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Curriculum Vitae

Anarina Le Murillo, Ph.D.

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Department of Biostatistics
Brown University School of Public Health
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EDUCATION

2006-2010	BS	Psychology	Arizona State University
2010-2013	MS	Applied Mathematics	Arizona State University
2010-2016	PhD	Applied Mathematics	Arizona State University
	Co-Advisors: Carlos Castillo-Chavez and Jiaxu Li		
2010-2016	Certificate	Statistics	Arizona State University

POSTGRADUATE TRAINING

2016-2019 **NIH T32 Postdoctoral Fellow**, Department of Biostatistics and Nutrition Obesity Research Center (NORC), University of Alabama, Birmingham, AL
- Statistical Genetics Training Program (NHLBI T32HL072757; PI: Hemant K. Tiwari)
- Obesity Training Program (NIDDK T32DK062710; PI: David B. Allison)

2018 **Visiting Researcher**, Center for Policy Informatics, Decision Theater, Arizona State University, Tempe, AZ

2019 **Postdoctoral Research Associate**, Simon A. Levin Mathematical, Computational and Modeling Sciences Center, Arizona State University, Tempe, AZ

2019 **Visiting Scholar**, Data Science Initiative and Division of Applied Math, Brown University, Providence, RI

ACADEMIC APPOINTMENTS

2019-2021 **Senior Biostatistician**, Center for Statistical Sciences, School of Public Health, Brown University, Providence, RI

2019-2021 **Assistant Professor (Research)**, Department of Pediatrics, Warren Alpert Medical School of Brown University, Providence, RI

2021-2022 **Visiting Assistant Professor**, Department of Biostatistics, School of Global Public Health, New York University, New York, NY

2022-current **Assistant Professor**, Teaching Scholar Track, Department of Biostatistics, School of Public Health, Brown University, Providence, RI

OTHER PROFESSIONAL APPOINTMENTS

2006-2008 **Peer Advisor**, Career Services Center, Arizona State University, Tempe, AZ

2008-2009 **Undergraduate Research Assistant**, Behavioral Neuroscience Conditioned Feeding Lab, Arizona State University, Tempe, AZ

2008-2009 **Director of Health and Wellness**, Undergraduate Student Government, Arizona State University, Tempe, AZ

2009-2010 **Program Assistant in Research and Evaluation (Statistician)**, Wellness and Health Promotion, Campus Health Services, Arizona State University, Tempe, AZ

2010-2011	**Research Intern,** Mathematical and Theoretical Biology Institute (MTBI), Arizona State University, Tempe, AZ (two summers)
2012-2014	**Research Affiliate**, Center for Metabolic and Vascular Biology, Mayo Clinic, Scottsdale, AZ
2012-2015	**Teaching Assistant**, Joaquin Bustoz Math Science Honors Program, Arizona State University, Tempe, AZ (four summers)
2014-2016	**Graduate Research Assistant (Statistician)**, Behavioral Neuroscience Conditioned Feeding Lab, Arizona State University, Tempe, AZ
2018-2019	**Instructor**, Mathematical and Theoretical Biology Institute (MTBI), Arizona State University, Tempe, AZ (two summers)
2019	**Instructor**, Joaquin Bustoz Math Science Honors Program, Arizona State University, Tempe, AZ (one summer)

PUBLICATIONS LIST

Original Publications in Peer-Reviewed Journals

1. Vera DM, Hora RA, **Murillo A**, Wong JF, Torre AJ, Wang D, Boulay D, Hancock K, Katz JM, Ramos M, Loayza L, Quispe J, Reaves EJ, Bausch DG, Chowell G, and Montgomery JM. "Assessing the impact of public health interventions on the transmission of pandemic H1N1 influenza a virus aboard a Peruvian navy ship." Influenza and other respiratory viruses, 8(3), p 353-359, 2014.
2. Murillo D, Holechek SA, **Murillo AL**, Sanchez F, and Castillo-Chavez C. "Vertical transmission in a two-strain model of dengue fever." Letters in Biomathematics, 1(2), p 249-271, 2014.
3. Bichara D, Holechek SA, Castro JV, **Murillo AL**, and Castillo-Chavez C. "On the dynamics of dengue disease 2 with residence times and vertical transmission." Letters in Biomathematics, 3(1), p 140-160, 2016.
4. **Murillo AL**, Safan M, Castillo-Chavez C, Capaldi Phillips ED, and Wadhera D. "Modeling eating behaviors: the role of environment and food association learning via a ratatouille effect." Mathematical Biosciences and Engineering, 13(4), p 841-855, 2016.
5. Safan M, **Murillo AL**, Wadhera D, and Castillo-Chavez C. "Modeling the diet dynamics of children: the roles of socialization and school environments." Letters in Biomathematics, 1(5), p 275-306, 2018.
6. Murillo D, **Murillo AL**, and Lee S. "The role of vertical transmission in the control of dengue fever." International Journal of Environmental Research and Public Health, 16(5), 803, 2019.
7. **Murillo AL**, Li J, and Castillo-Chavez C. "A dynamic model of glucose, insulin, and free fatty acids with time delay: the impact of bariatric surgery on type 2 diabetes mellitus," Mathematical Biosciences and Engineering, Mathematical Biosciences and Engineering, 16(5), p 5765-5787, 2019.
8. Cedillo YE, **Murillo AL**, Fernandez JR. "The association between allostatic load and anthropometric measurements among a multiethnic cohort of children." Pediatric obesity, e12501-e12501, 2019.
9. **Murillo AL**, Affuso O, Peterson CM, Li P, Wiener HW, Tekwe CD, and Allison DB. "Illustration of measurement error models for reducing biases in nutrition and obesity research using 2D body composition data." Obesity (Silver Spring), 27 (3): p. 489-495, 2019.
10. **Murillo AL**, Kaiser K, Smith DJ, Peterson CM, Affuso O, Tiwari HK, and Allison DB. "A Systematic Scoping Review of Surgically Manipulated Adipose Tissue and the Regulation of Energetics and Body Fat in Animals." Obesity (Silver Spring), 27 (9): p. 1404-1417, 2019.
11. Almonte-Vega L, Colon-Vargas M, Luna-Jarrin L, Martinez J, Rodriguez-Rincon J, Patil R, Espinoza B, Thakur M, **Murillo AL**, Arriola L, Viswanathan A, and Mubayi A. "A cost-effective analysis of treatment strategies for the control of HSV-2 infections in the U.S.: a mathematical modeling-based case study." Mathematical Biosciences, Mathematical Biosciences, 108347, 2020.
12. Bagheri M, Tiwari HK, **Murillo AL**, Al-Tobasei R, Arnett DK, Kind T, Barupal DK, Fan S, Fiehn O, O'Connell J, Montasser M, Aslibekyan S, and Irvin MR. "A lipidome-wide association study of the lipoprotein insulin resistance index." Lipids in health and disease, 19(1), pp.1-14, 2020.
13. MacDonell-Yilmaz R, Panicker C, **Murillo AL**, Welch J. "Evaluation of Knowledge and Comfort With Opioid Prescribing Among Pediatric Hematology/Oncology Fellows." Pediatrics Blood and Cancer. DOI: 10.1002/pbc.28786, 2020.
14. Ogbunugafor CB, Miller-Dickson MD, Meszaros VA, Gomez LM, **Murillo, AL** and Scarpino SV. "Variation in microparasite free-living survival and indirect transmission can modulate the intensity of emerging outbreaks." Scientific Reports. DOI: 10.1038/s41598-020-77048-4, 2020.

