Graham W. Johnson

MD/PhD · Neurological Surgery Resident, Mayo Clinic

CURRICULUM VITAE

Graham W. Johnson MD/PhD
Neurosurgery Resident – Mayo Clinic

SURGICAL TRAINING

Neurological Surgery Residency
Mayo Clinic – Rochester, MN
2024 - 2031

EDUCATION

M.D.
Vanderbilt Medical School
2017 - 2024
Ph.D.
Vanderbilt University
Department of Biomedical Engineering
Mentored by Dario Englot, M.D., Ph.D.
Dissertation: Advanced Structural and Functional Network Applications to Improve Neurosurgical Treatment of Epilepsy (link)
2019 - 2023
B.S. Electrical Engineering
B.S. Biochemistry
University of Wisconsin - Madison
Engineering Honor Society – Tau Beta Pi
Graduated with Highest Distinction
2011 - 2015 (graduated winter 2015)
Secondary Education
International Baccalaureate Diploma, NY
Summa cum laude
2007 - 2009
Minnetonka High School, MN
Valedictorian
2005 - 2009

PROFESSIONAL ACTIVITIES

PROFESSIONAL WORK EXPERIENCE

Electrical Engineer - Research & Development
Medtronic – Minneapolis, MN
2016 - 2017
Research Assistant
University of Wisconsin – Madison, WI
2014 - 2015
Electrical Engineer - Research & Development
Honeywell – Plymouth, MN
2013
Carpet Installer

Picture Perfect Floors – Minneapolis, MN
2009 – 2011

PROFESSIONAL APPOINTMENTS

Student Advisory Council
Vanderbilt Medical Scientist Training Program
2023
MSTP Quantitative Curriculum Consultant
Vanderbilt Medical Scientist Training Program
2022 - 2023
MSTP Admissions Committee Full-Voting Member
Vanderbilt Medical Scientist Training Program
2021 - 2023
MSTP T32 Grant Consultant
Vanderbilt Medical Scientist Training Program
2022
VISE Vision Leadership Board
Vanderbilt Institute of Surgery & Engineering
2021 - 2022
Vanderbilt MSTP Admissions Interviewer
Vanderbilt Medical Scientist Training Program
2020 - 2021
LCME Accreditation Committee
Vanderbilt Medical School
2019 - 2020
Mass Casualty Response Team
Vanderbilt University Medical Center
2019 - 2020
Southeastern Medical Scientist Symposium Organizing Committee
Vanderbilt Medical School
2018 - 2019
Honor Council – Elected by Classmates
Vanderbilt Medical School
2017 - 2019
Senate Grievance Committee – Appointed by Medical School Deans
Vanderbilt University
2017 - 2018

PROFESSIONAL MEMBERSHIPS

Congress of Neurological Surgeons (CNS)
American Association of Neurological Surgeons (AANS)
American Epilepsy Society (AES)
American Society for Stereotactic and Functional Neurosurgery (ASSFN)
North American Neuromodulation Society (NANS)
North American Spine Society (NASS)

MENTORING SUMMARY

Name	Role	Years	Current Position
Sameer Sundrani	MD Student	2024 – 2025	Vanderbilt MD Student

Name	Role	Years	Current Position
Ghassan Makhoul	MD/PhD Student	2023 - 2026	Vanderbilt MD/PhD Student
Price Withers	MD/PhD Student	2021 - 2023	Vanderbilt MD/PhD Student
Bruno Hidalgo	MD/PhD Student	2021 - 2023	Vanderbilt MD/PhD Student
Camden Bibro	Research Assistant	2022 - 2023	Vanderbilt MS Data Science Student
Anas Reda	MD/PhD Student	2022 - 2023	Vanderbilt MD/PhD Student
Jared Shless	Research Assistant	2022 - 2023	Harvard Medical Student
Derek Doss	MD/PhD Student	2019 - 2023	Vanderbilt MD/PhD Student
Aarushi Negi	Undergraduate	2019 - 2023	Applying for MD/PhD 2024
Jasmine Jiang	Research Assistant	2021 - 2022	Yale Medical Student
Kristin Wills	Research Assistant	2019 - 2021	MUSC Medical Student
Kanupriya Gupta	Research Assistant	2018 - 2019	University of Pittsburg Medical Student
Sarah Goodale	Undergraduate	2017 - 2019	Vanderbilt PhD BME Student

PUBLICATIONS

Google Scholar
Graham W. Johnson - Google Scholar
PubMed
https://www.ncbi.nlm.nih.gov/myncbi/graham.johnson.3/bibliography/public/

ORCID

https://orcid.org/0000-0002-9154-4315
Web of Science
http://www.webofscience.com/wos/author/record/GQP-7459-2022
ResearchGate
https://www.researchgate.net/profile/Graham-Johnson-19

PEER-REVIEWED ARTICLES

Johnson GW, Chanbour H, Doss DJ, Makhoul GS, Abtahi AM, Stephens BF, Zuckerman SL. Pseudarthrosis following adult spinal deformity surgery may be predicted with preoperative MRI adipose tissue features: an artificial intelligence study on raw 3D imaging. Artificial Intelligence Surgery. 2024;4(4):401-10. doi: 10.20517/ais.2024.40.

