Aya A. Mitani

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BIOGRAPHICAL INFORMATION

Education and Training

Postdoctoral Research Fellow   *Sept 2019 – July 2020*
Harvard T. H. Chan School of Public Health   Boston, MA
Department of Biostatistics

PhD in Biostatistics   *Sept 2014 – June 2019*
Boston University   Boston, MA
Dissertation: "Modeling dental disease progression in a longitudinal study"

MPH in Biostatistics   *Sept 2006 – May 2008*
Yale University   New Haven, CT
Thesis: "Analysis of reproductive factors and risk of endometrial cancer among Swedish women using Cox regression model with time-dependent covariates"

BA in Mathematics (Honors)   *Sept 2002 – May 2006*
Pitzer College   Claremont, CA

Employment

Assistant Professor   *Aug 2020 – Present*
University of Toronto Dalla Lana School of Public Health   Toronto, ON
Division of Biostatistics

Biostatistician   *Feb 2011 – July 2014*
Stanford University   Palo Alto, CA
Quantitative Sciences Unit

Biostatistician   *May 2008 – Jan 2011*
Brigham and Women's Hospital   Boston, MA
Department of Anesthesiology, Perioperative and Pain Medicine

Honours and Career Awards

2024 Marie Sklodowska Curie Award (Inspiration Prize), Japan Science and Technology Agency and the Embassy of the Republic of Poland
2023 Public Health Sciences Award for Excellence in Teaching (Early Career), Dalla Lana School of Public Health
2020 New Researcher Travel Award, Institute of Mathematical Statistics
2019 Biostatistics Doctoral Applied Research Paper Award, Boston University School of Public Health
2019 Winner, Boston University Department of Biostatistics Student Paper Competition
2018 IBM Student Research Award, New England Statistical Symposium

2017 Mu Sigma Rho, The National Statistics Honorary Society
2011 Annual Scientific Award, Society of Critical Care Medicine
2007 Pre-doctoral Cancer Research Training Fellowship, National Cancer Institute
2006 Graduated with Honors in Mathematics, Pitzer College
2005 Best Presentation in Geometry, MASS, Pennsylvania State University
2005 Research Experience for Undergraduates, Claremont Colleges (Funded by NSF)
2005 Sigma Xi, The Scientific Research Society

Professional Affiliations and Activities

Professional Associations

Caucus for Women in Statistics	*2021 – Present*
Statistical Society of Canada	*2021 – Present*
Eastern North American Region of the International Biometrics Society	*2018 – Present*
American Statistical Association	*2006 – Present*
Institute of Mathematical Statistics	*2017 – 2020*
New England Statistical Society	*2019 – 2020*

Administrative Activities

Conference Organizations and Services to Profession

Session chair, International Biometrics Conference	*2024*
Session chair, Annual meeting of Statistical Society of Canada (SSC)	*2024*
Reviewer, AI4PH Scholarships	*2023*
Invited session organizer, ISI World Statistics Congress	*2023*
Invited session organizer, International Day of Women in Statistics and Data Science Conference	*2022*
Reviewer, CIHR Clinical Trials Projects	*2022*
Member, International Program Committee, International Biometrics Conference 2024	*2022 – 2024*
Judge, Canadian Statistics Student Conference	*2022*
Member, Travel Award Committee, CWS	*2022 – 2023*
Session chair, SSC Annual Meeting	*2021*
Topic-contributed session organizer, Joint Statistical Meetings	*2020*

Services to Department, School and University

Co-chair, Biostatistics PhD Admissions Committee, DLSPH	*2024, 2025*
Member, Ontario Women's Health Awards Committee, UofT	*2024*
Chair, Paul Corey Biostatistics Research Day Poster Awards Committee, DLSPH	*2023*
Reviewer, DSI Doctoral Student Fellowship	*2022 – 2023*
Member, DLSPH Recruitment, Hiring and Appointments Advisory Group	*2022 – Present*
Member, Faculty Search Committee, DLSPH	*2022 – 2023*
Reviewer, DLSPH Graduate Awards in Data Science for Public Health and Health Systems	*2022 – 2023*
Co-founder and organizer, DLSPH Health Data Working Group	*2021 – Present*
Member, DLSPH Data Science Interdisciplinary Research Cluster	*2021 – 2023*
Reviewer, The C. David Naylor University Fellowships, UofT	*2022 –2025*
Member, Biostatistics PhD Admissions Committee, DLSPH	*2021 – 2023*
Member, Biostatistics PhD Comprehensive Exam Committee, DLSPH	*2021 – 2023*
Member, Graduate Department Academic Appeals Committee, DLSPH	*2020 – 2025*
Reviewer, Ontario Graduate Scholarship, UofT	*2021, 2023*
Chair, Awards Committee, Postdoctoral Association Council, HSPH,	*2019 – 2020*

Biostatistics Department Representative, Postdoctoral Association Council, HSPH   *2019 – 2020*
Student Representative, Biostatistics PhD Program Review Evaluation Committee, BUSPH   *2018*
Student Representative, L. Adrienne Cupples Award Committee, BUSPH   *2016*
Panelist, Graduate School Information Session by Statistics Club, BUSPH   *2016*
President, Biostatistics Student Association, BUSPH   *2016 – 2017*
Vice President of Academic Affairs, Biostatistics Student Association, BUSPH   *2015 – 2016*

