Curriculum Vitae

John Muschelli, PhD, ScM

Professional Data

He/Him
Email: jmusche1 [at] jh.edu / muschellij2 [at] gmail.com
Homepage: http://johnmuschelli.com
Blog: A HopStat and Jump Away
GitHub: muschellij2

Education and Training

2012–2016 **PhD**, *Biostatistics*,
Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.
Computational Methods for Neuroimaging in R: Stroke Hemorrhage in X-ray Computed Tomography Scanning
Advisor: Ciprian Crainiceanu, PhD

2008–2010 **ScM**, *Biostatistics*,
Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.
An Iterative Approach to Hemodynamic Response Function Temporal Derivatives in Statistical Parametric Mapping for Functional Neuroimaging
Advisor: Brian Caffo, PhD

2004–2008 **BS**, *Biomathematics and Neuroscience*,
The University of Scranton, Scranton, PA.
Advisors: Professor Jakub Jasinski, Professor J. Timothy Cannon

Professional Experience

Johns Hopkins University

2022–Present **Associate Research Professor**, *Department of Biostatistics*, Johns Hopkins Bloomberg School of Public Health, (Research-track Faculty).

2020–2022 **Associate Scientist**, *Department of Biostatistics*, Johns Hopkins Bloomberg School of Public Health, (Research-track Faculty).

2016–2020 **Assistant Scientist**, *Department of Biostatistics*, Johns Hopkins Bloomberg School of Public Health, (Research-track Faculty).

2012–2016 **Trainee**, *T32AG021334: Epidemiology and Biostatistics of Aging Training Grant*, Mentors: Dr. Michelle Carlson, Dr. Ravi Varadhan.

2009–2016 **Research Associate**, *Johns Hopkins Biostatistics Consulting Center*, Baltimore, MD.
Collaborated on statistical projects with senior consultants.
Weekly consulting for student research projects.
Report writing and analyzing data using statistical software: R, Stata.

2009–2014 **Data Analyst / Data Manager**, *Brain Injury Outcomes Division*, Baltimore, MD.
Decreased turnaround time on data safety report (from weeks to hours) by using knitr, LaTeX, and dynamic documents.
Created a standardized database and processing pipeline for CT images.
Analyzed phase II and III trials for treatment of intracerebral hemorrhage
Data management and consultation of electronic case report form (eCRF) creation.

2010–2012 **Data Analyst**, *Laboratory for Neurocognitive and Imaging Research at Kennedy Krieger Institute*, Baltimore, MD.
Reduced manual steps in complex imaging study analysis using automation from programming.
Analysis of functional MRI (fMRI) imaging studies using Statistical Parametric Mapping.
Programming consultant: Matlab & R.

Other Non-JHU Professional Experience

2021–2023 **Chief Technical Officer**, Streamline Data Science, `https://www.streamlinedatascience.io/`. (Startup folded).

Professional Activities

2009–Present **Statistical Methods and Applications for Research in Technology (SMART) Working Group**, *Johns Hopkins University, Department of Biostatistics*.

2016–Present **Member**, *Committee for Biostatistics Information Technology* (*BIT*), Johns Hopkins.

2014–Present **Member,Organizer**, *Biostatistics Structural Imaging Research Group*, Johns Hopkins University, Department of Biostatistics.

2018–Present **Member**, *Wearable and Implantable Technology* (*WIT*) *Research Group*, Johns Hopkins University, Department of Biostatistics.

2012–2020 **Member**, *Eastern North American Region* (*ENAR*) *of the Biometrics Society*.

2016–2020 **Member**, *Organization for Human Brain Mapping* (*OHBM*).

2014–2020 **Penn Statistical Imaging and Visualization Endeavor (PennSIVE) Working Group**, *University of Pennsylvania, Department of Biostatistics and Epidemiology*.

2014–2018 **Member**, *American Heart Association* (*AHA*).

2012–2016 **Epidemiology and Biostatistics of Aging (EBA) Training Program Meeting**, *Johns Hopkins University, Center on Aging and Health*.

Editorial and Other Peer Review Activities

Annals of Applied Statistics, `https://imstat.org/journals-and-publications/annals-of-applied-statistics/`.

Scientific Reports, `https://www.nature.com/srep/`.

Human Brain Mapping, `https://onlinelibrary.wiley.com/journal/10970193`.

NeuroImage, `https://www.journals.elsevier.com/neuroimage`.

Radiology: Artificial Intelligence, `https://pubs.rsna.org/journal/ai`.

Journal of Neuroimaging, `https://onlinelibrary.wiley.com/journal/15526569`.

Transactions on Biomedical Engineering, `https://tbme.embs.org/`.

International Journal of Information Technology & Decision Making, `https://www.worldscientific.com/worldscinet/ijitdm`.

Expert Systems With Applications, https://www.journals.elsevier.com/expert-systems-with-applications.

Data, https://www.mdpi.com/journal/data.

Honors and Awards

2014 **SOURCE (Student Outreach Resource Center) Community Service Award**.

2011 **Member of the winning team of the ADHD 200 Competition: a competition of develop diagnostic classification tools for ADHD diagnosis based on imaging of the brain**.

2004–2008 **Presidential Scholar (Full Tuition Scholarship)**.

2004–2008 **Dean's List**.

2008 **Alpha Sigma Nu**.

2004 **Alpha Lambda Delta**.

Publications

Peer-Reviewed Publications

2025 Gao, S., Zhou, X., Koffman, L., Wanigatunga, A. A., Schrack, J. A., Crainiceanu, C. M., **Muschelli, J.,** (2025). "Comparing step counting algorithms for high-resolution wrist accelerometry data in older adults in the ARIC study". *The Journals of Gerontology, Series A: Biological Sciences and Medical Sciences*, glaf034.

Zhao, A., Cui, E., Leroux, A., Zhou, X., **Muschelli, J.**, Lindquist, M. A., Crainiceanu, C. M., (2025). "Objectively measured physical activity using wrist-worn accelerometers as a predictor of incident Alzheimers disease in the UK Biobank". *The Journals of Gerontology, Series A: Biological Sciences and Medical Sciences* 80.2, glae287.

2024 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* 7.1.

Leroux, A., Cui, E., Smirnova, E., **Muschelli, J.**, Schrack, J. A., Crainiceanu, C. M., (2024). "NHANES 2011-2014: objective physical activity is the strongest predictor of all-cause mortality". *Medicine and science in sports and exercise* 56.10, pp. 1926–1934.

Wright, C., Meng, Q., Breshock, M. R., Atta, L., Taub, M. A., Jager, L. R., **Muschelli, J.**, Hicks, S. C., (2024). "Open case studies: statistics and data science education through real-world applications". *Journal of Statistics and Data Science Education* 32.4, pp. 331–344.