Singh B, Wang Z, Madiah LM, Gatti SE, Fulton JN, Johnson GW, Li R, Dawant BM, Englot DJ, Bick SK, Roberson SW, Constantinidis C. Brain-wide human oscillatory local field potential activity during visual working memory. iScience. 2024 Mar 15;27(3):109130. doi: 10.1016/j.isci.2024.109130. Epub 2024 Feb 5. PMID: 38380249. PMCID: PMC10877957.

Doss DJ, Gummadavelli A, Johnson GW, Makhoul GS, Shless JS, Bibro CE, Jacobs ML, Kang H, Haas KF, Bick SK, Terry DP, Dawant BM, Chang C, Morgan VL, Englot DJ. Impact of disease duration and surgical intervention on arousal networks in temporal lobe epilepsy. J Neurosurg. 2025 Jun 1;142(6):1525-1534. doi: 10.3171/2024.8.JNS241079. Epub 2025 Jan 24. PMID: 39854724. PMCID: PMC12129691.

Hughes NC, Qian H, Doss DJ, Makhoul GS, Zargari M, Zhao Z, Singh B, Wang Z, Fulton JN, Johnson GW, Li R, Dawant BM, Englot DJ, Constantinidis C, Williams Roberson S, Bick SK. Reward circuit local field potential modulations precede risk taking. Brain. 2025 Nov 4;148(11):3958-3972. doi: 10.1093/brain/awaf107. PMID: 40101145. PMCID: PMC12588683.

Feng E, Jayasuriya NM, Nathani KR, Katsos K, Machlab LA, Johnson GW, Freedman BA, Bydon M. Artificial intelligence image analysis for Hounsfield units in preoperative thoracolumbar CT scans: an automated screening for osteoporosis in patients undergoing spine surgery. J Neurosurg Spine. 2025 Jul 1;43(1):1-8. doi: 10.3171/2025.1.SPINE24900. Epub 2025 Apr 18. PMID: 40250051.

Sundrani S, Johnson GW, Doss DJ, Makhoul GS, Hidalgo Monroy Lerma B, Reda A, Cavender AC, Liao E, Rogers BP, Williams Roberson S, Bick SK, Morgan VL, Englot DJ. Deep learning on brief interictal intracranial recordings can accurately characterize seizure onset zones. Epilepsia. 2025 Sep;66(9):3180-3192. doi: 10.1111/epi.18478. Epub 2025 May 27. PMID: 40423629. PMCID: PMC12354104.

Makhoul GS, Doss DJ, Johnson GW, Withers CP, Cavender AC, Hidalgo Monroy Lerma B, Reda A, Bibro CE, Liao E, Kang H, Dawant BM, Reddy SB, Crudele AN, Constantinidis C, Williams Roberson S, Bick SK, Morgan VL, Englot DJ. Collapse of interictal suppressive networks permits seizure spread. Brain. 2025 Dec 4;148(12):4275-4287. doi: 10.1093/brain/awaf215. PMID: 40473247. PMCID: PMC13370126.

Sundrani S, Doss DJ, Johnson GW, Jain H, Zakieh O, Wegner AM, Lugo-Pico JG, Abtahi AM, Stephens BF, Zuckerman SL. Does alignment alone predict mechanical complications after adult spinal deformity surgery? A machine learning comparison of alignment, bone quality, and soft tissue. Neurosurg Focus. 2025 Jul 1;59(1):E15. doi: 10.3171/2025.4.FOCUS25245. PMID: 40591962.

Reda A, Doss DJ, Makhoul GS, Monroy Lerma BH, Johnson G, Sainburg LE, Cavender AC, Sundrani S, Liao E, Roche A, Long I, Kang H, Dawant B, Chang C, Bick SK, Nobis WP, Morgan V, Englot DJ. Altered Interictal Bed Nucleus of Stria Terminalis Connectivity in Patients With Temporal Lobe Epilepsy. Neurology. 2025 Dec 9;105(11):e214385. doi: 10.1212/WNL.0000000000214385. Epub 2025 Nov 13. PMID: 41232063. PMCID: PMC13439677.

Lampert F, Baker MR, Jensen MA, Ayyoubi AH, Bentler C, Bowersock JL, Esteller R, Herron JA, Johnson GW, Kipke DR, Kovach CK, Kremen V, Mivalt F, Neimat JS, Netoff TI, Opri E, Rockhill A, Rosenow JM, Sellers KK, Staff NP, Swamy CP, Viswanathan A, Schalk G, Denison T, Hermes D, Ince NF, Brunner P, Worrell GA, Miller KJ. Adaptive neuromodulation dialogues: navigating current challenges and emerging innovations in neuromodulation system development. J Neural Eng. 2025 Dec 19;22(6). doi: 10.1088/1741-2552/ae2359. PMID: 41285049. PMCID: PMC12715846.

Makhoul GS, Johnson GW, Reda A, Hidalgo Monroy Lerma B, Fan JM, Worrell GA, Englot DJ. Pathway to Adaptive Neuromodulation: Modeling Epileptogenic Brain States Using SEEG. Epilepsy Curr. 2026 Feb 19;15357597261422447. doi: 10.1177/15357597261422447. PMID: 41726571. PMCID: PMC12920160.

Hidalgo Monroy Lerma B, Makhoul GS, Reda A, Cavender AC, Doss DJ, Withers CP, Wang K, Johnson GW, Funk C, Crudele AN, Englot DJ. Inpatient continuous thalamic stereo-electroencephalography stimulation in the evaluation of focal epilepsy: illustrative case. J Neurosurg Case Lessons. 2026 Apr 6;11(14). doi: 10.3171/CASE25947. PMID: 41941831. PMCID: PMC13051662.

