Marcelo Almora Rios

Curriculum Vitae

malmorarios@g.ucla.edu

EDUCATION

Ph.D. **University of California, Los Angeles**
Education (Higher Education and Organizational Change); May 2027

M.A. **University of Montana**
Mathematics; December 2022

Qualifying Exams: real and complex analysis; philosophies of education and math education; wellbeing, creativity, and giftedness

Thesis: "Should Wellbeing be the Same as Perfection?" A Case Study on Student Wellbeing in Higher Mathematics Education

B.S. **Harvey Mudd College**
Mathematics; December 2020

Thesis: Radial Singular Solutions to Semilinear Partial Differential Equations

PUBLICATIONS

Hurtado, S., Vargas Ezquivel, D., Guiterrez Aragon, G., **Almora Rios, M.** (2024). *Campus climate assessments: Institutional uses and challenges*. Unpublished manuscript. UCLA.

Almora Rios, M. (2024). Examining student wellbeing and parental educational attainment in a U.S. college mathematics course. 2024. In T. Evans, O. Marmur, J. Hunter, G. Leach, & J. Jhagroo (Eds.). *Proceedings of the 47th Conference of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 25–31). PME.

Almora Rios, M. (2024). A role for affect in the future of mathematics education (with thoughts on intelligence). *The Mathematics Enthusiast, 21*(1-2), 485-496. https://doi.org/10.54870/1551-3440.1639

Arrillaga, E. S., Bland, S., Goto, K., & **Almora Rios, M.** (2023). *Integral voices: Examining math experiences of underrepresented students*. Just Equations. https://justequations.org/resource/integral-voices-examining-math-experiences-of-underrepresented-students

Almora Rios, M., & Burdman, P. (2023). *Staying the course: Examining college students' paths to Calculus*. Just Equations. https://justequations.org/resource/staying-the-course-examining-college-students-paths-to-calculus

Almora Rios, M., Avetisyan, Z., Berlow, K., Martin, I., Rakholia, G., Yang, K., Zhang, H., & Zhao, Z. (2022). Analysis on almost Abelian Lie groups: Groups, subgroups and quotients. *Journal of Mathematical Sciences, Series A*. https://doi.org/10.1007/s10958-022-05872-2

AWARDS AND HONORS

2023 UCLA University Fellowship ($5,150)
2023 National Science Foundation (NSF) Graduate Research Fellowship ($147,000)
2022 Graduate Student Summer Research Award ($3,250)
2021 (MT)^2: Montana Supports the Mathematicians of Tomorrow Fellowship ($12,500)
2021 Gloria C. Hewitt Award ($1,400)
2020 Latinos in Technology Scholarship ($18,000)

RESEARCH EXPERIENCE

Graduate Student Researcher, University of California, Los Angeles   *June 2024 - Present*
School of Education and Information Studies   *Los Angeles, California*
Advisor: Sylvia Hurtado

- Quantitative analyst (SPSS, Excel) for national Gates-funded campus climate assessment project.
- Disseminating factors associated to institutional usage of campus climate assessments and challenges across multiple institution types (e.g., 4 year vs. community colleges); usage of statistical inference techniques.

Graduate Student Researcher, University of California, Los Angeles
School of Education and Information Studies
Advisor: Sylvia Hurtado

October 2023 - Present
Los Angeles, California

- Conducting yearlong systematic literature review on the topic of mathematical wellbeing in higher education; pilot study accepted to the Proceedings of the International Psychology of Mathematics Education Conference.
- Began three collaborative projects within my program: measuring college student political ideologies (paper in-development), using community cultural wealth to predict STEM career desires for women of color (brief accepted to 2024 ASHE Conference), systematically reviewing the literature on U.S. STEM culture and climate and its relation to student belonging and persistence (brief in-development for 2025 AERA Conference).

Research Fellow, Just Equations
Supervisor: Pamela Burdman

June 2022 - May 2023
Oakland, California

- Lead author for *Staying the course* report. Quantified impact of Executive Order 1110 on the length of prerequisite course sequences to Calculus in the 23 campuses of the California State University system.
- Analyst for the *Integral voices* report. Conducted high-dimensional data analysis across a variety of measures pertaining to course patterns, mathematics perceptions, student demographics, and educational access.

Graduate Student Researcher, University of Montana
Department of Mathematical Sciences
Advisor: Bharath Sriraman

December 2021 - December 2022
Missoula, Montana

- Created research project to investigate the mathematical wellbeing of college students taking first-year math courses; filed IRB, awarded research grant, collected relevant data, published results in thesis.
- Developed taxonomy of factors for students' mathematical wellbeing in first-year college math courses.
- Measured the domain-specific wellbeing of 136 math students in an introductory probability and statistics course at the University of Montana using a seven-dimensional framework.

Undergraduate Researcher, Harvey Mudd College
Department of Mathematics
Advisor: Alfonso Castro

August 2019 - May 2020
Claremont, California

- Demonstrated that the boundary value problem

$$\Delta_p u + g(u) = 0 \text{ for } x \in \mathbb{R}^n,$$

$$u(x) = 0, \, ||x|| = 1,$$

  has an uncountable infinity of singular, radial solutions when g is subcritical.

