# Maricela Cruz

Curriculum Vitae (Updated January 2025)

# **1. EDUCATIONAL AND BIOGRAPHICAL INFORMATION**

Maricela Cruz, PhD Assistant Investigator Biostatistics Unit, Kaiser Permanente Washington Health Research Institute (KPWHRI) 1730 Minor Ave, Ste. 1600 Seattle, WA 98101 Phone: 206-287-2878 E-mail: Maricela.F.Cruz@kp.org

Ph.D., Statistics, University of California Irvine, CA, September 2019 M.S., Statistics, University of California Irvine, CA, March 2017 B.A., Mathematics, Pomona College, Claremont, CA, May 2014

# 2. PROFESSIONAL POSITIONS

Current

Affiliate Assistant Investigator, Department of Biostatistics, University of Washington, Seattle, WA, February 2021 – Present

Assistant Investigator, Biostatistics Unit, KPWHRI, Seattle, WA, August 2019 - Present

## <u>Prior</u>

Summer Associate, RAND Corporation, Santa Monica, CA, Summer 2018

## **3. PROFESSIONAL HONORS**

Journal of Managed Care & Specialty Pharmacy best paper of the year award (second author), April 2024

Featured, Latinxs and Hispanics in the Mathematical Sciences (Lathisms) Hispanic Heritage Month Calendar, September 2022 and September 2023 (kids-friendly edition)

Student Travel Award, 13<sup>th</sup> International Conference on Health Policy and Statistics (ICHPS), January 2019

PhD Enhancement Award for the Donald Bren School of Information and Computer Sciences, University of California Irvine, July 2019

Latino Excellence Award for the Donald Bren School of Information and Computer Sciences, University of California Irvine, April 2018

Student Paper Competition winner for the Survey Research Methodology Section/Government Statistics Section/Social Statistics Section (*travel award for JSM*), American Statistical Association, August 2017

Graduate Conference Presentation Grant, University of California Irvine Donald Bren School of Information and Computer Sciences, March 2017

Graduate Research Fellowship Program awardee, National Science Foundation, September 2015 – June 2019

Eugene Cota-Robles Fellowship, University of California Irvine, September 2014 – June 2019 Pat Kelly Prize, Pomona College, May 2014

QuestBridge Scholarship, Pomona College, September 2010 - May 2014

## 4. MEMBERSHIPS

American Statistical Association

Sections: Biometrics; Health Policy Statistics; Mental Health Statistics; Social Statistics; Statistics in Epidemiology; Statistical Learning and Data Science Justice, Equity, Diversity, and Inclusion Outreach Group Caucus for Women in Statistics

Western North American Region, International Biometric Society

#### 5. ORGANIZATIONAL SERVICE

KPWHRI Seminar Co-organizer, December 2023 – Present KPWHRI All Scientific Division's Culture Club, September 2023 – June 2024 KPWHRI Biostatistics Computing Workgroup, May 2022 – October 2023 KPWHRI Institute Steering Committee, January – September 2021 KPWHRI Faculty Equity Team Subcommittee member, August 2020 – October 2021 KPWHRI Equity Team Steering Committee member, August 2020 – October 2021

## 6. OTHER PROFESSIONAL SERVICE

## National Service

Session Organizer

Western North American Region, June 2021, June 2023, & June 2024 Joint Statistical Meetings, August 2022 & August 2024

Session Chair, Joint Statistical Meetings, August 2020 & August 2024

Session Discussant, Western North American Region, June 2023

Reviewer for Student Paper Award, International Conference on Health Policy Statistics, January 2023

#### Local Service

Member, Search Committee for Assistant Teaching Professor, University of Washington Department of Biostatistics, August 2021 – March 2022

#### Local Service, Prior Institutions

Poster Judge, AP Statistics Poster Competition, Chapman University, Orange, CA, April 2018 Co-organizer, R-Ladies Irvine, March 2018 – May 2019

