

Aya A. Mitani

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155 College Street #628, Toronto ON M5T 3M7

EDUCATION

PhD in Biostatistics

2019

Boston University

Boston, MA

Dissertation: “Modeling dental disease progression in a longitudinal study”

MPH in Biostatistics

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)

2006

Pitzer College

Claremont, CA

PROFESSIONAL EXPERIENCE

Assistant Professor

Aug 2020 – Present

University of Toronto Dalla Lana School of Public Health

Toronto, ON

Division of Biostatistics

Postdoctoral Research Fellow

Sept 2019 – July 2020

Harvard T. H. Chan School of Public Health

Boston, MA

Department 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

FUNDING

Ongoing

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)

Project grant

2023 – 2025

Canadian Institutes of Health Research

Title: Correcting for participation bias in nonprobability samples using multiple reference samples

Role: Co-applicant (NPI: Victoria Landsman)

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

Seed Funding for Methodologists *2022 – 2023*
University of Toronto DSI
 Title: Matrix-variate regression for multilevel data
 Role: Principal Investigator

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

Health Research Training Platform 2021-2022 Pilot *2022 – 2027*
Canadian Institutes of Health Research
 Title: Artificial Intelligence for Public Health (AI4PH) Training Platform
 Role: Co-applicant (NPI: Laura Rosella)

Completed

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

HONORS, AWARDS AND FELLOWSHIPS

DLSPH Public Health Sciences Award for Excellence in Teaching (Early Career)	<i>2023</i>
IMS New Researcher Travel Award	<i>2020</i>
BUSPH Biostatistics Doctoral Applied Research Paper Award	<i>2019</i>
Winner, BU Department of Biostatistics Student Paper Competition	<i>2019</i>
IBM Student Research Award, New England Statistical Symposium	<i>2018</i>
Mu Sigma Rho, The National Statistics Honorary Society	<i>2017</i>
Annual Scientific Award, Society of Critical Care Medicine	<i>2011</i>
Pre-doctoral Cancer Research Training Fellowship, National Cancer Institute	<i>2007</i>
Graduated with Honors in Mathematics, Pitzer College	<i>2006</i>
Best Presentation in Geometry, MASS, Pennsylvania State University	<i>2005</i>
Research Experience for Undergraduates, Claremont Colleges (Funded by NSF)	<i>2005</i>
Sigma Xi, The Scientific Research Society	<i>2005</i>

TEACHING

Dalla Lana School of Public Health

Instructor, Reading Course: Statistical Programming and Computation in Health Data	<i>Fall 2023</i>
<i>*Designed and proposed as a pilot course</i>	
Instructor, Analysis of Correlated Data	<i>Winter 2021 – 2023</i>
Co-instructor, Introduction to Joint Modeling in Health Research	<i>Summer 2022, 2023</i>
Co-instructor, Doctoral Seminar Series in Biostatistics	<i>Fall 2020 – 2022, Winter 2021 – 2023</i>

Guest lecturer, Biostatistics III: Advanced Biostatistical Techniques for Observational Studies *Fall 2022*
 Guest lecturer, Advanced Lab in Statistical Design & Analysis *Winter 2023*

Boston University School of Public Health

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

ADVISING

Thesis Supervision and Co-supervision

Xinyang (Sean) Feng (MSc, Biostatistics) *2021 – 2022*
 Xinyang (Sean) Feng (PhD, Biostatistics) *2022 – Present*
**Recipient of CIHR AI4PH Scholarship*
 Reza Fahimi (MSc, Biostatistics, co-supervised with Osvaldo Espin-Garcia) *2022 – Present*
**Recipient of Second Prize in 2023 Paul Corey Biostatistics Research Day Poster Award*

Practicum Supervision

Mei Dong (PhD, Biostatistics) *2021 – 2022*
 Yingren Luo (MSc, Biostatistics) *2022 – Present*
 Peiyu Li (MSc, Biostatistics) *2022 – Present*
**Recipient of First Prize in 2023 Paul Corey Biostatistics Research Day Poster Award*
 Shijie Min (MSc, Biostatistics, co-supervised with Kuan Liu) *2022 – Present*