Undergraduate Researcher, University of California, Santa Barbara
Department of Mathematics
Advisor: Zhirayr Avetisyan

June 2019 - August 2019
Isla Vista, California

- Proved that all simply connected almost Abelian Lie groups containing a Lie subalgebra equivalent to $^a\mathcal{A}\left(1 \times \imath^1\right)$ (i.e., a "simple" subalgebra) fail to be exponential.

Undergraduate Researcher, Rutgers University
Department of Physics and Astronomy
Advisor: Sevil Salur

May 2018 - December 2018
Piscataway, New Jersey

- Studied the energy distribution in a large dataset of particle collisions ($N = 3.55e8$) from the Relativistic Heavy Ion Collider to better understand the effects quark-gluon plasma has on products of hard particle collisions.

Undergraduate Researcher, Harvey Mudd College
Department of Mathematics
Advisor: Rachel Levy

June 2017 - August 2017
Claremont, California

- Conducted teacher interviews, developed the search and tagging interface for online presence, designed math modeling problems in collaboration with other students at the Gwangju Institute of Technology in Gwangju, South Korea.

Teaching Experience

Private Practice (1-on-1)

2024 — present	**Algorithms; Research in the Social Sciences** Instructor
2023	**Mathematics of Voting; Real Analysis** Instructor
2019 — 2021	**Real Analysis; Special Relativity** Instructor
2019 — 2021	**Multivariable Calculus; Complex Analysis** Tutor

University of Montana

2021 — 2022	**Probability and Linear Mathematics** Graduate student instructor; 3 sections (Fall 2021, Fall 2022)

SKIES Learn

Spring 2021	**Mathematics Grades 3-5** Math interventionist at Estrella Elementary (LAUSD); assisted 21 classrooms (3rd - 5th grade) during the COVID-19 pandemic

Harvey Mudd College

Spring 2020	**Fourier Series and Boundary Value Problems** Teaching assistant
Fall 2018	**Intermediate Probability** Grader
Summer 2018	**Multivariable Calculus** Teaching assistant
Summer 2018	**Differential Equations / Linear Algebra Pt. II** Teaching assistant
Fall 2017	**Intro to Probability and Statistics** Grader
Fall 2017	**Calculus I** Grader

Engenius Learning Center

Spring 2019	**AP Calculus and Physics** Tutor

José Valdes Math Institute

2015 — 2016	**Algebra I; Pre-Algebra** Teaching assistant (Summer 2015, Summer 2016)

Conference Presentations

Almora Rios, M. (2023, July 21). *Staying the course: Math prerequisites as a gatekeeper on students' paths to Calculus* [Research Talk]. 2023 Academic Affairs Summer Meeting; Baltimore, MD.

Almora Rios, M., Yang, K., Zhang, H. (2019, August 10). *Studying the spectral theory of Laplace-Beltrami Operators on almost Abelian groups* [Poster Presentation]. 2019 Young Mathematicians Conference; Columbus, OH.

Almora Rios, M. (2018, October 26). *A jet shape analysis with Au+Au collisions collected by STAR* [Poster Presentation]. 5th Joint Meeting of the APS Division of Nuclear Physics and the Physical Society of Japan; Waikoloa, HI.

Levy, R., **Almora Rios, M.**, Cordeiro, J., Lane, E., Torres-Navarro, A., Newman, L., Ravnik, A., Yearwood, L. (2017, August 6). *Mathematical modeling from age 0 to infinity* [Research Talk]. 2017 Harvey Mudd College Stauffer Lecture; Claremont, CA.

Service

Reviewer	University of Montana Experiential Learning Scholarship
Blog Post	"The Problem With Saying High School Math Shouldn't Change"
Blog Post	"The Hidden Cost of Calculus Prerequisites"
Reviewer	*Interactions* - UCLA Journal of Education and Information Studies
Representative	UCLA School of Education - Higher Education and Organizational Change Division

Travel Awards

2022	MSRI Critical Issues in Mathematics Education Workshop ($1,050)
2020	BRIDGES: Geometry, Algebra, Group Theory, Number Theory ($800)
2019	Young Mathematician's Conference ($1,000)
2019	MSRI Critical Issues in Mathematics Education Workshop ($400)
2018	Conference Experience for Undergraduates in Physics ($600)
2017	Math Alliance Field of Dreams Conference ($1,200)

Research Skills

- **Programming**: Python (numPy, Pandas), R, SPSS, LaTeX, Excel
- **Research Skills**: Quantitative research (survey design, secondary data analysis), Report writing (dissemination of research, working under grant deadlines)
- **Spoken**: English (fluent), Spanish (fluent)

Research Interests

Sociology of math education; Higher STEM education; Psychosocial factors associated to equity in STEM education

References

Pamela Burdman
Executive Director
Just Equations
✉ pamela@justequations.org

Dr. Bharath Sriraman
Professor of Mathematics
University of Montana
✉ SriramanB@mso.umt.edu

Dr. Sylvia Hurtado
Professor of Higher Ed. and Org. Change
University of California, Los Angeles
✉ sylvia.hurtado@gmail.com