Thesis Examinations

Ziqian Zhuang (PhD, UofT Biostatistics)   *2025*
Xueying Han (MSc, UofT Biostatistics)   *2025*
Mohammad Kaviul Khan (PhD, UofT Biostatistics)   *2024*
Changchang Xu (PhD, UofT Biostatistics)   *2023*
Erik Lovblom (PhD, UofT Biostatistics)   *2023*
Bo Chen (PhD, UofT Biostatistics)   *2023*
Siyi Wang (MSc, UofT Biostatistics)   *2022*
Kuan Liu (PhD, UofT Biostatistics)   *2021*

Peer Review Activities

Statistical Reviewer, JAMA Network Open   *2019 – Present*
Ad-Hoc Reviewer,
  Advances in Statistical Analysis, Annals of Applied Statistics, Archives of Public Health, Biometrical Journal, Biometrics, BMC Medical Research Methodology, Canadian Medical Association Journal, Dentistry Journal, Journal of Clinical Epidemiology, Journal of Dental Research, Journal of Modern Applied Statistical Methods, Journal of Statistical Computation and Simulation, Pharmaceutical Statistics, Statistical Methods in Medical Research, Statistics in Biosciences, Statistics in Medicine

Other Research and Professional Activities

Panelist, NIH Graduate and Postdoctoral Fellowships: Opportunities and Advice, Webinar from the ASA Committee on Funded Research   *2021*
Panelist, Graduate School Information Session by Statistics Club, BU   *2016*

RESEARCH FUNDING

Ongoing (as PI)

Discovery Grants Program and Discovery Launch Supplement   *2022 – 2027*
Natural Sciences and Engineering Research Council of Canada
Title: Statistical methods for multilevel data with informative cluster size
Role: Principal Investigator
Amount awarded: 120,000 CAD

Ongoing (other)

Research Project Grant Program (R01)
National Cancer Institute   *2024 – 2028*
Title: Addressing racial disparities in colorectal cancer risk prediction
Role: Co-PI, Site Lead for UofT (PI: Kerrie Nelson)
Subaward amount to UofT: 57,424 USD

Catalyst grant *2023 – 2025*
University of Toronto Data Sciences Institute (DSI)
Title: Providing data to improve representation by public officials
Role: Co-PI (NPI: Peter Loewen)
Amount awarded: 100,000 CAD

Project grant *2023 – 2025*
Canadian Institutes of Health Research
Title: Correcting for participation bias in nonprobability samples using multiple reference samples
Role: Co-investigator (NPI: Victoria Landsman)
Amount awarded: 237,150 CAD

Artificial Intelligence for Public Health - Health Research Training Platform *2022 – 2027*
(AI4PH-HRTP) CIHR
Title: Artificial Intelligence for Public Health (AI4PH) Training Platform
Role: Co-applicant (NPI: Laura Rosella)
Amount awarded: 2,400,000 CAD

Completed

Connaught New Researcher Award *2022 – 2024*
University of Toronto
Title: Towards Precision Public Oral Health: Developing A Dynamic Prediction Model For Tooth Loss
Role: Principal Investigator
Amount awarded: 20,000 CAD

Seed Funding for Methodologists *2022 – 2023*
University of Toronto DSI
Title: Matrix-variate regression for multilevel data
Role: Principal Investigator
Amount awarded: 10,000 CAD

NRSA Individual Pre-doctoral Fellowship (F31) *2017 – 2019*
National Institute of Dental and Craniofacial Research
Title: Modeling Dental Disease Progression in a Longitudinal Study
Role: Principal Investigator
Amount awarded: 92,116 USD

PUBLICATIONS

- Trainee indicated with *

- Level of contribution indicated by [SRA]: The Senior Responsible Author; [PA]: The Principal Author; or [COLL]: A Collaborator.

Manuscripts Submitted, Under Review, or in Revision

[1] Landsman, V, Wang, L, Carrillo-Garcia, I, **Mitani, A. A.**, Smith, P. M., Graubard, B. I., Bui, T, and Carnide, N. "Correction for participation bias in nonprobability samples using multiple reference surveys". *Submitted to Statistics in Medicine*, 2025+. [COLL]: consulted on study design, wrote simulation code, interpreted findings, reviewed and edited manuscript.

[2] **Mitani, A. A.**[‡], *Zou, Y.[‡], Leatherdale, S. T., and Patte, K. A. "Investigating the association between school substance programs and student substance use: accounting for informative cluster size". *Invited for revision at Epidemiologic Methods*, 2025+. [PA]: conceptualized study, obtained data, obtained funding, supervised analysis, drafted and finalized manuscript.
[‡]*Co-first authors.*

[3] Kim, D. J., Hadi, A., Dermott, J. A., **Mitani, A. A.**, Doria, A. S., Howard, A. W., and Lebel, D. E. "Community spine x-ray interpretation contributes to delays in treatment for adolescent idiopathic scoliosis patients". *Under review at Journal of Pediatric Orthopaedics*, 2025+. [COLL]: supervised data analysis, reviewed and edited manuscript.

[4] *Kang, E. and **Mitani, A. A.** "A re-investigation into the exposure of armed conflict on mortality rates using open-source data: Introducing a reproducible workflow". *Submitted to PLOS One*, 2025+. [PA]: conceptualized study, obtained data, supervised analysis, drafted and finalized manuscript.