Work Study Supervision

Walid Maraqa (MSc, Biostatistics) *Summer 2022*

Thesis Committee Memberships

Menelaos Konstantinidis (MSc, Biostatistics) *2020 – 2022*
 Alex Goodhand (PhD, Biostatistics) *2021 – Present*
 Dorothy Kim (MSc, Institute of Medical Science) *2021 – Present*
 Luis Ledesma (MSc, Biostatistics) *2022 – Present*
 Yushu Zou (MSc, Biostatistics) *2023 – Present*
 Aoqi Xie (MSc, Biostatistics) *2023 – Present*
 Shiyao Ying (PhD, Biostatistics) *2023 – Present*

PROFESSIONAL ACTIVITIES

Memberships in Professional Organizations

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*

Conference Organizations and Services to Profession

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

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 – 2023
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 – Present
Reviewer, The C. David Naylor University Fellowships, UofT	2022 – 2023
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 – 2023
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

Kuan Liu (PhD, UofT Biostatistics)	2021
Siyi Wang (MSc, UofT Biostatistics)	2022
Erik Lovblom (PhD, UofT Biostatistics)	2023
Bo Chen (PhD, UofT Biostatistics)	2023
Changchang Xu (PhD, UofT Biostatistics)	2023

Editorial Roles

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

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.

PAPERS

Peer-reviewed Publications (Trainee indicated with *)

1. Brolsma, D., Abdolrazagh, K., Sun, K., Yamada, M., **Mitani, A. A.**, Jung, T. & Narasaki-Jara, M. Does a student-led service learning physical activity intervention enhance the quality of life in individuals with physical disabilities? Qualitative and quantitative analysis to examine the reciprocal benefits of service learning. Accepted to *Journal of Teaching in Physical Education*.
2. *Dong, M. & **Mitani, A. A.** Multiple imputation methods for missing multilevel ordinal outcomes. *BMC Medical Research Methodology* **23** (2023). doi: [10.1186/s12874-023-01909-5](https://doi.org/10.1186/s12874-023-01909-5).
3. **Mitani, A. A.**, Kaye, E. K. & Nelson, K. P. Accounting for drop-out using inverse probability censoring weights in longitudinal clustered data with informative cluster size. *Ann. Appl. Statist.* **16**, 596–611 (2022). doi: [10.1214/21-AOAS1518](https://doi.org/10.1214/21-AOAS1518).
4. **Mitani, A. A.**, Mercaldo, N. D., Haneuse, S. & Schildcrout, J. S. Survey design and analysis considerations when utilizing misclassified sampling strata. *BMC Medical Research Methodology* **21** (July 2021). doi: [10.1186/s12874-021-01332-8](https://doi.org/10.1186/s12874-021-01332-8).
5. **Mitani, A. A.**, Kaye, E. K. & Nelson, K. P. Marginal analysis of multiple outcomes with informative cluster size. *Biometrics* **77**, 271–282 (2021). doi: [10.1111/biom.13241](https://doi.org/10.1111/biom.13241).
6. **Mitani, A. A.** & Haneuse, S. Invited Commentary: Small data challenges of studying rare diseases. *JAMA Network Open* **3** (2020). doi: [10.1001/jamanetworkopen.2020.1965](https://doi.org/10.1001/jamanetworkopen.2020.1965).
7. Ladabaum, U., Mannalithara, A., **Mitani, A.** & Desai, M. Clinical and economic impact of tailoring screening to predicted colorectal cancer risk: A decision analytic modeling study. *Cancer Epidemiol Biomarkers Prev.* **29**, 318–328 (2020). doi: [10.1158/1055-9965.EPI-19-0949](https://doi.org/10.1158/1055-9965.EPI-19-0949).
8. **Mitani, A. A.**, Kaye, E. K. & Nelson, K. P. Marginal analysis of ordinal clustered longitudinal data with informative cluster size. *Biometrics* **75**, 938–949 (2019). doi: [10.1111/biom.13050](https://doi.org/10.1111/biom.13050).
9. Nelson, K. P., **Mitani, A. A.** & Edwards, D. Evaluating the effects of rater and subject factors on measures of association. *Biom J* **60**, 639–656 (May 2018). doi: [10.1002/bimj.201700078](https://doi.org/10.1002/bimj.201700078).
10. **Mitani, A. A.**, Freer, P. E. & Nelson, K. P. Summary measures of agreement and association between many raters' ordinal classifications. *Ann Epidemiol* **27**, 677–685 (Oct. 2017). doi: [10.1016/j.annepidem.2017.09.001](https://doi.org/10.1016/j.annepidem.2017.09.001).
11. **Mitani, A. A.** & Nelson, K. P. Modeling agreement between binary classifications of multiple raters in R and SAS. *JMASM* **16**, 277–309 (2017). doi: [10.22237/jmasm/1509495300](https://doi.org/10.22237/jmasm/1509495300).

