

PERLA MOLINA

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EDUCATION

- Stanford University** — Stanford, CA *Jun 2023 - Current*
- **Ph.D.:** Biomedical Data Science *GPA 3.82*
- University Of San Francisco** — San Francisco, CA *Aug 2019 - May 2023*
- **Bachelor of Science:** Major in Data Science (Cum Laude Honors) *GPA 3.66*
 - **Associate of Business & Management:** Minor in Business Analytics

AWARDS & HONORS

- Pi Mu Epsilon (National Undergraduate Honor Society in Mathematics)** *May 2022*
- Honorary status for students in a math-related major with excellent academic standing and a good relationship with the department
 - Induction into the California Rho chapter of Pi Mu Epsilon
 - Will receive special recognition for it at the graduation ceremony
- Undergraduate Newmark Women in Tech Scholarship** *Aug 2021 - May 2023*
- Merit and financial status-based scholarship for underrepresented women in the technology majors
 - Received awards for the 2021 and 2022 applications
 - Selected amongst a group of 20 students
 - Recognition of arduous work and grit for being a woman in a field that has a drastic gender gap
- Hispanic Scholarship Fund Scholarship 2022** *January 2022*
- Merit-based and financial status-based scholarship for outstanding students who identify as Hispanic/Latino/a/e
 - Received the designation of HSF Scholar from among a highly competitive pool of applicants
 - Awarded scholarship from a smaller pool of HSF Scholars for higher academic standing and financial need
- Dean's Honor Roll** *May 2020 - May 2023*
- Honorary status and congratulatory certificate from the College of Arts and Sciences for my academic achievement during a specific semester
 - Received honor roll status for Fall 2022, Spring 2022, Fall 2021, Spring 2021, Fall 2020, Spring 2020
 - Determined to continue to receive honor roll status until completion of undergraduate studies
- Provost Scholarship** *Aug 2019 - May 2023*
- Merit-based scholarship that started from pre-college
 - Continuously merit-based throughout my undergraduate studies (remains awarded throughout college based on grades)
- University Tuition Grant** *Aug 2019 - May 2023*
- Merit-based scholarship that started from pre-college
 - Continuously merit-based throughout my undergraduate studies (remains awarded throughout college based on grades)

RELATED COURSEWORK

Course (credit hours)

Currently taking*

- Applied Business Technology (2)
- Bioinformatics for Stem Cell & Cancer Biology (3)
- Biomedical Data Science (3)

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- Clinical Trial Design in the Age of Precision Medicine (3)
- Data Mining (4)
- Data Science for Medicine (3)*
- Data Structures & Algorithms (4)
- Data Wrangling & Digital Analytics (4)
- Database Systems (4)
- Deep Learning for Genomics (3)
- General Biology w/ Lab (4)
- Human Rights & Health (1)
- Intermediate Biostatistics: Regression, Prediction, Survival Analysis (3)
- Linear Regression (4)
- Machine Learning Approaches for Data Fusion in Biomedicine (3)*
- Modern Statistics for Modern Biology (3)
- Numerical Analysis (4)
- Probability w/ Applications (4)
- Psychological Statistics (4)
- Representations & Algorithms for Computational Molecular Biology (3)
- Responsible Conduct of Research (1)
- Statistical Inference w/ Applications (4)
- Statistical Learning (Machine Learning) (4)
- Systems in Organization (2)
- Techniques in Tissue Culture w/ Lab (4)
- Visualizing Data w/ Tableau (2)

UNIVERSITY LEADERSHIP & MEMBERSHIP

SACNAS (Society for Advancement of Chicanos/Hispanics and Native Americans in Science) Student Chapter (Stanford) *Sept 2023 - Current*

- Principal Communications Officer since Sept 2024
- Spearhead social media strategy and oversee digital communications to enhance visibility and engagement with the chapter's activities
- Aid in coordinating student-led events, fostering collaboration both within the university and with other SACNAS chapters and campus organizations
- Actively participate in outreach initiatives, supporting recruitment efforts and expanding the chapter's reach within the Stanford community
- Assist in organizing professional development programs and community-building events, focused on celebrating and promoting diversity in STEM

Department of Biomedical Data Science Student JEDI (Justice, Equity, Diversity, Inclusion) Committee (Stanford) *Sept 2023 - Current*

- Participate in monthly committee meetings
- Voice concerns or new ideas to improve culture in the department or other academic aspects
- Volunteering for outreach events/programs within department
- Contribute to the network of outreach programs or volunteering opportunities outside of the department
- Involved in student-led events for department's annual retreat

ADVANCE Summer Institute Program (Stanford) *Jun 2023 - Aug 2023*

- Nominated and selected to be a part of institute through Ph.D. program
- Participate in first laboratory rotation within program (see "Predicting Pre-Term Birth From Proteomics Pregnancy Data" under PROJECTS & RESEARCH)
- Engaged with Stanford Biosciences graduate students, postdoctoral fellows, and faculty members in various academic workshops, group activities, and one on one mentoring