Abstract Session Reviewer, Workshop for the Philosophy of Machine Learning: Knowledge and Causality, Irvine, CA, April 2018

#### 7. SPECIAL NATIONAL SERVICE AND RESPONSIBILITIES

# Chair

American Statistical Association's Committee on Membership Retention and Recruitment, January 2025 – Present

## **Committee Member**

American Statistical Association's Committee on Membership Retention and Recruitment, January – December 2024

Western North American Region's Justice, Equity, Diversity, and Inclusion Committee, May 2021 – December 2022, August 2024 – Present

Justice, Equity, Diversity, and Inclusion Liaison Committee, American Statistical Association, January – December 2022

Ad hoc reviewer for research proposals from granting agencies:

PCORI Broad Pragmatic Studies: Summer 2024

PCORI Achieve Health Equity: Fall 2023

PCORI Adolescent Alcohol Use and Broad Pragmatic Studies on Children and Youth: Summer 2023

# 8. EDITORIAL RESPONSIBILITIES

#### Journal Referee

Alzheimer's & Dementia: The Journal of the Alzheimer's Association

Brain and Behavior

La Matematica

**Observational Studies** 

Research in Health Services & Regions

Statistics in Medicine

Vaccine

# 9. RESEARCH FUNDING

#### <u>Current</u>

u	<u>ment</u>	
	NIDA R01DA047954 (Glass) DIGITS Trial Administrative Supplement Role: Co-Investigator (8% FTE)	03/01/2023 – 02/28/2025 \$386,978 (total direct)
	Department of Health and Human Services (DHHS) R01MH134831 (Simon) Machine Learning to Personalize Antidepressant Treatment Role: Co-Investigator (10% FTE)	07/01/2024 – 04/30/2027 \$2,392,868 (total direct)
	NIMH 1R34MH132829-01 (Richards) Pilot Testing Implementation of Suicide Risk Prediction Algorith Prevention in Primary Care Role: Co-Investigator (10% FTE)	07/07/2023 – 04/30/2026 \$751,682 (total direct) nms to Support Suicide
	CDC 1R01CE003460-01-00 (Richards) Optimizing Firearm Suicide Prevention in Healthcare Role: Co-Investigator (10% FTE)	09/30/2022 – 09/29/2025 \$1,949,538 (total direct)
	American Foundation for Suicide Prevention SRG-0-109-21 (Richards) Encouraging Firearm Access Disclosure: Suicide Prevention in Role: Co-Investigator (1% FTE)	10/15/2022 – 10/14/2024 \$99,840 (total direct) Healthcare
	NIA R01AG077628 (Gillen, Grill) Recruiting and Retaining Participants from Disadvantaged Neig Role: Co-Investigator (20% FTE)	04/01/22 – 03/31/27 \$2,462,080 (total direct) ghborhoods in Registries
	NIMH	01/01/22 - 12/31/25

R01MH125831 (Coley) \$1,136,381 (total direct) Innovative Methods to Reduce Racial and Ethnic Disparities in Suicide Risk Prediction Role: Co-Investigator (20% FTE)

#### Pending Review

N/A

Past Funded Projects

AHRQ 09/30/2020 - 09/29/2023 R01HS027181 (Bender) \$826,480 (total direct) Organizing Nursing to Improve Care Quality and Safety: A Hybrid Implementation-Effectiveness Study Role: Co-Investigator (20% FTE)

**Donaghue Foundation** 09/30/2020 - 09/29/2023 [No Grant Number] (Yeung) \$366,739 (total direct) Value-based Formulary-Essentials: Testing and Expanding on Value in Prescription Drug **Benefit Design** Role: Co-Investigator (15% FTE)

FDA 09/30/2018 - 06/30/2022 HHSF223201810201C (Simon) \$4,899,783 (total direct) Effects of Medical Products on Suicidal Ideation and Behavior - Real World Evidence Role: Co-Investigator (25% FTE)