[5] Bandara, S., Oishi, W., Amarasiri, M., Nochi, T., Saito, M., **Mitani, A. A.**, Nguyen, T. H., and Sano, D. "Causal Inference to Address Interrelationships of Environmental, Social, and Economic Factors in Infectious Disease Incidence within the One Health Framework". *Submitted to Current Environmental Health Reports*, 2025+. [PA]: reviewed and edited manuscript.

[6] Dermott, J. A., To, T., Jaakkimmainen, L., Bouchard1, M., **Mitani, A. A.**, Howard, A. W., and Lebel, D. E. "Healthcare utilization associated with timeliness of adolescent idiopathic scoliosis presentation". *Under review at Pediatrics*, 2025+. [COLL]: consulted on statistical analysis, reviewed and edited manuscript.

[7] Cooke, L., Bere, T., Stanton, A., Mawere, N., Safren, S. A., Andersen, L. S., Psaros, C., Mawere, T., Chua, K., O'Cleirigh, C., **Mitani, A. A.**, and Abas, M. "Development and preliminary reliability of the new PROOF tool to measure fidelity of problem-solving therapy for depression delivered by non-specialists in a low-resource African setting". *Minor revision at Global Mental Health*, 2025+. [COLL]: conducted power calculation, reviewed and edited manuscript.

Peer-reviewed Publications

[1] Daza, J. F., **Mitani, A. A.**, Alibhai, S. M. H., Smith, P. M., Kennedy, E. D., Shulman, M. A., Myles, P. S., and Wijeysundera, D. N. "Joint Models Inform the Longitudinal Assessment of Patient-Reported Outcomes in Clinical Trials: A Simulation Study and Secondary Analysis of the Restrictive versus Liberal Fluid Therapy for Major Abdominal Surgery (RELIEF) Randomized Controlled Trial". *Journal of Clinical Epidemiology* pp. 111553, 2024. DOI: 10.1016/j.jclinepi.2024.111553. [COLL]: supervised data analysis, conducted simulation study, reviewed and edited manuscript.

[2] **Mitani, A. A.**, Espin-Garcia, O., Fernández, D., and Landsman, V. "Applying survey weights to ordinal regression models for improved inference in outcome-dependent samples with ordinal outcomes". *Statistical Methods in Medical Research* 33(11–12), 2024. DOI: 10.1177/09622802241282091. [PA]: conceptualized study, designed and executed simulation study, analyzed data, created tables and figures, drafted and finalized manuscript.

[3] Kim, D. J., Dermott, J. A., **Mitani, A. A.**, Doria, A. S., Howard, A. W., and Lebel, D. E. "The diagnostic accuracy of community spine radiology for adolescent idiopathic scoliosis brace candidates". *European Spine Journal* 33(10) pp. 3776–3783, 2024. DOI: 10.1007/s00586-024-08389-1.

[4] *Feng, S. X. and **Mitani, A. A.** "Marginal clustered multistate models for longitudinal progressive processes with informative cluster size". *Statistical Analysis and Data Mining: The ASA Data Science Journal* 17(2), 2024. DOI: 10.1002/sam.11668. [SRA]: conceptualized study, obtained funding, designed simulation study, supervised analysis, reviewed and finalized manuscript.
[†]*Winner of 2023 ASA Lifetime Data Science Section Student Paper Competition.*

[5] **Mitani, A. A.**, *Feng, X., and Kaye, E. K. "Modelling time-varying risk factors of tooth loss: Results from joint model compared with extended Cox regression model". *Journal of Clinical Periodontology* 51(2) pp. 110–117, 2023. DOI: 10.1111/jcpe.13888. [PA]: conceptualized study, obtained funding, designed simulation study, analyzed data, created tables and figures, drafted and finalized manuscript.

[6] Gandotra, S., Daza, J. F., Diep, C., **Mitani, A. A.**, Ladha, K. S., and Wijeysundera, D. N. "Psychological Distress After Inpatient Noncardiac Surgery: A Secondary Analysis of the Measurement of Exercise Tolerance Before Surgery Prospective Cohort Study". *Annals of Surgery* 279(3) pp. 450–455, 2023. DOI: 10.1097/sla.0000000000006031. [COLL]: supervised data analysis, reviewed and edited manuscript.
†*Related abstract won Award for Best Abstract in Perioperative at 2023 Canadian Anesthesiologists' Society Annual Meeting.*

[7] Narasaki-Jara, M., Brolsma, D., Abdolrazagh, K., Sun, K., Yamada, M., **Mitani, A. A.**, and Jung, T. "Quality of Life in Individuals With Disabilities Through a Student-Led Service-Learning Program: Qualitative and Quantitative Analysis to Examine the Reciprocal Benefits of Service Learning". *Journal of Teaching in Physical Education* pp. 1–10, 2023. DOI: 10.1123/jtpe.2022-0150. [COLL]: analyzed data, drafted and reviewed manuscript.

[8] *Dong, M and **Mitani, A.** "Multiple imputation methods for missing multilevel ordinal outcomes". *BMC Medical Research Methodology* 23(112) pp. 938–949, 2023. DOI: 10.1186/s12874-023-01909-5. [SRA]: conceptualized study, obtained funding, designed simulation study, supervised analysis, reviewed and finalized manuscript.

[9] **Mitani, A. A.**, Kaye, E. K., and Nelson, K. P. "Accounting for drop-out using inverse probability censoring weights in longitudinal clustered data with informative cluster size". *Ann. Appl. Statist.* 16(1) pp. 596–611, 2022. DOI: 10.1214/21-AOAS1518. [PA]: conceptualized study, obtained funding, designed and executed simulation study, analyzed data, created tables and figures, drafted and finalized manuscript.

