

John Muschelli

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Education

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

Relevant Experience

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

Peer-Reviewed Publications from past 3 years

* denotes authors contributed equally

- 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 (2020). “An improved algorithm of white matter hyperintensity detection in elderly adults”. *NeuroImage: Clinical* 25, p. 102151.
- Garibaldi, B. T. (2020). “Patient trajectories among persons hospitalized for COVID-19: a cohort study”. *Annals of Internal Medicine*.
- Hannawi, Y. (2020). “Postcardiac arrest neurological prognostication with quantitative regional cerebral densitometry”. *Resuscitation*.
- Hansen, B. M. (2020). “Relationship of white matter lesions with intracerebral hemorrhage expansion and functional outcome: MISTIE II and CLEAR III”. *Neurocritical Care*, pp. 1–9.
- Kross, S. (2020). “ari: The Automated R Instructor”. *The R Journal* 12.1, pp. 258–265.
- Leroux, A. (2020). “Quantifying the predictive performance of objectively measured physical activity on mortality in the UK Biobank”. *The Journals of Gerontology: Series A*.
- Minhas, D. S. (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. (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.C.
- Sharrock, M. (2020). “3D deep neural network segmentation of intracerebral hemorrhage: development and validation for clinical trials”. *medRxiv*.
- Valcarcel, A. M. (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.
- Hadavand, A. (2019). "Analysis of student behavior using the R package crsra". *Journal of Learning Analytics* 6.2, pp. 140–152.
- Ryan, S. M. (2019). "Template creation for high-resolution computed tomography scans of the lung in R software". *Academic Radiology*.
- 2018 **Muschelli, J.** (2018). "freesurfer: connecting the Freesurfer software with R". *F1000Research* 7.
- Muschelli, J.** (2018). "Neuroconductor: an R platform for medical imaging analysis". *Biostatistics*, kxx068. eprint: /oup / backfile / content _ public / journal / biostatistics/pap/10.1093_biostatistics_kxx068/1/kxx068.pdf.
- Commowick, O. (2018). "Objective evaluation of multiple sclerosis lesion segmentation using a data management and processing infrastructure". *Scientific Reports*.
- Smith, C. H. (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. (2018c). "TAPAS: threshold adjustment to probability map automatic segmentations". *MULTIPLE SCLEROSIS JOURNAL*. Vol. 24, pp. 629–630.
- Valcarcel, A. M. (2018b). "MIMoSA: an automated method for intermodal segmentation analysis of multiple sclerosis brain lesions". *Journal of Neuroimaging*.
- Valcarcel, A. M. (2018a). "MIMoSA: an approach to automatically segment T2 hyperintense and T1 hypointense lesions in multiple sclerosis". *International MICCAI Brainlesion Workshop*, pp. 47–56.

Software: R Packages

All download counts are from RStudio CRAN logs and are accurate as of October 13, 2020.

rscopus: Scopus Database API Interface, 67336.

fslr: Wrapper Functions for FSL (FMRIB Software Library) from Functional MRI of the Brain (FMRIB), 38196.

neurobase: Neuroconductor Base Package with Helper Functions for nifti Objects, 33972.

brainR: Helper Functions to misc3d and rgl Packages for Brain Imaging, 30298.

matlabr: An Interface for MATLAB using System Calls, 28363.

diffR: Display Differences Between Two Files using Codediff Library, 26895.

WhiteStripe: White Matter Normalization for Magnetic Resonance Images using WhiteStripe, 24097.

kirby21.base: Example Data from the Multi-Modal MRI Reproducibility Resource, 17085.

gifti: Reads in Neuroimaging GIFTI Files with Geometry Information, 17025.

freesurfer: Wrapper Functions for Freesurfer, 16661.

spm12r: Wrapper Functions for SPM (Statistical Parametric Mapping) Version 12 from the Wellcome Trust Centre for Neuroimaging, 16041.

gcite: Google Citation Parser, 15853.

mscstts: R Client for the Microsoft Cognitive Services Text-to-Speech REST API, 15762.

papayar: View Medical Research Images using the Papaya JavaScript Library, 14853.

cifti: Toolbox for Connectivity Informatics Technology Initiative (CIFTI) Files, 14699.

kirby21.t1: Example T1 Structural Data from the Multi-Modal MRI Reproducibility Resource, 13857.

kirby21.fMRI: Example Functional Imaging Data from the Multi-Modal MRI Reproducibility Resource, 13315.

neurohcp: Human Connectome Project Interface, 12702.

glassdoor: Interface to Glassdoor API, 12604.

stapler: Simultaneous Truth and Performance Level Estimation, 11337.

fedreporter: Interface to Federal RePORTER API, 11216.

text2speech: Text to Speech, 10000.

leanpubr: Leanpub API Interface, 8600.

nsrr: Interface to National Sleep Research Resource, 7570.

neurovault: Neurovault Database API Access, 703.