- Participated and engaged in professional and career training that prepares scholars for graduate studies and building professional networks
- Engaged in community building and leadership training events and activities

Association of Women in Mathematics (USF)

Aug 2020 - May 2023

- Vice President from May to Dec 2021; Promoted to President in Jan 2022
- Developed and launched the club's website to share information about the club, upcoming events, and important announcements (<https://sites.google.com/view/awmusfca>)
- Managed administrative tasks and communications including but not limited to coordinating meetings, overseeing executive board operations, and liaising with faculty advisors and school administration for event approvals
- Led efforts to revitalize the club post-pandemic, fostering a supportive environment for women in mathematics and related fields
- Initiated new annual fundraising events and hosted the club's first ever Datathon
- Received approval for over \$1.5k to send up to 10 students to the SF Data Institute Data Science Conference (DSCO) in 2023

Data Science Association (USF)

Aug 2020 - May 2023

- Active member, participating in networking events and career information sessions
- Contributed to post-pandemic efforts to reinvigorate the club's activities

ACV (Anime, Culture, Video Games) Club (USF)

Aug 2019 - May 2023

- Executive Board Member from May 2022
- Organized community-building events focused on shared interests in anime, culture, and video games
- Monitored discord server to maintain inclusivity and ensure a safe, respectful online environment
- Played a key role in restoring the club's active status post-pandemic

Women in Tech Club (USF)

Aug 2019 - May 2023

- Active member, participating in networking and coding sessions
- Attended guest lectures featuring successful women in tech from both industry and academia

PROJECTS & RESEARCH

Using Dirichlet Gaussian Processes to Analyze Gene Expression of Lung Cancer Metastasis Progression - Lab

Rotation Project (Stanford)

Sept - Dec 2023

- Updated Dirichlet Process Gaussian Process (DPGP) software for gene expression analysis
- Extracted and preprocessed RNA-seq data from wet lab experiments using statistical methods
- Analyzed gene expression and model performance for the three most frequent and two least frequent cell types
- Found consistent up/down regulation of genes over time by cell type, with DPGP model results revealing the need for improved efficiency to handle large datasets

Predicting Pre-Term Birth From Proteomics Pregnancy Data - Lab Rotation Project (Stanford)

Jun - Aug 2023

- Developed XGBoost and LASSO machine learning algorithms to predict preterm birth using proteomic data
- Compared model performance and significance across trimesters, with XGBoost outperforming in trimester 3 and trimester delta
- LASSO model results showed dimension reduction had no impact on model significance for any trimester

Linear Regression Methods on Cardiovascular Disease Dataset - Class Project in R (USF)

Dec 2022

- Implemented software that utilizes LASSO, Ridge Regression, and Ordinary Least Squares for predictive and explanatory analysis on cardiovascular data
- Selected optimal models to predict high systolic blood pressure in patients with cardiovascular conditions

- Conducted diagnostics and transformations on the data to enhance analysis of models
- Diagnostic analysis highlighted the need for outlier removal to improve model performance and sensitivity
- Explanatory model identified significant factors for high blood pressure: gender, height, weight, cholesterol, activity level, and cardiovascular disease presence
- Concluded further study needs to be done to examine efficacy of treatment plans that include diet changes and/or increased activity level to target weight and cholesterol

Performing Data Mining Methods on Ovarian Cancer Data - Class Project in R (USF) *Nov - Dec 2022*

- Applied classification techniques to predict a Benign Ovarian Tumor or Ovarian Cancer
- Performed cluster analysis to categorize ovarian tumors, revealing two distinct clusters but low total variance
- Results emphasized the need for a larger dataset for more robust clustering

WORDLE Data Analytics - Class Project in Jupyter Notebook (USF) *Apr - May 2022*

- Conducted general exploratory data analysis of the game Wordle through Jupyter Notebook in Python
- Developed natural language processing scripts to analyze letter frequencies and parts of speech
- Derived insights to determine the best starting word to play Wordle

Optimizing Logistic Regression (Binary Classification) - Class Project in Python (USF) *Dec 2021*

- Coded logistic regression objective function optimization using Gradient Descent, Newton's Method, and stochastic Gradient Descent
- Applied optimization methods to train models on "Breast Cancer Wisconsin" and MNIST datasets
- Compared performance of algorithms through iteration/epoch versus objective function plots

Case Study on the World Happiness Report of 2020 - Class Project in R (USF) *Nov - Dec 2020*

- Analyzed Gallup Survey data using nine variables to model factors influencing happiness and assess the pandemic's impact on global happiness levels
- Results indicated that European and East Asian countries reported higher happiness levels compared to other global regions, potentially reflecting how well they handled the pandemic
- Identified strong correlations between variables and national happiness, with widespread Perceptions of Corruption, aligning with global protests and social unrest throughout 2020