NIMH 08/03/2017 - 05/31/2022 5U01MH114087-05 (Simon, Ahmedani) \$1,222,633 (total direct year4) An Evaluation of the National Zero Suicide Model Across Learning Healthcare Systems Role: Co-Investigator (5% FTE)

NIDDK

09/15/2017 - 06/30/2022 R01DK114196 (Arterburn, Drewnowski) \$2,840,745 (total direct) Moving to Health: How Changing Built Environments Impact Weight and Glycemic Control Role: Co-investigator (25% FTE)

# **10. TEACHING AND MENTORING RESPONSIBILITIES**

## Teaching

Instructor

Health Services 525: Advanced Health Services Methods III - Causal Inference Using Observational Data (~30 students, 4hrs/week), Department of Health Services and Population Health, University of Washington, Spring 2022

Biostat 582: Student Seminar (~15 students, 2hrs/week), Department of Biostatistics, University of Washington, Winter 2020 and Winter 2021

**Teaching Assistant** 

Statistics 67: Introduction to Probability and Statistics for Computer Science Major, Department of Statistics, University of California Irvine, Summer II 2016 and Summer II 2017

Statistics 08: Introduction to Biostatistics, Department of Statistics, University of California Irvine, Summer II 2015

**Guest Lectures** 

Electronic Health Record Considerations, Epidemiology 515: Advanced Epidemiologic Methods 1, University of Washington, Seattle, WA, November 2022 & November 2023 Interrupted Time Series Models, Health Services 525: Advanced Health Services Methods III – Causal Inference Using Observational Data, University of Washington, Seattle, WA, April 2022

#### <u>Mentoring</u>

**Dissertation Committee Member** 

Thuy Lu, University of California Irvine, Expected Graduation (PhD in Statistics): Summer 2025

Mentored students

Shantell Missouri, University of California Los Angeles, Expected Graduation (PhD in Human Development and Psychology): Summer 2025

Summer interns

Khadija Dial, Fred Hutchinson Cancer Research Center Seattle Stat GROWS, 2024

Lydia Woldemichael, Fred Hutchinson Cancer Research Center Seattle Stat Summer 2023 Isabelle R. Bassler, Fred Hutchinson Cancer Research Center Pathway Undergraduate Researchers, 2021

## **11. PUBLICATIONS**

## Published Papers in Refereed Journals

\* Denotes co-first author publications

- Angerhofer Richards J, Cruz M, Stewart C, Lee AK, Ryan TC, Ahmedani BK, Simon GE. (2024). Effectiveness of Integrating Suicide Care in Primary Care: Secondary Analysis of a Stepped-Wedge, Cluster Randomized Implementation Trial. Ann Intern Med. https://doi.org/10.7326/m24-0024
- Wolock CJ, Williamson BD, Shortreed SM, Simon GE, Coleman KJ, Yeargans R, Ahmedani BK, Daida Y, Lynch FL, Rossom RC, Ziebell RA, Cruz M, Wellman RD, Coley RY. (2024). Importance of variables from different time frames for predicting self-harm using health system data. *Journal of Biomedical Informatics*. https://pmc.ncbi.nlm.nih.gov/articles/PMC11451820/
- Lozano PM, Bobb JF, Kapos FP, Cruz M, Mooney SJ, Hurvitz PM, Anau J, Theis MK, Cook A, Moudon AV, Arterburn DE, Drewnowski A. (2024). Residential density is associated with BMI trajectories in children and adolescents: Findings from the Moving to Health study. *AJPM Focus*. 3(3):100225. <u>https://doi.org/10.1016/j.focus.2024.100225</u>
- Rosenberg DE, Cruz MF, Mooney SJ, Bobb JF, Drewnowski A, Moudon AV, Cook AJ, Hurvitz PM, Lozano P, Anau J, Theis MK, Arterburn DE. (2024). Neighborhood built and food environment in relation to glycemic control in people with type 2 diabetes in the moving to health study. *Health Place*. 86:103216. https://doi.org/10.1016/j.healthplace.2024.103216
- Cruz M, Wei A, Hardin J, & Radunskaya A. (2024). Long-term averages of the stochastic logistic map. *Journal of Difference Equations and Applications*, 1-29. https://doi.org/10.1080/10236198.2024.2316379
- Simon GE, Cruz M, Boggs JM, Beck A, Shortreed SM, Coley RY. (2023). Predicting Outcomes of Antidepressant Treatment in Community Practice Settings. *Psychiatric* Services. <u>https://doi.org/10.1176/appi.ps.20230380</u>
- Yeung L, Cruz M, Tsiao E, Watkins JB, Sullivan SD. (2023). Drug Use and spending under a formulary informed by cost effectiveness. *Journal of Managed Care & Specialty Pharmacy*. 29(11):1175-1183. <u>https://doi.org/10.18553/jmcp.2023.29.11.1175</u>