15. Towers S, Cole S, Iboi E, Montalvo C, Navas MG, Pringle JAM, Saha K, Thakur M. Velazquez-Molina J, Castillo-Chavez C, Helitzer D, **Murillo AL**, and Norcross JC. "How long do people stick to a diet? A digital epidemiological approach to estimating temporal trends in diet persistence." Public Health Nutrition. DOI: 10.1017/S1368980020001597, 2020.
16. Musial S, Abioye A, **Murillo AL**, Eskander J, Sykes O, Rodriguez L, Friedman JF, Bancroft B, Golova N. "Introducing Juice and Sugar-Sweetened Beverages in Early Infancy: Parental Knowledge and Intended Behaviors." Clin Pediatr (Phila). DOI: 10.1177/0009922820961080. Clinical Pediatrics. 2021;60(2):109-118 (Epub ahead of print, 2020).
17. Shakiba N, Edholm C, Emerenini B, **Murillo AL,** Peace A, Saucedo O, Wang X, and Allen LJS. "Effects of environmental variability on superspreading transmission events in stochastic epidemic models for MERS and Ebola." Infectious Disease Modeling, DOI: 10.1016/j.idm.2021.03.001, 2021.
18. Morris DB, Gruppuso PA, McGee HA, **Murillo AL**, Grover A, and Adashi EY. "Diversity of the National Medical Student Body: Forty Years of Persistent Inequities." New England Journal of Medicine, New England Journal of Medicine, 384(17), pp.1661-1668, DOI: 10.1056/NEJMsr2028487, 2021.
19. Silva B, Kamath S, Panicker C, Puranam S, Lewis C, **Murillo AL**, and Watts D. "Comparisons of resident and faculty screening for social determinants of health in an academic pediatric practice," Rhode Island Medical Journal 104 (6), 33-37, 2021.
20. McKinney RL, Napolitano N, Levin JJ, Kielt M, Abman SH, Guaman MC, Rose RS, Courtney SE, Matlock D, Agarwal A, Leeman K, Sanlorenzo LA, Sindelar R, Collaco JM, Baker CD, Hannan K, Douglass M, Eldredge L, Lai K, McGrath-Morrow S, Tracy MC, Truog W, Lewis T, **Murillo A**, and Keszler M. "Ventilatory strategies in infants with established severe bronchopulmonary dysplasia: A multicenter point prevalence study." *The Journal of pediatrics*, *242*, 248-252, 2022.
21. **Murillo AL**, Sun T, Aroke H, Bratberg J, Kogut S, Marshall BD, Yedinak JL, Rich, JD, Lebeau R, Hogan JW and Buchanan A. "Novel Application of a Multistate Model to Evaluate the Opioid Use Disorder Care Cascade: A Retrospective Cohort Study," medRxiv, 2022-03.
22. Little RB, **Murillo AL**, Van Der Pol WJ, Lefkowitz EJ, Morrow CD, Yi N, Carson TL. "Diet Quality and the Gut Microbiota in Women Living in Alabama," American journal of preventive medicine. 63(1):S37-46, 2022.
23. Golova N, Eskander J, Pho A, Chu TC, **Murillo AL**, Friedman JF, Musial S. Preventing the Early Introduction of Juice and Sugar-Sweetened Beverages in Infants' Diets: A Randomized Controlled Trial. Clinical Pediatrics 2023;62(4):276-287. doi:10.1177/00099228221119983
24. MacDonell-Yilmaz, RE, **Murillo AL**, and Welch JG. "A randomized controlled trial to examine the effect of the Pediatric Opioid Analgesia Self-Instruction System (PedOASIS) tool on pediatric hematology/oncology trainee education." Pediatric Blood & Cancer, e30305, 2023.
25. Quon RJ, Feler J, Wang Z, Leary OP, **Murillo A**, Fridley JS. Weather patterns forecast the severity of cervical spinal cord injuries. Scientific reports, 15(1):21234, 2025.
26. Goodman MS, Lopez A, **Murillo AL**, Pierce KA. A comparison of methods for coding race in linear and logistic regression models. Annals of Epidemiology, 2025.
27. Porto CM., Hagan MJ, Schroeder C, Thakrar R, Taman M, **Murillo A**., ... & Fridley J.S. National Trends in Time to Surgery for Traumatic Spinal Cord Injury in the United States: An Analysis of the National Trauma Data Bank. *Journal of Neurotrauma*, 2025.
28. **Murillo AL**, Maytin A, Teaching Regression Calibration to Correct for Measurement Error to Develop Statistical Thinking, IASE 2025 Satellite Conference - Statistics and Data Science Education in STEAM, DOI: 10.52041/iase25.144, 2026