12. Nelson, K. P., **Mitani, A. A.** & Edwards, D. Assessing the influence of rater and subject characteristics on measures of agreement for ordinal ratings. *Stat Med* **36**, 3181–3199 (Sept. 2017). doi: [10.1002/sim.7323](https://doi.org/10.1002/sim.7323).
13. Winkelmayr, W. C., Goldstein, B. A., **Mitani, A. A.**, Ding, V. Y., Airy, M., Mandayam, S., Chang, T. I., Brookhart, M. A. & Fishbane, S. Safety of Intravenous Iron in Hemodialysis: Longer-term Comparisons of Iron Sucrose Versus Sodium Ferric Gluconate Complex. *Am. J. Kidney Dis.* **69**, 771–779 (June 2017). doi: [10.1053/j.ajkd.2016.10.031](https://doi.org/10.1053/j.ajkd.2016.10.031).
14. Montez-Rath, M. E., Kapphahn, K., Mathur, M. B., **Mitani, A. A.**, Hendry, D. J. & Desai, M. Guidelines for generating right-censored outcomes from a Cox model extended to accommodate time-varying covariates. *JMASM* **16**, 86–106 (2017). doi: [10.22237/jmasm/1493597100](https://doi.org/10.22237/jmasm/1493597100).
15. Desai, M., **Mitani, A. A.**, Bryson, S. W. & Robinson, T. Multiple Imputation when Rate of Change is the Outcome of Interest. *JMASM* **15**, Article 10 (2016). doi: [10.22237/jmasm/1462075740](https://doi.org/10.22237/jmasm/1462075740).
16. Afghahi, A., Mathur, M., Thompson, C. A., **Mitani, A.**, Rigdon, J., Desai, M., Yu, P. P., de Bruin, M. A., Seto, T., Olson, C., Kenkare, P., Gomez, S. L., Das, A. K., Luft, H. S., Sledge, G. W., Sing, A. P. & 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**, 697–709 (June 2016). doi: [10.1200/JOP.2015.009803](https://doi.org/10.1200/JOP.2015.009803).
17. Ladabaum, U., Patel, A., Mannalithara, A., Sundaram, V., **Mitani, A.** & Desai, M. Predicting advanced neoplasia at colonoscopy in a diverse population with the National Cancer Institute colorectal cancer risk-assessment tool. *Cancer* **122**, 2663–2670 (Sept. 2016). doi: [10.1002/cncr.30096](https://doi.org/10.1002/cncr.30096).
18. **Mitani, A. A.**, Kurian, A. W. & Desai, M. Navigating choices when applying multiple imputation in the presence of multi-level categorical interaction effects. *Statistical Methodology* **27**, 82–99 (2015). doi: [10.1016/j.stamet.2015.06.001](https://doi.org/10.1016/j.stamet.2015.06.001).
