

Joshua Lukemire

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EDUCATION

Ph.D. in Biostatistics Emory University, Atlanta	May 2021
M.S. in Biostatistics Emory University, Atlanta	December 2018
B.S. in Statistics University of Georgia, Athens	May 2015
B.S. in Psychology University of Georgia, Athens	May 2015

EXPERIENCE

- (2023-Pres.)** Research Assistant Professor. Department of Biostatistics and Bioinformatics, Emory University.
- (2021-2023)** Post-doctoral Fellow. Emory University.
- (2020-2021)** Graduate Research Assistant. Near-Infrared Spectroscopy Study. Emory University.
- (2016-2021)** Graduate Research Assistant. Hierarchical Independent Component Analysis Method Development. Emory University.
- (2013-2015)** Undergraduate Research Assistant. Primate Cognition and Behaviour Laboratory. University of Georgia.
- (2013-2015)** Undergraduate Research Assistant. Clinical Neuroscience Laboratory. University of Georgia.

PUBLICATIONS

Peer-Reviewed Articles

- Kundu, S., and **Lukemire, J.** (2022+). Non-parametric Bayesian Vector Autoregression using Multi-subject Data. *Journal of Machine Learning Research*, under review.
- Lukemire, J.**, Pagnoni, G., and Guo, Y. (2023). Sparse Bayesian Modeling of Hierarchical Independent Component Analysis: Reliable Estimation of Individual Differences in Brain Networks. *Biometrics*. **A previous version of this paper was awarded runner-up in the 2021 ASA Statistics in Imaging Section Student Paper Competition.**
- Kan, X., Cui, H., **Lukemire, J.**, Guo, Y. and Yang, C. (2022). FBNETGEN: Task-aware GNN-based fMRI analysis via functional brain network generation. *Proceedings of the International Conference on Medical Imaging with Deep Learning (MIDL)*. Selected for oral presentation.
- Cui, H., Dai, W., Zhu, Y., Kan, X., Aodong, A., Gu, C., **Lukemire, J.**, Zhan, L., He, L., Guo, Y., and Yang, C. (2022). BrainGB: A Benchmark for Brain Network Analysis with Graph Neural Networks. *IEEE Transactions on Medical Imaging*.
- Lukemire, J.**, Mandal, A., and Wong, W. K. (2022). Optimal Experimental Designs for Ordinal Models with Mixed Factors for Industrial and Healthcare Applications. *Journal of Quality Technology*, 54(2), 184-196.

6. Patel, R., **Lukemire, J.**, Shenvi, N., Arthur, C., Stowell, S., Sola-Visner, M., Easley, K., Roback, J., Guo, Y., and Josephson, C. (2021). Association of Blood Donor Sex and Age with Outcomes in Transfused Very Low Birth Weight Infants. *JAMA Network Open*, 4(9), e2123942. **Featured in Transfusion News – Global Advances, Trends, and Current Events.**
7. Fragaszy, D., **Lukemire, J.**, Reynoso–Cruz, E., Villarreal, S., Sheheane, S., Heaton, A., Quinones, M., and Mangalam, M. (2021). How Tufted Capuchin Monkeys (*Sapajus* spp.) and Humans (*Homo sapiens*) Handle a Jointed Tool. *Journal of Comparative Psychology*, 135(3), 382–393.
8. Woodbury, A., Krishnamurthy, V., Gebre, M., Napadow, V., Bicknese, C., Liu, M., **Lukemire, J.**, Kalangara, J., Cui, X., Guo, Y. and Sniecinski, R., 2021. Feasibility of Auricular Field Stimulation in Fibromyalgia: Evaluation by Functional Magnetic Resonance Imaging, Randomized Trial. *Pain Medicine*, 22(3), 715-726.
9. **Lukemire, J.**, Wang, Y., Verma, A., & Guo, Y. (2020). HINT: A Hierarchical Independent Component Analysis Toolbox for Investigating Brain Functional Networks using Neuroimaging Data. *Journal of Neuroscience Methods*, 108726.
10. **Lukemire, J.**, Kundu, S., Pagnoni, G., & Guo, Y. (2020). Bayesian Joint Modeling of Multiple Brain Functional Networks. *Journal of the American Statistical Association*, 116(534), pp.518-530.
11. Chowdhury, S., **Lukemire, J.**, & Mandal, A. (2020). A-ComVar: A Flexible Extension of Common Variance Design. *Journal of Statistical Theory and Practice*, 14(1), 1-49.
12. **Lukemire, J.**, Mandal, A., & Wong, W. K. (2019). d-QPSO: A quantum-behaved particle swarm technique for finding D-optimal designs with discrete and continuous factors and a binary response. *Technometrics*, 61(1), 77-87.
13. Tangpricha, V., **Lukemire, J.**, Chen, Y., Binongo, J. N. G., Judd, S. E., Michalski, E. S., ... & Zughaier, S. M. (2019). Vitamin D for the Immune System in Cystic Fibrosis (DISC): a double-blind, multicenter, randomized, placebo-controlled clinical trial. *The American Journal of Clinical Nutrition*, 109(3), 544-553.
14. Kundu, S., **Lukemire, J.**, Wang, Y., & Guo, Y. (2019). A Novel Joint Brain Network Analysis Using Longitudinal Alzheimer’s Disease Data. *Scientific Reports*, 9(1), 1-18.