Journal of Managed Care & Specialty Pharmacy best paper of the year award, 2024

- 8. Simon GE, **Cruz M**, Shortreed SM, Sterling SA, Coleman KJ, Ahmedani BK, Yaseem ZS, Mosholder AD. (2023). Stability of suicide risk prediction models during changes in health care delivery. *Psychiatric Services Decision*. <u>https://doi.org/10.1176/appi.ps.20230172</u>
- Shortreed SM, Walker RL, Johnson E, Wellman R, Cruz M, Ziebell R, Coley RY, Yaseen ZS, Dharmarajan S, Penfold RB, Ahmedani BK, Rossom RC, Beck A, Boggs JM, Simon GE. (2023). Electronic health record-based suicide risk prediction: Incorporating detailed temporal predictors and complex modeling strategies does not substantially improve performance. NPJ Digital Medicine. 6(1):47. https://doi.org/10.1038/s41746-023-00772-4
- Cruz M, Shortreed SM, Richards JE, Coley RY, Yarborough BJ, Walker RL, Johnson E, Ahmedani BK, Rossom R, Coleman KJ, Boggs JM, Beck AL, Simon GE. (2022). Machine Learning Prediction of Suicide Risk Does Not Identify Patients Without Traditional Risk Factors. *The Journal of clinical psychiatry*, 83(5), 42525. https://doi.org/10.4088/jcp.21m14178
- Cruz M, Drewnowski A, Bobb JF, Hurvitz PM, Moudon AV, Cook A, Mooney SJ, Buszkiewicz JH, Lozano P, Rosenberg DE, Kapos F, Theis MK, Anau J, Arterburn D. (2022). Differences in weight gain following residential relocation in the Moving to Health (M2H) Study. *Epidemiology*. 33(5):747-755. https://doi.org/10.1097/ede.00000000001505
- 12. **Cruz M**, Ombao H, Gillen DL. (2022). A Generalized Interrupted Time Series Model for Assessing Complex Health Care Interventions. *Statistics in Biosciences*. <u>https://doi.org/10.1007/s12561-022-09346-6</u>
- Bobb JF, Cruz MF, Mooney SJ, Drewnowski A, Arterburn D, Cook AJ. (2022). Accounting for spatial confounding in epidemiological studies of individual-level exposures: an exposure penalized spline approach. *Journal of the Royal Statistical Society, Series A*. <u>http://doi.org/10.1111/rssa.12831</u>
- \*Cruz M, Pinto-Orellana MA, Gillen DL, Ombao H. (2021). RITS: a toolbox for assessing complex interventions via interrupted time series models. *BMC Med Res Methodology*, 21(1):143. <u>https://doi.org/10.1186/s12874-021-01322-w</u>
- Buszkiewicz JH, Bobb JF, Kapos F, Hurvitz PM, Arterburn D, Moudon AV, Cook A, Mooney SJ, Cruz M, Gupta S, Lozano P, Rosenberg DE, Theis MK, Anau J, Drewnowski A. (2021). Differential associations of the built environment on weight gain by sex and race/ethnicity but not age. *International Journal of Obesity*. <u>https://doi.org/10.1038/s41366-021-00937-9</u>
- 16. Buszkiewicz JH, Bobb JF, Hurvitz PM, Arterburn D, Moudon AV, Cook A, Mooney SJ, Cruz M, Gupta S, Lozano P, Rosenberg DE, Theis MK, Anau J, Drewnowski A. Buszkiewicz, J. H., Bobb, J. F., Hurvitz, P. M., Arterburn, D., Moudon, A. V., Cook, A., ... & Drewnowski, A. (2021). Does the built environment have independent obesogenic power? Urban form and trajectories of weight gain. *International Journal of Obesity*, 1-11. <u>https://doi.org/10.1038/s41366-021-00836-z</u>
- 17. Coley RY, Walker RL, **Cruz M**, Simon GE, Shortreed SM. (2021). Clinical risk prediction models and informative cluster size: assessing the performance of a suicide risk prediction algorithm. *Biometrical Journal*. <u>https://doi.org/10.1002/bimj.202000199</u>
- Bender M, Williams M, Cruz MF, Rubinson C. (2021). A study protocol to evaluate the implementation and effectiveness of the Clinical Nurse Leader Care Model in improving quality and safety outcomes. *Nursing Open*. <u>https://doi.org/10.1002/nop2.910</u>
- Coley RY, Johnson E, Simon GE, Cruz M, Shortreed SM. (2021). Racial/Ethnic Disparities in the Performance of Prediction Models for Death by Suicide After Mental Health Visits. JAMA Psychiatry. <u>https://doi.org/10.1001/jamapsychiatry.2021.0493</u>.
- Bender M, Murphy EA, Cruz M, Ombao H. (2019). System and unit-level care quality outcomes after reorganizing frontline care delivery to integrate Clinical Nurse Leaders: a quasi-experimental time series study. *Journal of Nursing Administration, 49*(6), p. 315-322. <u>https://doi.org/10.1097/NNA.00000000000759</u>