Thesis and Dissertation

1. **Murillo AL**, A Theoretical Approach: Inferring the Reversal of Type 2 Diabetes and Proposing a Transcription Factor Network of Skeletal Muscle Post Exercise, *Master's Thesis*
2. **Murillo AL**, Type 2 Diabetes and Obesity: A Biological, Behavioral, and Environmental Context, *Dissertation*

Book Chapters

1. Edholm C, Emerenini B, **Murillo AL,** Saucedo O, Shakiba N, Wang X, Allen LJS, and Peace A. "Searching for superspreaders: identifying epidemic patterns associated with superspreading events in stochastic models," In Understanding Complex Biological Systems with Mathematics, pp. 1-29. Springer, Cham, 2018.
2. **Murillo AL**, Tiwari HK, and Affuso O. "Analysis of the High School Longitudinal Study to evaluate associations among mathematics achievement, mentorship and student participation in STEM programs," In New Frontiers of Biostatistics and Bioinformatics, pp. 269-290. Springer, Cham, 2018.
3. Evans, E., Guo, W., Genctav, A., Tari, S., Domeniconi, C., **Murillo, A**., ... & El-Zehiry, N. (2021). Role detection and prediction in dynamic political networks. Advances in Data Science, 233-252.

Other Non-Peer Reviewed Publications (Indicate *co-first authors, **undergraduate, ***graduate student)

1. *Foster A, *Hendryx E, ***Murillo A**, and *Salas M. "Extensions of the cable equation incorporating spatial dependent variations in nerve cell diameter," MTBI-07-01M, 2010.
2. *Baez J, *Gonzalez T, ***Murillo A**, *Toupo D, and *Zarate R. "My βIG fat math model: beta-cell compensation and type 2 diabetes," Mathematical and Theoretical Biology Institute, MTBI-08-04M, 2011.
3. **Caldwell WK, **Freedman B, **Settles L, **Thomas MM, **Murillo A**, Camacho E, and Wirkus S. "Substance abuse via legally prescribed drugs: the case of Vicodin in the U.S.," Mathematical and Theoretical Biology Institute, MTBI-10-02M, 2013.
4. **Almonte-Vega L, **Colon-Vargas M, ***Luna-Jarrin L, **Martinez J, **Rodriguez-Rincon J, Patil R, Espinoza B, **Murillo AL**, Arriola L, Viswanathan A, and Mubayi A. "A cost-effective analysis of treatment strategies for the control of HSV-2 infections in the U.S.: a mathematical modeling-based case study," Mathematical and Theoretical Biology Institute, 2018.
5. **George SS, **Mora-Mercade LO, **Oroz CY, **Tallana-Chimarro DX, Melendex-Alvarez JR, **Murillo AL**, Castillo-Garsow CW, and Rios-Soto KR. "The effect of GNRH on the menstrual cycle: a mathematical model," Mathematical and Theoretical Biology Institute, 2018.
6. *Alanis J, *Brown MM, *Kitchens J, *Magaña J, *Velastegui C, **Thakur M, Espinoza B, **Murillo AL**, Rodriguez-Messan M, Koester R, and Castillo-Garsow C. "Topography and behavior based movement models for missing hikers in land-wilderness settings," Mathematical and Theoretical Biology Institute, 2019.
7. *Rodriguez BA, *Chau B, *Chavez DMP, *Jaime-Yepez U, *Wang Z, **Yu F, **Murillo AL**, Rodriguez-Messan M, Rios-Soto K, and Mubayi A. "The Role of variation in mate choice and Wolbachia infection on the Aedes Aegypti population dynamics," Mathematical and Theoretical Biology Institute, 2019.

HONORS, AWARDS, AND FELLOWSHIPS

Fellowships/Scholarships

2010	**Infinite Possibilities Conference Oracle College Scholarship**, University of California Los Angeles, CA
2010-2012	**National Science Foundation (NSF) Louis Stokes Alliance for Minority Participation (LSAMP) Bridge to the Doctorate Fellowship**, Western Alliance to Expand Student Opportunities (WAESO), Arizona State University, Tempe, AZ
2013-2016	**Alfred P. Sloan Foundation Minority PhD Program**, Arizona State University, Tempe, AZ
2016-2019	**NIH T32 Postdoctoral Fellowship**, Department of Biostatistics and Nutrition Obesity Research Center (NORC), University of Alabama at Birmingham, Birmingham, AL
2020-2021	**Programs to Increase Diversity among Individuals Engaged in Health-Related Research (PRIDE), Research in Implementation Science for Equity (RISE) Program Scholar**, National Heart, Lung, and Blood Institute and the University of California, San Francisco, CA
2022-2023	Center for Improving Care Delivery for the Aging (CICADA), Leonard Davis Institute of Health Economics (LDI), National Institute of Aging (NIA) and University of Pennsylvania, Philadelphia PA

Selected Awards

2008	**Beaming Leadership**, Career Services Center, Arizona State University, Tempe, AZ
2009	**Outstanding Services Member of the Year**, Undergraduate Student Government, Arizona State University, Tempe, AZ

2009 **Travel Award**, Fostering Diversity in Biostatistics Workshop, Joint Statistical Meeting, Washington, D.C.
2011 **Second place (poster)**, NSF Emerging Researchers National Conference, Washington, D.C.
2011 **Travel Award**, Fostering Diversity in Biostatistics Workshop, ENAR, Miami, FL
2012 **First place (poster)**, 10th Annual More Graduate Education at Mountain State Alliance Student Conference, Arizona State University, Tempe, AZ
2012 **NSF Diversity Fellowship Travel Award for Short Course on Network Analysis: Systems Biology Analysis Methods for Genomic Data**, University of California, Los Angeles, CA
2012 **First place (poster)**, Infinite Possibilities Conference, University of California, Los Angeles, CA
2012 **First place (oral)**, NSF Emerging Researchers National Conference, Washington, D.C.
2012 **Travel Award**, Workshop on Mathematical Challenges in Neural Network Dynamics, Mathematical Biosciences Institute (MBI), Ohio University, Columbus, OH
2014 **Recognition of Service**, Society for Industrial and Applied Mathematics
2015 **Travel Award**, Fostering Diversity in Biostatistics Workshop, ENAR, Miami, FL
2015 **Travel Award**, MPE 2013+ Mathematics of Planet Earth Workshop on Education, National Institute for Mathematical and Biological Synthesis (NIMBioS), University of Tennessee, Knoxville, TN
2016 **Extraordinary First Year Postdoc Award**, Office of Postdoctoral Education, University of Alabama, Birmingham, AL
2017 **Travel Award**, Workshop on the Interface of Statistics and Optimization (WISO), Statistical and Applied Mathematical Sciences Institute (SAMSI), Duke University, Durham, NC
2017 **Third place (oral)**, Postdoctoral Research Day, University of Alabama, Birmingham, AL
2017 **Travel Award**, 5th Workshop on Biostatistics and Bioinformatics, Georgia State University, Atlanta, GA
2017 **The Obesity Society (TOS) Rolls-Simons Travel Award,** Obesity Week, National Harbor, MD
2018 **Travel Award**, IISA International Conference in Statistics, University of Florida, Gainesville, FL
2018 **Travel Award**, Fostering Diversity in Biostatistics Workshop, ENAR, Atlanta, GA