Qian H, Johnson GW, Hughes NC, Chao A, Long IC, Paulo DL, Zhao Z, Subramanian D, Taylor WD, Dhima K, Bick SK. Movement Disorder Patients with Depression Have Altered Corticostriatal Alpha-Beta Power Response to Reward and Loss. eNeuro. 2026 Jul;13(7). doi: 10.1523/ENEURO.0008-26.2026. Epub 2026 Jul 13. PMID: 42386530. PMCID: PMC13364504.

Cavender AC, Doss DJ, Makhoul GS, Lerma BHM, Reda A, Withers CP, Liao E, Wang K, González HFJ, Goodale SE, Johnson GW, Cutting LE, Bick SK, Chang C, Morgan VL, Englot DJ. Nucleus basalis functional connectivity aberrations in temporal lobe epilepsy and improvements after successful epilepsy surgery. Epilepsia. 2026 Aug 19. doi: 10.1002/epi.70451. PMID: 42615230.

Doss DJ, Johnson GW, Makhoul GS, Rashingkar RV, Shless JS, Bibro CE, Paulo DL, Gummadavelli A, Ball TJ, Reddy SB, Naftel RP, Haas KF, Dawant BM, Constantinidis C, Williams Roberson S, Bick SK, Morgan VL, Englot DJ. Network signatures define consciousness state during focal seizures. Epilepsia. 2024. doi: 10.1111/epi.18074.

Akbarian B, Sainburg LE, Janson A, Johnson GW, Doss DJ, Rogers BP, Englot DJ, Morgan VL. Association Between Postsurgical Functional Connectivity and Seizure Outcome in Patients With Temporal Lobe Epilepsy. Neurology. 2024 Oct 8;103(7):e209816. doi: 10.1212/WNL.0000000000209816. Epub 2024 Sep 3. PMID: 39226517; PMCID: PMC11373675.

Doss DJ, Shless JS, Bick SK, Makhoul GS, Negi AS, Bibro CE, Rashingkar R, Gummadavelli A, Chang C, Gallagher MJ, Naftel RP, Reddy SB, Williams-Roberson S, Morgan VL, Johnson GW, Englot DJ. The interictal suppression hypothesis is the dominant differentiator of seizure onset zones in focal epilepsy. Brain. 2024 Jun 14:awae189. doi: 10.1093/brain/awae189. Epub ahead of print. PMID: 38874456.

Younus I, Chanbour H, Chen JW, Johnson GW, Metcalf T, Lyons AT, Jonzzon S, Liles C, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Combined Anterior-Posterior vs. Posterior-Only Approach in Adult Spinal Deformity Surgery: Which Strategy Is Superior? J Clin Med. 2024 Jan 24;13(3):682. doi: 10.3390/jcm13030682. PMID: 38337376; PMCID: PMC10856410.

Cai LY, Lee HH, Johnson GW, Newlin NR, Ramadass K, Kim ME, Archer DB, Hohman TJ, Jefferson AL, Begnoche JP, Boyd BD, Taylor WD, Morgan VL, Englot DJ, Nath V, Chotai S, Barquero L, D'Archangel M, Cutting LE, Dawant BM, Rheault F, Moyer DC, Schilling KG, Gore JC, Landman BA. (2024, July). Tractography from T1-weighted MRI: empirically exploring the clinical viability of streamline propagation without diffusion MRI. Imaging Neuroscience.

Chanbour H, Bendfeldt GA, Johnson GW, Peterson K, Ahluwalia R, Younus I, Longo M, Abtahi AM, Stephens BF, Zuckerman SL. Longer Screws Decrease the Risk of Radiographic Pseudarthrosis Following Elective Anterior Cervical Discectomy and Fusion. Global Spine J. 2023 Nov 11:21925682231214361. doi: 10.1177/21925682231214361. Epub ahead of print. PMID: 37950628.

Jonzzon S, Chanbour H, Johnson GW, Chen JW, Metcalf T, Lyons AT, Younus I, Liles C, Abtahi AM, Stephens BF, et al. Who Can Be Discharged Home after Adult Spinal Deformity Surgery? Journal of Clinical Medicine. 2024; 13(5):1340. https://doi.org/10.3390/jcm13051340

Janson A, Sainburg L, Akbarian B, Johnson GW, Rogers BP, Chang C, Englot DJ, Morgan VL. Indirect structural changes and reduced controllability after temporal lobe epilepsy resection. Epilepsia. 2024 Jan 19. doi: 10.1111/epi.17889. Epub ahead of print. PMID: 38240699.

Johnson GW, Chanbour H, Ali MA, Chen J, Metcalf T, Doss DJ, Younus I, Jonzzon S, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Artificial Intelligence to Preoperatively Predict Proximal Junction Kyphosis Following Adult Spinal Deformity Surgery: Soft Tissue Imaging May be Necessary for Accurate Models. Spine. 2023. ():10.1097/BRS.0000000000004816, August 30, 2023. | DOI: 10.1097/BRS.0000000000004816. PMID: 37644737

Johnson GW, Doss DJ, Jiang JW, Paulo DL, Cai LY, Shless JS, Negi AS, Gummadavelli A, Kang H, Reddy SB, Naftel RP, Bick SK, Williams Roberson S, Dawant BM, Wallace MT, Englot DJ. The interictal suppression hypothesis in focal epilepsy: network-level supporting evidence. Brain. 2023 Feb 1: doi: 10.1093/brain/awad016. PMID: 36722219.