[10] **Mitani, A. A.**, Mercaldo, Nathaniel D., Haneuse, Sebastien, and Schildcrout, Jonathan S. "Survey design and analysis considerations when utilizing misclassified sampling strata". *BMC Medical Research Methodology* 21(1), 2021. DOI: 10.1186/s12874-021-01332-8. [PA]: conceptualized study, designed and executed simulation study, analyzed data, created tables and figures, drafted and finalized manuscript.

[11] **Mitani, A. A.**, Kaye, E. K., and Nelson, K. P. "Marginal analysis of multiple outcomes with informative cluster size". *Biometrics* 77(1) pp. 271–282, 2021. DOI: 10.1111/biom.13241. [PA]: conceptualized study, obtained funding, designed and executed simulation study, analyzed data, created tables and figures, drafted and finalized manuscript.

[12] **Mitani, A. A.** and Haneuse, S. "Invited Commentary: Small data challenges of studying rare diseases". *JAMA Network Open* 3(3), 2020. DOI: 10.1001/jamanetworkopen.2020.1965. [PA]: conceptualized paper, analyzed data, drafted and finalized manuscript.

[13] Ladabaum, U., Mannalithara, A., **Mitani, A.**, and Desai, M. "Clinical and economic impact of tailoring screening to predicted colorectal cancer risk: A decision analytic modeling study". *Cancer Epidemiol Biomarkers Prev.* 29(2) pp. 318–328, 2020. DOI: 10.1158/1055-9965.EPI-19-0949. [COLL]: designed study, analyzed data, drafted and reviewed manuscript.

[14] **Mitani, A. A.**, Kaye, E. K., and Nelson, K. P. "Marginal analysis of ordinal clustered longitudinal data with informative cluster size". *Biometrics* 75(3) pp. 938–949, 2019. DOI: 10.1111/biom.13050. [PA]: conceptualized study, obtained funding, designed and executed simulation study, analyzed data, created tables and figures, drafted and finalized manuscript.

[15] Nelson, K. P., **Mitani, A. A.**, and Edwards, D. "Evaluating the effects of rater and subject factors on measures of association". *Biom J* 60(3) pp. 639–656, 2018. DOI: 10.1002/bimj.201700078. [COLL]: designed and executed simulation study, analyzed data, created tables and figures, drafted and reviewed manuscript.

[16] **Mitani, A. A.**, Freer, P. E., and Nelson, K. P. "Summary measures of agreement and association between many raters' ordinal classifications". *Ann Epidemiol* 27(10) pp. 677–685, 2017. DOI: 10.1016/j.annepidem.2017.09.001. [PA]: conceptualized study, designed and executed simulation study, analyzed data, created tables and figures, drafted and finalized manuscript.

[17] **Mitani, A. A.** and Nelson, K. P. "Modeling agreement between binary classifications of multiple raters in R and SAS". *JMASM* 16(2) pp. 277–309, 2017. DOI: 10.22237/jmasm/1509495300. [PA]: conceptualized study, designed and executed simulation study, analyzed data, created tables and figures, drafted and finalized manuscript.

[18] Nelson, K. P., **Mitani, A. A.**, and Edwards, D. "Assessing the influence of rater and subject characteristics on measures of agreement for ordinal ratings". *Stat Med* 36(20) pp. 3181–3199, 2017. DOI: 10.1002/sim.7323. [COLL]: designed and executed simulation study, analyzed data, created tables and figures, drafted and reviewed manuscript.

[19] Winkelmayer, W. C., Goldstein, B. A., **Mitani, A. A.**, Ding, V. Y., Airy, M., Mandayam, S., Chang, T. I., Brookhart, M. A., and Fishbane, S. "Safety of Intravenous Iron in Hemodialysis: Longer-term Comparisons of Iron Sucrose Versus Sodium Ferric Gluconate Complex". *Am. J. Kidney Dis.* 69(6) pp. 771–779, 2017. DOI: 10.1053/j.ajkd.2016.10.031. [COLL]: designed study, analyzed data, created tables and figures, drafted and reviewed manuscript.

[20] Montez-Rath, M. E., Kapphahn, K., Mathur, M. B., **Mitani, A. A.**, Hendry, D. J., and Desai, M. "Guidelines for generating right-censored outcomes from a Cox model extended to accommodate time-varying covariates". *JMASM* 16(1) pp. 86–106, 2017. DOI: 10.22237/jmasm/1493597100. [COLL]: conceptualized study, drafted and reviewed manuscript.

[21] Desai, M., **Mitani, A. A.**, Bryson, S. W., and Robinson, T. "Multiple Imputation when Rate of Change is the Outcome of Interest". *JMASM* 15(1) pp. Article 10, 2016. DOI: 10.22237/jmasm/1462075740. [COLL]: conceptualized study, drafted and reviewed manuscript.

[22] Afghahi, A., Mathur, M., Thompson, C. A., **Mitani, A.**, Rigdon, J., Desai, M., Yu, P. P., Bruin, M. A. de, Seto, T., Olson, C., Kenkare, P., Gomez, S. L., Das, A. K., Luft, H. S., Sledge, G. W., Sing, A. P., and Kurian, A. W. "Use of Gene Expression Profiling and Chemotherapy in Early-Stage Breast Cancer: A Study of Linked Electronic Medical Records, Cancer Registry Data, and Genomic Data Across Two Health Care Systems". *J Oncol Pract* 12(6) pp. 697–709, 2016. DOI: 10.1200/JOP.2015.009803. [COLL]: analyzed data, drafted and reviewed manuscript.