GRANTS

Completed Research Awards:

R25 HL126146 (Bibbins-Domingo)
NIH/NHLBI PRIDE UCSF Research in Implementation Science for Equity (RISE-2) 11/01/20-10/31/21
Spatial multi-level risk factor analysis to predict asthma morbidity in urban multiethnic children
Role: Mentored Independent Research

U54 GM115677 (PI: Padbury) 07/01/16-04/30/21
NIH/NIGMS RI-Center for Clinical Translational Science
Advance Clinical and Translational Research is a statewide consortium of universities, hospital systems and non-profit agencies that provides the infrastructure to support, train and educate investigators conducting clinical and translational research.
Role: Biostatistician

P20 GM121298 (PI: Sharma) 04/01/17-02/28/22
NIH/NIGMS COBRE for Reproductive Health
The project involves providing biostatistical expertise and collaboration to investigators affiliated with the Biomedical Research Excellence (COBRE) for Reproductive Health IDeA grant awarded from the National Institute of General Medical Sciences (NIGMS).
Role: Biostatistician

8UG1OD024951 (PI: Dennery/Chun/Laptook) 09/23/16-08/31/25
NIH/NIGMS Rhode Island Child Clinical Trials Collaborative (RICCTC) (ECHO ISPCTN)
The objective of the RICCTC is to participate in a network to advance the field of Pediatric Medicine through a collaboration of academic centers that perform multi-center clinical trials research, assuring the participation of children living in rural or underserved communities located in Institutional Development Award (IDeA) states to investigate efficacy of treatment and management strategies to care for children. The 5 focus areas of the ECHO

program are pre-, peri-, and postnatal outcomes; obesity, upper and lower airways, neurodevelopment and positive health.
Role: Biostatistician

NIH/NIDDK T32DK062710 (PI: Allison) 05/16-05/17
University of Alabama at Birmingham, Birmingham, AL
Goal: To obtain collaborative research experience in biostatistics and nutrition.
Role: Postdoctoral Trainee

NIH/NHLBI T32HL072757 (PI: Tiwari) 05/17-03/19
University of Alabama at Birmingham, Birmingham, AL
Goal: To obtain methodological research experience in statistical genetics and bioinformatics.
Role: Postdoctoral Trainee

Alfred P. Sloan Foundation Career Development Grant (PI: Murillo) 06/18-08/18
Sloan Scholars Mentoring Network
Goal: To perform patient-centered research involving the analysis of continuous glucose monitor (CGM) data to improve the management of type 1 diabetes using open source platforms.
Role: Principal Investigator

Structured Quartet Research Ensembles (SQuaREs) 01/19-01/21
American Institute of Mathematics
Goal: To develop and analyze stochastic models of the demographic and environmental factors superspreaders and their roles in Ebola and MERS.
Role: Co-Principal Investigator (with Allen, Edholm, and Wang)

Structured Quartet Research Ensembles (SQuaREs) 01/19-01/21
American Institute of Mathematics
Goal: To develop and analyze agent-based models to study the spatial influence of Ebola and MERS epidemic dynamics.
Role: Team Member

ABSTRACTS

1. Panicker C, Kamath S, Silva B, Puranam S, Lewis C, **Murillo AL** and Watts D. "Language spoken and social determinants of health in pediatric primary care," Pediatric Academic Society Conference, 2020.
2. Silva B, Kamath S, Panicker C, Sravanthi Puranam, Puranam S, Lewis C, **Murillo AL**, and Watts D. "Comparisons of resident and faculty screening for social determinants of health in an academic pediatric practice," Pediatric Academic Society Conference, 2020.
3. Berk J, Garbitelli B, Taranto N, **Murillo AL**, Williams P, and Watto M. "All Ears, Who is listening to Internal Medicine Podcasts," Society of General Internal Medicine Conference, 2020.

Conference Presentations (◆Indicate awarded travel support, ❖Indicate presentation award recipient)

1. ◆**Poster Presenter**. Presentation title: "Extensions of the cable equation incorporating spatial dependent variations in nerve cell diameter." At the Society for American Chicanos/Native Americans Conference, Anaheim, CA, 2010.
2. ◆**Poster Presenter**. Presentation title: "Extensions of the cable equation incorporating spatial dependent variations in nerve cell diameter." At the Annual Joint Mathematics Meeting, New Orleans, LA, 2011.
3. **Poster Presenter**. Presentation title: "Extensions of the cable equation incorporating spatial dependent variations in nerve cell diameter." At the 9th Annual More Graduate Education at Mountain State Alliance Student Conference, Arizona State University, Tempe, AZ, 2011.
4. **Poster Presenter**. Presentation title: "Extensions of the cable equation: spatial dependent variations in nerve cell diameter." At the Emerging Researchers National Conference, Washington, DC, 2011.