Zhao, A., Cui, E., Leroux, A., Zhou, X., **Muschelli, J.**, Lindquist, M. A., Crainiceanu, C. M., (2024). "Objectively measured physical activity using wrist-worn accelerometers as a predictor of incident Alzheimers disease in the UK Biobank". *The Journals of Gerontology, Series A: Biological Sciences and Medical Sciences*, glae287.

2023 Savonen, C., Wright, C., Hoffman, A. M., **Muschelli, J.**, Cox, K., Tan, F. J., Leek, J. T., (2023). "Open-source tools for training resources–OTTR". *Journal of Statistics and Data Science Education* 31.1, pp. 57–65.

Zhao, C., Tapera, T. M., Bagautdinova, J., Bourque, J., Covitz, S., Gur, R. E., Gur, R. C., Larsen, B., Mehta, K., Meisler, S. L., (2023). "ModelArray: an R package for statistical analysis of fixel-wise data". *Neuroimage* 271, p. 120037.

2022 Karas, M., **Muschelli, J.**, Leroux, A., Urbanek, J. K., Wanigatunga, A. A., Bai, J., Crainiceanu, C. M., Schrack, J. A., (2022). "Comparison of accelerometry-based measures of physical activity: retrospective observational data analysis study". *JMIR mHealth and uHealth* 10.7, e38077.

Pham, D. D., **Muschelli, J.**, Mejia, A. F., (2022). "ciftiTools: a package for reading, writing, visualizing, and manipulating CIFTI files in R". *NeuroImage* 250, p. 118877.

Qi, G., Dutta, D., Leroux, A., Ray, D., **Muschelli, J.**, Crainiceanu, C., Chatterjee, N., (2022). "Genome-wide association studies of 27 accelerometry-derived physical activity measurements identified novel loci and genetic mechanisms". *Genetic epidemiology* 46.2, pp. 122–138.

Redd, A. D., Peetluk, L. S., Jarrett, B. A., Hanrahan, C., Schwartz, S., Rao, A., Jaffe, A. E., Peer, A. D., Jones, C. B., Lutz, C. S., McKee, C. D., Patel, E. U., Rosen, J. G., Desany, H. G., McKay, H. S., **Muschelli, J.**, Andersen, K. M., Link, M. A., Wada, N., Baral, P., Young, R., Boon, D., Grabowski, M. K., Gurley, E. S., the Novel Coronavirus Research Compendium Team, (2022). "Curating the evidence about COVID-19 for frontline public health and clinical care: the novel coronavirus research compendium". *Public Health Reports* 137.2, pp. 197–202. DOI: 10.1177/00333549211058732.

Sharrock, M. F., Mould, W. A., Hildreth, M., Ryu, E. P., Walborn, N., Awad, I. A., Hanley, D. F., **Muschelli, J.,** (2022). "Bayesian deep learning outperforms clinical trial estimators of intracerebral and intraventricular hemorrhage volume". *Journal of Neuroimaging* 32.5, pp. 968–976.

Smirnova, E., Mallow, C., **Muschelli, J.**, Shao, Y., Thiboutot, J., Lam, A., Rule, A. M., Crainiceanu, C., Yarmus, L., (2022). "Predictive performance of selected breath volatile organic carbon compounds in stage 1 lung cancer". *Translational Lung Cancer Research* 11.6, p. 1009.

2021 Bennett, T. D., Moffitt, R. A., Hajagos, J. G., Amor, B., Anand, A., Bissell, M. M., Bradwell, K. R., Bremer, C., Byrd, J. B., Denham, A., DeWitt, P. E., Gabriel, D., Garibaldi, B. T., Girvin, A. T., Guinney, J., Hill, E. L., Hong, S. S., Jimenez, H., Kavuluru, R., Kostka, K., Lehmann, H. P., Levitt, E., Mallipattu, S. K., Manna, A., McMurry, J. A., Morris, M., **Muschelli, J.**, Neumann, A. J., Palchuk, M. B., Pfaff, E. R., Qian, Z., Qureshi, N., Russell, S., Spratt, H., Walden, A., Williams, A. E., Wooldridge, J. T., Yoo, Y. J., Zhang, X. T., Zhu, R. L., Austin, C. P., Saltz, J. H., Gersing, K. R., Haendel, M. A., Chute, C. G., Consortium, N. C. C. C. N., (July 2021). "Clinical Characterization and Prediction of Clinical Severity of SARS-CoV-2 Infection Among US Adults Using Data From the US National COVID Cohort Collaborative". *JAMA Network Open* 4.7, e2116901–e2116901. ISSN: 2574-3805. DOI: 10.1001/jamanetworkopen.2021.16901. eprint: https://jamanetwork.com/journals/jamanetworkopen/articlepdf/2781923/bennett_2021_oi_210506_1625605077.56265.pdf. URL: https://doi.org/10.1001/jamanetworkopen.2021.16901.

Bowring, M. G., Wang, Z., Xu, Y., Betz, J., **Muschelli, J.**, Garibaldi, B. T., Zeger, S. L., (2021). "Outcome-stratified analysis of biomarker trajectories for patients infected with severe acute respiratory syndrome coronavirus 2". *American journal of epidemiology* 190.10, pp. 2094–2106.

Broll, S., Urbanek, J., Buchanan, D., Chun, E., **Muschelli, J.**, Punjabi, N. M., Gaynanova, I., (2021). "Interpreting blood glucose data with R package iglu". *PloS one* 16.4, e0248560.

Garibaldi, B. T., Fiksel, J., **Muschelli, J.**, Robinson, M. L., Rouhizadeh, M., Perin, J., Schumock, G., Nagy, P., Gray, J. H., Malapati, H., (2021). "Patient trajectories among persons hospitalized for COVID-19: a cohort study". *Annals of Internal Medicine* 174.1, pp. 33–41.

Leroux, A., Xu, S., Kundu, P., **Muschelli, J.**, Smirnova, E., Chatterjee, N., Crainiceanu, C., (2021). "Quantifying the predictive performance of objectively measured physical activity on mortality in the UK Biobank". *The Journals of Gerontology: Series A* 76.8, pp. 1486–1494.

Scully, E. P., Schumock, G., Fu, M., Massaccesi, G., **Muschelli, J.**, Betz, J., Klein, E. Y., West, N. E., Robinson, M., Garibaldi, B. T., (2021). "Sex and gender differences in testing, hospital admission, clinical presentation, and drivers of severe outcomes from COVID-19". *Open forum infectious diseases*. Vol. 8. 9, ofab448.

Sharrock, M. F., Mould, W. A., Ali, H., Hildreth, M., Awad, I. A., Hanley, D. F., **Muschelli, J.,** (2021). "3D deep neural network segmentation of intracerebral hemorrhage: development and validation for clinical trials". *Neuroinformatics* 19.3, pp. 403–415.