19. Winkelmayr, W. C., Chang, T. I., **Mitani, A. A.**, Wilhelm-Leen, E. R., Ding, V., Chertow, G. M., Brookhart, M. A. & 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**, 106–113 (July 2015). doi: [10.1053/j.ajkd.2015.02.339](https://doi.org/10.1053/j.ajkd.2015.02.339).
20. Airy, M., Mandayam, S., **Mitani, A. A.**, Chang, T. I., Ding, V. Y., Brookhart, M. A., Goldstein, B. A. & Winkelmayr, W. C. Comparative outcomes of predominant facility-level use of ferumoxytol versus other intravenous iron formulations in incident hemodialysis patients. *Nephrol. Dial. Transplant.* **30**, 2068–2075 (Dec. 2015). doi: [10.1093/ndt/gfv305](https://doi.org/10.1093/ndt/gfv305).
21. 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. & West, R. B. Chromosomal copy number alterations for associations of ductal carcinoma in situ with invasive breast cancer. *Breast Cancer Res.* **17**, 108 (Aug. 2015). doi: [10.1186/s13058-015-0623-y](https://doi.org/10.1186/s13058-015-0623-y).
22. Oxman, D. A., Adams, C. D., Deluke, G., Philbrook, L., Ireland, P., **Mitani, A.**, Panizales, C., Frendl, G. & Rogers, S. O. Improving Antibiotic De-Escalation in Suspected Ventilator-Associated Pneumonia: An Observational Study With a Pharmacist-Driven Intervention. *J Pharm Pract* **28**, 457–461 (Oct. 2015). doi: [10.1177/0897190014527316](https://doi.org/10.1177/0897190014527316).
23. Shen, J. I., **Mitani, A. A.** & Winkelmayr, W. C. Heparin use in hemodialysis patients following gastrointestinal bleeding. *Am. J. Nephrol.* **40**, 300–307 (2014). doi: [10.1159/000367901](https://doi.org/10.1159/000367901).
24. Shen, J. I., Montez-Rath, M. E., **Mitani, A. A.**, Erickson, K. F. & Winkelmayr, W. C. Correlates and variance decomposition analysis of heparin dosing for maintenance hemodialysis in older US patients. *Pharmacoepidemiol Drug Saf* **23**, 515–525 (May 2014). doi: [10.1002/pds.3595](https://doi.org/10.1002/pds.3595).
25. Kurella-Tamura, M., Goldstein, B. A., Hall, Y. N., **Mitani, A. A.** & Winkelmayr, W. C. State medicaid coverage, ESRD incidence, and access to care. *J. Am. Soc. Nephrol.* **25**, 1321–1329 (June 2014). doi: [10.1681/ASN.2013060658](https://doi.org/10.1681/ASN.2013060658).