5. **Poster Presenter**. Presentation title: "My BIG fat math model: beta-cell compensation and type 2 diabetes." At the Field of Dreams Conference, Arizona State University, Tempe, AZ, 2011.
6. ❖ **Poster Presenter**. Presentation title: "My BIG fat math model: beta-cell compensation and type 2 diabetes." At the 10th Annual More Graduate Education at Mountain State Alliance Student Conference, Arizona State University, Tempe, AZ, 2012.
7. ◆ **Poster Presenter**. Presentation title: "A mathematical modeling approach to beta-cell compensation and the reversal of type 2 diabetes." At the NSF Joint Annual Meeting, Washington, DC, 2012.
8. ❖◆ **Poster Presenter**. Presentation title: "Modeling beta-cell compensation and the reversal of type 2 diabetes." At the Infinite Possibilities Conference, Baltimore, MD, 2012.
9. ❖◆**Oral Presenter**. Presentation title: "My BIG fat math model: beta-cell compensation and type 2 diabetes." At the Emerging Researchers National Conference, Atlanta, GA, 2012.
10. **Poster Presenter**. Presentation title: "A transcription factor network responsible for gene expression changes following exercise in human skeletal muscle." At the 11th Annual More Graduate Education at Mountain State Alliance Student Conference, Arizona State University, Tempe, AZ, 2013.
11. **Poster Presenter**. Presentation title: "A transcription factor network responsible for gene expression changes following exercise in human skeletal muscle." At the Society for Mathematical Biology Meeting, Tempe, AZ, 2013.
12. **Poster Presenter**. Presentation title: "Vertical transmission in a two-strain model of dengue fever." At the First International and Interdisciplinary Workshop on the Ecology, Evolution, and Dynamics of Dengue and other Related Diseases, Arizona State University, Tempe, AZ, 2014.
13. ◆ **Poster Presenter**. Presentation title: "Modeling eating behaviors: the environment and food association learning via a ratatouille effect." At the MPE 2013+ Mathematics of Planet Earth Workshop on Education for the Planet Earth of Tomorrow, NIMBioS, University of Tennessee, Knoxville, TN, 2015.
14. **Poster Presenter**. Presentation title: "Modeling eating behaviors: the environment and food association learning via a ratatouille effect." At the International Symposium on Biomathematics and Ecology Education and Research, Illinois State University, Normal, IL, 2015.
15. **Oral Presenter**. Presentation title: "A model to assess the role of free fatty acids on the progression of type 2 diabetes." At the Society for American Chicanos/Native Americans Conference, Long Beach, CA, 2016.
16. ◆ **Poster Presenter**. Presentation title: "A mathematical model to evaluate the role of free fatty acids on the progression of type 2 diabetes." At the Workshop on the Interface of Statistics and Optimization (WISO), Statistical and Applied Mathematical Sciences Institute, Duke University, Durham, NC, 2017.
17. ❖**Oral Presenter**. Presentation title: "Estimating physical activity from 2D body composition data using regression calibration methods for measurement error correction." At the UAB Postdoctoral Research Day, University of Alabama, Birmingham, AL, 2017.
18. ❖◆**Poster Presenter**. Presentation title: "Estimating physical activity from 2D body composition data using regression calibration methods for measurement error correction." At the 12th Annual More Graduate Education at Mountain State Alliance Student Conference, Arizona State University, Tempe, AZ, 2017.
19. ◆ **Poster Presenter**. Presentation title: "Estimating physical activity from 2D body composition data using regression calibration methods for measurement error correction." At the 5th Workshop on Biostatistics and Bioinformatics, Georgia State University, Atlanta, GA, 2017.
20. **Poster Presenter**. Presentation title: "Predicting type 2 diabetes risk and physical activity from 2D body composition data corrected for measurement error." At StatFest, Emory University, Atlanta, GA, 2017.
21. ◆**Oral Presenter**. Presentation title: "Regression calibration to adjust estimates relating Body Composition to Relative Risk of Diabetes." At ObesityWeek, National Harbor, MD, 2017.
22. ◆ **Poster Presenter**. Presentation title: "Measurement error correction methods to improve parameter estimation in a model relating 2D body composition data with physical activity." At the 13th Annual More Graduate Education at Mountain State Alliance Conference, Arizona State University, Tempe, AZ, 2018.
23. **Oral Presenter**. Presentation title: "Analysis of the High School Longitudinal Study to evaluate associations among mathematics achievement, mentorship and student participation in STEM programs." At ENAR, Atlanta, GA, 2018.
24. **Poster Presenter**. Presentation title: "Measurement error models in public health and epidemiology." At MBI, Columbus, OH, 2018.
25. **Invited speaker**. Presentation title: "Teaching Measurement Error Models to Develop Statistical Thinking," UK Conference on Teaching Statistics, University of Glassgow, Scotland, 2026.

INVITED PRESENTATIONS

International (◆Indicate awarded travel support)

1. ◆**Invited speaker**. Presentation title: "A transcription factor network responsible for gene expression changes following exercise in human skeletal muscle." At Open Problems in Math Epidemiology, Vancouver, BC, Canada, 2011.
2. **Invited speaker**. Presentation title: "Teaching Regression Calibration to Correct for Measurement Error to Develop Statistical Thinking." International Association for Statistics Education Satellite Meeting, University of Muenster, Germany, 2026

