Lily Koffman

Biostatistics PhD Candidate · Johns Hopkins Bloomberg School of Public Health

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Education

Johns Hopkins Bloomberg School of Public Health *Baltimore, MD*

PhD Candidate in Biostatistics *2021 - present*

- Advisors: Dr. Ciprian Crainiceanu and Dr. John Muschelli
- Dissertation defense: March 24, 2026
- Dissertation topic: Statistical Methods for Digital Fingerprinting and Health Prediction Using High-Resolution Accelerometry Data

Harvard TH Chan School of Public Health *Boston, MA*

MS Biostatistics *2019-2021*

- Research advisor: Dr. Sebastien Haneuse

Harvard University *Cambridge, MA*

AB Statistics *2015-2019*

- Thesis research advisor: Kevin Rader

Publications

Published & Peer Reviewed

Goeddel, L., Hernandez, M., **Koffman, L.**, et al. 2025. Assessment of Renal Vein Flow Index by Transesophageal Echocardiography: Precision, Variability, and Association with Cardiac Index During Cardiac Surgery. Journal of Cardiothoracic and Vascular Anesthesia

Goeddel, L., Hernandez, M., **Koffman, L.**, et al. 2025. Fine-Mapping the Association of Acute Kidney Injury with Mean Arterial and Central Venous Pressures during Coronary Artery Bypass Surgery. Anesthesia & Analgesia

Gao, S., Zhou, X., **Koffman, L.** et al. 2025. Comparing step counting algorithms for high-resolution wrist accelerometry data in older adults in the ARIC study. The Journals of Gerontology: Series A.

Koffman, L., Crainiceanu, C.M., Muschelli, J. 2024. Comparing Step Counting Algorithms for High-Resolution Wrist Accelerometry Data in NHANES 2011-2014. Medicine & Science in Sport & Exercise.

Goeddel, L., Hernandez, M., **Koffman, L.** et al. 2024. Assessment of Renal Vein Stasis Index by Transesophageal Echocardiography During Cardiac Surgery: A Feasibility Study. Anesthesia & Analgesia.

Goeddel, L., **Koffman, L.**, Hernandez, M. et al. 2024. Occurrence of Low Cardiac Index During Normotensive Periods in Cardiac Surgery: A Prospective Cohort Study Using Continuous Noninvasive Cardiac Output Monitoring. Anesthesia & Analgesia.

Koffman, L., Muschelli, J. 2024. Evaluating Step Counting Algorithms on Subsecond Wrist-Worn Accelerometry: A Comparison Using Publicly Available Data Sets. Journal for the Measurement of Physical Behaviour.

Koffman, L., Crainiceanu, C.M., Leroux, A. 2024. Walking fingerprinting. Journal of the Royal Statistical Society Series C: Applied Statistics.

Koffman, L., Crainiceanu, C.M., Roemmich, R.T., French, M.A. 2023. Identifying Unique Subgroups of Individuals With Stroke Using Heart Rate and Steps to Characterize Physical Activity. Journal of the American Heart Association.

Lin J. J. Y., **Koffman, L.**, Tehrani, M. W., et al. 2023. Reliability of low mass toenail samples as biomarkers of chronic metal exposure. Journal of Exposure Science and Environmental Epidemiology.

Koffman, L., Zhang, Y., Harezlak, J., Crainiceanu, C.M., Leroux, A. 2023. Fingerprinting walking using wrist-worn accelerometers. Gait & Posture.

Koffman, L., Levis, A.W., Haneuse, S. et al. 2021. Evaluation of Intensive Telephonic Nutritional and Lifestyle Counseling to Enhance Outcomes of Bariatric Surgery. Obesity Surgery.

Koffman, L., Levis, A.W., Arterburn, D. et al 2021. Investigating Bias from Missing Data in an Electronic Health Records-Based Study of Weight Loss After Bariatric Surgery. Obesity Surgery.