[23] Ladabaum, U., Patel, A., Mannalithara, A., Sundaram, V., **Mitani, A.**, and Desai, M. "Predicting advanced neoplasia at colonoscopy in a diverse population with the National Cancer Institute colorectal cancer risk-assessment tool". *Cancer* 122(17) pp. 2663–2670, 2016. DOI: 10.1002/cncr.30096. [COLL]: analyzed data, drafted and reviewed manuscript.

[24] **Mitani, A. A.**, Kurian, A. W., and Desai, M. "Navigating choices when applying multiple imputation in the presence of multi-level categorical interaction effects". *Statistical Methodology* 27 pp. 82–99, 2015. DOI: 10.1016/j.stamet.2015.06.001. [PA]: conceptualized study, designed and executed simulation study, analyzed data, created tables and figures, drafted and finalized manuscript.

[25] Winkelmayer, W. C., Chang, T. I., **Mitani, A. A.**, Wilhelm-Leen, E. R., Ding, V., Chertow, G. M., Brookhart, M. A., and Goldstein, B. A. "Longer-term outcomes of darbepoetin alfa versus epoetin alfa in patients with ESRD initiating hemodialysis: a quasi-experimental cohort study". *Am. J. Kidney Dis.* 66(1) pp. 106–113, 2015. DOI: 10.1053/j.ajkd.2015.02.339. [COLL]: designed study, analyzed data, created tables and figures, drafted and reviewed manuscript.

[26] Airy, M., Mandayam, S., **Mitani, A. A.**, Chang, T. I., Ding, V. Y., Brookhart, M. A., Goldstein, B. A., and Winkelmayer, W. C. "Comparative outcomes of predominant facility-level use of ferumoxytol versus other intravenous iron formulations in incident hemodialysis patients". *Nephrol. Dial. Transplant.* 30(12) pp. 2068–2075, 2015. DOI: 10.1093/ndt/gfv305. [COLL]: analyzed data, created tables and figures, drafted and reviewed manuscript.

[27] Afghahi, A., Forgo, E., **Mitani, A. A.**, Desai, M., Varma, S., Seto, T., Rigdon, J., Jensen, K. C., Troxell, M. L., Gomez, S. L., Das, A. K., Beck, A. H., Kurian, A. W., and West, R. B. "Chromosomal copy number alterations for associations of ductal carcinoma in situ with invasive breast cancer". *Breast Cancer Res.* 17 pp. 108, 2015. DOI: 10.1186/s13058-015-0623-y. [COLL]: reviewed data analysis, drafted and reviewed manuscript.

[28] Oxman, D. A., Adams, C. D., Deluke, G., Philbrook, L., Ireland, P., **Mitani, A.**, Panizales, C., Frendl, G., and Rogers, S. O. "Improving Antibiotic De-Escalation in Suspected Ventilator-Associated Pneumonia: An Observational Study With a Pharmacist-Driven Intervention". *J Pharm Pract* 28(5) pp. 457–461, 2015. DOI: 10.1177/0897190014527316. [COLL]: designed study, analyzed data, created tables and figures, drafted and reviewed manuscript.

[29] Shen, J. I., **Mitani, A. A.**, and Winkelmayer, W. C. "Heparin use in hemodialysis patients following gastrointestinal bleeding". *Am. J. Nephrol.* 40(4) pp. 300–307, 2014. DOI: 10.1159/000367901. [COLL]: analyzed data, created tables and figures, drafted and reviewed manuscript.

[30] Shen, J. I., Montez-Rath, M. E., **Mitani, A. A.**, Erickson, K. F., and Winkelmayer, W. C. "Correlates and variance decomposition analysis of heparin dosing for maintenance hemodialysis in older US patients". *Pharmacoepidemiol Drug Saf* 23(5) pp. 515–525, 2014. DOI: 10.1002/pds.3595. [COLL]: analyzed data, created tables and figures, drafted and reviewed manuscript.

[31] Kurella-Tamura, M., Goldstein, B. A., Hall, Y. N., **Mitani, A. A.**, and Winkelmayer, W. C. "State medicaid coverage, ESRD incidence, and access to care". *J. Am. Soc. Nephrol.* 25(6) pp. 1321–1329, 2014. DOI: 10.1681/ASN.2013060658. [COLL]: designed study, analyzed data, created tables and figures, drafted and reviewed manuscript.

[32] Winkelmayer, W. C., **Mitani, A. A.**, Goldstein, B. A., Brookhart, M. A., and Chertow, G. M. "Trends in anemia care in older patients approaching end-stage renal disease in the United States (1995-2010)". *JAMA Intern Med* 174(5) pp. 699–707, 2014. DOI: 10.1001/jamainternmed.2014.87. [COLL]: analyzed data, created tables and figures, drafted and reviewed manuscript.