National

1. **Invited speaker.** High School Ecology Class presentation title: "Nutrition and health." At Leading Edge Academy, Gilbert, AZ, 2009.
2. **Invited speaker**. Presentation title: "Math-bio research opportunities." At the Joaquin Bustoz Math-Science Honors Program, Arizona State University, Tempe, AZ, 2011.
3. **Invited speaker**. Presentation title: "Extensions of the cable equation incorporating spatial dependent variations in neurons." At Unraveling Complex Systems: Math Biology Minisymposium, Arizona State Tempe, AZ, 2011.
4. ◆ **Invited speaker**. Presentation title: "Modeling beta-cell compensation and the reversal of type 2 diabetes." Society for Industrial and Applied Mathematics Workshop Celebrating Diversity, Minneapolis, MN, 2013.
5. **Invited speaker**. Presentation title: "Mathematical applications to type 2 diabetes and eating behaviors, and tips for preparing for graduate school." At an Introductory Psychology Class, Arizona State University, Tempe, AZ, 2015.
6. **Invited speaker**. Presentation title: "A model for evaluating the role of free fatty acids on the progression of type 2 diabetes." At the Department of Nutrition Seminar, University of Alabama, Birmingham, AL, 2016.
7. **Invited speaker**. Presentation title: "A dynamic model of free fatty acids, glucose, and insulin metabolism." At the Department of Mathematics Colloquium, University of Alabama, Birmingham, AL, 2017.
8. **Invited speaker** Presentation title: "Measurement error methods to improve estimates relating 2D body composition data with physical activity status." At the 2018 IISA International Conference on Statistics, Gainesville, FL, 2018.
9. ◆ **Invited speaker**. Presentation title: "Developing Mathematical Models to Evaluate the Effectiveness of School Nutrition Programs to Reduce Childhood Obesity." At the International Symposium on Biomathematics and Ecology Education and Research, Arizona State University, Tempe, AZ, 2018.
10. ◆ **Invited speaker**. Presentation title: "Applications of Mathematical Modeling and Statistical Tools to Evaluate the Effects of Nutrition and Metabolism in Diabetes." At the Society for American Chicanos/Native Americans Conference, Building Community Through Mathematics Research Houston, TX, 2018.
11. **Invited speaker**. Presentation title: "A dynamic model of free fatty acids, glucose, and insulin metabolism." At the Department of Mathematics, University of Alabama, Huntsville, AL, 2018.
12. **Invited speaker**. Presentation title: "Modeling the Diet Dynamics of Children: the Roles of Socialization and the School Environment." At the Joint Mathematics Meeting, Baltimore, MD, 2019.
13. **Invited speaker**. Presentation title: "Open Problems in Modeling Behavior Responses in Obesity." At the NIH-Funded Short Course on Mathematical Sciences in Obesity, Baltimore, MD, 2019.
14. **Invited speaker**. Presentation title "A Mathematical, Statistical, and Computational Modeling Approach to Obesity and Diabetes Research." At Lehman College, Bronx, NY, 2019.
15. **Invited speaker**. Presentation title "Applications of Statistical and Mathematical Models to Evaluate Childhood Obesity and Nutrition Policies." At the Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX, 2020.
16. **Invited speaker**. Presentation title "A Multilevel Framework Combining Statistical Inference and Modeling Studies to Address Health Disparities." At the School of Public Health, Indiana University, Bloomington, IN, 2021.
17. **Invited speaker**. Presentation title "Multilevel Framework Combining Statistical Inference and Modeling Studies to Address Health Disparities." At the Center for Biostatistics and AIDS Research, Harvard University, Boston, MA, 2021.

18. **Invited speaker.** Presentation title "Data Science." At the ICERM Girls Get Math Program, Brown University, Providence, RI, 2021.
19. **Invited Session Speaker.** Presentation title "A Spatial Risk Factor Analysis of Asthma Morbidity and Obesity in a Multiethnic Cohort of Children." In *Novel Data Science Approaches to Eliminate Health Disparities*. At ENAR 2022, Houston, TX, 2022.
20. **Invited Session Speaker.** Presentation title "Spatial Analysis Predicting Asthma Morbidity in Multiethnic Urban Rhode Island Children." In *Recent Advances in Statistical Methods Applied to Racial Equity and Health Disparities Research*. At JSM 2022, Washington, DC, 2022.
21. **Invited Session Speaker.** Presentation title "A Social Network-Based Model of School Nutrition Programs Incorporating Social Heterogeneity and Hierarchy." In *Advanced social network analysis for public health*. At JSM 2022, Washington, DC, 2022.
22. **Invited speaker.** Presentation title "Data Science." At the ICERM Girls Get Math Program, Brown University, Providence, RI, 2022.
23. **Invited speaker**. Presentation title: "Measurement Error Models in Obesity Research." At the NIH-Funded Short Course on Mathematical Sciences in Obesity, Virtual, 2021.
24. **Invited speaker**. Presentation title: "Measurement Error Models in Obesity Research." At the NIH-Funded Short Course on Mathematical Sciences in Obesity, Bloomington, IN 2023.
25. **Invited speaker.** Presentation title "Data Science." At the ICERM Girls Get Math Program, Brown University, Providence, RI, 2023.
26. **Invited speaker.** Presentation title "Data Science." At the ICERM Girls Get Math Program, Brown University, Providence, RI, 2024.
27. **Invited speaker.** Presentation title "Basics and Applications of Survival Analysis in Clinical Research." At Division of Maternal Fetal Medicine at Women & Infants Hospital, Brown University, Providence, RI, 2024.
28. **Invited speaker**. Presentation title: "Measurement Error Models in Aging Research." At the NIH-Funded "Statistical Methods, Developments, and Challenges in Geroscience" Meeting, Indianapolis, IN 2025.
29. **Invited speaker**. Presentation title: "Teaching Measurement Error Models in Introductory Biostatistics Courses to Develop Statistical Thinking," Wake Forest University Department of Statistical Sciences, Winston-Salem, NC, 2025.

PROFESSIONAL SERVICE

University Committees

2008	Arizona State University Residential Review Board
2008-09	Arizona State University Campus Health Advisory Board
2007-10	Arizona State University Career Services Advisory Committee
2022-2023	Brown University Department of Biostatistics Introductory Courses Review Committee
2023-2024	Co-organizer, CSS/Biostatistics Statistical Seminar Series AY 2023-2024
2022-current	Brown University Department of Biostatistics Diversity, Equity, and Inclusion (DEI) Committee
2022-current	Brown University Department of Biostatistics Master's Degree Admissions Committee
2024-current	Brown University School of Public Health Delta Omega Honor Society Faculty Advisor
2024-current	Brown University School of Public Health Community Advisory Board

Ad Hoc Reviewer Roles

2016	JAMA
2016	Nature Medicine
2016	Nature Reviews Disease Primers
2016	Science
2017-2021	Obesity
2017-2021	Clinical Obesity
2018-2021	Mathematical Biosciences and Engineering
2018-2021	Journal of Nutrition Science
2018-2021	Revista de Matemática: Teoría y Aplicaciones
2020-2021	American Journal of Reproductive Immunology
2017-2023	PLoS One

2021-2023 Clinical Pediatrics
2025-current Annuals of Epidemiology
2025-current Statistics in Medicine

Editorial Roles
2024-present Associate Editor, Journal of Statistics and Data Science Education