AWARDS AND HONORS

- First place winner, Kutner Jr. Faculty Poster Session. IMS/ASA Spring Research Conference, Brunswick, GA (2021).
- Runner-up, 2021 ASA Statistics in Imaging Section Student Paper Competition (2021).
- Livingston Fellow, Emory Biostatistics and Bioinformatics Department (2020).
- First place team, BrainHack Atlanta (2019).
- First place winner, Kutner Award for the Best Senior PhD Student Research Presentation (2019).
- First place winner of the International Conference on Advances in Interdisciplinary Statistics and Combinatorics 2018 best paper presentation competition.
- Spring Research Conference on Statistics in Industry and Technology Student Scholarship (2015).
- Kermit Hutcheson Best Capstone Student Award (2015), University of Georgia.
- Center For Undergraduate Research Opportunities Summer Research Fellowship (2014), University of Georgia.

PRESENTATIONS

- Bile Acid Metabolism: a potential indicator for red blood cell transfusion in preterm infants, Pediatric Academic Societies Conference 2023, Washington D.C.
- Red Blood Cell Irradiation, Storage, Metabolomics and Mesenteric Tissue Oxygenation Responses to Transfusion in Very Preterm Infants, Pediatric Academic Societies Conference 2023, Washington D.C.
- A General Framework for Repeated Measures Sparse Bayesian Independent Component Analysis with Applications to Multi-center and Longitudinal Imaging Studies, Joint Statistical Meetings 2022, Washington D.C.
- HINT – A Matlab toolbox for hierarchical covariate-adjusted independent component analysis of fMRI data, short course taught at Statistical Methods in Imaging Conference 2022, Nashville TN.
- Association of Blood Donor Sex and Age with Outcomes in Transfused Very Low Birth Weight Infants, Pediatric Academic Societies (PAS) 2021, Virtual Meeting.
- Enteral Feeding, Probiotic Supplementation, and Intestinal Oxygenation Responses to Red Blood Cell Transfusion in Preterm Infants, Pediatric Academic Societies (PAS) 2021, Virtual Meeting.
- Sparse Bayesian Modeling of Hierarchical Independent Component Analysis: reliable estimation of individual differences in brain networks, Joint Statistical Meetings 2021, Virtual Meeting. Presenter.
- Sparse Bayesian Modeling of Hierarchical Independent Component Analysis: reliable estimation of individual differences in brain networks, ENAR 2021, Virtual Meeting. Presenter.
- Bayesian Joint Modeling of Multiple Brain Functional Networks, Joint Statistical Meetings, Denver, Colorado, July 2019. Presenter.
- d -QPSO: A Quantum-Behaved Particle Swarm Technique for Finding D -Optimal Designs with Discrete and Continuous Factors and a Binary Response International Conference on Advances in Interdisciplinary Statistics and Combinatorics, October 2018. Presenter.
- Using particle swarm optimization to search for locally D -optimal designs under generalized linear models. ASA/IMS Spring Research Conference on Statistics in Industry and Technology, Chicago, IL, May 2016. Presenter.
- Using particle swarm optimization to search for locally D -optimal designs under generalized linear models. ASA/IMS Spring Research Conference on Statistics in Industry and Technology, Cincinnati, OH, May 2015. Presenter.

POSTERS

- Lukemire, J., Pagnoni, G., and Guo, Y. (2021). Sparse Bayesian Modeling of Hierarchical Independent Component Analysis: Reliable Estimation of Individual Differences in Brain Networks. Poster presented at IMS/ASA Spring Research Conference, Brunswick, GA (2021).
- Lukemire, J., Kundu, S., Pagnoni, G., & Guo, Y. (2018). Bayesian Joint Modeling of Multiple Brain Functional Networks. Poster presented at Georgia Statistics Day, Athens, GA.
- Lukemire, J., Kundu, S., Pagnoni, G., & Guo, Y. (2018). Bayesian Joint Modeling of Multiple Brain Functional Networks. Poster presented at Eastern North American Region International Biometric Society, Atlanta, GA.
- Lukemire, J., Verma, A., Shi., & Guo, Y. (2017). A Hierarchical Covariate-Adjusted ICA Matlab Toolbox for Investigating Differences in Brain Networks. Poster presented at Workshop on Applications-Driven Geometric Functional Data Analysis, Tallahassee, FL