- 21. **Cruz M**, Osilla KC, Paddock SM. (2019). Group cohesion and climate in cognitive behavioral therapy for first-time DUI offenders. *Alcoholism Treatment Quarterly*, 1-19. <u>https://doi.org/10.1080/07347324.2019.1613941</u>
- Cruz M, Gillen DL, Bender M, & Ombao H. (2019). Assessing health care interventions via an interrupted time series model: study power and design considerations. *Statistics in Medicine*, 38(10), 1734-1752. <u>https://doi.org/10.1002/sim.8067</u>
- Cruz M, Bender M, & Ombao H. (2017). A robust interrupted time series model for analyzing complex health care intervention data. *Statistics in Medicine*, 36(29), 4660– 4676. <u>https://doi.org/10.1002/sim.7443</u>

## Accepted Peer-Reviewed Papers in Press

1. Bobb JF, Mooney SJ, **Cruz M**, Moudon AV, Drewnowski A, Arterburn D, Cook AJ. (2024). Distributed lag models for retrospective cohort data with application to a study of built environment and body weight. *Biometrics*. In press.

## Non-Refereed Papers / Articles

1. Ye S, **Cruz M**, Hu Y, Yu Y. (2022). A marginalized three-part interrupted time series regression model for proportional data. *ArXiv*. <u>https://doi.org/10.48550/arXiv.2212.09996</u>

#### Book Chapters

Not applicable

#### Published Technical Reports

Not applicable

#### Published Abstracts from Professional Conferences

Not applicable

## Digital and Other Novel Forms of Scholarship

1. **Cruz M**, Pinto M, Gillen DL, Ombao H. (2021). Robust Interrupted Time Series (RITS) Toolbox. <u>https://biostatistics-kaust.github.io/robust\_time\_series\_toolbox/</u>

#### Submitted Manuscripts

- 1. **Cruz M**, Shortreed SM, Simon GE, Coley RY. Evaluating clinical implementation of risk prediction based interventions using difference-in-differences. *Health Services Research*. Revise and resubmit.
- 2. Bender M, Williams M, **Cruz M**, Coppin JD. Examining the relationship between differing implementation patterns of an evidence-informed frontline nursing care model and implementation success in a national-level study. *Journal of Nursing Management*.