*Paulo DL, *Johnson GW, Doss DJ, Allen JH, González HFJ, Shults R, Li R, Ball TJ, Bick SK, Hassell TJ, D'Haese PF, Konrad PE, Dawant BM, Narasimhan S, Englot DJ. Intraoperative physiology augments atlas-based data in awake deep brain stimulation. J Neurol Neurosurg Psychiatry. 2023 Sep 7:jnnp-2023-331248. doi: 10.1136/jnnp-2023-331248. PMID: 37679029 *Equal Contribution

Doss DJ, Johnson GW, Narasimhan S, Jiang JW, Gonzalez HFJ, Paulo DL, Lucas A, Davis KA, Chang CE, Morgan VL, Constantinidis C, Dawant BM, Englot DJ. Deep learning segmentation of the nucleus basalis of Meynert on 3T MRI. AJNR Am J Neuroradiol. 2023 Aug 10. doi: 10.3174/ajnr.A7950. Epub ahead of print. PMID: 37562826.

Cai LY, Lee HH, Newlin NR, Kerley CI, Kanakaraj P, Yang Q, Johnson GW, Moyer D, Schilling KG, Rheault F, Landman BA. Convolutional-recurrent neural networks approximate diffusion tractography from T1-weighted MRI and associated anatomical context. In Proceedings of Machine Learning Research. 2023.

Paulo DL, Qian H, Subramanian D, Johnson GW, et al., Corticostriatal beta oscillation changes associated with cognitive function in Parkinson's disease. Brain. 2023;doi:10.1093/brain/awad206

Jiang JW, Narasimhan S, Johnson GW, González HFJ, Doss DJ, Shless JS, Paulo DL, Terry DP, Chang C, Morgan VL, Englot DJ. Abnormal functional connectivity of the posterior hypothalamus and other arousal regions in surgical temporal lobe epilepsy. J Neurosurg. 2023 Feb 17:1-11. doi: 10.3171/2023.1.JNS221452. PMID: 36807210.

Sainburg LE, Janson AP, Johnson GW, Jiang JW, Rogers BP, Chang C, Englot DJ, Morgan VL. Structural disconnection relates to functional changes after temporal lobe epilepsy surgery. Brain. 2023 Apr 5:awad117. doi: 10.1093/brain/awad117. PMID: 37018067.

Nanda A, Johnson GW, Mu Y, Ahrens MB, Chang C, Englot DJ, Breakspear M, Rubinov M. Time-resolved correlation of distributed brain activity tracks E-I balance and accounts for diverse scale-free phenomena. Cell Rep. 2023 Mar 24;42(4):112254. doi: 10.1016/j.celrep.2023.112254. Epub ahead of print. PMID: 36966391.

Johnson GW, Cai LY, Doss DJ, Jiang JW, Negi AS, Narasimhan S, Paulo DL, González HFJ, Williams Roberson S, Bick SK, Chang CE, Morgan VL, Wallace MT, Englot DJ. Localizing seizure onset zones in surgical epilepsy with neurostimulation deep learning. J Neurosurg. 2022 Sep 23:1-6. doi: 10.3171/2022.8.JNS221321. PMID: 36152321.

González HFJ, Narasimhan S, Goodale SE, Johnson GW, Doss DJ, Paulo DL, Morgan VL, Chang C, Englot DJ. Arousal and salience network connectivity alterations in surgical temporal lobe epilepsy. J Neurosurg. 2022 Jul 8;138(3):810-820. doi: 10.3171/2022.5.JNS22837. PMID: 35901709.

*Sinha N, *Johnson GW, Davis KA, Englot DJ. Integrating Network Neuroscience Into Epilepsy Care: Progress, Barriers, and Next Steps. Epilepsy Curr. 2022 May 13;22(5):272-278. doi: 10.1177/15357597221101271. PMID: 36285209; PMCID: PMC9549227. *Equal contribution.

Morgan VL, Sainburg LE, Johnson GW, Janson A, Levine KK, Rogers BP, Chang C, Englot DJ. Presurgical temporal lobe epilepsy connectome fingerprint for seizure outcome prediction. Brain Commun. 2022 May 17;4(3):fcac128. doi: 10.1093/braincomms/fcac128. PMID: 35774185; PMCID: PMC9237708.

Sainburg LE, Little AA, Johnson GW, Janson AP, Levine KK, González HFJ, Rogers BP, Chang C, Englot DJ, Morgan VL. Characterization of resting functional MRI activity alterations across epileptic foci and networks. Cereb Cortex. 2022 Dec 8;32(24):5555-5568. doi: 10.1093/cercor/bhac035. PMID: 35149867; PMCID: PMC9753043.

Paulo DL, Wills KE, Johnson GW, Gonzalez HFJ, Rolston JD, Naftel RP, Reddy SB, Morgan VL, Kang H, Williams Roberson S, Narasimhan S, Englot DJ. SEEG Functional Connectivity Measures to Identify Epileptogenic Zones: Stability, Medication Influence, and Recording Condition. Neurology. 2022 May 17;98(20):e2060-e2072. doi: 10.1212/WNL.0000000000200386. Epub 2022 Mar 25. PMID: 35338075; PMCID: PMC9162047.