[33] Kurian, A. W., **Mitani, A.**, Desai, M., Yu, P. P., Seto, T., Weber, S. C., Olson, C., Kenkare, P., Gomez, S. L., Bruin, M. A. de, Horst, K., Belkora, J., May, S. G., Frosch, D. L., Blayney, D. W., Luft, H. S., and Das, A. K. "Breast cancer treatment across health care systems: linking electronic medical records and state registry data to enable outcomes research". *Cancer* 120(1) pp. 103–111, 2014. DOI: 10.1002/cncr.28395. [COLL]: designed study, analyzed data, created tables and figures, drafted and reviewed manuscript.

[34] Arce, C. M., Goldstein, B. A., **Mitani, A. A.**, and Winkelmayer, W. C. "Trends in relative mortality between Hispanic and non-Hispanic whites initiating dialysis: a retrospective study of the US Renal Data System". *Am. J. Kidney Dis.* 62(2) pp. 312–321, 2013. DOI: 10.1053/j.ajkd.2013.02.375. [COLL]: designed study, analyzed data, created tables and figures, drafted and reviewed manuscript.

[35] Arce, C. M., Goldstein, B. A., **Mitani, A. A.**, Lenihan, C. R., and Winkelmayer, W. C. "Differences in access to kidney transplantation between Hispanic and non-Hispanic whites by geographic location in the United States". *Clin J Am Soc Nephrol* 8(12) pp. 2149–2157, 2013. DOI: 10.2215/CJN.01560213. [COLL]: designed study, analyzed data, created tables and figures, drafted and reviewed manuscript.

[36] Fox, A. A., Nascimben, L., Body, S. C., Collard, C. D., **Mitani, A. A.**, Liu, K. Y., Muehlschlegel, J. D., Shernan, S. K., and Marcantonio, E. R. "Increased perioperative b-type natriuretic peptide associates with heart failure hospitalization or heart failure death after coronary artery bypass graft surgery". *Anesthesiology* 119(2) pp. 284–294, 2013. DOI: 10.1097/ALN.0b013e318299969c. [COLL]: designed study, analyzed data, created tables and figures, drafted and reviewed manuscript.

[37] Kumar, S., Fioritto, A., **Mitani, A.**, Desai, M., Gunaratnam, N., and Ladabaum, U. "Optical biopsy of sessile serrated adenomas: do these lesions resemble hyperplastic polyps under narrow-band imaging?" *Gastrointest. Endosc.* 78(6) pp. 902–909, 2013. DOI: 10.1016/j.gie.2013.06.004. [COLL]: analyzed data, drafted and reviewed manuscript.

[38] Nair, S. S., **Mitani, A. A.**, Goldstein, B. A., Chertow, G. M., Lowenberg, D. W., and Winkelmayer, W. C. "Temporal trends in the incidence, treatment, and outcomes of hip fracture in older patients initiating dialysis in the United States". *Clin J Am Soc Nephrol* 8(8) pp. 1336–1342, 2013. DOI: `10.2215/CJN.10901012`. [COLL]: designed study, analyzed data, created tables and figures, drafted and reviewed manuscript.

[39] Shen, J. I., **Mitani, A. A.**, Chang, T. I., and Winkelmayer, W. C. "Use and safety of heparin-free maintenance hemodialysis in the USA". *Nephrol. Dial. Transplant.* 28(6) pp. 1589–1602, 2013. DOI: `10.1093/ndt/gft067`. [COLL]: analyzed data, created tables and figures, drafted and reviewed manuscript.

[40] Shen, J. I., **Mitani, A. A.**, Saxena, A. B., Goldstein, B. A., and Winkelmayer, W. C. "Determinants of peritoneal dialysis technique failure in incident US patients". *Perit Dial Int* 33(2) pp. 155–166, 2013. DOI: `10.3747/pdi.2011.00233`. [COLL]: analyzed data, created tables and figures, drafted and reviewed manuscript.

[41] Carabuena, J. M., **Mitani, A. A.**, Liu, X., Kodali, B. S., and Tsen, L. C. "The learning curve associated with the epidural technique using the Episure AutoDetect versus conventional glass syringe: an open-label, randomized, controlled, crossover trial of experienced anesthesiologists in obstetric patients". *Anesth. Analg.* 116(1) pp. 145–154, 2013. DOI: `10.1213/ANE.0b013e31826c7cad`. [COLL]:analyzed data, created tables and figures, drafted and reviewed manuscript.

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PRESENTATIONS AND LECTURES

Invited Conference Presentations

Local

[1] *Correlated data analysis using R.* SORA-TABA Annual Workshop and DLSPH Biostatistics Research Day. Toronto, ON. May 2024.

[2] *Bridging the gap between data availability and reproducibility.* Toronto Conference on Reproducibility, University of Toronto, Toronto, ON. Feb. 2023.

[3] *Reproducible, reliable, replicable? In-class exercise using peer-reviewed studies.* Toronto Workshop on Reproducibility, Virtual. Feb. 2022.

National

[1] *Modelling Time-Varying Risk Factors of Tooth Loss: Results From Joint Model Compared With Extended Cox Regression Model.* SSC Annual Meeting, St. John's, NL. June 2024.

[2] *Fitting bivariate skew-t linear mixed models for longitudinal periodontal data: A Stan recourse.* SSC Annual Meeting, Ottawa, ON. May 2023.

International

[1] *Marginal clustered multistate models for longitudinal progressive processes with informative cluster size.* International Statistical Institute World Statistics Congress, Ottawa, ON. July 2023.

[2] *Accounting for drop-out using inverse probability censoring weights in longitudinal clustered data with informative cluster size.* International Day of Women in Statistics and Data Science Conference, Virtual. Oct. 2022.