26. Winkelmayer, W. C., **Mitani, A. A.**, Goldstein, B. A., Brookhart, M. A. & 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**, 699–707 (May 2014). doi: [10.1001/jamainternmed.2014.87](https://doi.org/10.1001/jamainternmed.2014.87).
27. Kurian, A. W., **Mitani, A.**, Desai, M., Yu, P. P., Seto, T., Weber, S. C., Olson, C., Kenkare, P., Gomez, S. L., de Bruin, M. A., Horst, K., Belkora, J., May, S. G., Frosch, D. L., Blayney, D. W., Luft, H. S. & Das, A. K. Breast cancer treatment across health care systems: linking electronic medical records and state registry data to enable outcomes research. *Cancer* **120**, 103–111 (Jan. 2014). doi: [10.1002/cncr.28395](https://doi.org/10.1002/cncr.28395).
28. Arce, C. M., Goldstein, B. A., **Mitani, A. A.** & 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**, 312–321 (Aug. 2013). doi: [10.1053/j.ajkd.2013.02.375](https://doi.org/10.1053/j.ajkd.2013.02.375).
29. Arce, C. M., Goldstein, B. A., **Mitani, A. A.**, Lenihan, C. R. & 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**, 2149–2157 (Dec. 2013). doi: [10.2215/CJN.01560213](https://doi.org/10.2215/CJN.01560213).
30. Fox, A. A., Nascimben, L., Body, S. C., Collard, C. D., **Mitani, A. A.**, Liu, K. Y., Muehlschlegel, J. D., Shernan, S. K. & 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**, 284–294 (Aug. 2013). doi: [10.1097/ALN.0b013e318299969c](https://doi.org/10.1097/ALN.0b013e318299969c).
31. Kumar, S., Fioritto, A., **Mitani, A.**, Desai, M., Gunaratnam, N. & Ladabaum, U. Optical biopsy of sessile serrated adenomas: do these lesions resemble hyperplastic polyps under narrow-band imaging? *Gastrointest. Endosc.* **78**, 902–909 (Dec. 2013). doi: [10.1016/j.gie.2013.06.004](https://doi.org/10.1016/j.gie.2013.06.004).
32. Nair, S. S., **Mitani, A. A.**, Goldstein, B. A., Chertow, G. M., Lowenberg, D. W. & 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**, 1336–1342 (Aug. 2013). doi: [10.2215/CJN.10901012](https://doi.org/10.2215/CJN.10901012).
33. Shen, J. I., **Mitani, A. A.**, Chang, T. I. & Winkelmayer, W. C. Use and safety of heparin-free maintenance hemodialysis in the USA. *Nephrol. Dial. Transplant.* **28**, 1589–1602 (June 2013). doi: [10.1093/ndt/gft067](https://doi.org/10.1093/ndt/gft067).
34. Shen, J. I., **Mitani, A. A.**, Saxena, A. B., Goldstein, B. A. & Winkelmayer, W. C. Determinants of peritoneal dialysis technique failure in incident US patients. *Perit Dial Int* **33**, 155–166 (2013). doi: [10.3747/pdi.2011.00233](https://doi.org/10.3747/pdi.2011.00233).
35. Carabuena, J. M., **Mitani, A. A.**, Liu, X., Kodali, B. S. & 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**, 145–154 (Jan. 2013). doi: [10.1213/ANE.0b013e31826c7cad](https://doi.org/10.1213/ANE.0b013e31826c7cad).
36. Ladabaum, U., Fioritto, A., **Mitani, A.**, Desai, M., Kim, J. P., Rex, D. K., Imperiale, T. & Gunaratnam, N. Real-time optical biopsy of colon polyps with narrow band imaging in community practice does not yet meet key thresholds for clinical decisions. *Gastroenterology* **144**, 81–91 (Jan. 2013). doi: [10.1053/j.gastro.2012.09.054](https://doi.org/10.1053/j.gastro.2012.09.054).
37. Elie-Turenne, M. C., Hou, P. C., **Mitani, A.**, Barry, J. M., Kao, E. Y., Cohen, J. E., Frendl, G., Gajic, O. & Gentile, N. T. Lung injury prediction score for the emergency department: first step towards prevention in patients at risk. *Int J Emerg Med* **5**, 33 (Sept. 2012). doi: [10.1186/1865-1380-5-33](https://doi.org/10.1186/1865-1380-5-33).
38. Garfield, J. M., Garfield, F. B., Holzman, R., **Mitani, A. A.** & Tsen, L. C. Practice policies for older anesthesiologists in academic departments: a national survey of academic departmental chairpersons. *J Clin Anesth* **24**, 357–363 (Aug. 2012). doi: [10.1016/j.jclinane.2012.02.003](https://doi.org/10.1016/j.jclinane.2012.02.003).
39. Mizuguchi, K. A., **Mitani, A.**, Waikar, S. S., Ireland, P., Panizales, C., Deluke, G., Sugarbaker, D. J., Bonventre, J. V. & Frendl, G. Use of postoperative creatinine to predict sustained kidney injury in

