

CONTACT INFORMATION

Vanderbilt University Medical Center
Department of Biostatistics
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EDUCATION AND TRAINING

- B.S., Mathematics. Northeastern University, Boston, MA, 2011
- M.S., Biostatistics. University of Washington, Seattle, WA, 2015
- Ph.D., Biostatistics. University of Washington, Seattle, WA, 2016
- Postdoctoral Researcher, University of Pennsylvania, Department of Biostatistics, Epidemiology, and Informatics, and Center for Causal Inference, 2016–2018
- Associate Fellow, Leonard Davis Institute of Health Economics, 2017–2018

ACADEMIC APPOINTMENTS

- Assistant Professor of Biostatistics, Vanderbilt University School of Medicine, 2018–2024
- Associate Professor of Biostatistics, Vanderbilt University School of Medicine, 2024–Present
- Director of Biostatistics Graduate Studies, Vanderbilt University School of Medicine, 2025–Present

OTHER EMPLOYMENT

- Research Assistant, Beth Israel Deaconess Medical Center, 2010–2012
- Research Assistant, Collaborative Health Studies Coordinating Center, 2012–2015
- Research Assistant, Fred Hutchinson Cancer Research Center, 2015–2016

CURRENT PROFESSIONAL ORGANIZATIONS

- International Biometric Society (Eastern North American Region), 2014–Present
 - Member, Regional Advisory Board 2022–2024
 - Chair of Local Arrangements, 2023
 - Elected Member, RECOM (Regional Committee), 2026–2029
- International Biometric Society (Western North American Region), 2015–2017
- American Statistical Association, 2018–Present
 - Program Chair, Biometrics Section, Joint Statistical Meetings, 2022
 - Conference Co-Chair, 2027 International Conference on Health Policy Statistics
 - Member, Health Policy Statistics Executive Committee (2025–2027)
 - Elected Secretary of Mid-TN Chapter, 2025

- Society for Causal Inference, 2021–Present
 - Elected Member-at-Large, 2025–2028
 - Co-Chair, Membership and Outreach Committee, 2025–present

INTRAMURAL PROFESSIONAL ACTIVITIES

University of Washington, Department of Biostatistics

- Student Representative, Departmental Self-Study Committee, 2012–2013
- Member, Educational Policy and Teaching Evaluation Committee, 2014–2016
- Member, Faculty/Student Relations Committee, 2015–2016

Other professional activities at University of Washington

- Facilitator, University of Washington Annual TA/RA Conference, 2015

University of Pennsylvania, Department of Biostatistics, Epidemiology, and Informatics

- Member, Post-Doc Training Task Force, 2017–2018

Vanderbilt University Medical Center, Department of Biostatistics

- Organizer, Weekly Biostatistics Seminar Series, 2018–2021
- Member, VUMC Biostatistics Faculty Search Committee, 2018–2019; 2019–2020; 2022–2023
- Member, Strategic Directions Committee, 2019–2020
- Member, Comprehensive Exam Committee, 2019–2021
- Member, Selection Committee for Arbogast Collaborative Award, 2020
- Chair, Comprehensive Exam Committee, 2021–2025
- Member, Executive Committee of Graduate Studies, 2022–2025
- Member, Summer Internship Program for Underrepresented Undergraduates (Planning Committee), 2022–2024
- Member, 20th Anniversary Symposium Planning Committee, 2023
- Member, Selection Committee for Methods Paper Award, 2023
- Co-chair, VUMC Biostatistics Faculty Search Committee, 2023–2024
- Member, Graduate Admissions Committee, 2024–2025
- Chair, VUMC Biostatistics Faculty Search Committee, 2024–Present

Other professional activities at Vanderbilt University/Vanderbilt University Medical Center

- Member, Geoffrey Fleming Academy for Excellence in Education Mentorship Program, 2021–2023
- Member, DSMB: The Effect and Contribution of a Perioperative Ketamine Infusion in an Established Enhanced Recovery Pathway (B. Raymond, P.I.), 2021–2024
- Member, DSMB: PCORI Integrated Health Services to Reduce Opioid Use While Managing Chronic Pain (L. McCormack, P.I.), 2022–2024

- Member, Mid-career Leadership Development Program, 2025
- Member, Provost Graduate Fellowship Review Committee, 2026

EXTRAMURAL PROFESSIONAL ACTIVITIES

Committees and activities associated with professional organizations

- Member, David P. Byar Young Investigator Award Committee (2018, 2019)
- ENAR Poster Session Judge (2019, 2024)
- Member, ENAR Distinguished Student Paper Awards Committee (2018–2020)
- ICSA Applied Statistics Symposium Poster Session Judge (2020)
- Member, ASA Statistics in Epidemiology Young Investigator Awards Committee (2022)
- Scientific Program Committee, International Conference on Computational and Methodological Statistics (2022)
- Abstract Review Committee, American Causal Inference Conference (2022)
- American Causal Inference Conference Poster Session Judge (2024)
- Member, Professional Development Committee, Society for Causal Inference (2023–2025)
- Member, American Causal Inference Conference Program Committee (2026)