## 12. INVITED PRESENTATIONS (Like Presentations Grouped)

#### <u>Seminars</u>

**Cruz M**. Analytic Challenges in Mental Health. Collaborative Undergraduate Biostatistics Experience program, Center for Biostatistics and Health Data Science, Virginia Tech, Virtual, June 2024

**Cruz M**, Shortreed SM, Coley Y. Assessing the Impact of Risk-stratified Interventions with Difference-in-Differences. Mental Health Research Network Methods Scientific Interest Group, Virtual, September 2023

**Cruz M**, Ombao H, Bender M, Gillen DL. Interrupted Time Series Models for Observational Health Care Interventions. University of Colorado Denver Anschutz Medical Campus, Department of Biostatistics & Informatics Seminar, Virtual, September 2023

**Cruz M**, Holbrook A. A Mixed-Effects Interrupted Time Series Model for Assessing Complex Healthcare Interventions Across Multiple Units. Mental Health Research Network Methods Scientific Interest Group, Virtual, October 2022

**Cruz M**. My Statistically Significant Journey. Loyola Marymount University Mathematics Department, Los Angeles, CA, April 2022

**Cruz M**, Ombao H, Bender M, Gillen DL. Interrupted Time Series Models for Analyzing Complex Health Care Interventions.

University of Washington Developing Data Driven Cancer Researchers Training Program, WA, February 2022

Claremont Center for the Mathematical Sciences, Claremont, CA, Virtual, October 2021 University of Washington Department of Biostatistics, Seattle, WA, January 2020

Enhancing Diversity in Graduate Education (EDGE) Program, Claremont, CA, June 2019 KPWHRI, Seattle, WA, January 2019

RAND Corporation, Santa Monica, CA, January 2019

University of Texas Austin Department of Statistics and Data, Austin, TX, January 2019 Loyola Marymount University Mathematics Department, Los Angeles, CA, January 2019 Harvard Department of Biostatistics, Boston, MA, January 2019

Chubak J, Ziebell R, **Cruz M**, Coley RY, Gray R. Racial and Ethnicity in Analyses of Health Care Data: Reflections from KPWHRI Researchers. KPWHRI Seminar, Seattle, WA, Virtual. September 2021

**Cruz M**. Doing it All with R Markdown – A Tutorial. R-Ladies Irvine, Irvine, CA, November 2018

**Cruz M**, Osilla KC, Paddock SM. Examining Group Cohesion and Climate in an Intervention for First Time DUI Offenders. RAND Corporation, Santa Monica, CA, August 2018

**Cruz M**. My Higher Education Journey. Pomona Scholars of Math, Claremont, CA, February 2017

## Conferences and Symposiums

**Cruz M**, Coley Y. A Simulation Framework for Understanding the Impact of Structural Racism on Clinical Prediction Models and Evaluating Bias-mitigating Methods, International Conference on Health Policy Statistics, San Diego, CA, January 2025

**Cruz M**, Shortreed SM, Coley Y. Evaluating Clinical Implementation of Risk Prediction-Based Interventions using Difference-in-Differences, Western North American Region (WNAR), Fort Collins, CO, June 2024

**Cruz M**, Shortreed SM, Coley Y. Assessing the Impact of Risk-Stratified Interventions with Difference-in-Differences. Association for Women in Mathematics Research Symposium, Atlanta, GA, September 2023

