# Alexandra G. Roberts, M.S.

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## Employment History

2017 - 2020 **Research Engineer** Benz Research & Development, Sarasota, FL

2014 – 2015 **Corps Member** Teach For America, New York, NY

## Education

2020 **Doctor of Philosophy, Cornell University** Electrical & Computer Engineering

2016 - 2020 **Master of Engineering, University of Florida** Chemical Engineering
*3D reconstruction algorithms for X-ray tomography of printed circuit board samples*

2010 - 2014 **Bachelor of Science, West Virginia Wesleyan College** Chemistry
*Summa Cum Laude, WV-INBRE Researcher*

## Personal

Licensed amateur radio operator (KC0AGR), marathon runner, and guitarist.

## Research Publications

### Selected Articles


1. A. G. Roberts et al., "Joint Prediction of Motor and Non-motor Deep Brain Stimulation Outcomes using Quantitative Susceptibility Mapping," *Movement Disorders Congress*, Oct. 2025.
2. A. G. Roberts et al., "Synthetic Generation and Latent Projection Denoising of Rim Lesions in Multiple Sclerosis," *Synthetic Data for Computer Vision Workshop @ CVPR 2025*, Jun. 2025. URL: https://openreview.net/forum?id=wFkiqB5spT
3. A. G. Roberts et al., "Technical Feasibility of Quantitative Susceptibility Mapping Radiomics for Predicting Deep Brain Stimulation Outcomes in Parkinson's Disease," *Neurosurgery*, Feb. 2025. DOI: 10.1227/neu.0000000000003721
4. A. G. Roberts et al., "Radiomic Prediction of Parkinson's Disease Deep Brain Stimulation Surgery Outcomes using Quantitative Susceptibility Mapping and Label Noise Compensation," en, *Brain Stimul.*, vol. 18, no. 4, pp. 1286–1288, Oct. 2024. DOI: 10.1016/j.brs.2025.05.062
5. A. G. Roberts et al., "Maximum Spherical Mean Value Filtering for Whole-brain QSM," *Magnetic Resonance in Medicine*, vol. 91, no. 4, pp. 1586–1597, Jan. 2024, ISSN: 1522-2594. DOI: 10.1002/mrm.29963

### Conference Proceedings

1. A. G. Roberts, J. Zhang, P. Spincemaille, T. Nguyen, and Y. Wang, "Radiomic prediction of Parkinson's disease deep brain stimulation surgery motor and nonmotor outcomes using quantitative susceptibility mapping," in *Magnetic Resonance Phase, Susceptibility, and Electrical Properties Mapping*, 2024.
2. A. G. Roberts, A. Dimov, T. Nguyen, P. Spincemaille, and Y. Wang, "Inhomogeneity-informed field-fitting for quantitative susceptibility mapping (if-QSM)," in *Proceedings of the 33rd Annual Meeting of ISMRM, Singapore*, 2024.
3. A. G. Roberts et al., "QRadAR: A toolbox for quantitative magnetic resonance radiomics analysis and reliability," in *Proceedings of the 33rd Annual Meeting of ISMRM, Singapore*, 2024.
4. A. G. Roberts et al., "Radiomics for deep brain stimulation outcome prediction using quantitative susceptibility mapping (RadDBS-QSM)," in *Proceedings of the 33rd Annual Meeting of ISMRM, Singapore*, 2024.
5. A. G. Roberts et al., "Whole brain source separation for neurodegeneration," in *Proceedings of the 33rd Annual Meeting of ISMRM, Singapore*, 2024.
6. A. Roberts, P. Spincemaille, T. Nguyen, and Y. Wang, "Whole brain spherical mean value filtering for shadow reduction in quantitative susceptibility mapping," in *Proceedings of the 32nd Annual Meeting of ISMRM, Toronto, Canada*, 2023.
7. A. G. Roberts, I. Kovanlikaya, B. Kopell, P. Spincemaille, T. Nguyen, and Y. Wang, "Improved visualization of the medial medullary lamina via phase priors in quantitative susceptibility mapping," in *Proceedings of the 32nd Annual Meeting of ISMRM, Toronto, Canada*, 2023.
8. A. G. Roberts, J. Zhang, P. Spincemaille, T. Nguyen, and Y. Wang, "Choice of architecture in 3d super-resolution of quantitative susceptibility maps," in *Proceedings of the 32nd Annual Meeting of ISMRM, Toronto, Canada*, 2023.
9. A. Roberts, P. Spincemaille, I. Kovanlikaya, J. A. Tsiouris, T. Nguyen, and Y. Wang, "SWISeR: Multi-field susceptibility-weighted images super-resolution," in *Proceedings of the 31st Annual Meeting of ISMRM, London, England*, 2022.
10. A. G. Roberts, J. Zhang, P. Spincemaille, T. Nguyen, and Y. Wang, "SuperQ: 3d super-resolution of quantitative susceptibility maps," in *Proceedings of Magnetic Resonance Phase, Susceptibility, and Electrical Properties Mapping*, 2022.
11. A. G. Roberts, P. Spincemaille, T. Nguyen, I. Kovanlikaya, and Y. Wang, "MEDI-FM: Field map error guided regularization for shadow reduction in quantitative susceptibility mapping," in *Proceedings of the 31st Annual Meeting of ISMRM, London, England*, 2022.
12. A. Roberts, P. Spincemaille, T. D. Nguyen, and Y. Wang, "MEDI-d: Downsampled morphological priors for shadow reduction in quantitative susceptibility mapping," in *Proceeedings of the 30th Annual Meeting of ISMRM*, 2021.
13. A. Roberts, J. True, N. T. Jessurun, and D. N. Asadizanjani, "An overview of 3d X-Ray reconstruction algorithms for PCB inspection," ASM International, Dec. 2020. DOI: 10.31399/asm.cp.istfa2020p0188
14. A. Roberts, D. Russell, and B. Anthony, "Systems genomics in alcohol exposed dorsal root ganglia neuronal stem cells of adult rats," in *Proceedings of the West Virginia Academy of Sciences*, 2014.

## References

Available on request