Conference sessions organized and chaired

- Chair: Survival Analysis and Semi-parametric and Non-parametric Models. ENAR: Washington, D.C., March 2017.
- Chair: Recent Developments in Observational Data. WNAR: Santa Fe, NM, June 2017.
- Chair: Comparative Effectiveness Research. ENAR: Atlanta, GA, March 2018.
- Organizer/Chair: Recent Advances in Bayesian Methods for Cost and Cost-Effectiveness Analysis. ICHPS: San Diego, CA, January 2020.
- Organizer/Chair: Recent Advances in Causal Inference. International Conference on Computational and Methodological Statistics (Virtual), December 2021.
- Chair: Contributed Papers Session on Clinical Trials. ENAR: Houston, TX, March 2022.
- Chair: Biometrics Section Early Career Paper Awards. JSM: Washington, D.C., August 2022.
- Organizer/Chair: Innovative and Practical Strategies in Causal Inference. International Conference on Computational and Methodological Statistics: London, UK, December 2022.
- Chair: Generalizability and Covariate Selection. American Causal Inference Conference: Austin, TX, May 2023.
- Organizer/Chair: Novel Methods and Practical Strategies for Clinical Trials. International Conference on Computational and Methodological Statistics: Berlin, Germany, December 2023.
- Organizer/Chair: Methodological Advances in and Practical Considerations for Data Originating from Randomized Trials: ENAR: Baltimore, MD, March 2024.
- Organizer/Chair: New Perspectives on Randomized Trials: Methods and Applications. International Conference on Computational and Methodological Statistics: London, UK, December 2024.
- Organizer/Chair: Recent Developments in Receiver Operating Characteristic Curve Analysis. International Conference on Computational and Methodological Statistics: London, UK, December 2025.

- Organizer: (Re)-Assessing the Role of Qualifying Examinations in Training Next-Generation Biostatisticians. JSM: Boston, MA, August 2026.

Editorial roles

- Associate Editor, *Observational Studies*, 2021–2025
- Book Review Editor, *Biometrics*, 2024–Present
- Co-Editor-in-Chief, *Observational Studies*, 2025–Present
- *Ad hoc* reviewer for the following clinical journals: *BMJ*, *BMJ Public Health*, *Cancer*, *Circulation: Cardiovascular Quality and Outcomes*, *Clinical Pediatrics*, *Emerging Infectious Diseases*, *JAMA Network Open*, *JMIR Public Health and Surveillance*, *Journal of the American Medical Informatics Association*, *Journal of Clinical Epidemiology*, *Journal of Clinical Oncology*, *Journal of Medical Virology*, *Journal of Pediatric Rehabilitation Medicine*, *Journal of Thoracic Disease*, *Medical Decision Making*, *Nature Communications*, *PLOS One*.
- *Ad hoc* reviewer for the following biostatistics and epidemiology journals: *American Journal of Epidemiology*, *Annals of Applied Statistics*, *Biometrics*, *Biostatistics*, *Biostatistics*, *Communications in Statistics – Case Studies and Data Analysis*, *Communications in Statistics – Theory and Methods*, *International Journal of Biostatistics*, *International Journal of Epidemiology*, *Journal of the American Statistical Association*, *Journal of Causal Inference*, *Journal of the Indian Statistical Association*, *Journal of the Royal Statistical Society, Series C*, *Observational Studies*, *Pharmacoepidemiology and Drug Safety*, *Statistics and its Interface*, *Statistics in Medicine*, *Statistics in Biosciences*, *Wiley Interdisciplinary Reviews: Computational Statistics*.

Grant reviews

- Clinical and Translational Research Funding Program of Washington University in St. Louis (2021)
- PCORI: Improving Methods for Conducting PCOR (2022–2024: six cycles)
- NIH/NCI: P01 Applications, *ad hoc* reviewer (2025)

AWARDS AND RECOGNITION FOR PROFESSIONAL ACTIVITIES

- University of Washington Department of Biostatistics: Best Research Poster Award (as selected by incoming students), 2013
- WNAR Student Paper Competition: Most Outstanding Paper Award, 2015
- WNAR Student Paper Competition: Most Outstanding Oral Presentation Award, 2015
- Atlantic Causal Inference Conference: Ten Have Poster Presentation Award Runner-up, 2017
- Vanderbilt Department of Biostatistics: Patrick G. Arbogast Collaborative Publication Award, 2022

TEACHING ACTIVITIES

Select courses through the Massachusetts Institute of Technology Educational Studies Program

- Counting Principles (Summer 2009)
- Calculus AB (September 2009–May 2010)
 - Co-instructed with Michael Garcia
- Multivariable Calculus (Summer 2010)

- Counting Principles (Summer 2011)
- Calculus BC (September 2010–May 2011)
 - Co-instructed with Michael Garcia
- Calculus BC (September 2011–May 2012)

Undergraduate courses at University of Washington

- Biostatistics 311 - Regression Methods in the Health Sciences (Spring 2016; Enrollment: 7)

Graduate courses at University of Pennsylvania Perelman School of Medicine

- Health Policy Research 604 - Introduction to Statistics for Health Policy (Fall 2017; Enrollment: 24)

Graduate courses at Vanderbilt University

- Biostatistics 6312 - Modern Regression Analysis (Spring 2020; Enrollment: 18)
- Biostatistics 6312 - Modern Regression Analysis (Spring 2021; Enrollment: 19)
- Biostatistics 6312 - Modern Regression Analysis (Spring 2022; Enrollment: 22)
- Biostatistics 6312 - Modern Regression Analysis (Spring 2023; Enrollment: 20)
- Biostatistics 7345 - Advanced Regression Analysis I (Fall 2023; Enrollment: 11)
- Biostatistics 8004 - Ethical Principles and Practices for Biostatisticians (Spring 2024; Enrollment: 1)
- Epidemiology 8332 - Mathematical Preparation for Advanced Statistics (Summer 2024; Enrollment: 1)
- Biostatistics 7345 - Advanced Regression Analysis I (Fall 2024; Enrollment: 5)
- Epidemiology 8332 - Mathematical Preparation for Advanced Statistics (Fall 2024; Enrollment: 1)
- Biostatistics 7345 - Advanced Regression for Independent Data (Fall 2025; Enrollment: 13)
- Biostatistics 6342 - Contemporary Statistical Inference (Spring 2026; Enrollment: 7)