**Cruz M**. My Statistically Significant Journey. Enhancing Diversity in Graduate Education Summer Symposium, Atlanta, GA, Keynote, July 2022

**Cruz M**, Ombao H, Bender M, Gillen DL. A Formal Test for The Existence of a Change Point in Interrupted Time Series. Western North American Region (WNAR), Virtual, June 2021

#### Panels

What I Know Now That I Wish I Knew Then. Women in Statistics and Data Science, Bellevue, WA, October 2023

Seattle Stat Summer Research Careers in Biostatistics and Public Health Panel. Fred Hutchinson Cancer Research Center, Seattle, WA, July 2023

The Alternative Hypothesis: Underrepresented (Bio)Statisticians Share Graduate School Experiences. Western North American Region (WNAR), Virtual, June 2022

Life Outside Millikan – Alumni Panel. Pomona College, Claremont, CA, May 2019

Graduate School Panel Discussion. StatFest, American Statistical Association Committee on Minorities in Statistics, Claremont, CA, September 2018

Questbridge Alumni Panel for First-Generation/Low-Income Students. Pomona College, Claremont, CA, April 2018

## **13. OTHER PRESENTATIONS**

#### Conferences and Symposiums

#### International

**Cruz M**, Shortreed SM, Coley Y. Evaluating Clinical Implementation of Risk Prediction-Based Interventions using Difference-in-Differences, Joint Statistical Meetings (JSM), Portland, OR, Contributed, August 2024

**Cruz M**, Gillen DL, & Holbrook A. A Mixed-Effects Interrupted Time Series Model for Assessing Complex Healthcare Interventions Across Multiple Units. Joint Statistical Meetings, Washington DC, Topic-contributed, August 2022

**Cruz M**, Ombao H, & Gillen DL. A Generalized Interrupted Time Series Model for Assessing Complex Health Care Interventions.

International Conference on Health Policy and Statistics, San Diego, CA, Contributed, January 2020

Joint Statistical Meetings, Denver, CO, Contributed, July 2019

Western North American Region, Portland, OR, Student Session, June 2019

**Cruz M**, Gillen DL, Bender M, & Ombao H. Assessing Health Care Interventions via an Interrupted Time Series Model: Study Power and Design Considerations.

Joint Statistical Meetings, Vancouver, British Columbia, Canada, Contributed, July 2018 Western North American Region, Edmonton, Alberta, Canada, Student Session, June 2018

Eastern North American Region, Atlanta, GA, Contributed, March 2018

**Cruz M**, Bender M, & Ombao H. A Robust Interrupted Time Series Model for Analyzing Complex Health Care Intervention Data. Joint Statistical Meetings, Baltimore, MD, Topic-contributed. August 2017.

#### National

**Cruz M**, Ombao H, & Gillen DL. A Generalized Interrupted Time Series Model for Assessing Complex Health Care Interventions. Women in Statistics and Data Science Conference, Bellevue, WA, Poster, October 2019

**Cruz M**, Bender M, & Ombao H. A Robust Interrupted Time Series Model for Analyzing Complex Health Care Intervention Data.

Academy Health Annual Research Meeting, New Orleans, LA, Poster, June 2017 Association for Women in Mathematics Research Symposium, Los Angeles, CA, Poster, April 2017

**Cruz M**. Completing Partial Matrices to Satisfy the Anticommutativity Equation.

Nebraska Conference for Undergraduate Women in Mathematics, Lincoln, NE, Poster, January 2013

Society for Advancement of Chicanos and Native Americans in Science, Seattle, WA, Poster, October 2012

Local

**Cruz M**, Hardin J, Radunskaya A. Averages in the Period 2 Region of the Logistic Map Claremont Center for the Mathematical Sciences, Claremont, CA, Poster, September 2013 Annual Summer Research Poster Conference, Claremont, CA, Poster, September 2013