Johnson GW, Cai LY, Narasimhan S, González HFJ, Wills KE, Morgan VL, Englot DJ. Temporal lobe epilepsy lateralisation and surgical outcome prediction using diffusion imaging. J Neurol Neurosurg Psychiatry. 2022 Jun;93(6):599-608. doi: 10.1136/jnnp-2021-328185. Epub 2022 Mar 28. PMID: 35347079; PMCID: PMC9149039.

Narasimhan S, González HFJ, Johnson GW, Wills KE, Paulo DL, Morgan VL, Englot DJ. Functional connectivity between mesial temporal and default mode structures may help lateralize surgical temporal lobe epilepsy. J Neurosurg. 2022 Apr 1;137(6):1571-1581. doi: 10.3171/2022.1.JNS212031. PMID: 35364587; PMCID: PMC9525455.

Johnson GW, Doss DJ, Englot DJ. Network dysfunction in pre and postsurgical epilepsy: connectomics as a tool and not a destination. Curr Opin Neurol. 2022 Apr 1;35(2):196-201. doi: 10.1097/WCO.0000000000001008. PMID: 34799514; PMCID: PMC8891078.

Morgan VL, Johnson GW, Cai LY, Landman BA, Schilling KG, Englot DJ, Rogers BP, Chang C. MRI network progression in mesial temporal lobe epilepsy related to healthy brain architecture. Netw Neurosci. 2021 Apr 27;5(2):434-450. doi: 10.1162/netn_a_00184. PMID: 34189372; PMCID: PMC8233120.

Cai LY, Yang Q, Hansen CB, Nath V, Ramadass K, Johnson GW, Conrad BN, Boyd BD, Begnoche JP, Beason-Held LL, Shafer AT, Resnick SM, Taylor WD, Price GR, Morgan VL, Rogers BP, Schilling KG, Landman BA. PreQual: An automated pipeline for integrated preprocessing and quality assurance of diffusion weighted MRI images. Magn Reson Med. 2021 Jul;86(1):456-470. doi: 10.1002/mrm.28678. Epub 2021 Feb 3. PMID: 33533094; PMCID: PMC8387107.

Narasimhan S, Kundassery KB, Gupta K, Johnson GW, Wills KE, Goodale SE, Haas K, Rolston JD, Naftel RP, Morgan VL, Dawant BM, González HFJ, Englot DJ. Seizure-onset regions demonstrate high inward directed connectivity during resting-state: An SEEG study in focal epilepsy. Epilepsia. 2020 Nov;61(11):2534-2544. doi: 10.1111/epi.16686. Epub 2020 Sep 18. PMID: 32944945; PMCID: PMC7899016.

Wills KE, González HFJ, Johnson GW, Haas KF, Morgan VL, Narasimhan S, Englot DJ. People with mesial temporal lobe epilepsy have altered thalamo-occipital brain networks. Epilepsy Behav. 2021 Feb;115:107645. doi: 10.1016/j.yebeh.2020.107645. Epub 2020 Dec 15. PMID: 33334720; PMCID: PMC7882020.

González HFJ, Narasimhan S, Johnson GW, Wills KE, Haas KF, Konrad PE, Chang C, Morgan VL, Rubinov M, Englot DJ. Role of the Nucleus Basalis as a Key Network Node in Temporal Lobe Epilepsy. Neurology. 2021 Mar 2;96(9):e1334-e1346. doi: 10.1212/WNL.0000000000011523. Epub 2021 Jan 13. PMID: 33441453; PMCID: PMC8055321.

Goodale SE, González HFJ, Johnson GW, Gupta K, Rodriguez WJ, Shults R, Rogers BP, Rolston JD, Dawant BM, Morgan VL, Englot DJ. Resting-State SEEG May Help Localize Epileptogenic Brain Regions. Neurosurgery. 2020 Jun 1;86(6):792-801. doi: 10.1093/neuros/nyz351. PMID: 31814011; PMCID: PMC7225010.

PREPRINTS

Johnson GW, Makhoul GS, Doss DJ, Monroy Lerma BH, Cai LY, et al. (36 authors; Worrell GA, Miller KJ, Englot DJ last three). Generalized brain-state modeling with KenazLBM. bioRxiv. Posted 2025-08-12 (v3 2025-09-12). doi: 10.1101/2025.08.10.669538. First and corresponding author.

Johnson GW, Doss DJ, Makhoul GS, Cai LY, Bibro CE, Paulo DL, Reddy SB, Naftel RP, Haas KF, Wallace MT, Dawant BM, Crudele AN, Morgan VL, Constantinidis C, Roberson SW, Bick SK, Englot DJ. Brain-state modeling using electroencephalography: Application to adaptive closed-loop neuromodulation for epilepsy. bioRxiv. 2024-06-01. doi: 10.1101/2024.06.01.596884. First and corresponding author. Preprint: Crossref type posted-content; no journal version indexed as of 2026-09-11.

MANUSCRIPTS IN PROGRESS

Self-reported and NOT independently verified. Held here, in the applicant's own words, rather than deleted; nothing in this section may be quoted in an application until it is checked against a primary record. Relocated out of PEER-REVIEWED ARTICLES 2026-09-11.

Natasha submission to Brain – are there 2?