Short courses through the Vanderbilt Center for Quantitative Sciences Summer Institute

- Introduction to Causal Inference (2019; Enrollment: 23)
- Introduction to Causal Inference (2021; Enrollment: 24)
- Introduction to Causal Inference (2022; Enrollment: 23)
- Introduction to Causal Inference (2023; Enrollment: 15)
- Introduction to Causal Inference (2024; Enrollment: 14)

Select short courses through the Massachusetts Institute of Technology Educational Studies Program

- Introduction to Calculus (2008, 2009)
- Group Theory (2008, 2009)
- Number Theory (2009)
- Stochastic Processes (2009)
- Introduction to Topology (2009)
- Introduction to Real Analysis (2009)

- Linear Algebra (2009)
- Complex Variables (2009, 2010)

Vanderbilt Summer Internship Program for Underrepresented Undergraduates

- Introduction to Statistics (2022; Enrollment: 3)
- Introduction to Statistics (2023; Enrollment: 5)
- Introduction to Statistics (2024; Enrollment: 6)

Other Guest Lectures

- BIOST 524: Design of Medical Studies (University of Washington)
 - Guest lecture on blinding, randomization, and crossover designs for Dr. Thomas Fleming; 2014, 2015.
- BIOST 570: Advanced Regression Methods for Independent Data (University of Washington)
 - Guest lecture on nonlinear least squares for Dr. Barbara McKnight; 2014.
- HPR 608: Applied Regression Analysis for Health Policy Research (University of Pennsylvania)
 - Guest lecture on survival analysis for Dr. Nandita Mitra; 2018.
- BIOS 6342: Contemporary Statistical Inference (Vanderbilt University)
 - Guest lecture on interval estimation for Dr. Jeffrey Blume; 2018.
- BIOS 8375: Causal Inference (Vanderbilt University)
 - Guest lecture on endogeneity for Dr. Bryan Shepherd; 2022.

Graduate Teaching Assistantships at University of Washington

- Biostatistics 524 - Design of Medical Studies (Spring 2014; Enrollment: 34)
- Biostatistics 570 - Advanced Regression Methods I (Autumn 2014; Enrollment: 44)
- Biostatistics 571 - Advanced Regression Methods II (Winter 2015; Enrollment: 36)
- Biostatistics 524 - Design of Medical Studies (Spring 2015; Enrollment: 38)

AWARDS AND RECOGNITION FOR TEACHING ACTIVITIES

- University of Washington Department of Biostatistics: Outstanding Teaching Assistant Award, 2014
- Vanderbilt Department of Biostatistics: Outstanding Faculty Mentor Award, 2020
- Vanderbilt Department of Biostatistics: Golden Apple Award for Excellence in Teaching, 2021
- Vanderbilt Department of Biostatistics: Outstanding Faculty Mentor Award, 2023
- Vanderbilt University School of Medicine: Academy for Excellence in Education, 2024

RESEARCH SUPERVISION

Primary advisor

- Aaron Lee (MS, Biostatistics, 2021)
- Caroline Birdrow (MS, Biostatistics, 2021)
- Jackson Resser (MS, Biostatistics, 2022)

- Nate Dowd (MS, Biostatistics, 2024)
- Nicholas Micheletti (MS, Biostatistics, 2024)
- Julia Whitman (MS, Biostatistics, 2024)
- Jamie Joseph (PhD, Biostatistics, 2024)
- Seth Young (MS, Biostatistics, Expected 2026)
- Alexis Fleming (PhD, Biostatistics, Expected 2027)
- Kaixing Liu (PhD, Biostatistics, Expected 2028)

Thesis/dissertation committee membership

- Nicholas Illenberger (PhD, Biostatistics, 2022; University of Pennsylvania); Committee member
- Elisa Yazdani (MS, Biostatistics, 2023); Committee member
- Barrett Jones (PhD, Biomedical Informatics, 2024); Committee member
- Julia Thome (PhD, Biostatistics, 2024); Committee chair
- Lisa Levoir (MS, Biostatistics, 2025); Committee member
- Layla Aref (PhD, Chemical and Physical Biology Program; 2026); Committee member
- Justin Amarin (PhD, Epidemiology, Expected 2027); Committee member

Academic advising

- Yunbi Nam (PhD, Biostatistics), 2023–2025

Other mentorship and advising

- Marlena Norwood (*ad hoc* undergraduate honors project), 2016
- Thomas Klink (MPH, Global Health Track, 2019); Scholarly Oversight Committee
- Varvara Probst (MPH, Epidemiology Track, 2020); Scholarly Oversight Committee
- Olla Hamdan (MPH, Epidemiology Track, 2024); Scholarly Oversight Committee
- Yuhuan Li (MS, Biostatistics, Expected 2025); UW Alumni Mentoring Program
- Turbo Du (MS, Biostatistics, Expected 2026); UW Alumni Mentoring Program
- Adam Gailani (MPH, Epidemiology Track, 2026); Scholarly Oversight Committee
- Karly Dubs; (Pediatric Hematology/Oncology fellow, 2026); Scholarly Oversight Committee

RESEARCH PROGRAM

Ongoing research

P30 DK 020593 (Project PI: Spieker)