[3] *Marginal analysis of multiple outcomes with informative cluster size.* Joint Statistical Meetings, Virtual. Aug. 2020.

[4] *Modeling tooth-loss using inverse probability censoring weights in longitudinal clustered data with informative cluster size.* New England Statistical Symposium, Hartford, CT. May 2019.

[5] *Marginal analysis of ordinal clustered longitudinal data with informative cluster size.* New England Statistical Symposium, University of Massachusetts Amherst, Amherst, MA. Apr. 2018.

Contributed Conference Presentations

National

[1] *Using Stereotype Regression for Unbiased Inference from Ordinal Outcome-Dependent Samples.* SSC Annual Meeting, Virtual. June 2022.

International

[1] *Applying survey weights to ordinal regression models for improved inference in outcome-dependent samples with ordinal outcomes.* International Biometrics Conference, Atlanta, GA. Dec. 2024.

[2] *Multiple imputation methods for multilevel ordinal outcomes.* Joint Statistical Meetings, Toronto, ON. Aug. 2023.

[3] *Ordinal clustered data with informative cluster size in a longitudinal study.* ENAR, Philadelphia, PA. Mar. 2019.

[4] *Marginal analysis of ordinal clustered longitudinal data with informative cluster size.* Joint Statistical Meetings, Vancouver, BC. July 2018.

[5] *Variable selection with multiply imputed data when considering interaction effects.* Joint Statistical Meetings, Montreal, QC. Aug. 2013.

[6] *The implications of software choice for handling missing data in the presence of interaction effects involving at least one categorical variable.* Joint Statistical Meetings, San Diego, CA. July 2012.

[7] *Biweight correlation as a measure of distance between genes on a microarray.* Joint Statistical Meetings, Seattle, WA. Aug. 2006.

Invited Talks, Lectures, and Seminars

Local

[1] *Matrix-variate regression for multilevel data.* Learn about Innovative Data Science Methodologies, Data Science Institute, University of Toronto, Virtual. June 2022.

[2] *Reproducibility in research.* Health Data Working Group, University of Toronto Dalla Lana School of Public Health, Virtual. Nov. 2021.

[3] *Analysis of complex multilevel dental data with informative tooth-loss.* The Biostatistics Seminar Series, University of Toronto Dalla Lana School of Public Health, Virtual. Nov. 2021.

[4] *How to write your own R package and upload it to GitHub.* The Biostatistics Seminar Series, University of Toronto Dalla Lana School of Public Health, Virtual. Jan. 2021.

[5] *Marginal analysis of multiple outcomes with informative cluster size.* Biostatistics Division, University of Toronto Dalla Lana School of Public Health, Toronto, ON. Mar. 2020.

Provincial/Regional

[1] *Marginal analysis of multiple outcomes with informative cluster size.* Statistics Seminar, University of Waterloo, Waterloo, ON. Jan. 2020.

National

[1] *Application of joint models for longitudinal and survival data in estimating hazard of tooth loss.* Seminar, Cancer Care Alberta, Virtual. Feb. 2025.

[2] *Application of joint models for longitudinal and survival data in estimating hazard of tooth loss.* Statistics Seminar Series, Department of Mathematics and Statistics, University of Calgary, Virtual. Jan. 2025.

[3] *Analysis of complex multilevel dental data with informative cluster size.* Biostatistics Seminar Series, McGill University, Virtual. Nov. 2023.

International

[1] *Analysis of complex multilevel dental data with informative cluster size.* Biostatistics Seminar Series, Yale School of Public Health, New Haven, CT. Nov. 2023.

[2] *Analysis of complex multilevel dental data with informative tooth-loss.* Research Seminar, Department of Biostatistics, Virginia Commonwealth University School of Medicine, Virtual. Nov. 2021.

[3] *Informative cluster size in observational studies.* HIV Working Group, Harvard Chan School, Boston, MA. Nov. 2019.

[4] *Applying for Individual (pre- and post-doctoral) Fellowship Awards from the NIH.* Biostatistics Student Association Seminar, Boston University, Boston, MA. Oct. 2017.

[5] *Multiple imputation in practice – approaches for handling categorical and interaction variables.* QSU Research Methods Seminar, Stanford University, Palo Alto, CA. May 2013.

[6] *Issues and guidelines of multiple imputation in practice.* Webinar training series, ASA Section for Statistical Programmers and Analysts. Apr. 2013.

[7] *Basic statistics for journal reading.* Faculty Breakout Session, Department of Anesthesiology, Perioperative and Pain Medicine, Brigham and Women's Hospital, Boston, MA. Feb. 2010.

Workshops

Local

[1] *Handling missing data in health science research.* Data Science Interdisciplinary Research Cluster, Dalla Lana School of Public Health, In-person. Apr. 2023.

[2] *Handling missing data in health science research.* Data Science Interdisciplinary Research Cluster, Dalla Lana School of Public Health, Virtual. June 2022.

SOFTWARE

R Packages

CWGEE (https://github.com/ayamitani/CWGEE),
Cluster weighted generalized estimating equations for clustered longitudinal data with informative cluster size.

ipccwGEE (https://github.com/ayamitani/ipccwGEE),
Cluster weighted generalized estimating equations with inverse probability centering weights for clustered longitudinal data with informative cluster size and informative drop-out.

modelkappa (https://github.com/ayamitani/modelkappa),
Calculates model-based kappa of agreement and association and their standard errors for multiple raters each assessing multiple cases.