Brain acceptance : Natasha Feb 2025 email

Zuckerman: Neurosurgery submission

Neurologic Deficits Due to Proximal Junctional Kyphosis After Adult Spinal Deformity Surgery: How Often Do They Happen and Do They Improve?"

FIRST-AUTHOR ORAL PRESENTATIONS

Johnson GW, Doss DJ, Makhoul GS, Cai LY, Bibro CE, Reddy SB, Naftel RP, Haas KF, Wallace MT, Dawant BM, Crudele AN, Morgan VL, Constantinidis C, Williams Roberson S, Miller KJ, Bick SK, Englot DJ. BrainState: Instantaneous Functional Network State for Adaptive Closed-Loop Neuromodulation of Epilepsy. North American Neuromodulation Society (NANS). First place oral presentation.

Johnson GW, Doss DJ, Makhoul GS, Cai LY, Bibro CE, Cavender AC, Paulo DL, Rogers BP, Reddy SB, Naftel RP, Dewant B, Chang CE, Wallace MT, Williams-Roberson S, Morgan VL, Bick SK, Englot DJ. Peri-Ictal Dynamics of The Interictal Suppression Hypothesis: An SEEG Study. American Society for Stereotactic and Functional Neurosurgery (ASSFN) Biennial Meeting. June 01-04, 2024; Nashville, TN, USA. Podium Presentation.

Johnson GW, Chanbour H, Chen J, Metcalf T, Jonzzon S, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Combined Anterior-Posterior vs. All-Posterior Approach in Adult Spinal Deformity Surgery: Which Strategy Is Superior?. North American Spine Society (NASS) Annual Meeting, October 18, 2023; Los Angeles, CA. Podium Presentation.

Johnson GW, Chanbour H, Chen J, Metcalf T, Doss DJ, Younus I, Jonzzon S, Ali MA, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Preoperative Soft Tissue Imaging Features Elucidated by Artificial Intelligence May Best Predict Radiographic Proximal Junction Kyphosis Following Adult Spinal Deformity Surgery. Congress of Neurological Surgeons (CNS) Annual Meeting, September 9, 2023; Washington, D.C. Oral Presentation.

Johnson GW, Chanbour H, Chen J, Metcalf T, Jonzzon S, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Spinopelvic Failure After Adult Spinal Deformity Surgery: Incidence and Predictors. Scoliosis Research Society (SRS) Annual Meeting. September 6, 2023; Seattle, WA, USA. Podium Presentation.

Johnson GW, Chanbour H, Chen J, Metcalf T, Ali MA, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Deep Learning of Raw Image Preoperative Scoliosis Films Predicts the Development of Proximal Junction Kyphosis in Adult Spinal Deformity Surgery Better Than Radiographic Measurements. Scoliosis Research Society (SRS) Annual Meeting. September 6, 2023; Seattle, WA, USA. E-Point Oral Presentation.

Johnson GW, Chanbour H, Bendfeldt G, Peterson K, Ahluwalia R, Younus I, Longo M, Abtahi AM, Stephens BF, Zuckerman SL. Longer screws decrease the risk of radiographic pseudarthrosis following elective anterior cervical discectomy and fusion. Vanderbilt Annual Research Forum, April 2023, Nashville, TN. Podium Presentation.

Johnson GW, Doss DJ, Jiang JW, Paulo DL, Cai LY, Shless JS, Negi AS, Gummadavelli A, Kang H, Reddy SB, Naftel RP, Bick SK, Williams Roberson S, Dawant BM, Wallace MT, Englot DJ. Are Healthy Brain Regions Tonically Inhibiting Seizure Onset Zones? The Interictal Suppression Hypothesis in Focal Epilepsy. ILAE 35th International Epilepsy Congress. September 2, Dublin, Ireland. Podium Presentation.

Johnson GW, Chanbour H, Bendfeldt G, Peterson K, Ahluwalia R, Younus I, Longo M, Abtahi AM, Stephens BF, Zuckerman SL. Longer screws decrease the risk of radiographic pseudarthrosis following elective anterior cervical discectomy and fusion. North American Spine Society (NASS) Annual Meeting, October 18, 2023; Los Angeles, CA. Podium Presentation.

Johnson GW, Chanbour H, Chen J, Metcalf T, Jonzzon S, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Neurologic Deficits Due to Proximal Junctional Kyphosis After Adult Spinal Deformity Surgery: Incidence and Improvement. North American Spine Society (NASS) Annual Meeting, October 18, 2023; Los Angeles, CA. Podium Presentation.

Johnson GW, Doss DJ, Shless JS, Negi AS, Gummadavelli A, Paulo DL, Bick SK, Morgan VL, Englot DJ. Peri-Ictal Alterations of Directed Connectivity in Focal Epilepsy: A Stereotactic-EEG Study. North American Neuromodulation Society. January 2023, Las Vegas, NV. Oral Presentation.

Johnson GW, Doss DJ, Shless JS, Paulo DL, Gummadavelli A, Morgan VL, Bick SE, Englot DJ. Combined Diffusion MRI and SEEG Approach for Identification of Seizure Onset and Propagative Zones Without Ictal Recordings. Vanderbilt University Institute of Imaging Sciences (VUIIS). October 2022, Nashville, TN. Oral Presentation.