03/01/24 – 03/31/26

10%

NIH/NIDDK

Role: Project PI

Evaluating the role of engagement with mobile health interventions to support diabetes

R-2203-05822 (Mayberry)	08/01/24 – 06/30/27	5%
Leona M. and Harry B. Helmsley Charitable Trust		Role: Co-Investigator
<i>Adapting FAMS to optimize CGM use among emerging adults with type 1 diabetes</i>		
R01 DK 140190-01 (Mayberry)	08/01/24 – 06/30/29	2%
NIH/NIDDK		Role: Co-Investigator
<i>Tailoring diabetes support to social contexts for adults living with type 2 diabetes</i>		
R01 DK 124719-04 (Berg, Mayberry, Wiebe)	04/01/22 – 04/30/27	3%
NIH/NIDDK		Role: Co-Investigator
<i>Improving self-regulation and social support for type 1 diabetes during emerging adulthood</i>		
VUMC134352 (Nelson)	11/01/24 – 04/30/29	5%
NIH/NIDDK		Role: Co-Investigator
<i>Adapting and testing Agile methodology as a novel approach to engagement in research</i>		
U01 IP 001156-01 (Halasa)	09/01/21 – 08/31/26	9%
NIH/NCIRD		Role: Co-investigator
<i>Enhanced surveillance for new vaccine preventable diseases</i>		
U01 AI 167799-01A1 (Halasa)	03/01/23 – 02/29/28	3%
NIH/NCIRD		Role: Co-investigator
<i>Comparison of high vs. standard dose influenza vaccines in pediatric solid organ transplant recipients</i>		
U01 DK 137533-01 (Rothman)	01/01/24 – 06/20/27	15%
NIH/NIDDK		Role: Co-investigator
<i>CODA: COVID and diabetes assessment</i>		
U01 AI 167789-02 (Halasa)	02/07/22 – 01/31/27	5%
NIH/NIAID		Role: Co-Investigator
<i>Comparison of high vs. standard dose influenza vaccines in lung allograft recipients</i>		
U01 AI 152967-01 (Halasa)	09/01/20 – 06/30/25	3%
NIH/NIAID		Role: Co-Investigator
<i>Comparison of high vs. standard dose influenza vaccines in adult solid organ transplant recipients</i>		
75N93019D00031 (NIAID) (Karron)	06/10/20 – 01/31/25	15%
NIH/NCIRD		Role: Biostatistician
<i>Evaluation of live-attenuated pediatric RSV vaccine candidate RSV LID/deltaM2-2/1030s</i>		

Select completed research

RWJF 76037 (Spieker: Site PI) Robert Wood Johnson Foundation <i>Implementation of Medicaid work requirements: Factors influencing physician willingness to request exemptions</i>	12/01/18 – 11/30/19	Role: Site PI
U01 AI 125135-03 (Halasa) NIH/NIAID <i>Comparison of high vs. standard dose flu vaccine in pediatric stem cell transplant recipients</i>	09/01/18 – 07/31/20	Role: Biostatistician
R01 DK 100694-06 (Mayberry) NIH/NIDDK <i>Improving medication adherence among underserved patients with type 2 diabetes</i>	09/01/18 – 04/30/21	Role: Biostatistician
U01 AI 132004-03 (Halasa) NIH/NIAID <i>High vs. standard dose flu vaccine in adult stem cell transplant recipients</i>	09/01/18 – 06/30/21	Role: Biostatistician
U01 IP 001063-05-00 (Halasa) NIH/NCIRD <i>Enhanced surveillance for new vaccine preventable diseases</i>	09/01/16 – 08/31/21	Role: Biostatistician
R21 AI 149303-01 (Halasa) NIH/NIAID <i>Adenovirus types and acute respiratory illness severity in children</i>	01/14/20 – 12/31/21	Role: Co-Investigator
R34 AI 150532-01 (Halasa) NIH/NIAID <i>High vs. standard dose flu vaccine in pediatric solid organ transplant recipients</i>	06/04/20 – 06/30/22	Role: Co-Investigator
R01 DK 119282 (Mayberry) NIH/NIDDK <i>Mobile phone support for adults and support persons to live well with diabetes</i>	04/15/19 – 07/31/23	Role: Biostatistician
R21 HD 104983-01A1 (Osmundson) NIH/NICHD <i>Gestational diabetes drugs and perinatal outcomes in underserved populations</i>	09/01/21 – 08/31/23	Role: Co-investigator
P30 AI 110527 (Spieker: Project PI) NIH/NCIRD <i>TN-CFAR developmental core award: Evaluating longitudinal effects of antiretroviral therapy on weight gain</i>	05/01/22 – 12/31/23	Role: Project PI

ORIGINAL PUBLICATIONS

* - Indicates joint authorship/equal contribution.

