes Becker, Emmanouil Stavrou, Igor Kukhtevich, Thomas Höfer et al. "Single-Cell Tracing Dissects Regulation of Maintenance and Inheritance of Transcriptional Reinduction Memory." *Molecular Cell* (2020).
6. Acosta, Armando, Gabriel Suárez-Varón, Luis A. Rodríguez-Miranda, Andrés Lira-Noriega, **Diana Aguilar-Gómez**, Mariana Gutiérrez-Mariscal, Oswaldo Hernández-Gallegos, Fausto Méndez-de-la-Cruz, and Diego Cortez. "Corytophanids Replaced the Pleurodont XY System with a New Pair of XY Chromosomes." *Genome Biology and Evolution* 11, no. 9 (2019): 2666.
7. Haojie Tong, Jiashen Li, Yubin Wo, Gang Shao, Wei Zhao, **Diana Aguilar-Gómez** and Yuanting Jin. "Effects of substrate color on intraspecific body color variation in the toad-headed lizard, *Phrynocephalus versicolor*." *Ecology and Evolution* 9, no. 18 (2019): 10253.
8. Vivian Link, **Diana Aguilar-Gómez**, Ciro Ramírez-Suástegui, Laurence D. Hurst, and Diego Cortez. "Male mutation bias is the main force shaping chromosomal substitution rates in monotreme mammals." *Genome biology and evolution* 9, no. 9 (2017): 2198-2210.
9. Adam F. Kebede, Anna Nieborak, Lara Zorro Shahidian, Stephanie Legras, **Diana Aguilar-Gómez**, Florian Richter, Marijke P. Baltissen, Gergo Meszaros, Helena de Fatima Magliarelli, Romeo Ricci, Michiel Vermeulen, Gerhard Mittler and Robert Schneider. "Histone propionylation is a novel mark of active chromatin". *Nature Structural & Molecular Biology* 24.12 (2017): 1048.

\*co-first authors

## Preprints/Review

- Linderroth, Tyler, **Diana Aguilar-Gómez**, Emily White, Evan Twomey, Adam Stuckert, Ke Bi, Amy Ko et al. "Genetic basis of aposematic coloration in a mimetic radiation of poison frogs." *bioRxiv* (2023): 2023-04.
- **Aguilar-Gómez, Diana**, Jacob Bejder, Jonathan Andreasen, Yelin Ko, Andrew Vaughn, Kendell Clement, Martin Tristani, Joo Young Lee, Nikolai Nordsborg, Rasmus Nielsen, Melissa Ilardo. "Genetic and Training Adaptations in the Haenyeo Divers of Jeju, Korea"

## TEACHING EXPERIENCE

*Graduate Student Instructor* Integrative Biology Department at UC Berkeley

- Population and Evolutionary Genetics (IB 161), Spring 2021 (Remote instruction)

*Instructor* for Python Bootcamp, Center for Computational Biology at UC Berkeley

- Summer 2023
- Winter 2021 (Remote instruction)
- Winter 2020

*Teaching Assistant* for Python Bootcamp, Center for Computational Biology at UC Berkeley

- Summer 2018

## PRESENTATIONS

### Invited Seminars

*Exploring Colorful Tales of Evolution and Diversification in the Strawberry Poison Frog, *Oophaga pumilio**

- Research & Collections: Natural History Museum of Los Angeles Seminar, March 2024

*Genetic basis of coloration and population genomics of lizards and frogs*

- Ecology, Evolution, and Conservation Seminar at CSU Sacramento, Fall 2021 (virtual)

- IB 234 Seminar on Biology of Amphibians and Reptiles (UC Berkeley Herpetology group), March 2023
- Evolution and genetics of the strawberry poison frog in Bocas del Toro*

- Center for Theoretical and Evolutionary Genetics Seminar, April 2022

## Talks

*Genetic rescue, selection, and conservation—Insights from Florida’s puma whole-genome sequencing analysis*

- Biology of Genomes 2024

*Conservation genomics of endangered species in North America*

- President’s Postdoctoral Fellowship Program Academic Retreat 2024

*Evolution and genetics of the strawberry poison frog in Bocas del Toro*

- Society of Systematic Biologists 5th Standalone Meeting, January 2023
- Evolution Conference 2022
- CCB Computational and Genomic Biology Retreat 2022
- CCB Graduate Student Symposium on Computational Biology 2021
- CCB Student Lunch Seminar Spring 2019

*Adaptation of the Toad-headed Lizard to the Colorful Sand of the Gobi Desert*

- Virtual Evolution Conference 2021

*Towards a functional assay for maize endophytes: seedling studies*

- 4th Annual Undergraduate Research Symposium for Life Sciences, Cornell University 2014

## Poster

*Genomics of the Oophaga pumilio polymorphism at the Bocas del Toro archipelago*

- Society for Molecular Biology and Evolution Meeting 2023
- Bay Area Population Genomics Conference, Fall 2022
- Biology of Genomes 2022
- CCB Computational and Genomic Biology Retreat 2021 **Best Poster Award**

*Adaptation of the Toad-headed Lizard to the Colorful Sand of the Gobi Desert*

- Society for Molecular Biology and Evolution Virtual Meeting 2021
- CRA-URMD Conference 2020
- CCB Computational and Genomic Biology Retreat 2019
- Bay Area Population Genomics Conference, Fall 2019