Johnson GW, Doss DJ, Shless JS, Paulo DL, Morgan VL, Bick SK, Englot DJ. Presurgical Identification of Seizure Onset and Propagative Zones Without Ictal Recordings: A Combined Diffusion MRI and SEEG Study. Congress of Neurological Surgeons (CNS) 2022 Annual Meeting, San Francisco, CA. Oral Presentation.

Johnson GW, Negi A, Doss DJ, Jiang J, Narasimhan S, Paulo DL, Williams Roberson S, Bick SK, Chang CE, Morgan VL, Englot DJ. Direction and frequency of connectivity in the seizure generation network: a cortico-cortical evoked potential study. American Society for Stereotactic and Functional Neurosurgery (ASSFN) Biennial Meeting 2022, Atlanta, GA. Oral Presentation.

Johnson GW, Wills KE, Cai LY, Negi AS, Jiang JW, Narasimhan S, Paulo DL, González HFJ, Sonmezturk HH, Williams Roberson S, Morgan VL, Englot DJ. A neural network trained on distant cortico-cortical evoked potentials can localize ictal onset in focal epilepsy. North American Neuromodulation Society Annual Meeting, Jan 2022, Orlando, FL. Oral Presentation.

Johnson GW, Cai LY, Doss DD, Negi AS, Jiang JW, Narasimhan S, Paulo DL, González HFJ, Morgan VL, Englot DJ. Neural Network Trained on Distant Cortico-Cortical Evoked Potentials can Localize Ictal Onset in Temporal Lobe Epilepsy. Vanderbilt Institute for Surgery and Engineering Annual Symposium; December 15, 2021; Nashville, TN, USA. 3rd place oral presentation.

Johnson GW, Cai LY, Narasimhan S, González HFJ, Wills KE, Morgan VL, Englot DJ. Structural Connectivity of Unilateral vs. Bilateral mTLE: Automated ICA-Based Feature Extraction Predictive White-Matter Patterns. American Epilepsy Society; 2020 December; Seattle, WA, USA. Platform Presentation.

Johnson GW, Cai LY, Narasimhan S, González HFJ, Wills KE, Morgan VL, Englot DJ. Predicting Temporal Lobe Epilepsy Laterality and Surgical Outcome with Interpretable Diffusion Imaging Features. Vanderbilt Institute for Surgery and Engineering Symposium; 2020 December; Nashville, TN, USA. Oral Presentation.

BOOK CHAPTERS

Doss DJ, Johnson GW, Englot DJ. Chapter 5: Imaging and SEEG Functional Networks to Guide Epilepsy Surgery, NEC 35.1 (Yang/Richardson) Epilepsy Surgery: Paradigm Shifts

CONFERENCE PROCEEDINGS

Makhoul GS, Doss DJ, Johnson GW, Withers CP, Cavender AC, Bibro CE, Liao E, Wallace MT, Williams Roberson S, Bick SK, Morgan VL, Englot DJ. Peri-Ictal Functional Networks Increase Suppressive Motifs: An SEEG Study. North American Neuromodulation Society (NANS) Annual Conference. January 30-February 1, 2025; Orlando, FL, USA. Oral presentation.

Doss DJ, Makhoul GS, Johnson GW, Liao E, Bibro CE, Cavender AC, Goodale SE, Terry D, Kang H, Haas KF, Gallagher M, Morgan VL, Chang C, Englot DJ. Patients with Focal Epilepsy Demonstrate Decreased Subcortical Arousal States. North American Neuromodulation Society (NANS) Annual Conference. January 30-February 1, 2025; Orlando, FL, USA. Oral presentation.

Cavender AC, Makhoul GS, Doss DJ, Bibro CE, Goodale SE, González HFJ, Liao E, Johnson GW, Cutting LE, Bick SK, Chang C, Morgan VL, Englot DJ. Functional Connectivity Abnormalities of the Nucleus Basalis of Meynert May Recover After Successful Epilepsy Surgery: Opportunities for Neuromodulation. North American Neuromodulation Society (NANS) Annual Conference. January 30-February 1, 2025; Orlando, FL, USA. Poster presentation.

Withers CP, Makhoul GS, Doss DJ, Johnson GW, Cavender AC, Bibro CE, Liao E, Wallace MT, Williams Roberson S, Bick SK, Morgan VL, Englot DJ. Consciousness-Impairing Seizures Demonstrate Distinctive Ictal Electrographic Signatures. North American Neuromodulation Society (NANS) Annual Conference. January 30-February 1, 2025; Orlando, FL, USA. Oral presentation.

Liao E, Doss DJ, Makhoul GS, Johnson GW, Withers CP, Cavender AC, Bibro CE, Williams Roberson S, Bick SK, Morgan VL, Englot DJ. Functional Connectivity Analyses Can Identify Seizure Onset Zones in Focal Epilepsy for Neuromodulation. North American Neuromodulation Society (NANS) Annual Conference. January 30-February 1, 2025; Orlando, FL, USA. Oral presentation.

Makhoul GS, Doss DJ, Johnson GW, Withers CP, Cavender AC, Hidalgo Monroy Lerma B, Reda A, Bibro CE, Liao E, Kang H, Dawant BM, Reddy SB, Crudele A, Bick SK, Constantinidis C, Williams Roberson S, Morgan VL, Englot DJ. Peri-Ictal Dynamics Demonstrate Antagonism Between Seizure Onset Zones and Broader Networks. Dan Beauchamp Research Day Symposium. February 21, 2025; Nashville, TN, USA. Poster Presentation.