TEACHING AND DESIGN

Dalla Lana School of Public Health

Instructor, Statistical Programming and Computation in Health Data   *Fall 2023, 2024*
  ⋆*Designed and proposed as a new course*
Instructor, Analysis of Correlated Data   *Winter 2021 – 2025*
Co-instructor, Introduction to Joint Modeling in Health Research   *Summer 2022, 2023*
Co-instructor, Doctoral Seminar Series in Biostatistics   *Fall 2020 – 2023, Winter 2021 – 2024*
Instructor, Reading Course: Statistical Simulation Methods with Implementation in R   *Summer 2024*
Instructor, Reading Course: Introduction to Optimization Techniques in Biostatistics   *Winter 2025*
Guest lecturer, Biostatistics III: Advanced Biostatistical Techniques for Observational Studies
Fall 2022, 2023, 2024
Guest lecturer, Advanced Lab in Statistical Design & Analysis   *Winter 2023, 2024, Fall 2025*
Guest lecturer, Special Topics in Biostatistics   *Winter 2024*

Boston University School of Public Health

Co-instructor, Introduction to Statistical Computing   *Fall 2016, Spring & Summer 2017*

RESEARCH SUPERVISION

Thesis Supervision and Co-supervision

Mohammad Reza Fahimi (PhD, Biostatisitcs)	*2024 – Present*
⋆Recipient of Ontario Graduate Scholarship	
Xinyang (Sean) Feng (PhD, Biostatisitcs)	*2022 – Present*
⋆Recipient of CIHR AI4PH-HRTP Scholarship	
Hanlong Chen (MSc, Biostatisitcs)	*2025 – Present*
Mohammad Reza Fahimi (MSc, Biostatisitcs, co-supervised with Osvaldo Espin-Garcia)	*2022 – 2024*
⋆Recipient of Second Prize in 2023 Paul Corey Biostatistics Research Day Poster Award	
Xinyang (Sean) Feng (MSc, Biostatisitcs)	*2021 – 2022*

Postdoc Supervision

Octavia Wong (Co-supervising with Janet Smylie)	*2024 – Present*
⋆Recipient of UofT DSI Postdoctoral Fellowship	

Practicum Supervision

Hanning Su (PhD, Biostatistics, co-supervising with Octavia Wong)	*2024 – 2025*
Sheharyar Raza (MSc, Biostatistics, co-supervising with Octavia Wong)	*2024 – 2025*
Vanessa Liao (MSc, Biostatistics, co-supervising with Camellia Zakaria)	*2024 – 2025*
Jason Dang (MSc, Biostatistics, co-supervising with Camellia Zakaria)	*2024 – 2025*
Yuning Wang (PhD, Biostatistics)	*2023 – 2024*
Jinyu Luo (MSc, Biostatistics, co-supervised with Chun-Po Steve Fan and Sudipta Saha)	*2023 – 2024*
⋆Recipient of First Prize in 2024 Paul Corey Biostatistics Research Day Poster Award	
Youxue Ren (MSc, Biostatistics, co-supervised with Tony Panzarella)	*2023 – 2024*
Peiyu Li (MSc, Biostatistics, co-supervised with Chun-Po Steve Fan and Sudipta Saha)	*2022 – 2023*
⋆Recipient of First Prize in 2023 Paul Corey Biostatistics Research Day Poster Award	
Yingren Luo (MSc, Biostatistics)	*2022 – 2023*
Shijie Min (MSc, Biostatistics, co-supervised with Kuan Liu)	*2022 – 2023*
Mei Dong (PhD, Biostatistics)	*2021 – 2022*

Undergraduate Supervision

Ethan Zajaczkowski (BA, Statistics & Economics)	*2024 – 2025*
Bilin Nong (BA, Statistics)	*Summer 2024*
⋆Recipient of UofT DSI Summer Undergraduate Data Science Research Scholarship	

Work Study Supervision

Yuning Wang (PhD, Biostatistics, co-supervised with Kuan Liu)	*2023 – 2025*
Walid Maraqa (MSc, Biostatistics)	*Summer 2022*

Thesis Committee Memberships

George Stefan (PhD, Biostatistics)	*2024 – Present*
Anastasia Teterina (PhD, Biostatistics)	*2023 – Present*
Shiyao Ying (PhD, Biostatistics)	*2023 – Present*
Hyejung Jung (PhD, Biostatistics)	*2023 – Present*
Alex Goodhand (PhD, Biostatistics)	*2021 – Present*
Danny Del Rosso (MSc, Biostatistics)	*2025 – Present*
Priyonto Saha (MSc, Biostatistics)	*2024 – Present*
Yushu Zou (MSc, Biostatistics)	*2023 – 2024*
Aoqi Xie (MSc, Biostatistics)	*2023 – 2024*

Dorothy Kim (MSc, Institute of Medical Science)	*2021 – 2024*
Luis Ledesma (MSc, Biostatistics)	*2022 – 2023*
Menelaos Konstantinidis (MSc, Biostatistics)	*2020 – 2022*

INTERRUPTIONS AND DELAYS

Birth & Parental

Sept 2018 – Jan 2019
Sept 2020 – Jan 2021

COVID-19

Mar 2020 – July 2020
Jan 2022

PERSONAL INFORMATION

Work authorization

U.S. citizen; Canadian permanent resident

Language

Native in English and Japanese