JUNRUI DI

615 N. Wolfe Street E3039, Baltimore, MD 21205
410-955-4394 ⋄ jdi2@jhu.edu ⋄ www.junruidi.com

STATISTICAL METHODS RESEARCH INTERESTS

feature engineering from accelerometry signals, matrix and tensor decompositions, dimension reduction, functional data analysis, integration of multiple modalities.

SCIENTIFIC RESEARCH INTERESTS

wearable devices and their applications in public health (e.g. mental health and aging), physical activity assessment, sleep, circadian rhythmicity.

EDUCATION

Johns Hopkins Bloomberg School of Public Health Expected: *May 2019*
Ph.D. in Biostatistics

Advisor: Vadim Zipunnikov, Ph.D.

Georgetown University *Dec 2013*
M.S. in Biostatistics

Thesis: *Robust Integrative Analysis of Multi-Block Contaminated Datasets*

Advisor: Valeriy Korostyshevskiy, Ph.D.

University of California, Berkeley *May 2012*
B.A. in Applied Mathematics

High Distinction General Scholarship (roughly equivalent to Magna Cum Laude)

EXPERIENCE

Research Assistant *Jun 2015 - Present*
Johns Hopkins Bloomberg School of Public Health *Baltimore, MD*

Advisor: Vadim Zipunnikov, Ph.D.

Research Assistant *May 2013 - Apr 2014*
Georgetown University, Medicine *Washington, DC*

Advisor: Michael Plankey, Ph.D.

Research Assistant *Sep 2012 - May 2013*
Georgetown University, Biostatistics *Washington, DC*

Advisor: George Luta, Ph.D. and Valeriy Korostyshevskiy, Ph.D.

PUBLICATIONS

Published / In Press

1. Schmidt, A., Bosse, M., Frey, K., **Di, J.**, OToole, R., Stinner, D., Westberg, G., Scharfstein, D., Zipunnikov, V., MacKenzie, E., and METRC. Is continuous near-infrared spectroscopy a reliable method to monitor development of acute compartment syndrome in patients with lower leg injuries? Accepted by *The Journal of Bone & Joint Surgery.* 2018.

2. Grigsby, M., **Di, J.**, Leroux, A., Xiao, L., Zipunnikov, V., Crainiceanu, C., and Checkley, W.. Novel metrics for growth model selection. *Emerging Themes in Epidemiology*. 2018; 15(1): 4.

3. Urbanek, J., Spira, A., **Di, J.**, Leroux, A., Crainiceanu, C., and Zipunnikov, V.. Epidemiology of objectively measured bedtime and chronotype in US adolescents and adults: NHANES 2003-2006. *Chronobiology International*. 2018; 35(3): 416-434.

4. Varma, V., Dey D., Leroux A., **Di, J.**, Urbanek, J., Xiao, L., and Zipunnikov, V.. Total volume of physical activity: TAC, TLAC or TAC(λ). *Preventive Medicine*. 2018; 106: 233-235.

5. Varma, V., Dey D., Leroux A., **Di, J.**, Urbanek, J., Xiao, L., and Zipunnikov, V.. Re-evaluating the effect of age on physical activity over the lifespan. *Preventive Medicine*. 2017; 101: 102-108.

6. **Di, J.**, Li, Y., Friedman, MR., Reddy, S., Surkan, PJ., Shoptaw, S., and Plankey, M.. Determining survey satisficing of online longitudinal survey data in the Multicenter AIDS Cohort Study using a Group-Based Trajectory Analysis. *Journal of Medical Internet Research Public Health and Surveillance*. 2016; 2(2): e150.

Preprints

7. **Di, J.**, Leroux, A., Urbanek, J., R., Varadhan, Spira, A., Schrack, J., and Zipunnikov, V.. Patterns of sedentary and active time accumulation are associated with mortality in US adults: The NHANES study. *bioRxiv: 182337*. (Under review *PLoS ONE*).

Under Review / Revision

8. Zipunnikov, V., Dey, D., Leroux, A., **Di, J.**, Urbanek, J., Harris, T., and Crainiceanu, C.. Objectively measured late-morning physical activity predicts mortality in the NHANES 2003-2006 cohorts. Resubmitted to *PLoS ONE* after revision.

9. Johns, J., **Di, J.**, Merikangas, K., Cui, L., Swendsen, J., and Zipunnikov, V.. Fragmentation as a novel measure of stability in normalized trajectories of mood and attention assessed by electronic diaries. Under review *Physiological Measurement*.