Hidalgo Monroy Lerma B, Johnson GW, Doss DJ, Makhoul GS, Reda A, Cavender AC, Liao E, Sundrani S, Crudele A, Bick SK, Williams Roberson S, Morgan VL, Englot DJ. Towards Closed-Loop Neuromodulation Through Brain State Embeddings: Validation with Sleep Stages. Dan Beauchamp Research Day Symposium. February 21, 2025; Nashville, TN, USA. Poster Presentation.

Sundrani S, Johnson GW, Doss DJ, Makhoul GS, Reda A, Hidalgo B, Liao E, Cavender A, Bick SK, Morgan VL, Englot DJ. Deep learning for the detection of epileptogenicity in hippocampal resting-state SEEG. Vanderbilt Translational Research Forum. February 12, 2025; Nashville, TN, USA. Poster Presentation.

Bibro CB, Doss DJ, Johnson GW, Makhoul G, Cavender AC, Goodale SE, Harding JM, Paulo DL, Chang C, Bick SK, Morgan VL, Englot DJ. Thalamic Connectivity Abnormalities in Focal Epilepsy. American Epilepsy Society Annual Meeting; 2024 December. Oral presentation.

Doss DJ, Makhoul G, Johnson GW, Bibro CE, Cavender AC, Pourmotabbed H, Goodale SE, Terry D, Kang H, Haas KF, Gallagher M, Morgan VL, Chang C, Englot DJ. Differential Connectivity of Subcortical Arousal Structures Across Vigilance States in Focal Epilepsy. American Epilepsy Society Annual Meeting; 2024 December. Poster presentation.

Johnson GW, Doss DJ, Makhoul G, Cai LY, Bibro CE, Paulo DL, Reddy SB, Naftel RP, Haas MT, Dawant BM, Crudele AN, Morgan VL, Constantinidis C, Williams Roberson S, Bick SK, Englot DJ. Brain-State Modeling for Adaptive Closed-Loop Neuromodulation of Epilepsy. American Epilepsy Society Annual Meeting; 2024 December. Poster presentation.

Makhoul G, Doss DJ, Johnson GW, Sainburg LE, Cavender AC, Bibro CE, Liao E, Wallace MT, Williams Roberson S, Bick SK, Morgan VL, Englot DJ. Peri-Ictal Functional Dynamics Suggest Seizure Suppression: An SEEG Study. American Epilepsy Society Annual Meeting; Los Angeles 2024. Poster presentation.

Doss DJ, Makhoul GS, Johnson GW, Liao E, Bibro CE, Cavender AC, Goodale SE, Terry D, Kang H, Haas KF, Gallagher M, Morgan VL, Chang C, Englot DJ. Patients with Focal Epilepsy Demonstrate Decreased Subcortical Arousal States. North American Neuromodulation Society (NANS) Annual Conference. January 30-February 1, 2025; Orlando, FL, USA. Poster presentation.

Makhoul GS, Doss DJ, Johnson GW, Withers CP, Cavender AC, Bibro CE, Liao E, Wallace MT, Williams Roberson S, Bick SK, Morgan VL, Englot DJ. Peri-Ictal Functional Networks Increase Suppressive Motifs: An SEEG Study. North American Neuromodulation Society (NANS) Annual Conference. January 30-February 1, 2025; Orlando, FL, USA. Poster presentation.

Johnson GW, Doss DJ, Makhoul GS, Cai LY, Bibro CE, Reddy SB, Naftel RP, Haas KF, Wallace MT, Dawant BM, Crudele AN, Morgan VL, Constantinidis C, Williams Roberson S, Miller KJ, Bick SK, Englot DJ. BrainState: Instantaneous Functional Network State for Adaptive Closed-Loop Neuromodulation of Epilepsy. North American Neuromodulation Society (NANS) Annual Conference. January 30-February 1, 2025; Orlando, FL, USA. Poster presentation.

Cavender AC, Makhoul GS, Doss DJ, Bibro CE, Goodale SE, González HFJ, Liao E, Johnson GW, Cutting LE, Bick SK, Chang C, Morgan VL, Englot DJ. Functional Connectivity Abnormalities of the Nucleus Basalis of Meynert May Recover After Successful Epilepsy Surgery: Opportunities for Neuromodulation. North American Neuromodulation Society (NANS) Annual Conference. January 30-February 1, 2025; Orlando, FL, USA. Poster presentation.

Withers CP, Makhoul GS, Doss DJ, Johnson GW, Cavender AC, Bibro CE, Liao E, Wallace MT, Williams Roberson S, Bick SK, Morgan VL, Englot DJ. Consciousness-Impairing Seizures Demonstrate Distinctive Ictal Electrographic Signatures. North American Neuromodulation Society (NANS) Annual Conference. January 30-February 1, 2025; Orlando, FL, USA. Poster presentation.

Liao E, Doss DJ, Makhoul GS, Johnson GW, Withers CP, Cavender AC, Bibro CE, Williams Roberson S, Bick SK, Morgan VL, Englot DJ. Functional Connectivity Analyses Can Identify Seizure Onset Zones in Focal Epilepsy for Neuromodulation. North American Neuromodulation Society (NANS) Annual Conference. January 30-February 1, 2025; Orlando, FL, USA. Poster presentation.

Rashingkar RV, Doss DJ, Johnson GW, Bibro CE, