

María A. Valdez Cabrera

Department of Biostatistics, University of Washington

3980 15th Ave NE, Seattle, WA 98105

✉ mariavc@uw.edu | 🏠 biostat.washington.edu/people/maria-valdez-cabrera | 📄 github.com/MariaAVC

Personal Profile

I am a PhD candidate in the Department of Biostatistics at the University of Washington. My research interests include the development of statistical methods for non-Euclidean data, semiparametric modeling and survival analysis.

My current dissertation project is focused on proposing a metric space for weighted tree-graphs with non-identical leaves, and developing statistical tools for the analysis of collections of these graphs. For this project, I am drawing on my skills in mathematics, algorithm design, and statistics.

Education

University of Washington

Seattle, Washington, USA

PhD Candidate, Biostatistics

September 2018 – Current

- Advisor: Amy Willis, Ph. D.
- Dissertation: Statistical methods for phylogenetic trees with non-identical leaf sets
- Expected graduation: March 2024

Universidad de Guanajuato

Guanajuato, México

Bachelor in Mathematics

August 2013 – June 2018

- Advisor: Eloísa Díaz-Francés, Ph. D.
- Thesis project: Proposal for the efficient estimation of a Binomial success rate and its extension to the comparison of two binomial distributions

Honors/Awards and Scholarships

XV Escuela de Probabilidad y Estadística

Guanajuato, México

Poster Contest

March 2017

Won the first place in the poster Contest of the XV Summer School of Probability and Statistics of CIMAT.

CIMAT (Center for Research in Mathematics)

Guanajuato, México

CIMAT scholarship

Sept 2020 - Aug 2021

- Scholarship for students who achieve and maintain a high GPA throughout their studies.

Research Experience

University of Washington - Statistical Diversity Lab

Seattle, Washington, USA

Research Assistant

June 2022 – current

- **Supervisor:** Amy Willis, Ph.D.
- Development of statistical methods and software for Phylogenetics.
- Maintenance and improvement of software from the Statistical Diversity Lab such as the R packages: **Breakaway** and **Corncob**.

Fred Hutchinson Cancer Research Center

Seattle, Washington, USA

Research Assistant

April 2019 – June 2022

- **Supervisor:** Elizabeth Brown, Ph.D.
- Development of statistical plan for studies on STI incidence rate.
- Analysis on the usage of novel HIV prevention methods in an open label HIV prevention trial under Microbicide Trials Network (MTN).

Fred Hutchinson Cancer Research Center

Seattle, Washington, USA

Research collaborator

January 2019 – April 2019

- **Supervisor:** Ruth Etzioni, Ph.D.
- Simulation study on performance of a new biomarker for future screening test.

CIMAT (Center for Research in Mathematics)

Research Assistant

Guanajuato, México

January 2018 – May 2018

- **Supervisor:** Víctor Pérez-Abreu, Ph.D.
- Explored the application of Topological Data Analysis into graph theory.

CIMAT (Center for Research in Mathematics)

Research Assistant

Guanajuato, México

August 2015 – December 2016

- **Supervisor:** Eloísa Díaz-Francés, Ph.D.
- Improvement of the use of binomial likelihoods in proportions estimation on clinical trials.
- Review on the most common methods of binomial estimation.