- Lukemire, J., Verma, A., Shi., & Guo, Y. (2017). A Hierarchical Covariate-Adjusted ICA Matlab Toolbox for Investigating Differences in Brain Networks. Poster presented at Organization for Human Brain Mapping, Vancouver, Canada.
- Lukemire, J.D. (2015). Using Particle Swarm Optimization to identify D-optimal designs for binary response generalized linear models with mixed factors. Poster presented at Georgia Statistics Day, Athens, GA.
- Fragaszy, D., Lukemire, J.D., Reynoso-Cruz, E., Kelley, M., & Villareal, S. (2015). Using a tool: Impact of degrees of freedom on terminal performance by tufted capuchin monkeys (*Sapajus spp.*). Poster presented at the 38th meeting of the American Society of Primatologists, Oregon.
- Schwarz, N.F., Lukemire, J.D., Clark, U., Riskin-Jones, H., Xu, X., Labbe, D., Hawkshead, B., Liebel, S., Sweet, L. (2014). Cerebrovascular reactivity and cardiovascular disease in older adult: Results from an fMRI breath-hold hypercapnia task. Presented at the 44th Annual Meeting of the Society for Neuroscience, Washington D. C.
- Schwarz, N.F., Lukemire, J.D., Liebel, S., Hawkshead, B., Sweet, L. (2014). Hypercapnia calibration of BOLD fMRI response reveals improved relationship to task performance. Poster Session presented at the Organization for Human Brain Mapping (OHBM) 2014 Annual Meeting, Hamberg, Germany.
- Moskowitz, J., Reynoso E., Lukemire J.D., Villarreal S., Heaton A., Simpson K., & Fragaszy, D. (2014) Strategic mastery of a jointed tool task: How capuchins handle multiple degrees of freedom. Poster presented at the 2014 University of Georgia Center for Undergraduate Research Opportunities Symposium, Athens, GA.
- Lukemire, J.D., Villarreal, S., Reynoso-Cruz, E., Moskowitz, J., Heaton, A., & Fragaszy, D. (2014) How do capuchin monkeys cope with mechanically challenging tools? Poster presented at the 36th Annual Psi Chi Convention of the Behavioral Sciences, Athens, GA.
- Sweet, L., Schwarz, N.F., Hawkshead, B., Liebel, S., Lukemire, J.D (2014). Attenuation of Default Network Processing during Working Memory. Poster presented at the SEC MRI/fMRI Collaborative Mini-Conference, Athens, GA.

SOFTWARE
DEVELOPMENT

- HINT** Hierarchical Independent Component Analysis Toolbox - <https://github.com/Emory-CBIS/HINT>
- BJNL** Bayesian Joint Network Learning - <https://github.com/JoshuaLukemire/BJNL>

TEACHING

TEACHING AT EMORY UNIVERSITY

- BIOS 590R, BIOS 790R: Seminar In Biostatistics
Instructor Fall 2022, Spring 2023
- BIOS 760R: Advanced Topics in Biostatistics
Teaching Assistant Spring 2020
- R and SAS Statistical Programming Bootcamp for Incoming Graduate Students
Instructor Fall 2019
- Summer Institute in Biostatistics
Teaching Assistant Summer 2019
- BIOS 506, BIOS 508: Biostatistical Methods
Teaching Assistant Fall 2018, 2019, 2020

EXTERNAL TEACHING

Mini-Course “HINT – A Matlab toolbox for hierarchical covariate-adjusted independent component analysis of fMRI data.” Statistical Methods in Imaging Conference (SMI), Nashville, TN.

Instructor

Summer, 2022

SERVICE

JOURNAL REFEREE

Biometrics

Technometrics

Brain Connectivity

Statistics in Medicine

CONFERENCE ACTIVITIES

Organizer and chair for “Recent advances in neuroimaging statistics for investigating human brain function and disorders” session at 2022 Statistical Methods in Imaging Conference

ENAR 2021 Spring Meeting Digital Program Organizer

Chair of the Emory CBIS Students/Postdoc Conference Organizing Group of Statistical Methods in Imaging 2021 conference

SERVICE AT EMORY UNIVERSITY

Meeting Organizer, Center for Biomedical Imaging Statistics, 2019-2023.

Meeting Organizer, BIOS Student Computing Club, 2019-2020.

OTHER SERVICE

Treasurer, Georgia Chapter of ASA, 2023–2024.

Secretary, American Statistical Association Section in Imaging, 2023–2024.