Torbati, M. E., Minhas, D. S., Ahmad, G., OConnor, E. E., **Muschelli, J.**, Laymon, C. M., Yang, Z., Cohen, A. D., Aizenstein, H. J., Klunk, W. E., (2021). "A multi-scanner neuroimaging data harmonization using RAVEL and ComBat". *Neuroimage* 245, p. 118703.

Tustison, N. J., Cook, P. A., Holbrook, A. J., Johnson, H. J., **Muschelli, J.**, Devenyi, G. A., Duda, J. T., Das, S. R., Cullen, N. C., Gillen, D. L., (2021). "The ANTsX ecosystem for quantitative biological and medical imaging". *Scientific reports* 11.1, pp. 1–13.

Wang, G., **Muschelli, J.**, Lindquist, M. A., (2021). "Moderated t-tests for group-level fMRI analysis". *NeuroImage* 237, p. 118141.

Wongvibulsin, S., Garibaldi, B. T., Antar, A. A. R., Wen, J., Wang, M.-C., Gupta, A., Bollinger, R., Xu, Y., Wang, K., Betz, J. F., **Muschelli, J.**, Bandeen-Roche, K., Zeger, S. L., Robinson, M. L., (2021). "Development of severe COVID-19 adaptive risk predictor (SCARP), a calculator to predict severe disease or death in hospitalized patients with COVID-19". *Annals of internal medicine* 174.6, pp. 777–785.

Wrobel, J., **Muschelli, J.**, Leroux, A., (2021). "Diurnal physical activity patterns across ages in a large UK based cohort: the UK Biobank study". *Sensors* 21.4, p. 1545.

2020 **Muschelli, J.** (2020). "A publicly available, high resolution, unbiased CT brain template". *International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems*, pp. 358–366.

Ding, T, Cohen, A., OConnor, E., Karim, H., Crainiceanu, A, **Muschelli, J**, Lopez, O, Klunk, W., Aizenstein, H., Krafty, R, (2020). "An improved algorithm of white matter hyperintensity detection in elderly adults". *NeuroImage: Clinical* 25, p. 102151.

Gherman, A., **Muschelli, J.**, Caffo, B., Crainiceanu, C., (2020). "Rxnat: an open-source R package for XNAT-based repositories". *Frontiers in Neuroinformatics* 14.

Hannawi, Y., **Muschelli, J.**, Mulder, M., Sharrock, M., Storm, C., Leithner, C., Crainiceanu, C. M., Stevens, R. D., (2020). "Postcardiac arrest neurological prognostication with quantitative regional cerebral densitometry". *Resuscitation* 154, pp. 101–109.

Hansen, B. M., Ullman, N., **Muschelli, J.**, Norrving, B., Dlugash, R., Avadhani, R., Awad, I., Zuccarello, M., Ziai, W. C., Hanley, D. F., (2020). "Relationship of white matter lesions with intracerebral hemorrhage expansion and functional outcome: MISTIE II and CLEAR III". *Neurocritical Care*, pp. 1–9. DOI: 10.1007/s12028-020-00916-4.

Kross, S., Leek, J. T., **Muschelli, J.,** (2020). "ari: The Automated R Instructor". *The R Journal* 12.1, pp. 258–265. DOI: 10.32614/RJ-2020-023. URL: https://doi.org/10.32614/RJ-2020-023.

Minhas, D. S., Yang, Z., **Muschelli, J.**, Laymon, C. M., Mettenburg, J. M., Zammit, M. D., Johnson, S., Mathis, C. A., Cohen, A. D., Handen, B. L., (2020). "Statistical methods for processing neuroimaging data from two different sites with a Down syndrome population application". *International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems*, pp. 367–379.

Rothstein, J. D., Caulfield, L. E., Broaddus-Shea, E. T., **Muschelli, J.**, Gilman, R. H., Winch, P. J., (2020). "'The doctor said formula would help me': health sector influences on use of infant formula in peri-urban Lima, Peru". *Social Science & Medicine* 244.112324. DOI: https://doi.org/10.1016/j.socscimed.2019.05.029.

Ryan, S. M., Vestal, B., Maier, L. A., Carlson, N. E., **Muschelli, J.,** (2020). "Template creation for high-resolution computed tomography scans of the lung in R software". *Academic radiology* 27.8, e204–e215.

Valcarcel, A. M., **Muschelli, J.**, Pham, D. L., Martin, M. L., Yushkevich, P., Brandstadter, R., Schindler, M. K., Patterson, K. R., Calabresi, P. A., Bakshi, R., Shinohara, R. T., (2020). "TAPAS: a thresholding approach for probability map automatic segmentation in multiple sclerosis". *NeuroImage: Clinical*.

2019 **Muschelli, J.** (2019b). "ROC and AUC with a binary predictor: a potentially misleading metric". *Journal of Classification*, pp. 1–13.

Muschelli, J. (2019a). "Recommendations for processing head CT data". *Frontiers in Neuroinformatics* 13, p. 61. ISSN: 1662-5196. DOI: 10.3389/fninf.2019.00061. URL: https://www.frontiersin.org/article/10.3389/fninf.2019.00061.

Hadavand, A., **Muschelli, J.**, Leek, J., (2019). "Analysis of student behavior using the R package crsra". *Journal of Learning Analytics* 6.2, pp. 140–152.

2018 **Muschelli, J.**, Sweeney, E., Crainiceanu, C. M., (2018). "freesurfer: connecting the Freesurfer software with R". *F1000Research* 7.

Muschelli, J., Gherman, A., Fortin, J.-P., Avants, B., Whitcher, B., Clayden, J. D., Caffo, B. S., Crainiceanu, C. M., (2018). "Neuroconductor: an R platform for medical imaging analysis". *Biostatistics*, kxx068. DOI: 10.1093/biostatistics/kxx068. eprint: /oup/backfile/content_public/journal/biostatistics/pap/10.1093_biostatistics_kxx068/1/kxx068.pdf. URL: +http://dx.doi.org/10.1093/biostatistics/kxx068.

Commowick, O., Istace, A., Kain, M., Laurent, B., Leray, F., Simon, M., Pop, S. C., Girard, P., Ameli, R., Ferré, J.-C., Kerbrat, A., Tourdias, T., Cervenansky, F., Glatard, T., Beaumont, J., Doyle, S., Forbes, F., Knight, J., Khademi, A., Mahbod, A., Wang, C., Mckinley, R., Wagner, F., **Muschelli, J.**, Sweeney, E., Roura, E., Lladó, X., Santos, M. M., Santos, W. P., Silva-Filho, A. G., Tomas-Fernandez, X., Urien, H., Bloch, I., Valverde, S., Cabezas, M., Vera-Olmos, F. J., Malpica, N., Guttmann, C., Vukusic, S., Edan, G., Dojat, M., Styner, M., Warfield, S. K., Cotton, F., Barillot, C., (2018). "Objective evaluation of multiple sclerosis lesion segmentation using a data management and processing infrastructure". *Scientific Reports* 8, p. 13650.