- patients undergoing mesothelioma surgery. *Clin J Am Soc Nephrol* **7**, 1071–1078 (July 2012). doi: [10.2215/CJN.12401211](https://doi.org/10.2215/CJN.12401211).
40. Sarin, P., Philip, B. K., **Mitani, A.**, Eappen, S. & Urman, R. D. Specialized ambulatory anesthesia teams contribute to decreased ambulatory surgery recovery room length of stay. *Ochsner J* **12**, 94–100 (2012). PMID: 22778673.
 41. Hou, P. C., Elie-Turenne, M. C., **Mitani, A.**, Barry, J. M., Kao, E. Y., Cohen, J. E., Frendl, G., Gajic, O. & Gentile, N. T. Towards prevention of acute lung injury: frequency and outcomes of emergency department patients at-risk - a multicenter cohort study. *Int J Emerg Med* **5**, 22 (May 2012). doi: [10.1186/1865-1380-5-22](https://doi.org/10.1186/1865-1380-5-22).
 42. Urman, R. D., Sarin, P., **Mitani, A.**, Philip, B. & Eappen, S. Presence of anesthesia resident trainees in day surgery unit has mixed effects on operating room efficiency measures. *Ochsner J* **12**, 25–29 (2012). PMID: 22438778.
 43. Arce, C. M., **Mitani, A. A.**, Goldstein, B. A. & Winkelmayer, W. C. Hispanic ethnicity and vascular access use in patients initiating hemodialysis in the United States. *Clin J Am Soc Nephrol* **7**, 289–296 (Feb. 2012). doi: [10.2215/CJN.08370811](https://doi.org/10.2215/CJN.08370811).
 44. Nowak-Machen, M., Rawn, J. D., Shekar, P. S., **Mitani, A.**, Tuli, S., Bingold, T. M., Lawlor, G., Eltzschig, H. K., Shernan, S. K. & Rosenberger, P. Descending aortic calcification increases renal dysfunction and in-hospital mortality in cardiac surgery patients with intraaortic balloon pump counterpulsation placed perioperatively: a case control study. *Crit Care* **16**, R17 (Jan. 2012). doi: [10.1186/cc11162](https://doi.org/10.1186/cc11162).
 45. Colvin, A. C., Wang, C. F., Soens, M. A., **Mitani, A. A.**, Strichartz, G. & Gerner, P. Prolonged cutaneous analgesia with transdermal application of amitriptyline and capsaicin. *Reg Anesth Pain Med* **36**, 236–240 (2011). doi: [10.1097/AAP.0b013e31820c2c30](https://doi.org/10.1097/AAP.0b013e31820c2c30).
 46. Pfeiffer, R. M., **Mitani, A.**, Landgren, O., Ekbom, A., Kristinsson, S. Y., Bjorkholm, M., Biggar, R. J. & Brinton, L. A. Timing of births and endometrial cancer risk in Swedish women. *Cancer Causes Control* **20**, 1441–1449 (Oct. 2009). doi: [10.1007/s10552-009-9370-7](https://doi.org/10.1007/s10552-009-9370-7).
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 49. Anderson, W. F., Rosenberg, P. S., Menashe, I., **Mitani, A.** & Pfeiffer, R. M. Age-related crossover in breast cancer incidence rates between black and white ethnic groups. *J. Natl. Cancer Inst.* **100**, 1804–1814 (Dec. 2008). doi: [10.1093/jnci/djn411](https://doi.org/10.1093/jnci/djn411).
 50. Pfeiffer, R. M., **Mitani, A.**, Matsuno, R. K. & Anderson, W. F. Racial differences in breast cancer trends in the United States (2000–2004). *J. Natl. Cancer Inst.* **100**, 751–752 (May 2008). doi: [10.1093/jnci/djn112](https://doi.org/10.1093/jnci/djn112).
 51. Hardin, J., **Mitani, A.**, Hicks, L. & VanKoten, B. A robust measure of correlation between two genes on a microarray. *BMC Bioinformatics* **8**, 220 (June 2007). doi: [10.1186/1471-2105-8-220](https://doi.org/10.1186/1471-2105-8-220).