International/National Committees
2024-2026 Regional Advisory Board Member, Eastern North American Region (ENAR), International Biometric Society
2024-2026 Member, American Statistical Association, Committee on Minorities in Statistics
2024-2026 At-Large Executive Committee Member, American Statistical Association, Section on Statistics and Data Science Education

Memberships In Societies
2009- present Member, American Statistical Association
2011- present Member, Eastern North American Region International Biometric Society
2010- 2020 Member, Society for Advancement of Chicanos/Hispanics and Native Americans in Science
2011- 2019 Member, Society for Industrial and Applied Mathematics
2016- 2019 Member, Obesity Society
2017- 2019 Member, Association for Women in Mathematics (AWM)

Conference Activities
2018 Invited Session Chair, IISA International Conference in Statistics, "Recent Microbiome Research Methods," Gainesville, FL
2020 Panelist, "Fields of Success from Math Alliance Alumni," Virtual Field of Dreams Conference
2021 Panelist, "Graduate Information Session," Electronic Undergraduate Statistics Research Conference (eUSR), Virtual Meeting
2021 Invited Session Chair, Annual Joint Statistical Meetings, "Innovative Methods for Predicting Public Health Outcomes and Informing Policy," Seattle, WA
2023 Panelist, JSM Diversity Mentoring Program, "Navigating Working Remotely and Mentoring," Toronto, Canada
2025 Panelist, ENAR Spring Meeting, "Careers Panel," New Orleans, LA
2025 Invited Session Chair, Annual Joint Statistical Meetings, "Journal of Statistics and Data Science Education: Promoting Innovative and Inclusive Approaches in Statistics and Data Science Education," Nashville, TN

Organizing Committee
2011 Program Committee Co-Chair, "Unraveling Complex Systems: Math Biology Minisymposium," Arizona State University
2014 Program Committee Co-Chair, "First International and Interdisciplinary Workshop on the Ecology, Evolution, and Dynamics of Dengue and Related Diseases," Arizona State University
2015 AWIS Chapter Committee, "JumpStarting STEM Careers Symposium on Scientific Writing," Arizona State University
2016 AWIS Chapter Committee, "JumpStarting STEM Careers Symposium on Computer Science, Mathematics, and Engineering," Arizona State University
2021 SIAM Committee, "Joint SIAM Student Conference," Georgia Tech University
2021-current American Statistical Association StatFest Conference Planning Committee for Undergraduate students from underrepresented backgrounds
- Chair (2025), Vice Chair (2024), Planning Committee Member (2021-2023)

Service
2005-2006 Volunteer, American Cancer Society, Sherman Oaks, CA
2006-2009 Member, Students for a Cure, Arizona State University, Tempe, AZ

2007-2009 Member, Colleges Against Cancer, Arizona State University, Tempe, AZ
2010-2013 Society for Industrial and Applied Mathematics ASU Chapter, Tempe, AZ
Vice President (2012-13), Secretary (2011-12), Representative (2010-11)
2013-2014 Approach Representative, Association of All Graduate Students, School of Human Evolution and Social Change, Arizona State University, Tempe, AZ
2014-2016 Secretary, Association for Women in Science Chapter, Arizona State University, Tempe, AZ
2016-2017 Contributor to the Obesity and Energetics Offerings, University of Alabama, Birmingham, AL
2022-2023 Chair, Student and Young Professional Group of the Justice, Equity, Diversity, and Inclusion (JEDI) Outreach Group, American Statistical Association, Washington, D.C.

Undergraduate and Graduate Level Education and Outreach

2011 Panelist, "Summer REUs," Field of Dreams Conference, Arizona State University, Tempe, AZ
2012-2014 Volunteer, Informal Science Communication, Arizona State University, Tempe, AZ
2015 Panelist, "AWIS Seminar: STEM Careers and Pathways," Arizona State University, Tempe, AZ
2016 Mentor Judge undergrad/graduate presentations, SACNAS Conference, Long Beach, CA
2018 Mentor Judge graduate presentations, SACNAS Conference, San Antonia, TX
2022 Mentor Judge undergrad/graduate presentations, Brown School of Public Health Research Day, Providence, RI
2023 Mentor Judge undergrad/graduate presentations, Brown School of Public Health Research Day, Providence, RI

K through 12th Level Education and Outreach

2010-2013 Panelist/Math Grader, Sonia Kovalevsky Day, Arizona State University, Tempe, AZ
2014 Volunteer, Girl Scouts Technology STEM Series, Arizona State University, Tempe, AZ
2021-2024 Lecturer, Data Science in Public Health, ICERM Girls Get Math Program, Brown University, Providence, RI
- Co-organizer (2024, 2025)
2022 Poster Judge, American Statistical Association Fall Data Challenge for High School Students
2025 Judge, ENAR Spring Meeting DataFest

UNIVERSITY TEACHING ROLES

Arizona State University

Fall 2010 Arizona State University, "Calculus I" course
Guest lecturer (two undergraduate lectures total)

Spring 2011 Arizona State University, "Brief Calculus" course
Guest lecturer (two undergraduate lectures total)

Fall 2011 Arizona State University, Joaquin Bustoz Math-Science Honors Program (JBMSHP)
Faculty mentor to four undergraduate students: C. Rodriguez, A. Lee, B. Urena, and A. Bacilia

Summer 2013 Arizona State University, Mathematical and Theoretical Biology Institute (MTBI)
Teaching assistant and mentor to four undergraduates students: W. Caldwell, B. Freedman, L. Settles, and M. Thomas

Spring 2015 Arizona State University, "Elementary Statistics" course
Guest lecturer (four undergraduate lectures total)

Fall 2016 Arizona State University, "Continuous Models for Life and Social Sciences" course
Guest lecturer (three undergraduate lectures total)

Summer 2018 Arizona State University, Mathematical and Theoretical Biology Institute (MTBI)
Lecturer for "Introduction to Biostatistics" and "Introduction to Probability and Statistics"

Faculty mentor to eight undergraduates and one graduate student:
L. Almonte-Vega, M. Colon-Vargas, L. Luna-Jarrin, J. Martinez, J. Rodriguez-Rincon, S. S George, L. Mora-Mercade, C. Y Oroz, D. Tallana-Chimarro

Summer 2019 Arizona State University, Mathematical and Theoretical Biology Institute (MTBI)
Lecturer for "Introduction to Biostatistics," "Introduction to Probability and Statistics," and "Introduction to Epidemic Modeling"

Faculty mentor to eight undergraduates and one graduate student:
J. Alanis, B. Ameneyro, M. Chavez, J. Magaña, M. Brown, U. Jaime-Yepez, C. Velastegui, B. Chau, J. Kitchens, and Z. Wang

Brown University

Spring 2020 Brown University, Advance-CTR, "Virtual Learning in R Module Series"
Facilitated an R programming course to ~20 clinical junior faculty over 5 months.