Smith, C. H., Turbitt, E., **Muschelli, J.**, Leonard, L., Lewis, K. L., Freedman, B., Muratori, M., Biesecker, B. B., (2018). "Feasibility of coping effectiveness training for caregivers of children with autism spectrum disorder: a genetic counseling intervention". *Journal of genetic counseling* 27.1, pp. 252–262.

Valcarcel, A., **Muschelli, J**, Crainiceanu, C, Pham, D., Calabresi, P., Bakshi, R, Shinohara, R., (2018c). "TAPAS: threshold adjustment to probability map automatic segmentations". *MULTIPLE SCLEROSIS JOURNAL*. Vol. 24, pp. 629–630.

Valcarcel, A. M., Linn, K. A., Vandekar, S. N., Satterthwaite, T. D., **Muschelli, J.**, Calabresi, P. A., Pham, D. L., Martin, M. L., Shinohara, R. T., (2018b). "MIMoSA: an automated method for intermodal segmentation analysis of multiple sclerosis brain lesions". *Journal of Neuroimaging*.

Valcarcel, A. M., Linn, K. A., Khalid, F., Vandekar, S. N., Tauhid, S., Satterthwaite, T. D., **Muschelli, J.**, Bakshi, R., Shinohara, R. T., (2018a). "MIMoSA: an approach to automatically segment T2 hyperintense and T1 hypointense lesions in multiple sclerosis". *International MICCAI Brainlesion Workshop*, pp. 47–56.

2017 **Muschelli, J.**, Sweeney, E. M., Ullman, N. L., Vespa, P., Hanley, D. F., Crainiceanu, C. M., (2017). "PItcHPERFeCT: primary intracranial hemorrhage probability estimation using random forests on CT". *NeuroImage: Clinical* 14, pp. 379 –390. ISSN: 2213-1582. DOI: http://dx.doi.org/10.1016/j.nicl.2017.02.007. URL: http://www.sciencedirect.com/science/article/pii/S2213158217300414.

Hanley, D. F., Lane, K., McBee, N., Ziai, W., Tuhrim, S., Lees, K. R., Dawson, J., Gandhi, D., Ullman, N., Mould, W. A., Mayo, S. W., Mendelow, A. D., Gregson, B., Butcher, K., Vespa, P., Wright, D. W., Kase, C. S., Carhuapoma, J. R., Keyl, P. M., Diener-West, M., **Muschelli, J.**, Betz, J. F., Thompson, C. B., Sugar, E. A., Yenokyan, G., Janis, S., John, S., Harnof, S., Lopez, G. A., Aldrich, E. F., Harrigan, M. R., Ansari, S., Jallo, J., Caron, J.-L., LeDoux, D., Adeoye, O., Zuccarello, M., Adams, H. P., Rosenblum, M., Thompson, R. E., Awad, I. A., (2017). "Thrombolytic removal of intraventricular haemorrhage in treatment of severe stroke: results of the randomised, multicentre, multiregion, placebo-controlled CLEAR III trial". *The Lancet* 389.10069, pp. 603–611.

Kickingereder, P., Neuberger, U., Bonekamp, D., Piechotta, P., Götz, M., Wick, A., Sill, M., Kratz, A., Shinohara, R., Jones, D., Radbruch, A., **Muschelli, J.**, Unterberg, A., Debus, J., Schlemmer, H.-P., Herold-Mende, C., Pfister, S., von Deimling, A., Wick, W., Capper, D., Maier-Hein, K., Bendszus, M., (2017). "Radiomic subtyping improves disease stratification beyond key molecular, clinical and standard imaging characteristics in patients with glioblastoma." *Neuro-Oncology*.

Maier, O., Menze, B., von der Gablentz, J., Häni, L., Heinrich, M., Liebrand, M., Winzeck, S., Basit, A., Bentley, P., Chen, L., Christiaens, D., Dutil, F., Egger, K., Feng, C., Glocker, B., Götz, M., Haeck, T., Halme, H.-L., Havaei, M., Iftekharuddin, K., Jodoin, P.-M., Kamnitsas, K., Kellner, E., Korvenoja, A., Larochelle, H., Ledig, C., Lee, J.-H., Maes, F., Mahmood, Q., Maier-Hein, K., McKinley, R., **Muschelli, J.**, Pal, C., Pei, L., Rangarajan, J., Reza, S., Robben, D., Rueckert, D., Salli, E., Suetens, P., Wang, C.-W., Wilms, M., Kirschke, J., Krämer, U., Münte, T., Schramm, P., Wiest, R., Handels, H., Reyes, M., (2017). "ISLES 2015 - a public evaluation benchmark for ischemic stroke lesion segmentation from multispectral MRI". *Medical Image Analysis* 35. cited By 14, pp. 250–269. DOI: 10.1016/j.media.2016.07.009. URL: https://www.scopus.com/inward/record.uri?eid=2-s2.0-84979950799&doi=10.1016%2fj.media.2016.07.009&partnerID=40&md5=15537a210adbbc102bcef75103bee7df.

2016 Bundy, D. G., **Muschelli, J.**, Clemens, G. D., Strouse, J. J., Thompson, R. E., Casella, J. F., Miller, M. R., (2016). "Preventive care delivery to young children with sickle cell disease". *Journal of pediatric hematology/oncology* 38.4, pp. 294–300.

Fortin, J.-P., Sweeney, E. M., **Muschelli, J.**, Crainiceanu, C. M., Shinohara, R. T., Initiative, A. D. N., (2016). "Removing inter-subject technical variability in magnetic resonance imaging studies". *NeuroImage* 132, pp. 198–212.

Hanley, D. F., Thompson, R. E., **Muschelli, J.**, Rosenblum, M., McBee, N., Lane, K., Bistran-Hall, A. J., Mayo, S. W., Keyl, P., Gandhi, D., Morgan, T. C., Ullman, N., Mould, W. A., Carhuapoma, J. R., Kase, C., Ziai, W., Thompson, C. B., Yenokyan, G., Huang, E., Broaddus, W. C., Graham, R. S., Aldrich, E. F., Dodd, R., Wijman, C., Caron, J.-L., Huang, J., Camarata, P., Mendelow, A. D., Gregson, B., Janis, S., Vespa, P., Martin, N., Awad, I., Zuccarello, M., (2016). "Safety and efficacy of minimally invasive surgery plus alteplase in intracerebral haemorrhage evacuation (MISTIE): a randomised, controlled, open-label, phase 2 trial". *The Lancet Neurology* 15.12, pp. 1228–1237.