*Population genomics of the variegated toad-headed lizard, Phrynocephalus versicolor, and its adaptation to the colorful sand of the Gobi Desert*

- CRA-W Grad Cohort 2019
- Bay Area Population Genomics Conference, Spring 2019

*Biological significance of genetic modules predicted by the natural decomposition approach*

- EMBO Conference: From Functional Genomics to Systems Biology 2016

## Panelist

- Graduate Student Success Panel: Invited by Berkeley International Office
- Biology X Data Science - Showcase / Workshop 2021: Teaching using the R Datahub at UC Berkeley
- HES x LAGSES Panel 2020: Invited by the Hispanic Engineers and Scientists (HES) at UC Berkeley
- Berkeley Connect Comp Bio Grad Student Panel 2020

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## ORGANIZER

- Northern California Computational Biology (NCCB) Student Symposium 2019
- Center for Computational Biology (CCB) Seminar Series 2018-2019
- Computational and Genomic Biology Retreat at UC Berkeley 2018
- Epigenetics Advanced Course, Genomic Science Program at UNAM 2016

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## SCIENCE COMMUNICATION

English

- [“Photographing nucleo-some friends”](#). *Berkeley Science Review*, Spring 2021
- [“An interview with Professional in Residence Mike Holmes: Pioneering genome editing tools in gene therapy”](#). *Qb3 Berkeley*. April 2020
- [“Searching for adaptation secrets in the Sahara Desert”](#). *Qb3 Berkeley*. August 2020

Spanish

- [Joyas del Bosque: La genética de color en ranas venosas](#). Caminos de la Ciencia. Seminars in Spanish for the general public at the Oakland Public Library, Science at Cal, April 2023
- [“Las distintas ciudades de las aves migratorias”](#). *Nexos Simbiosis*. February 2022
- [“Un T. rex por cada tres personas”](#). *Nexos Simbiosis*. July 2021

- “[El sexo no es un código binario](#)”. Página de divulgación del Centro de Ciencias Genómicas, UNAM. May 2015
- “[Los descendientes de los dinosaurios](#)”. Página de divulgación del Centro de Ciencias Genómicas, UNAM. March 2015

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## SKILLS

- **Languages:** Spanish (Native), English (Advanced), French (Intermediate), Portuguese (Elementary)
- **OS:** Linux, Mac, Windows
- **Programming languages:** Python, R, bash, LaTeX, Perl, Matlab

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## MEMBERSHIPS/ COMMITTEES

- **Society for Molecular Biology and Evolution (SMBE)** 2020-2025
- **Mentorship Program CCB** 2021-2022
- **Society of Systematic Biologists (SSB)** 2021
- **MEXASB:** Mexican Association of Students at Berkeley 2017-present  
*Vice President* 2021-2022
- **CCB DEI Committee:** CCB Diversity Equity and Inclusion Committee  
*Student representative* 2020-2021
- **LAGSES:** Latinx Association of Graduate Students in Engineering and Science at UC Berkeley  
*Outreach Chair* 2019-2020  
*Public Relations Chair* 2018-2019
- **Systems Biology Research Team, Computational Genomics at UNAM** 2014-2017

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## REVIEWER

- *Molecular Ecology Resources*, November 2020
- *Biological Journal of the Linnean Society*, December 2020

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## MENTORING

- Adam Choïs, undergraduate at UC Berkeley (First Steps in Research Program)
- Irene Liang, undergraduate at UC Berkeley
- Teresa Parra Alvarado, undergraduate at the National Autonomous University of Yucatán (Gradiente Program)
- Lin Yuan, undergraduate at the Chinese University of Hong Kong

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## VOLUNTEERING

- **Caminos de la Ciencia by Science at Cal** April 2023  
*Joyas del Bosque: La genética de color en ranas venenosas.* A talk in Spanish at the Cesar Chavez Public Library in Oakland, CA
- **Orientation Leader** Fall 2021  
Lead students for Berkeley International Office student orientation
- **Literatura COVID** Spring 2020  
A project that made an effort to translate articles about COVID-19/SARS-Cov2 to Spanish
- **BASIS (Bay Area Scientists in Schools)** October 2019  
Catapult Challenge at John Muir Elementary School in Berkeley, CA
- **Caminos de Ciencia**, April 2019  
El Desafío de la catapulta: The Catapult Challenge, taught for Spanish-speaking kids, at the Cesar Chavez Public Library in Oakland, CA
- **Jóvenes en Acción (Youth in Action)**, 2012-2013  
U.S. Department of State & Mexican Government Program. Civic education, community service, and youth leadership development.

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## RELEVANT COURSES/ WORKSHOPS TAKEN

- Holistic Graduate Admissions Workshop with Julie Posselt, Fall 2020
- Science Writing for the Public Workshop from CCB at UC Berkeley, Spring 2020
- Principles and Techniques of Data Science UC Berkeley, Spring 2020
- Population and Evolutionary Genetics at UC Berkeley, Spring 2019
- Statistical Genomics at UC Berkeley, Spring 2018
- Introduction to Probability at an Advanced Level at UC Berkeley, Fall 2017
- Introduction to Statistics at an Advanced Level at UC Berkeley, Fall 2017