10. **Di, J.**, Spira, A., Bai, J., Urbanek, J., Leroux, A., Wu, M., Resnick, S., Simonsick, E., Ferrucci, L., Schrack, J., and Zipunnikov, V.. Joint and individual representation of domains of physical activity, sleep, and circadian rhythmicity. Under review *Statistics in Biosciences*.

11. Leroux, A., **Di, J.**, Smirnova, E., Mcguffey, E., Cao, Q., Bayatmokhtari, E., Tabacu, L., Zipunnikov, V., Urbanek, J., Crainiceanu, C.. Organizing and analyzing the activity data in NHANES. Under review *Statistics in Biosciences*.

In Preparation

12. Capturing enhanced information with higher-order tensorian statistics and predicting mortality from accelerometry-measured physical activity.

SOFTWARES

1. **actigraphy** (R package). Feature extraction from minute level actigraphy/accelerometry data.

   https://github.com/junruidi/actigraphy.

PRESENTATIONS

1. Integrative Analysis of Multi-Block Contaminated Datasets (topicl contributed). *2013 JSM, Montreal, Canada*

2. Fragmentation of Physical Activity and Its Application (poster). *2016 Baltimore Aging Showcases, Baltimore, MD*
3. Novel Statistical Framework to Quantify Fragmentation of Physical Activity (contributed). *2017 ENAR, Washington, DC.*
4. Fragmentation of Physical Activity and Its Application (oral). *2017 ICAMPAM, Bethesda, MD.*
5. Fragmentation of Daily Physical Activity: Prediction of Mortality in NHANES 2003-2006 (oral). *2017 IAGG, San Francisco, CA.*
6. Analysis of Tensor Cumulants and Its Application to NHANES (contributed). *2018 ENAR, Atlanta, GA*

EDITORIAL ACTIVITIES

Referee for:

Journal of Statistical Software (JSS) [1]

International Association of Gerontology and Geriatrics 2017 World Congress (IAGG) [1]

Journal of Medical Internet Research Cardio (JMIR Cardio) [1]

Journal of Medical Internet Research Mental Health (JMIR Mental Health) [1]

Journal of Medical Internet Research mHealth and uHealth (JMIR mHealth and uHealth) [1]

Interactive Journal of Medical Research [1]

PROFESSIONAL ACTIVITIES

Session chair, JSM 2018

Session chair, JSM 2017

Organizer of the JHSPH Biostatistics Computing Club 2015 - 2016

HONORS & AWARDS

The June B. Culley Award *Dec 2017*

This award honors outstanding achievement by a Biostatistics student on his or her schoolwide examination paper.

The Louis I. and Thomas D. Dublin Award *Mar 2017*

This award, which is for the Advancement of Epidemiology and Biostatistics, supports those students whose research focuses on the effective use of statistical reasoning and methods in epidemiology.

Washington Statistical Society Outstanding Graduate Student Award *Jun 2013*

This award is presented by the Washington Statistical Society to the outstanding full-time graduate student of statistics/biostatistics at each university in the Washington metropolitan area with a graduate statistics/biostatistics program.

Phi Beta Kappa Honor Society Inductee *May 2012*

Phi Beta Kappa Honor Society

TEACHING EXPERIENCE

PH.140.623 - **Lab Instructor** Statistical Methods in Public Health III *Spring 2018*

PH.140.621 - **Lab Instructor** Statistical Methods in Public Health I *Fall 2017*

PH.140.623-4 - **TA** Statistical Methods in Public Health III-IV *Spring 2017*

PH.140.621-2 - **TA** Statistical Methods in Public Health I-II *Fall 2016*

PH.140.753-4 - **TA** Advanced Methods in Biostatistics III-IV *Spring 2016*

PH.140.751-2 - **TA** Advanced Methods in Biostatistics I-II *Fall 2015*

BIST 514 - **TA** Linear Modeling & Multivariate Analysis *Spring 2014*

PROFESSIONAL MEMBERSHIP

Americal Statistical Association (ASA)

Washington Statistical Society (WSS)

International Biometric Society (ENAR)

CERTIFICATIONS

SAS Certified Advanced Programmer for SAS 9 *Aug 2013*

SAS Certified Base Programmer for SAS 9 *Jul 2013*

COMPUTING SKILLS

Proficient: R, SAS

Experienced: Matlab, MySQL, and Python