Kickingereder, P, Götz, M, **Muschelli, J**, Wick, A, Neuberger, U, Shinohara, R, Radbruch, A, Schlemmer, H, Wick, W, Bendszus, M, Maier-Hein, K, Bonekamp, D, (2016). "Large-scale radiomic profiling of glioblastoma identifies an imaging signature for predicting and stratifying antiangiogenic treatment response". *RöFo-Fortschritte auf dem Gebiet der Röntgenstrahlen und der bildgebenden Verfahren*. Vol. 188. S 01, WISS301_1.

Sweeney, E. M., Shinohara, R. T., Dewey, B. E., Schindler, M. K., **Muschelli, J.**, Reich, D. S., Crainiceanu, C. M., Eloyan, A., (2016). "Relating multi-sequence longitudinal intensity profiles and clinical covariates in incident multiple sclerosis lesions". *NeuroImage: Clinical* 10, pp. 1–17.

2015 **Muschelli, J.**, Ullman, N. L., Mould, W. A., Vespa, P., Hanley, D. F., Crainiceanu, C. M., (2015b). "Validated automatic brain extraction of head CT images". *NeuroImage* 114, pp. 379–385.

Muschelli, J., Sweeney, E., Lindquist, M., Crainiceanu, C., (2015a). "fslr: connecting the FSL software with R". *R Journal* 7.1, pp. 163–175.

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Choe, A. S., Jones, C. K., Joel, S. E., **Muschelli, J.**, Belegu, V., Caffo, B. S., Lindquist, M. A., van Zijl, P. C., Pekar, J. J., (2015). "Reproducibility and temporal structure in weekly resting-state fMRI over a period of 3.5 years". *PloS one* 10.10, e0140134.

Webb, A. J., Ullman, N. L., Morgan, T. C., **Muschelli, J.**, Kornbluth, J., Awad, I. A., Mayo, S., Rosenblum, M., Ziai, W., Aldrich, Zuccarello, F. M., John, S., Harnof, S., Lopez, G., Broaddus, W. C., Wijman, C., Vespa, P., Bullock, R., Haines, S. J., Cruz-Flores, S., Tuhrim, S., Hill, M. D., Narayan, R., Hanley, D. F., (2015). "Accuracy of the ABC/2 score for intracerebral hemorrhage systematic review and analysis of MISTIE, CLEAR-IVH, and CLEAR III". *Stroke* 46.9, pp. 2470–2476.

2014 **Muschelli, J.**, Sweeney, E., Crainiceanu, C., (2014). "brainR: interactive 3 and 4D images of high resolution neuroimage data". *R Journal* 6.1, pp. 41–48.

Muschelli*, J., Nebel*, M. B., Caffo, B. S., Barber, A. D., Pekar, J. J., Mostofsky, S. H., (2014). "Reduction of motion-related artifacts in resting state fMRI using aCompCor". *NeuroImage* 96, pp. 22–35.

Eloyan, A., Li, S., **Muschelli, J.**, Pekar, J. J., Mostofsky, S. H., Caffo, B. S., (2014). "Analytic programming with fMRI data: a quick-start guide for statisticians using R". *PLOS ONE* 9.2, e89470.

Nebel, M. B., Joel, S. E., **Muschelli, J.**, Barber, A. D., Caffo, B. S., Pekar, J. J., Mostofsky, S. H., (2014). "Disruption of functional organization within the primary motor cortex in children with autism". *Human Brain Mapping* 35.2, pp. 567–580.

2013 Mould, W. A., Carhuapoma, J. R., **Muschelli, J.**, Lane, K., Morgan, T. C., McBee, N. A., Bistran-Hall, A. J., Ullman, N. L., Vespa, P., Martin, N. A., Awad, I., Zuccarello, M., Hanley, D. F., (2013a). "Minimally invasive surgery plus recombinant tissue-type plasminogen activator for intracerebral hemorrhage evacuation decreases perihematomal edema". *Stroke* 44.3, pp. 627–634.

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2012 Bundy, D. G., **Muschelli, J.**, Clemens, G. D., Strouse, J. J., Thompson, R. E., Casella, J. F., Miller, M. R., (2012). "Ambulatory care connections of medicaid-insured children with sickle cell disease". *Pediatric Blood & Cancer* 59.5, pp. 888–894.

Eloyan, A., **Muschelli, J.**, Nebel, M. B., Liu, H., Han, F., Zhao, T., Barber, A. D., Joel, S., Pekar, J. J., Mostofsky, S. H., (2012). "Automated diagnoses of attention deficit hyperactive disorder using magnetic resonance imaging". *Frontiers in Systems Neuroscience* 6, p. 6.

Hinson, H. E., Melnychuk, E., **Muschelli, J.**, Hanley, D. F., Awad, I. A., Ziai, W. C., (2012). "Drainage efficiency with dual versus single catheters in severe intraventricular hemorrhage". *Neurocritical Care* 16.3, pp. 399–405.

Jaffe, J., Melnychuk, E., **Muschelli, J.**, Ziai, W., Morgan, T., Hanley, D. F., Awad, I. A., (2012). "Ventricular catheter location and the clearance of intraventricular hemorrhage". *Neurosurgery* 70.5, pp. 1258–1264.

Webb, A. J., Ullman, N. L., Mann, S., **Muschelli, J.**, Awad, I. A., Hanley, D. F., (2012). "Resolution of intraventricular hemorrhage varies by ventricular region and dose of intraventricular thrombolytic the clot lysis: evaluating accelerated resolution of IVH (CLEAR IVH) program". *Stroke* 43.6, pp. 1666–1668.

Ziai, W. C., **Muschelli, J.**, Thompson, C. B., Keyl, P. M., Lane, K., Shao, S., Hanley, D. F., (2012). "Factors affecting clot lysis rates in patients with spontaneous intraventricular hemorrhage". *Stroke* 43.5, pp. 1234–1239.

2011 Newell, D. W., Shah, M. M., Wilcox, R., Hansmann, D. R., Melnychuk, E., **Muschelli, J.**, Hanley, D. F., (2011). "Minimally invasive evacuation of spontaneous intracerebral hemorrhage using sonothrombolysis". *Journal of Neurosurgery* 115.3, pp. 592–601.

Niedner, M. F., Huskins, W. C., Colantuoni, E., **Muschelli, J.**, Harris, J. M., Rice, T. B., Brilli, R. J., Miller, M. R., (2011). "Epidemiology of central line-associated bloodstream infections in the pediatric intensive care unit". *Infection Control* 32.12, pp. 1200–1208.

Books

2018 Crainiceanu, C., Caffo, B., **Muschelli, J.,** (Apr. 2018). *Methods in Biostatistics with R: A Rigorous and Practical Treatment of Biostatistics Foundations using R*. Leanpub. URL: `https://leanpub.com/biostatmethods`.

Chapters

2014 **Muschelli, J.**, Betz, J., Varadhan, R., (2014). "Binomial regression in R". *Handbook of Statistics: Computational Statistics with R* 32, pp. 257–309.

Practice Activities

Podcasts

2019– **The Corresponding Author: An Academic Data Science Podcast**, *John Muschelli and Stephanie Hicks*, https://soundcloud.com/the-corresponding-author, Approximately 200 listeners.

Software

R Packages

All download counts are from RStudio CRAN logs and are accurate as of March 30, 2025.

rscopus: Scopus Database API Interface, 351398.

neurobase: Neuroconductor Base Package with Helper Functions for nifti Objects, 86591.

diffr: Display Differences Between Two Files using Codediff Library, 76504.

fslr: Wrapper Functions for FSL (FMRIB Software Library) from Functional MRI of the Brain (FMRIB), 65549.

matlabr: An Interface for MATLAB using System Calls, 51680.

brainR: Helper Functions to misc3d and rgl Packages for Brain Imaging, 51642.

gifti: Reads in Neuroimaging GIFTI Files with Geometry Information, 51554.

mscstts: R Client for the Microsoft Cognitive Services Text-to-Speech REST API, 47418.

WhiteStripe: White Matter Normalization for Magnetic Resonance Images, 43734.

text2speech: Text to Speech Conversion, 35483.

freesurfer: Wrapper Functions for Freesurfer, 34808.

gcite: Google Citation Parser, 34408.

kirby21.base: Example Data from the Multi-Modal MRI Reproducibility Resource, 34071.

cifti: Toolbox for Connectivity Informatics Technology Initiative (CIFTI) Files, 32675.

neurohcp: Human Connectome Project Interface, 31396.

kirby21.t1: Example T1 Structural Data from the Multi-Modal MRI Reproducibility Resource, 28783.

spm12r: Wrapper Functions for SPM (Statistical Parametric Mapping) Version 12 from the Wellcome Trust Centre for Neuroimaging, 28730.

kirby21.fmri: Example Functional Imaging Data from the Multi-Modal MRI Reproducibility Resource, 28311.

glassdoor: Interface to Glassdoor API, 27546.

stapler: Simultaneous Truth and Performance Level Estimation, 25470.

papayar: View Medical Research Images using the Papaya JavaScript Library, 25114.

leanpubr: Leanpub API Interface, 20986.

nsrr: Interface to National Sleep Research Resource, 17513.

fedreporter: Interface to Federal RePORTER API, 15043.

neurovault: Neurovault Database API Access, 1903.

GitHub **drammsr: Port of Deformable Registration via Attribute Matching and Mutual-Saliency Weighting (DRAMMS) Registration to R**.

didactr: Tools for Creating Automated Courses.

flexconnr: FLEXCONN Model Wrapped in R .

extrantsr: Additional functionality and extensions to the ANTsR R package.

rcamino: R Port of Camino Software.

dcm2niir: R wrapper for dcm2nii DICOM converter.

ichseg: ICH Segmentation of CT scans.

msseg: MS Lesion Segmentation.

googleCite: Scraper for Google Citations.

processVISION: Scripts for Parsing XML from VISION database.

sri24: SRI24 Atlas: Normal Adult Brain Anatomy.

Shiny Web Applications

2019 **Do Data Analysis with Your Voice!**,
https://jhubiostatistics.shinyapps.io/Speak_dplyr/.

Turning Slide Decks into Videos (private request needed),
https://jhubiostatistics.shinyapps.io/presentation_to_video/.

A Sortable NIH RFA Table,
https://jhubiostatistics.shinyapps.io/rfa_sort/.

Turn a Folder of Slides into a Leanpub Course,
https://jhubiostatistics.shinyapps.io/slides_to_leanpub/.

2016 **Segmentation of Intracranial Hemorrhage from CT Scans**,
http://johnmuschelli.com/ich_segment_all.html.

2015 **Abandoned Cars in Baltimore Finder**,
https://jmuschelli.shinyapps.io/Abandoned_Baltimore_Car.

Unofficial ENAR 2015 Itinerary Maker,
https://muschellij2.shinyapps.io/ENAR_2015.

2014 **Online DICOM TO NIfTI Converter**,
https://muschellij2.shinyapps.io/dcm2nii.

Cost of most common medical procedures at United States hospitals based on Centers for Medicare and Medicaid Services data,
https://jmuschelli.shinyapps.io/Shiny_Health_Data.

Teaching

Advising

2023 **Marina Hernandez**, *PhD*, Department Oral Exam Participation.

2020 **Elizabeth Du**, *MPH*, Academic Advisor.

2020 **Shuai Li**, *ScM*, Academic Advisor.

2019-2020 **Jingran Zhu**, *ScM*, Academic Advisor.

2017–2020 **Saqer Alkharabsheh**, *iMPH*, Capstone Advisor.

2018–2020 **Joseph Catallini**, *ScM*, Research Advisor.

2018 **Luqin Gan**, *ScM*, Academic Advisor.

2018 **Alessandra Valcarcel**, (*UPenn*) *PhD*, Independent Study Advisor.

2018 **Sarah Ryan**, (*UC Denver*) *PhD*, Summer Internship Advisor.

2018 **Kenneth Morales**, *ScM*, Thesis Reader.
Thesis: PrEP and Porn: Trends in Popularity of condom-less pornographic videos featuring men having sex with men

2018 **W. Andrew Mould**, *MPH*, Capstone Advisor.
Capstone: The Effects of Perihematomal Edema on Hemorrhagic Stroke Patients and Outcomes

2017 **Lucia Rivera Lara**, *MPH*, Capstone Advisor.
Capstone: The Impact of Blood Pressure Variability on Hemorrhage Enlargement on Patients with Acute Intracerebral Hemorrhage

2017 **Noam Finkelstein**, *ScM*, Academic Advisor.

Classroom Instruction

2023- **Co-Instructor**, *JHSPH*, Advanced Data Science.
Provides an intensive introduction to applied statistics, data analysis, and computing. Topics range from unsupervised and supervised machine learning methods, resampling techniques, high-performance computing, and basic database interaction.

2014–2020 **Co-Instructor**, *JHSPH*, Introduction to R for Public Health Researchers.
Co-developed a one-week, 8-hour-a-day course in the Winter and Summer Institutes at Johns Hopkins with Dr. Andrew Jaffe. Developed 50% of code and slides for presentation and recorded lectures delivering slides.

2016–2017 **Co-instructor**, *JHSPH*, Advanced Data Science.
Provides an intensive introduction to applied statistics and data analysis. Since both data analysis and methods development require substantial hands-on experience, focuses on hands-on data analysis.

Other Teaching

2020 **Instructor**, *ENAR*, R package development.
Developed and instructed a tutorial on R package development. Created of all code and slides for presentation; a 1-hour, 45 minute tutorial.

2019 **Instructor**, *SMI*, R Software Development Workshop.
Co-developed and instructed a tutorial on R package developed for 40 statisticians. Ran the workshop and delivered a 2 hour tutorial with Dr. Amanda Mejia.

