

Research Interests

Effect sizes; study replicability; robust statistics; neuroimaging; longitudinal data analysis; Alzheimer's disease; behavioral sciences; psychiatry; health equity.

Education

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| 2019 – present | Ph.D. program in Biostatistics
Vanderbilt University, Nashville, TN <ul style="list-style-type: none">Expected to graduate in May 2024Advisor: Simon Vandekar, Ph.D. |
| 2017 – 2019 | M.S. in Biostatistics
Georgetown University, Washington, D.C. |
| 2013 – 2017 | B.S. in Applied Statistics
Southern Medical University, Guangzhou, China |

Honors and Awards

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| 2023 | Student Paper Award, the 36 th New England Statistics Symposium (NESS) |
| 2023 | Best Blitz Talk Award, 4 th Annual Vanderbilt Alzheimer's Disease Research Day |

Presentations

Invited Talks

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| 2024 | July | Study features that improve effect sizes in longitudinal brain-wide association studies. <ul style="list-style-type: none"><i>Organization for Human Brain Mapping (OHBM) Annual Meeting, Seoul, Korea</i> |
| 2023 | Jun | Double-anchoring events based sigmoidal mixed-effects model for Alzheimer's disease progression. <ul style="list-style-type: none"><i>36th New England Statistics Symposium (NESS), Boston, MA</i>Student Paper Competition Session & 2023 NESS Student Paper Award |
| 2023 | May | Study features contributing to replicable brain-wide association studies. <ul style="list-style-type: none"><i>Statistical Methods in Imaging (SMI) Conference, Minneapolis, MN.</i> |
| 2023 | Mar | Double-anchoring events based sigmoidal mixed-effects model: an application in Alzheimer's disease progression. <ul style="list-style-type: none"><i>The 4th Annual Vanderbilt Alzheimer's Disease Research Day, Nashville, TN</i>Invited Blitz Talk & Best Blitz Talk Award of the Year |
| 2022 | Dec | A unifying framework for the analysis of effect sizes in cross-sectional and longitudinal studies. <ul style="list-style-type: none"><i>Computational and Methodological Statistics (CMStatistics) Conference, London, UK</i> |

Contributed Talks

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| 2023 | Aug | Study Features Impacting Replicability of Brain-wide Association Studies |
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- *Joint Statistical Meetings (JSM), Toronto, Canada*
- 2023 Mar A unifying framework for the analysis of effect sizes in cross-sectional and longitudinal studies
- *ENAR Spring Meeting, Nashville, TN*
- 2022 Mar Accurate Confidence Interval Estimation for Non-centrality Parameters and Effect Sizes.
- *ENAR Spring Meeting, Houston, TX*

Poster Presentations

- 2023 July Study features contributing to replicable brain-wide association studies.
- *Organization for Human Brain Mapping (OHBM) Annual Meeting, Montreal, Canada.*
- 2023 Mar Double-anchoring events based sigmoidal mixed-effects model: an application in Alzheimer's disease progression.
- *The 4th Annual Vanderbilt Alzheimer's Disease Research Day, Nashville, TN*
- 2022 Aug A Framework of the Analysis of Effect Sizes (ANOES).
- *Joint Statistical Meetings (JSM), Washington, D.C.*
- 2022 Aug Synchronized sigmoidal mixed-effects model for dynamics of cognitive decline relative to onset of Alzheimer's disease in aging adults in the Alzheimer's Disease Neuroimaging Initiative (ADNI) study. ([Link](#))
- *Alzheimer's Association International Conference (AAIC), San Diego, CA*
- 2022 May A Framework of the Analysis of Effect Sizes (ANOES).
- *Statistical Methods in Imaging (SMI) Conference, Nashville, TN*
- 2022 Apr Using Analysis of Effect Sizes (ANOES) to Study Relational Memory in Schizophrenia and Early Psychosis. ([Link](#))
- *Society of Biological Psychiatry (SOBP) Annual Meeting, New Orleans, LA.*

Other

- 2023 Mar A unifying framework for the analysis of effect sizes in cross-sectional and longitudinal studies
- *Vanderbilt Biostatistics Graduate Student Association Journal Club*
- 2018 Aug An Alzheimer's disease progression model for a cognitive composite score based on ADNI data.
- *Department of Statistics & Decision Sciences, Janssen Research & Development*