Peer-reviewed publications

1. Nodera H, Spieker A, Sung M, Rutkove SB. Neuroprotective effects of Kv7 channel agonist, retigabine, for cisplatin-induced peripheral neuropathy. *Neuroscience Letters* 2011; 505(3): 223–227.
2. Jafarpour M, Spieker AJ, Li J, Darras BT, and Rutkove SB. Assessing electrical impedance alterations in spinal muscular atrophy via the finite element method. *Annual International Conference: IEEE Engineering in Medicine and Biology Society* 2011, 1871-1874.
3. Wang L, Spieker AJ, Li J, Rutkove SB. Electrical impedance myography for monitoring motor neuron loss in the SOD1 G93A amyotrophic lateral sclerosis rat. *Clinical Neurophysiology* 2011; 122(12): 2505–2511.
4. Narayanaswami P, Spieker AJ, Mongiovi P, Keel, JC, Muzin SC, Rutkove SB. Utilizing a handheld electrode array for localized muscle impedance measurements. *Muscle and Nerve* 2012; 46(2): 257–263.
5. Li J, Staats W, Spieker A, Sung M, Rutkove SB. A technique for performing electrical impedance myography in the mouse hind limb: data in normal and ALS SOD1 G93A animals. *PLOS One* 2012; 7(9): e45004.
6. Sung M, Spieker AJ, Narayanaswami P, Rutkove SB. The effect of subcutaneous fat on electrical impedance myography when using a handheld electrode array: The case for measuring reactance. *Clinical Neurophysiology* 2013; 124(2): 400–404.
7. Li J, Spieker AJ, Rosen GD, Rutkove SB. Electrical impedance alterations in the rat hind limb with unloading. *Journal of Musculoskeletal and Neuronal Interactions* 2013; 13(1): 37–44.
8. Spieker AJ, Narayanaswami P, Fleming L, Keel JC, Muzin SC, Rutkove SB. Electrical impedance myography in the diagnosis of radiculopathy. *Muscle and Nerve* 2013; 48(5): 800–805.
9. Sung M, Li J, Spieker AJ, Spatz J, Ellman R, Ferguson G, Bateman T, Rosen GD, Boussein M, Rutkove SB. Spaceflight and hind limb unloading induce similar changes in electrical impedance characteristics of mouse gastrocnemius muscle. *Journal of Musculoskeletal and Neuronal Interactions* 2013; 13(4): 405–411.
10. Spieker AJ, Delaney JAC, McClelland RL. Evaluating the treatment effects model for estimation of cross-sectional associations between risk factors and cardiovascular biomarkers influenced by medication use. *Pharmacoepidemiology and Drug Safety* 2015; 24(12): 1286–1296.
11. Hsi RS, Spieker AJ, Stoller ML, Jacobs DR Jr., Reiner AP, McClelland RL, Kahn AJ, Chi T, Szklo M, Sorensen MD. Coronary artery calcium score and association with recurrent nephrolithiasis: The Multi-Ethnic Study of Atherosclerosis. *Journal of Urology* 2015; 195(4 Part 1): 971–976.

12. Johnson M, Pierson ER., Spieker AJ, Nielsen S, Posso S, Kita M, Buckner J, Goverman J. Distinct T cell signatures define subsets of multiple sclerosis patients. *Neurology: Neuroimmunology & Neuroinflammation* 2016; 3(5): e278.
13. Spieker AJ, Huang Y. A method to address between-subject heterogeneity for identification of principal surrogate markers in repeated low-dose challenge HIV vaccine studies. *Statistics in Medicine* 2017; 36(26): 4167–4181.
14. Stephens-Shields AJ, Spieker AJ, Yang W, Anderson A, Drawz P, Fischer M, Sozio SM, Feldman H, Joffe M, Green T, The CRIC Study Investigators. Blood pressure and the risk of chronic kidney disease progression using multistate marginal structural models in the CRIC study. *Statistics in Medicine* 2017; 36(26): 4071–4080.
15. Spieker AJ, Roy JA, Mitra N. Analyzing medical costs with time-dependent treatment: The nested g-formula. *Health Economics* 2018; 27(7): 1063–1073.
16. Spieker AJ, Delaney JAC, McClelland RL. A method to account for covariate-specific treatment effects when estimating biomarker associations in the presence of endogenous medication use. *Statistical Methods in Medical Research* 2018; 27(8): 2279–2293.
17. Wan J*, Oganisian A*, Spieker AJ, Hoffstad OJ, Mitra N, Margolis DJ, and Takeshita J. Racial/ Ethnic variation in use of ambulatory and emergency care for atopic dermatitis among U.S. children. *Journal of Investigative Dermatology* 2019; 139(9): 1906–1913.
18. Klink T, Rankin DA, Piya B, Spieker AJ, Faouri S, Shehabi A, Williams JV, Khuri-Bulos N, Halasa NB. Evaluating the diagnostic accuracy of the WHO Severe Acute Respiratory Infection (SARI) criteria in Middle Eastern children under two years over three respiratory seasons. *PLOS One* 2020; 15(4): e0232188.
19. Nelson LA, Spieker A, Greevy R, LeSturgeon LM, Wallston KA, Mayberry LS. User engagement among diverse adults in a 12-month text message-delivered diabetes support intervention: Results from a randomized controlled trial. *JMIR mHealth and uHealth* 2020; 8(7): e17534.
20. Gordetsky J, Spieker AJ, Rodriguez Pena MDC, Kamanda S, Anderson MR, Cheville J, Boorjian S, Frank I, Prieto Granada C, Comperat E, Hirsch MS, Iczkowski KA, Imblum B, Schwartz L, Giannico GA, Rais-Bahrami S. Squamous cell carcinoma of the bladder Is not associated with high-risk HPV. *Urology* 2020; 144: 158–163.
21. Spieker AJ, Ko E, Roy JA, Mitra N. Nested g-computation: A causal approach to analysis of censored medical costs in the presence of time-varying treatment. *Journal of the Royal Statistical Society, Series C* 2020; 69(5): 1189–1208.
22. Probst V, Datyner EK, Haddadin Z, Rankin DA, Hamdan L, Rahman HK, Spieker A, Stewart LS, Guevara C, Yepsen E, Schmitz JE, Halasa NB. Human adenovirus species in children with acute respiratory illnesses. *Journal of Clinical Virology* 2021; 134: 104716.