2018 **Instructor**, *ENAR*, Neuroimaging Analysis within R.
Co-developed and instructed a tutorial for 20 statisticians. Created 75% of all code and slides for presentation and presented for half of the 4-hour session.

2017 **Instructor**, *ISBI*, Neuroimaging Analysis within R.
Co-developed and instructed a tutorial for 30 biomedical engineers. Created 75% of all code and slides for presentation and presented for half of the 4-hour session.

2015 **Instructor**, *ENAR*, A Tutorial for Multisequence Clinical Structural Brain MRI.
Co-developed and instructed a tutorial for 35 statisticians. Created 75% of all code and slides for presentation and presented for half of the 3-hour session.

2015 **Instructor**, *Coursera*, Neurohacking with R.
Co-developed a MOOC (massive open online course) for Coursera on neuroimage processing and statistical analysis completely within R. Developed 50% of code and slides for presentation and recorded lectures delivering slides.

Teaching Assistant

All teaching assistantships were in the Department of Biostatistics at the Johns Hopkins Bloomberg of Public Health.

2015-2016 **Advanced Data Science I-II (PH.140.711-712)**, 1*st*-2*nd term*.
Instructors: Jeff Leek, PhD and Elizabeth Colantuoni, PhD

2014-2015 **Statistical Methods in Public Health IV (PH.140.624)**, 4*th term*.
Instructors: James Tonascia, Ph.D and Mark Van Natta, MHS

2014-2015 **Special topics: Statistical Consulting**, 1*st*-3*rd term*.
Instructors: Carol Thompson, MS and Elizabeth Colantuoni, PhD

2013-2014 **Methods in Biostatistics I-II (PH.140.651-652)**, 1*st*-2*nd term*.
Instructor: Ciprian Craniceanu, PhD

2012-2013 **Methods in Biostatistics III-IV (PH.140.653-654)**, 3*rd*-4*th term*.
Instructor: Hongkai Ji, PhD

2012-2013 **Methods in Biostatistics I-II (PH.140.651-652)**, 1*st*-2*nd term*.
Instructor: Thomas Louis, PhD

2010-2011 **Statistical Methods in Public Health IV (PH.140.624)**, 4*th term*.
Instructors: James Tonascia, PhD and Mark Van Natta, MHS

2010-2011 **Statistical Methods in Public Health I (PH.140.621)**, 1*st*-3*rd term*.
Instructors: Marie Diener West, PhD and Karen Bandeen Roche, PhD

2009-2010 **Methods in Biostatistics I-II (PH.140.651-652)**, 1*st*-2*nd term*.
Instructor: Brian Caffo, PhD

Research Grant Participation

Mar 2019 – Apr 2024 **Co-Investigator**, *NIH/NCATS UL*1*TR*003098 (*Bandeen-Roche*), Institutional Clinical and Translational Science Award.
The purpose of this application is to enhance both the process and benefits of clinical and translational research by bringing together the diverse resources of the Johns Hopkins Medical Institutions (JHMI) and creating a new model for carrying out scientific research.

Aug 2019 – Jun 2024 **Co-Investigator**, *NIH AWD*00001055 (*Tudorascu/Crainiceanu*), Assist Dr. Tudorascu (main PI) with the development and implementation of methods for multi-sequence image segmentation and image intensity normalization in longitudinal studies. Drs. Muschelli and Crainiceanu will help mentor students involved in conducting the research and will support the development and deployment of open source R software on the Neuroconductor platform..

Sep 2019 – Jul 2023 **Co-Investigator**, *NIH/NIDA* 1*U*54*DA*049110-01 (*Lindquist*), Data Center for Acute to Chronic Pain Biosignatures.
Understanding the mechanisms underlying the transition to chronic pain is a key to mitigating the dual epidemics of chronic pain and opioid use in the U.S. As part of the NIH Common Fund Acute to Chronic Pain Signatures (A2CPS) Program, we will establish a Data Integration and Resource Center (DIRC). The Center will integrate imaging, peripheral physiology, genomics and other omics, behavior, and clinical measures to develop biosignatures for the transition to chronic pain.

Sep 2018 – Jun 2023 **Co-Investigator**, *NIH/NHGRI U24HG010263-01* (*Taylor/Schatz*), Implementing the Genomic Data Science Analysis, Visualization, and Informatics Lab-space (AnVIL).

We will develop the AnVIL environment using the leading supercomputing infrastructure as the foundation supporting the most widely used analysis environments and frameworks vetted by biomedical researchers. Our user-centered solution for data access, analysis, and visualization will enable investigators across all levels of expertise to fully utilize genomic datasets using environments they are already familiar with, leveraging well-engineered and optimized scientific computing infrastructure for greater efficiency and lower costs.

Jul 2020 – Jun 2025 **Co-Investigator**, *UE5CA254170* (*MPI*: *Leek, Goecks, Watson, Wheelan*), Scalable multimode education to increase use of ITCR tools by diverse analysts.

We propose to create a complete training resource including content and both online and offline courses to improve cancer informatics knowledge throughout the research enterprise. The project will create an informatics training network hosted at www.itcrtraining.org that can be used by everyone from community members, to basic scientists, to ITCR tool developers, to medical doctors, to principal investigators to improve their knowledge of informatics.

Completed Support

Jun 2017 – Feb 2022 **Co-Investigator**, *NIH/NINDS 2R01NS060910-09A1* (*Crainiceanu*), Statistical Methods for Multilevel Multivariate Functional Studies.

The goals of this project are to: 1) extend functional data analysis models to ultra-high-dimensional longitudinal data, 2) extend functional regression to longitudinal and high-dimensional settings, and; 3) extend methods to multi-modality multivariate outcome studies.

Jan 2018 – Jan 2021 **Co-Investigator**, 90076639 *Veran Medical Technologies*(*Yarmus*), All in One: Multicenter, Prospective triAL of ELectromagnetIc BroNchoscOpic and ElectromagNEtic Transthoracic Approaches for the Biopsy of Peripheral Pulmonary Lesions.

Compiled data and created reports on VOCs (volatile organic compounds) to determine if any are potential biomarkers of stage-I lung cancer using breath data.

Aug 2012 – Apr 2017 **Co-Investigator**, 12-01046 (*Crainiceanu*), Statistical Methods for Mapping Human Brain Development.

The goal of this project is to coordinate the work for JHU subcontract part of this grant, which includes programming, writing, literature reviews and data processing, as needed

Oct 2016 Dec 2017 **Co-Investigator**, *ABBVIE* 90071428 (*Zeger*), Prostate Cancer Clinical Decision Support Tool - Pilot Project.

The goal is to discover new scientific measurements and models to predict the trajectory of diseases in current patients as well as how each patients unique genetic makeup is likely to respond to medical treatments and procedures. Hopkins inHealth researchers combine clinical, genetic, lifestyle, and other data sources to create innovative tools intended to improve decision making in the prevention and treatment of a range of conditions, including cancer, cardiovascular disease, autoimmune disorders, and infectious disease.