Spring 2020 Brown University, Pediatric Faculty Development Series, "Incorporating Statistical Planning into the Research Strategy for the IRB Proposal"
Guest lecturer (~15 faculty and fellows total, CME credit option provided)

Summer 2020 Brown University, Pediatric Fellows Core Curriculum, "Incorporating Statistical Planning into the Research Strategy"
Guest lecturer (~9 fellows total)

Fall 2022 Brown University, "Essentials of Data Analysis," Undergraduate in Public Health
Instructor (~90 undergraduate students)

Spring 2023 Brown University, "Applied Regression Analysis," Masters in Biostatistics or Public Health, Doctoral in Public Health
Instructor (~75 graduate-level students)

Spring 2023 Brown University, "Applied Longitudinal Data Analysis," Masters in Biostatistics or Public Health, Doctoral in Public Health
Instructor (~25 graduate-level students)

Spring 2023 Brown University, "Applied Multilevel Modeling," Masters in Biostatistics or Public Health, Doctoral in Public Health
Instructor (~25 graduate-level students)

Fall 2023 Brown University, "Essentials of Data Analysis," Undergraduate in Public Health
Instructor (~90 undergraduate students)

Spring 2024 Brown University, "Applied Regression Analysis," Masters or Doctoral in Public Health
Instructor (~45 graduate-level students)

Spring 2024 Brown University, "Applied Longitudinal Data Analysis," Masters in Biostatistics or Public Health, Doctoral in Public Health
Instructor (~27 graduate-level students)

Spring 2024 Brown University, "Applied Multilevel Modeling," Masters in Biostatistics or Public Health, Doctoral in Public Health
Instructor (~27 graduate-level students)

Fall 2025 Brown University, "Essentials of Data Analysis," Undergraduate in Public Health
Instructor (~85 undergraduate students)

Spring 2025 Brown University, "Applied Regression Analysis," Masters or Doctoral in Public Health
Instructor (~45 graduate-level students)

Spring 2025 Brown University, "Biostatistics and Data Analysis II," Masters in Biostatistics or Public Health
Instructor (~55 graduate-level students)

New York University

Fall 2021 New York University, "Biostatistics for Public Health," Global Health concentration
Instructor (~35 undergraduate students)

Fall 2021 New York University, "Biostatistics for Public Health," Masters in Biostatistics or Public Health
Instructor (~70 graduate-level students)

Spring 2022 New York University, "Biostatistics for Public Health," Global Health concentration
Instructor (~35 undergraduate students)

Spring 2022 New York University, "Biostatistics for Public Health," Masters in Biostatistics or Public Health
Instructor (~70 graduate-level students)

Spring 2023 New York University, "Regression Analysis," Masters in Biostatistics or Public Health
Instructor (~70 graduate-level students)

UNIVERSITY ADVISING AND MENTORING ROLES

Scholarship Oversight Committee Member, Archana Lingannan, MD, Brown Department of Pediatrics, Division of Pediatric Gastroenterology, Hepatology, and Nutrition Fellow, "Weight gain in Pediatric IBD patients in anti TNF therapy," 2020-2021

Undergraduate Thesis Advisor, Raghav Pantav, Brown Department of Applied Mathematics, "Modeling the Transmission Dynamics of Respiratory syncytial virus (RSV) in Childcare Settings," 2020-2022

Undergraduate Research Mentor, Melanie Morales, Brown Health and Human Biology, "Investigating pediatric health disparities in obesity and asthma," 2021-2022

Undergraduate Research Mentor, Presidential Scholars Program, Elise Togneri, Brown Department of Applied Mathematics, "Mathematical Modeling with Applications to Biology and Ecology," Summer 2021

Graduate Research Mentor, Rachel Gaither, Brown Epidemiology, "Spatial analysis of pediatric health disparities in obesity and asthma," Summer 2021

Undergraduate Student Research Mentor, Avery Maytin, Brown Computational Biology, "Measurement Error Methods for Blood Pressure NHANES data," Spring 2024

Thesis Advisor, Victoria Grase, Brown Biostatistics Master's student, "Race Coding Methods to Evaluate Blood Pressure Using NHANES data," Graduated in Spring 2024

Thesis Advisor, Michael Stewart, Brown Biostatistics Master's student, "Measurement Error Models for Correcting Bias in Models Evaluating the Association Between Diet and Hypertension," Expected Graduation in Spring 2025

Thesis Advisor, Yingxi Kong, Brown Biostatistics Master's student, "Longitudinal Data Analysis Evaluating Childhood Behavioral Problems in the Future of Families and Child Wellbeing Study (FFCWS)," Expected Graduation in Spring 2025

Thesis Advisor, Tianna Chan, Brown Biostatistics Master's student, "Measurement Error Models Evaluating Childhood Depression in the Future of Families and Child Wellbeing Study (FFCWS)," Expected Graduation in Spring 2025

OTHER TEACHING ROLES

High-School Level

Summer 2012, 2014, 2015	Arizona State University, "Introduction to Applied Mathematics" course Joaquin Bustoz Math Science Honors Program (JBMSHP) Teaching assistant and primary mentor for six high school students: Breanna Parker, Leslie Mora, Octavio Espinoza, Jaylene Arvizu, Cassandra Lopez, and Arly Melendez
Summer 2019	Arizona State University, "Introduction to Applied Mathematics" course Joaquin Bustoz Math Science Honors Program (JBMSHP) Co-Instructor (high-school level)