23. Nelson LA, Greevy R, Spieker A, Wallston KA, Elasy TA, Kripalani S, Gentry C, Bergner EM, LeSturgeon LM, Williamson SE, Mayberry LS. Effects of a tailored text messaging intervention among diverse adults with type 2 diabetes: Evidence from the 15-month REACH randomized controlled trial. *Diabetes Care* 2021; 44(1): 26–34.
24. Halasa N, Piya B, Stewart LS, Rahman H, Payne DC, Woron A, Thomas L, Constantine-Renna L, Garman K, McHenry R, Chappell J, Spieker AJ, Fonnesbeck C, Batarseh E, Hamdan L, Wikswo ME, Parashar U, Bowen MD, Vinjé J, Hall AJ, Dunn JR. The changing landscape of pediatric viral enteropathogens in the post-rotavirus vaccine era. *Clinical Infectious Diseases* 2021; 72(4): 576–585.
25. Spieker AJ, Delaney JAC, McClelland RL. Semi-parametric estimation of biomarker age trends with endogenous medication use in longitudinal data. *Observational Studies* 2021; 7(2): 127–147.
26. Spieker AJ, Illenberger N, Roy JA, Mitra N. Net benefit separation and the determination curve: A probabilistic framework for cost-effectiveness estimation. *Statistical Methods in Medical Research* 2021; 30(5): 1306–1319.
27. Howard LM, Rankin DA, Spieker AJ, Gu W, Haddadin Z, Probst V, Rahman H, McHenry R, Guevara-Pulido C, Williams JV, Faouri S, Shehabi A, Khuri-Bulos N, Halasa NB. Clinical features of parainfluenza infections among young children hospitalized for acute respiratory illness in Amman, Jordan. *BMC Infectious Diseases* 2021; 21(1): 323.
28. Haddadin Z, Schuster JE, Spieker AJ, Rahman H, Blozinski A, Stewart L, Campbell AP, Lively JY, Michaels MG, Williams JV, Boom JA, Sahni LC, Staat M, McNeal M, Selvarangan R, Harrison CJ, Weinberg GA, Szilagyi PG, Englund JA, Klein EJ, Curns AT, Rha B, Langley GE, Hall AJ, Patel MM, Halasa NB. Acute respiratory illnesses in children in the SARS-CoV-2 pandemic: Prospective multicenter study. *Pediatrics* 2021; 148(2): e2021051462.
29. Schmidt H*, Spieker AJ*, Luo T, Szymczak J, Grande D. Variability in primary care physician attitudes toward Medicaid Work Requirement exemption requests made by patients with depression. *JAMA Health Forum* 2021; 2(10): e212932.
30. Haddadin Z, Rankin DA, Lipworth L, Suh M, McHenry R, Blozinski A, George SS, Fernandez KN, Varjabedian R, Spieker AJ, Shepard DS, Halasa NB. Respiratory virus surveillance in infants across different clinical settings. *Journal of Pediatrics* 2021; 234: 164–171.
31. Wiese AD, Osmundson SS, Mitchel EM Jr., Adgent M, Phillips S, Patrick SW, Spieker AJ, Grijalva CG. The risk of serious opioid-related events associated with common opioid prescribing regimens in the postpartum period after cesarean. *American Journal of Obstetrics and Gynecology, Maternal-Fetal Medicine* 2021; 2021(3): 1–12.

32. Haddadin Z, Batarseh E, Hamdan L, Stewart LS, Piya B, Rahman H, Spieker AJ, Chappell J, Wikswo ME, Dunn JR, Payne DC, Vinjé J, Hall A, Halasa N. Characteristics of GII.4 norovirus versus other genotypes in sporadic pediatric infections in Davidson County, Tennessee, USA. *Clinical Infectious Diseases* 2021; 73(7): e1525-e1531.
33. Spieker AJ*, Gordetsky J*, Maris AS, Dehan LM, Denney JE, Arnold Egloff SA, Scarpato K, Barocas D, Giannico GA. PTEN expression and morphologic patterns in prostatic adenocarcinoma. *Histopathology* 2021; 79(6): 1061-1071.
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Commentaries and responses

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105. Spieker AJ, Dowd NP. ROC analysis for classification and prediction in practice by Christos T. Nakas, Leonidas E. Bantis, and Constantine A. Gatsonis, Chapman and Hall/CRC, 2023, ISBN: 9781482233704. To appear in *Biometrics* 2025; 81(4): ujaf106.

Manuscripts under review or pending submission

106. Rizzuto J, Amarin JZ, Polic A, Howe HL, Rahman HK, Spieker AJ, Rice TW, Halasa NB, Patel SS, Thompson JL. Comparison of severe COVID-19 in pregnant and nonpregnant women admitted to the Intensive Care Unit. Revised and resubmitted *Journal of Medical Virology*.
107. Thome JC, Rebeiro PF, Spieker AJ, Shepherd BE. Understanding difference-in-differences methods to evaluate policy effects with staggered adoption: an application to Medicaid and HIV. Undergoing revisions for *Observational Studies* ([arXiv:2402.12576](https://arxiv.org/abs/2402.12576)).
108. Thome JC, Spieker AJ, Rebeiro PF, Li C, Li T, Shepherd BE. Estimating treatment effects with a unified semi-parametric difference-in-differences approach. Pending submission to *Statistical Methods in Medical Research*.

109. Liu K, Birdrow C, Shepherd B, Mitra N, and Spieker AJ. An overview of parametric and semi-parametric g-computation approaches. Pending submission to *WIREs Computational Statistics*.