Nov 2017 – Jun 2019 **Co-Investigator**, *NINDS/Duke Univ* 2037033 (*Crainiceanu*), Statistical methods for clinical trials with multivariate longitudinal outcomes.

This project provides statistical analysis methods for large clinical trial datasets where multiple health outcomes are measured at multiple visits. Methods are applied to two double-blind, placebo-controlled multi-site randomized phase III clinical trials of Parkinson's disease to provide a clear and simple clinical interpretation of the overall treatment effects.

Sep 2013 – Jul 2019 **Co-Investigator**, *NIH R01NS085211* (*Shinohara*), Statistical Methods for Large and Complex Databases of Ultra-High-Dimensional.

Responsible for co-developing statistical methods, their implementation as well as publication of software and papers related to the proposed work.

Aug 2016 – Jul 2019 **Co-Investigator**, *NIH/NINDS* 5*U*01*NS*08082405 (*Hanley*), MISTIE III Lead Grant Cluster Application for the Clinical Coordination.
MISTIE III is a Phase III, randomized, open-label, 500-subject multicenter clinical trial of minimally invasive surgery + rt-PA in the treatment of intracerebral hemorrhage with the primary aim of assessing whether rapid removal of blood using catheter-delivered intermittent thrombolytic dosing improves functional outcome in patients with an intracerebral hemorrhage.

Academic Service

2017–Present **Faculty Senator**, *Johns Hopkins Bloomberg School of Public Health*.
Helped lead a discussion on scientist-track faculty and representation in the school and represented the department of Biostatistics.

2013–Present **Middle Manager**, *Thread/Incentive Mentoring Program*.
Interfaced between executive-level staff and lower-level management. Organized monthly meetings, weekly progress updates and e-mails, and provided broad-scale mentorship for high-school students in the Baltimore City school district. Program title was "Grandparent", as it is a family-based, positive change model.

2013–Present **Co-founder, Vanguard Scholarship**, *Sun Valley High School*.
Co-founded a scholarship for outstanding students attending my alma mater, Sun Valley High School. Interviewed students as a representative of a graduate doing science at mock interview day. Continually recruiting other graduates to become involved and fund raising.

2014 **Organizer, Journal Club**, *JHSPH Department of Biostatistics*.

2013-2015 **Founder/Organizer, Writing Accountability Group**,
JHSPH Department of Biostatistics.

2013-2014 **Founder/Organizer, Blogging Club**,
JHSPH Department of Biostatistics.

2010–2013 **Manager**,
Thread/Incentive Mentoring Program.
Title was a “Head of Household”; mentored and tutored a student from Dunbar High School, teaching coursework, life skills, support as needed.

Presentations

Invited Seminars

Neuroconductor: An R Platform for Medical Imaging Analysis ,
University of Arkansas for Medical Sciences (*UAMS*), Little Rock, AK, Invited Seminar.

Scientific Meetings

2020 **R Package Development**,
Eastern North American Region (*ENAR*), (Online due to COVID19), Tutorial.

2019 **Potential Batch Effects and Biases in the UK Biobank Accelerometer Data**,
ENAR, Philadephia, PA, Talk.

2018 **Neuroconductor and Reproducibility: Imaging in R**,
Joint Statistical Meeting (*JSM*), Vancouver, BC, Canada, Talk.

My First Exposure to Accelerometer Data was for 100000 People from UK Biobank,
11*th International Conference of the ERCIM WG on Computational and Methodological Statistics*, Pisa, Italy, Talk.

Submitting to CRAN and Continuous Integration,
R Package Hackathon at Statistics in Imaging Conference, Philadelphia, PA, Talk and Hackathon Co-organizer.

Imaging Statistics in R,
Statistics in Imaging Conference, Philadelphia, PA, Talk.

Neuroimaging Analysis within R,
Eastern North American Region (*ENAR*), Atlanta, GA, Short Course.

Robust Lesion Segmentation on MRI of Patients with Multiple Sclerosis,
Genentech, South San Francisco, CA, Talk.

2017 **Neuroconductor: A Framework for a Framework for Reproducible Neuroimaging Analysis in R**,
Eastern North American Region (*ENAR*), Washington, DC, Poster.

Creating Interactive Graphics,
Joint Statistical Meeting (*JSM*), Baltimore, MD, Discussant and Organizer.

Neuroconductor: A Neuroimaging Analysis Project in R,
University of Mississippi Medical Center (*UMMC*), Jackson, MS, Invited Seminar.

Creating Interactive Graphics,
Joint Statistical Meeting (*JSM*), Baltimore, MD, Discussant and Organizer.

2016 **Papayar: A Better Interactive Neuroimage Plotter in R**,
Joint Statistical Meeting (*JSM*), Chicago, IL, Talk.

Processing Neuroimaging Data in R: Capabilities,
Mathematical and Statistical Challenges in Neuroimaging Data Analysis, Banff, AB, Talk.

Processing fMRI Data in R,
SAMSI Challenges in Functional Connectivity Modeling and Analysis Workshop, Durham, NC, Talk.

2015 **Succeeding in Undergraduate: A Message to Top Students**,
Sun Valley High School, Aston, PA, Talk.

SuBGELS: Subtraction-Based Gadolinium-Enhancing Lesion Segmentation,
Hopkins Imaging Conference, Baltimore, MD, Poster.

Automated Intracerebral Hemorrhage Segmentation of CT Scans,
Joint Statistical Meeting (*JSM*), Seattle, WA, SPEED Talk and Poster.

PItcHPERFECT: Primary Intracerebral Hemorrhage Prediction Employing Regression and Features Extracted from CT,
Eastern North American Region (*ENAR*), Miami, FL, Poster.

Quantitative Localization and Predictive Performance of Intracranial Hemorrhage,
International Stroke Conference (*ISC*), Nashville, TN, Poster.

Validated Automatic Brain Extraction of Head CT Images,
Organization for Human Brain Mapping (*OHBM*), Honolulu, HI, Poster.

2014 **Validated Automatic Brain Extraction of Head CT Images**,
Hopkins Imaging Conference, Baltimore, MD, Talk and Poster.

Reduction of motion-related artifacts in resting state fMRI using aCompCor,
Hopkins Imaging Conference, Baltimore, MD, Poster.
Award: Top Poster

2013 **Visualizing Brain Imaging in Interactive 3D**,
ENAR, Orlando, FL, Talk.

2012 **Resting State Preprocessing and Motion Artifacts**,
Second Biennial Conference on Resting State, Madgeburg, Germany, Poster.

Effects of preprocessing on motion-induced artifacts in resting state fMRI,
Society for Neuroscience (*SfN*), New Orleans, LA, Poster.