Teaching Experience

Teaching Assistant

University of Washington

BIOST 571: Advanced Regression Methods for Dependent Data

January 2023 – March 2023

BIOST 537: Survival Data Analysis In Epidemiology

January 2022 – March 2022

– Conducted discussion sections

BIOST 513: Medical Biometry III

March 2021 – June 2021

– Conducted discussion sections

BIOST 512: Medical Biometry II

January 2021 – March 2021

BIOST 536: Categorical Data Analysis in Epidemiology

September 2020 – December 2020

BIOST 523: Statistical Inference For Biometry II

January 2020 – March 2020

BIOST 512: Medical Biometry II

January 2019 – March 2019

BIOST 511: Medical Biometry I

September 2018 - December 2018

Teaching Assistant

Universidad de Guanajuato

M24101: Statistical Methods

January 2016 – June 2016

– Conducted lectures and review sessions

Publications

1. Mirembe, B. G., **Valdez Cabrera, M.**, van der Straten, A., Nakalega, R., Cobbing, M., Mgodhi, N. M., Palanee-Phillips, T., Mayo, A. J., Dadabhai, S., Mansoor, L. E., Siva, S., Nair, G., Chinula, L., Akello, C. A., Nakabiito, C., Soto-Torres, L. E., Baeten, J. M., & Brown, E. R. (2022). *Correlates of Dapivirine Vaginal Ring Acceptance among Women Participating in an Open Label Extension Trial*. *AIDS and Behavior*. <https://doi.org/10.1007/s10461-022-03841-z>
2. Urquidez, O., & **Valdez, M.** (2019). *Diseño de grafos pesados con n-ciclos persistentes*. *Morfismos*, Vol. 23 No.1

Conferences and Workshops

INVITED PRESENTATIONS

1. **Valdez Cabrera, M.** & Willis, A. Developing statistical methods to compare Phylogenetic Trees with non-identical leaf sets. Presented at: WNAR 2023 Annual Meeting; June 2023; Anchorage, AK, USA.
2. **Valdez Cabrera, M.** & Willis, A. Statistical methods to analyze phylogenetic trees with non-identical leaf sets. Presented at: 6th International Conference on Econometrics and Statistics; July 2023; Tokyo, Japan.
3. **Valdez Cabrera, M.** Esqueleto de Homología Persistente como descriptor del borde de objetos en una imagen (Homologically Persistent Skeleton for describing the border of objects in an Image). Presented at: Noveno Verano de Probabilidad y Estadística en el CIMAT; June 2016; Guanajuato, México.

POSTER PRESENTATIONS

1. Gati Mirembe, B., **Valdez Cabrera, M.**, Cobbing, M., ..., Brown, E. Correlates of Dapivirine vaginal ring uptake among women participating in an open label extension trial-MTN-025/HOPE. Poster presented at: HIV R4P; January 2021; Virtual.

2. **Valdez Cabrera, M.** & Díaz-Francés, E. Propuesta de estimación de una proporción Binomial con intervalos de verosimilitud de nivel adecuado (Proposal for the estimation of a Binomial proportion with appropriate level likelihood intervals). Poster presented at: XV Escuela de Probabilidad y Estadística en el CIMAT; March 2017; Guanajuato, México.

WORKSHOPS AND CONFERENCE PARTICIPATION

1. Object Oriented Data Analysis in Health Sciences Workshop; July 2023; Chicago, IL, USA.
2. 2019 Women in Statistics and Data Science (WSDS) Conference; October 2019; Bellevue, WA, USA.
3. III School of Topological Data Analysis and Stochastic Topology; January 2017; Toluca, Mexico.

Extracurricular Activities

Biostatistics Student Seminar Organizer

September 2019 – December 2022

Activities included the planning of useful sessions for students and the recruitment of presenters each quarter, keeping assistance for enrolled students for proper accreditation and making public announcements for each session.

Organizational Committee of National Elementary and Middle School Mathematical Olympiads program (ONMAPS)

January 2015 – June 2018

Member of the Organizational Committee of National Elementary and Middle School Mathematical Olympiads program (ONMAPS) for the state of Guanajuato. Activities included designing, applying and grading selection tests, training the selected students and giving workshops to teachers of different schools.

Mathematics Educational Extension department

January 2014 – December 2014

Volunteer at the Mathematics Educational Extension department of CIMAT (Matemorfosis). As part of this team I gave workshops of interactive mathematics to kids along the state of Guanajuato.

Technical skills

Programming	R, C/C++, Python, JavaScript
R packages	devtools, dplyr, ggplot2, lme4, msm, shiny, tidyverse
Miscellaneous	Shell (Bash), \LaTeX (Overleaf/R Markdown), Git, SQL

References available upon request.