STATISTICAL SOFTWARE PACKAGES (R)

- **rigr**: Willis AD, Okonek T, Wolock CJ, Williamson BD, Emerson SS, Spieker AJ, Hee Wai TY, Hughes JP. Regression, Inference, and General Data Analysis Tools in R (previously under the title uwIntroStats). CRAN link: <https://cran.r-project.org/web/packages/rigr/index.html>.
- **endogenous**: Spieker AJ. Classical Simultaneous Equation Models. CRAN link: <https://cran.r-project.org/web/packages/endogenous/index.html>.

PRESENTATIONS

Invited workshops

1. Computing session for propensity score methods. First Causal Inference and Big Data Summer Institute: Philadelphia, PA, July 2017.
2. Computing session for propensity score and matching methods. Second Causal Inference and Big Data Summer Institute: Philadelphia, PA, June 2018.
3. Introduction to causal inference. Causal Inference and Pharmacoepidemiology Summer Institute: Piscataway, NJ, July 2019.
4. Propensity scores: Matching and inverse probability of treatment weighting. Summer Short Course on Causal Inference, University of Pennsylvania Center for Causal Inference (Virtual), June 2020.
5. Propensity scores: Matching and inverse probability of treatment weighting. Causality in Clinical Research: What, Why, When and How, University of Pennsylvania Center for Causal Inference (Virtual), December 2020.
6. Propensity score and matching methods. Vanderbilt University Medical Center, Department of Biostatistics Continuing Education Seminar Series (Virtual), January 2021.
7. Introduction to sensitivity analyses. Causal Inference Summer Institute: Philadelphia, PA, June 2024.
8. Introduction to sensitivity analyses. Penn Causal Workshop: Philadelphia, PA, May 2025.
9. Sensitivity Analysis & Bounds. Penn Causal Workshop: Philadelphia, PA, June 2026.

Invited conference presentations and panels

1. Causal approaches to cost and cost-effectiveness analysis with time-dependent treatment regimes. ENAR: Atlanta, GA, March 2018.

2. Approaches to cost-effectiveness analysis based on individual monetary benefit. ENAR: Philadelphia, PA, March 2019.
3. Population-level cost-effectiveness analysis: The individual net benefit from a causal perspective. Third International Conference on Econometrics and Statistics: Taichung, Taiwan, June 2019.
4. Comment on “Penalized Spline of Propensity Methods for Treatment by Zhou, Elliott, and Little”. JSM: Denver, CO, July 2019.
5. A second-generation cost-effectiveness acceptability curve based on the Bayesian credible interval for net monetary benefit. International Conference on Health Policy Statistics: San Diego, CA, January 2020.
6. Bounds for local average treatment effects in instrumental variable analyses of mobile interventions. ICSA Applied Statistics Symposium (Virtual): December 2020.
7. Bounding local average treatment effects under exclusion-restriction violations in mobile health interventions. Fourth International Conference on Econometrics and Statistics (Virtual): June 2021.
8. Semi-parametric estimation of biomarker age trends with endogenous medication use in longitudinal data. Fourteenth International Conference on Computational and Methodological Statistics: London, UK, December 2021.
9. Cumulative probability models and their utility in semi-parametric estimation of causal effects. Fifth International Conference on Econometrics and Statistics (Virtual): June 2022.
10. A semi-parametric g-computation approach based on cumulative probability models. JSM: Washington, DC, August 2022.
11. Semi-parametric g-computation to understand the effect of antiretroviral therapy on subsequent weight gain. Fifteenth International Conference on Computational and Methodological Statistics: London, UK, December 2022.
12. Kickstart your career: How to maximize those early years. (Panel discussion). ENAR: Nashville, TN, March 2023.
13. Longitudinal causal analysis of HIV antiretroviral therapy effects on weight gain. Sixth International Conference on Econometrics and Statistics: August 2023.
14. Causal approaches to understanding the role of engagement with modern mobile health interventions in randomized trials (Presentation in the plenary session: Causal Inference in the Trenches: Challenges and Opportunities). American Causal Inference Conference: Seattle, WA, May 2024.

15. Causal mediation analysis of engagement for randomized trials involving mobile health interventions. Seventeenth International Conference on Computational and Methodological Statistics: London, UK, December 2024.
16. Navigating Challenges and Leveraging Opportunities in Biostatistics Graduate Education. (Panel discussion). JSM: Nashville, TN, August 2025.
17. Semi-parametric confidence bands for the ROC curve based on unions of transformed elliptical regions. Eighteenth International Conference on Computational and Methodological Statistics: London, UK, December 2025.
18. Perspectives on AI to augment theoretical coursework for graduate training programs in biostatistics. ENAR: Indianapolis, IN, March 2026.

Department seminars

1. Flexible modeling of biomarker associations in the presence of endogenous treatment. Collaborative Health Studies Coordinating Center. Seattle, WA, March 2015.
2. Extending Heckman's treatment effects model to allow heterogeneity in the effects of medication use. FDA Center for Drug Evaluation and Research. White Oak, MD, September 2015.
3. Understanding natural history in the presence of endogenous medication use. Weill Cornell Medical College Division of Biostatistics and Epidemiology. New York, NY, January 2016.
4. Accounting for endogenous medication use when estimating natural biomarker associations using observational data. Stanford Medicine Quantitative Sciences Unit. Palo Alto, CA, March 2016.
5. Recovering natural history: Modeling biomarker age trends in the presence of endogenous medication use. University of Pennsylvania Division of Biostatistics. Philadelphia, PA, October 2016.
6. The nested g-formula: A causal approach to analysis of medical cost data in the presence of censoring. University of Washington, Collaborative Health Studies Coordinating Center. Seattle, WA, May 2017.
7. Analyzing medical cost outcomes with time-dependent treatment. New York University Department of Population Health. New York, NY, October 2017.
8. The nested g-formula: A causal approach for analyzing medical cost outcomes. New York University Division of Biostatistics. New York, NY, January 2018.
9. The nested g-formula: A causal approach for analyzing medical cost outcomes. University of Pennsylvania Division of Biostatistics. Philadelphia, PA, January 2018.