Under review

Koffman, L., Muschelli, J, Crainiceanu, C.M. 2025. Walking Fingerprinting Using Wrist Accelerometry During Activities of Daily Living in NHANES. *Invited to resubmit at* Annals of Applied Statistics `arXiv:2506.17160`

Koffman, L., Gao, S., Zhou, X., Leroux, A., Crainiceanu, C.M, Muschelli, J. Function on Scalar Regression with Complex Survey Designs. `https://arxiv.org/abs/2511.05487`

Goeddel, L. **Koffman, L.***, Zhou, X. et al. 2025. Low Cardiac Output During Periods of Hypotension and Risk of Acute Kidney Injury in Cardiac Surgery. *Submitted to* JAMA Surgery. * denotes co-first author

Koffman, L., Gao, S., Muschelli, J, Crainiceanu, C.M. Survey-Weighted Function on Scalar Regression.

* denotes co-first author

Talks and Posters

Contributed Posters

Koffman, L., Adamowicz, L., Moustridi, E. et al. 2025. Comparing Literature Algorithms to Derive Physical Activity Endpoints from a Wrist Accelerometer. Poster: IEEE BSN, Los Angeles, CA.

Koffman, L., Muschelli, J., Crainiceanu, C. 2025. Fingerprinting walking in a large epidemiological study. Poster: ENAR, New Orleans, LA.

Koffman, L., Crainiceanu, C., Roemmich, R., French, M.A. 2023. Identifying Unique Subgroups of Individuals Post-Stroke Using Heart Rate and Steps to Characterize Physical Activity. Poster: APTA-CSM, San Diego, CA.

Balasubramanian, A., French, M., **Koffman, L.**, et al. 2023. Classifying Physical Conditioning Using Remote Monitoring in Chronic Obstructive Pulmonary Disease. Poster. American Thoracic Society International Conference, Washington D.C.

Talks

Walking Fingerprinting in a large epidemiological study. Building Future Faculty Workshop, NC State University, April 10, 2025* and Functional Data Working Group at Emory (FUDGE), April 15, 2025*

NHANES Accelerometry and Derivatives. BIRS: Emerging Statistical Methods for Digital Health Data, February 2025

Walking Fingerprinting. ENAR 2024 Spring Meeting

Application of Open-Source Step Counting Algorithms on Publicly-Available Data. Pre-ENAR Workshop: Statistical Methods for Digital Health Technologies Data, March 2024

A nonrandom sample of medical statistics. MedStar Health General Surgery Baltimore Grand Rounds, March 2024*

Livin' On the Edge: U.S. Ski & Snowboard's Competitive Edge via Analytics. Panelist: Comcast Sports Tech Webinar, Dec 2020*

*denotes invited talk

Professional Experience

Pfizer *Cambridge, MA*

Statistics Intern *Summer 2024*

- AI/ML Quantitative and Digital Sciences Team
- Mentor: Nunzio Camerlingo
- Analysis of treatment effects using data collected from wearable digital health technologies

US Ski and Snowboard *Park City, UT*

Data & Analytics Intern with Gus Kaeding *2019-2020*

- Prediction of alpine skiing performance from training data (article)
- Modeling of medal probabilities to inform funding decisions and team naming criteria
- Analysis of female participation in the American Birkebeiner
- Creation of app to visualize force plate output

Awards and Fellowships

2025 **Joseph Zeger Travel Award**, Johns Hopkins Bloomberg Department of Biostatistics

2019-2021 **Presidential Scholar**, Harvard TH Chan School of Public Health

2020 **WiST Fellowship**, Women in Sports Technology

Teaching Experience

2025-26 **Statistical Methods in Public Health**, Lead Teaching Assistant

2023-24 **Statistical Methods in Public Health**, Lead Teaching Assistant

Spring 2023 **Statistical Methods in Public Health**, Lead Teaching Assistant

Fall 2022 **Statistical Methods in Public Health**, Teaching Assistant

Lead Teaching Assistant • Competitive, appointed role involving leading multiple weekly lab sessions and overseeing course TA team.

Leadership

2023-2025 **Wearable and Implantable Technology (WIT) Research Group**, Organizer

2025 **JHU Biostatistics Writing Accountability Group (WAG)**, Founder & Organizer

2025 **Mobile and Wearable Data Science ASA Interest Group**, Communications Officer

2019 **Harvard University Division I Nordic Ski Team**, Captain