Peer-reviewed Publications & Working Papers, Pre-prints

†: corresponding author; *: co-first author

- [1] Chao Yan*, Xinmeng Zhang*, Yuyang Yang*, **Kaidi Kang**, Martin C Were, Peter Embí, Mayur B Patel, Bradley A Malin†, Abel N Kho†, You Chen. Differences in Health Professionals' Engagement with Electronic Health Records Based on Inpatient Race and Ethnicity. *JAMA Network Open* (2023)
- [2] Mirte A G Kuipers, **Kaidi Kang**, Anca D Dragomir, Karin Monshouwer, Elisa Benedetti, Gabriele Lombardi, George Luta, Anton E Kunst†. A Novel Methodological Approach to Measure Linear Trends in Health Inequalities: Proof-Of-Concept for Adolescent Smoking in Europe. *American Journal of Epidemiology* (2023).
- [3] **Kaidi Kang**†, Megan T Jones, Kristan Armstrong, Suzanne Avery, Maureen McHugo, Stephan Heckers, Simon Vandekar†. Accurate Confidence and Bayesian Interval Estimation for Non-centrality Parameters and Effect Size Indices. *Psychometrika* (2023).
- [4] **Kaidi Kang**†, Jakob Seidlitz, Richard A.I. Bethlehem, Jiangmei Xiong, Megan T. Jones, Kahini Pankaj Mehta, Arielle Keller, Ran Tao, Anita Randolph, Bart Larsen, Brenden Tervo-Clemmens, Eric J Feczko, Oscar Miranda Dominguez, Steve Nelson, Lifespan Brain Chart Consortium, 3R-BRAIN, AIBL, Alzheimer's Disease Neuroimaging Initiative, Alzheimer's Disease Repository Without Borders Investigators, CALM Team, CCNP, COBRE, cVEDA, Harvard Aging Brain Study, IMAGEN, POND, The PREVENT-AD Research Group, Jonathan Schildcrout, Damien Fair, Theodore D Satterthwaite, Aaron Alexander-Bloch, Simon Vandekar†. Study features that improve effect sizes in cross-sectional and longitudinal brain-wide association studies. (Under second review; [pre-print](#))
- [5] Anna Huang, **Kaidi Kang**, Simon Vandekar, Baxter P. Rogers, Stephan Heckers, Neil D. Woodward†. Lifespan development of thalamic nuclei and characterizing thalamic nuclei abnormalities in psychotic disorders using normative modeling. (Under revision).
- [6] Megan Jones, **Kaidi Kang**, Simon Vandekar†. RESI: An R Package for Robust Effect Sizes. *Journal of Statistical Software* (Under revision; [pre-print](#)).
- [7] Xinmeng Zhang, **Kaidi Kang**, Chao Yan, Yubo Feng, Simon Vandekar, Danxia Yu, S. Trent Rosenbloom, Jason Samuels, Gitanjali Srivastava, Brandon Williams, Vance L. Albaugh, Wayne J. English, Charles R. Flynn, You Chen†. Enhanced Patient Portal Engagement Associated with Improved Weight Loss Outcomes in Post-Bariatric Surgery Patients. (Under review)
- [8] Simon N. Vandekar, **Kaidi Kang**, Neil Woodward, Anna Huang, Maureen McHugo, Shawn Garbett, Jeremy Stephens, Russell T. Shinohara, Armin Schwartzman, and Jeffrey Blume. Evaluation of resampling-based inference for topological features of neuroimages. (In preparation; [pre-print](#)).
- [9] Liu, J., Xu, K., Nguyen, T., Ferguson, J., **Kang, K.**, Yao, L., Wang, Y., Vandekar, S., Zhang, X., & Tu, X. M.. Edger: An Ensembled Distance-Based Generalized Estimation for Repeated Measures of Longitudinal Microbiome Beta-Diversity with Missing Data. (In preparation)
- [10] **Kaidi Kang***, Panpan Zhang*, Shubhabrata Mukherjee, Michael L. Lee, Seo-Eun Choi, Emily H. Trittschuh, Jesse Mez, Katherine A. Gifford, Rachel F. Buckley, Xiaoting Gao, Jianing Di, Paul K.