10. The nested g-formula: A causal approach for analyzing medical cost outcomes. University of British Columbia Department of Statistics. Vancouver, BC, January 2018.
11. Analyzing medical cost outcomes with time-dependent treatment. British Columbia Children's Hospital Research Institute. Vancouver, BC, January 2018.
12. The nested g-formula: A causal approach for analyzing medical cost outcomes. University of Utah Department of Population Health. Salt Lake City, UT, February 2018.
13. Analyzing medical cost outcomes with time-dependent treatment. Huntsman Cancer Institute. Salt Lake City, UT, February 2018.
14. Analyzing medical cost outcomes with time-dependent treatment. University of Massachusetts Amherst Department of Biostatistics. Amherst, MA, February 2018.
15. The nested g-formula: A causal approach for analyzing medical cost outcomes. Vanderbilt University Department of Biostatistics Seminar. Nashville, TN, February 2018.
16. Analyzing cost outcomes with time-varying treatment: Guidance for resource allocation and health policy decisions. Drexel University Biostatistics Seminar. Philadelphia, PA, February 2018.
17. Analyzing cost outcomes with time-varying treatment: Guidance for resource allocation and health policy decisions. State University of New York at Albany Epidemiology and Biostatistics Seminar. Albany, NY, February 2018.
18. Using observational data to aggregate evidence of clinical efficacy with information on medical costs. Vanderbilt University Medical Center Department of Biomedical Informatics. Nashville, TN, February 2019.
19. Bounding local average treatment effects in studies of engagement with mobile interventions. University of Québec at Montréal (Virtual), September 2020.
20. Bounding local average treatment effects in studies of engagement with mobile interventions. University of Pennsylvania Center for Causal Inference (Virtual), October 2020.
21. Bounding local average treatment effects in studies of engagement with mobile interventions. Fox Chase Cancer Center (Virtual), January 2021.
22. Bounding local average treatment effects in studies of engagement with mobile interventions. Vanderbilt University Medical Center Department of Biostatistics (Virtual), January 2021.
23. Bounding local average treatment effects in studies of engagement with mobile interventions. University of California at Davis (Virtual), March 2021.

24. Methods to evaluate the role of engagement with mobile interventions. University of Louisville (Virtual), September 2021.
25. Methods to evaluate the role of engagement with mobile interventions. University of Colorado (Virtual), October 2021.
26. Causal strategies to identify the role of engagement in mobile health interventions. Boston University, December 2024.
27. Causal strategies to identify the role of engagement in mobile health interventions. Drexel University, December 2024.

Contributed conference presentations

1. (Oral) A comparison of methods for biomarker associations with endogenous treatment. ENAR: Baltimore, MD, March 2014.
2. (Oral) Extending Heckman's treatment effects model to allow for treatment heterogeneity. WNAR: Boise, ID, June 2015. (WNAR Most Outstanding Oral Presentation Award; WNAR Most Outstanding Paper Award).
3. (Oral) Extending Heckman's treatment effects model to non-additive treatment effects. Joint Statistical Meetings: Seattle, WA, August 2015.
4. (Oral) Accounting for heterogeneity when evaluating surrogate endpoints in a discrete-time survival model. ENAR: Austin, TX, March 2016.
5. (Oral) A constrained covariance modeling approach for estimation of marginal age trends in the presence of endogenous medication use. ENAR: Washington, D.C., March 2017.
6. (Poster) A nested g-computation approach for analysis of censored medical cost data. Atlantic Causal Inference Conference: Chapel Hill, NC, May 2017. (Thomas R. Ten Have Poster Session Runner-up).
7. (Oral) A nested g-computation approach to analyze medical cost outcomes in the presence of censoring. WNAR: Santa Fe, NM, June 2017.
8. (Oral) A new direction for health policy decisions based on subgroup discovery: The cost-effectiveness determination curve. Joint Statistical Meetings: Vancouver, BC, August 2018.
9. (Oral) Bounding local average treatment effects in studies of engagement with mobile interventions. ENAR (Virtual), March 2021.
10. (Oral) Statistical methods to understand the role of engagement in studies of mobile health interventions. JSM (Virtual), August 2021.

11. (Oral) Modeling considerations for semi-continuous dose-response relationships in pharmacoepidemiologic studies. ENAR: Houston, TX, March 2022.
12. (Poster) Semi-parametric g-computation for longitudinal analysis of antiretroviral therapy. ACIC: Austin, TX, May 2023.
13. (Oral) Analytic methods for elucidating continuous dose-response associations in the presence of spike-effects: Avoiding the illusion of a safe dose. ICPE: Copenhagen, Denmark, August 2022.
14. (Oral) Longitudinal analysis of HIV antiretroviral therapy effects on weight gain. (Topic-contributed paper session). JSM: Toronto, Ontario, CA, August 2023.
15. The qualifying examination as one piece (but not the whole) of the puzzle: Suggestions regarding thoughtful exam development. (Topic-contributed paper session). JSM: Boston, MA, August 2026.