Manuscripts Under Review

1. Gandotra, S., Daza, J. F., Diep, C., **Mitani, A. A.**, Ladha, K. S. & Wijeyesundera, D. N. Psychological distress after inpatient non-cardiac surgery: a secondary analysis of the Measurement of Exercise Tolerance before Surgery (METS) prospective cohort study. Invited for revision at *Annals of Surgery*.

[†]*Related abstract won Award for Best Abstract in Perioperative at 2023 Canadian Anesthesiologists' Society Annual Meeting.*

2. *Feng, X. & **Mitani, A. A.** Marginal clustered multistate models for longitudinal progressive processes with informative cluster size. Under review. [†]*Winner of 2023 ASA Lifetime Data Science Section Student Paper Competition.*
3. **Mitani, A. A.**, *Feng, X. & Kaye, E. K. Modeling time-varying risk factors of tooth loss: results from joint model compared to extended Cox regression model. Invited for revision at *Journal of Clinical Periodontology*.

TALKS, SEMINARS AND WORKSHOPS

Invited

1. Marginal clustered multistate models for longitudinal progressive processes with informative cluster size. International Statistical Institute World Statistics Congress, Ottawa, ON (July 2023).
2. Fitting bivariate skew-t linear mixed models for longitudinal periodontal data: A Stan recourse. SSC Annual Meeting, Ottawa, ON (May 2023).
3. Bridging the gap between data availability and reproducibility. Toronto Conference on Reproducibility, University of Toronto, Toronto, ON (Feb. 2023).
4. 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).
5. Matrix-variate regression for multilevel data. Learn about Innovative Data Science Methodologies, Data Science Institute, University of Toronto, Virtual (June 2022).
6. Reproducible, reliable, replicable? In-class exercise using peer-reviewed studies. Toronto Workshop on Reproducibility, Virtual (Feb. 2022).
7. 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).
8. Reproducibility in research. Health Data Working Group, University of Toronto Dalla Lana School of Public Health, Virtual (Nov. 2021).
9. Analysis of complex multilevel dental data with informative tooth-loss. Research Seminar, Department of Biostatistics, Virginia Commonwealth University School of Medicine, Virtual (Nov. 2021).
10. 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).
11. Marginal analysis of multiple outcomes with informative cluster size. Joint Statistical Meetings, Virtual (Aug. 2020).
12. Marginal analysis of multiple outcomes with informative cluster size. Biostatistics Division, University of Toronto Dalla Lana School of Public Health, Toronto, ON (Mar. 2020).
13. Marginal analysis of multiple outcomes with informative cluster size. Statistics Seminar, University of Waterloo, Waterloo, ON (Jan. 2020).
14. Informative cluster size in observational studies. HIV Working Group, Harvard Chan School, Boston, MA (Nov. 2019).
15. Modeling tooth-loss using inverse probability censoring weights in longitudinal clustered data with informative cluster size. New England Statistical Symposium, Hartford, CT (May 2019).

16. Marginal analysis of ordinal clustered longitudinal data with informative cluster size. New England Statistical Symposium, University of Massachusetts Amherst, Amherst, MA (Apr. 2018).
17. Applying for Individual (pre- and post-doctoral) Fellowship Awards from the NIH. Biostatistics Student Association Seminar, Boston University, Boston, MA (Oct. 2017).
18. Multiple imputation in practice – approaches for handling categorical and interaction variables. QSU Research Methods Seminar, Stanford University, Palo Alto, CA (May 2013).
19. Basic statistics for journal reading. Faculty Breakout Session, Department of Anesthesiology, Perioperative and Pain Medicine, Brigham and Women's Hospital, Boston, MA (Feb. 2010).

Contributed

1. Multiple imputation methods for multilevel ordinal outcomes. Joint Statistical Meetings, Toronto, ON (Aug. 2023).
2. Using Stereotype Regression for Unbiased Inference from Ordinal Outcome-Dependent Samples. SSC Annual Meeting, Virtual (June 2022).
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).

Webinars

1. Panelist, NIH Graduate and Postdoctoral Fellowships: Opportunities and Advice. Webinar from the ASA Committee on Funded Research (Jan. 2021).
2. Instructor, Issues and guidelines of multiple imputation in practice. Webinar training series, ASA Section for Statistical Programmers and Analysts (Apr. 2013).

Workshops

1. Handling missing data in health science research. Data Science Interdisciplinary Research Cluster, Dalla Lana School of Public Health, Virtual (June 2022).
2. Handling missing data in health science research. Data Science Interdisciplinary Research Cluster, Dalla Lana School of Public Health, In-person (Apr. 2023).