EXPERIENCE

ADVANCE Summer Institute Program Leader *May - Aug 2024*

Stanford University - Stanford, CA

- Collaborated with the Director of ADVANCE and other program leaders to develop programmatic activities for the Stanford ADVANCE Summer Institute, a comprehensive 8-week transition program for incoming Biosciences graduate students
- Facilitated and led workshops and activities designed to acclimate scholars to campus, and to promote academic, professional, and leadership skills throughout the program
- Supported scholars transition into their first year, contributing to a foundation for a successful and rewarding graduate experience

Teaching Assistant *Aug 2021 - May 2023*

University of San Francisco - San Francisco, CA

- Assisted professors in keeping track of students' work in Data Science and Mathematics classes (2 classes in Data Science w/ R, 1 class in Elementary Statistics, and 2 classes in Discrete Mathematics)
- Graded student assignments while providing feedback on what students got wrong or did not understand
- Provided academic and college-related support for any students or underclassmen who ask for it

Redwoods Analyst *Jun - Aug 2022*

DaVita Kidney Care - San Francisco, CA

- Worked with the DaVita Clinical Research team on research tasks involving qualitative research and Natural Language Processing
- Programmed survey for Care Partner Stress on Qualtrics and aided in the launching process
- Conducted preliminary and analytical research on the Care Partner Stress survey results & presented findings to the team

Student Web Developer

Sept 2018 - May 2019

Douglas High School — Minden, NV

- Created websites for 4 high school teachers coded from scratch in HTML and CSS, as well as Google Sites
- Leader of a 3-person team to redesign high school's website utilizing HTML and CSS
- Successfully led team by coordinating workstreams, work process, and time management, meeting all deliverables and deadlines
- Impact results were improved organization of content on the website so that all audiences (faculty, students, and parents) can better navigate the website as well as enhanced modern, visually appealing look

VOLUNTEERING

Spanish-English Interpreter

Nov 2023

Stanford-Pescadero Partnership - Pescadero, CA

- Volunteered to be an interpreter for Pescadero Middle and High School parent conferences
- Attended training & volunteered to cover additional shifts
- Connected with the Pescadero Mexican immigrant community

Mentor

Apr 2022

Women in Data Science (WiDS) - San Francisco Girls' School, San Francisco, CA

- Mentoring for High School Data Science Workshop hosted by WiDS
- Was personally reached out for this due to my outstanding work in the USF Math & Stats department and dedication to the field
- Oversaw a group of girls working on a data set in which their end goal was to produce a visualized story of the data with open-ended approaches by the girls
- Tasks included guiding them, providing feedback, making sure they were on track, and answering any questions they had about my college life

CONFERENCES ATTENDED

SACNAS National Diversity in STEM Conference (2023) - Oregon Convention Center, Portland, OR

- Received department funding to attend the in-person conference
- Networked with accomplished Latine/Chicane people in various fields and academia
- Helped with recruitment for Stanford graduate programs, including my home program
- Mentored and advised applicants to my home program

Nebraska Conference for Undergraduate Women in Mathematics (2023) - University of Nebraska Lincoln, Lincoln, NE

- Received funding to attend the in-person conference
- Networked with accomplished women in the field
- Became inspired and motivated to continue with plans of pursuing a PhD
- Realized how important belonging and community-building are to spaces in STEM fields
- Created a new dream to one day lead and create spaces for the Latine community

Women in Data Science (2022) - Stanford University, Stanford, CA

- Received funding to attend the in-person conference

- Met successful women in data science from all backgrounds
- Gained personal confirmation on my career goals and decision for grad school

Grace Hopper Conference (2021) - Online

- Awarded a scholarship to attend the online conference
- Participated in 1-on-1 chats with people working in the industry to receive advice on career paths
- Helped bring clarity to my future career goals

Hack the Gap Hackathon (2021) - Online

- Coded a website from scratch in one day with a team called "Minnesota Mutual Aid" which was our submission for the hackathon
- Project is centered on bringing awareness to localized charities and nonprofit organizations around the Twin Cities area that do not get as much visibility compared to government-funded, national, and mainstream organizations
- Minnesotan locals can submit requests for putting up more donation sites that are in need of recognition for receiving aid

Nebraska Conference for Undergraduate Women in Mathematics (2021) - Online

- Three-day online conference where the lovely and strong women in mathematics gathered to demonstrate each other's accomplishments and work in the field of math and science
- Motivational experience where all presenters, panelists, speakers, and attendees supported each other to move forward with their careers

Tapia Conference (2020) - Online

- Awarded a scholarship to attend the conference
- Consisted of diversity and inclusivity in the Computing, Tech, and STEM worlds
- Received inspiration to move forward with major

SKILLS

- **Coding Languages:** HTML (Expert), CSS (Expert), R (Proficient), Python (Proficient), SQL (Proficient), Jupyter Notebook (Proficient), Java (Proficient), Javascript (Beginner)
- **Software & App Programs:** Adobe Photoshop, Adobe Illustrator, Adobe Flash, Adobe Dreamweaver, Google Suite (Docs, Slides, Sites), Microsoft Excel, Qualtrics, Github, Canva, Postgres
- **Languages:** Spanish (Native)