Crane, Timothy J. Hohman and Dandan Liu[†]. Double anchoring events-based sigmoidal mixed model for longitudinal memory decline in Alzheimer’s disease. (In preparation; [pre-print](#))

- **2023 NESS Student Paper Award**
- **Best Blitz Talk Award**, the 4th Annual Vanderbilt Alzheimer’s Disease Research Day

Professional Experience

2023 Summer	Biostatistics Intern Sanofi <ul style="list-style-type: none">• Power analysis for longitudinal data• Advisors: Qi Zhang, Ph.D. & Yuanyuan Duan, Ph.D.
Aug. 2021 – present	Independent Project Vanderbilt University Medical Center <ul style="list-style-type: none">• Developed an Alzheimer’s disease (AD) progression model to characterize the overall trajectory of AD biomarkers using fragmentary data commonly seen from AD studies.• Advisor: Dandan Liu, Ph.D.
Dec. 2020 – present	Research Assistant Vanderbilt University Medical Center <ul style="list-style-type: none">• Development of a robust effect size reporting framework to facilitate the result communication between scientific studies using different statistical methods and designs.• Advisor: Simon Vandekar, Ph.D.
2018 Summer	Biostatistics Intern Janssen Research & Development, Johnson & Johnson Inc. <ul style="list-style-type: none">• An Alzheimer’s disease progression model based on Alzheimer’s Disease Neuroimaging Initiative (ADNI) database• Advisors: Grace Gao, Ph.D. & Jianing Di, Ph.D.
Jan. 2018 – Dec. 2019	Master research practicum Department of Biostatistics, Georgetown University <ul style="list-style-type: none">• Evaluating the accuracy of natural language processing without a golden standard• Advisor: Ao Yuan, Ph.D.
Jan. 2018 – Jun. 2018	Graduate Research Assistant Georgetown University Medical Center <ul style="list-style-type: none">• Advisor: George Luta, Ph.D.

Teaching

Vanderbilt University, Nashville, TN

Spring 2023	BIOS 7352: Statistical Collaboration in Health Sciences II
Fall 2022	BIOS 7345: Generalized Linear Regression
Fall 2021	BIOS 7323: Survival Analysis
Spring 2021	BIOS 6321: Clinical Trials and Experimental Designs

Georgetown University, Washington, D.C.

Fall 2018	PBIO 504: Introductory Biostatistics
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Software

[RESI](#) R package for the implementation of the robust effect size index (RESI)

Service & Peer Review

Session chair at

- 2023 ENAR Spring Meeting
- 2023 Joint Statistical Meetings (JSM)

Abstract reviewer for

- OHBM 2024

Peer reviewer for the following journals:

- *Human Brain Mapping* (2023)
- *Communications Biology* (2023)

Memberships in Professional & Scientific Societies

2019 – Present	Eastern North American Region (ENAR) of the International Biometric Society (IBS)
2020 – Present	American Statistical Association
2022 – Present	Alzheimer's Association (ISTAART)
2023 – Present	International Chinese Statistical Association (ICSA)
2023 – Present	Organization for Human Brain Mapping (OHBM)

Skills

Statistical Software: R, R Shiny, SAS, Stata, SPSS

Athletic Activities: Kendo

- Rank: Black belt (1-Dan)
- Member of All US Kendo Federation since 2019
- Co-founder of Vanderbilt University Kendo Club

Honors:

- 2022 Kanto-sho (best fighting spirit) award at Southeastern US Kendo tournament
- 2023 Top 8 at Detroit Open Kendo Tournament 2023
 - In mudansha (people below black belt) individual division
- 2023 3rd place at 2023 All US National Kendo Championships
 - Representing Southeast US Mudansha Team
- 2023 3rd place at Midwest Kendo Tournament 2023
 - In mudansha individual division

References

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[Aaron Alexander-Bloch](#), M.D., Ph.D.

- Department of Child and Adolescent Psychiatry and Behavioral Sciences, The Children's Hospital of Philadelphia
- Department of Psychiatry, University of Pennsylvania
- Lifespan Brain Institute of The Children's Hospital of Philadelphia and Penn Medicine
- Email: aaron.alexander-bloch@pennmedicine.upenn.edu

[Dandan Liu](#), Ph.D.

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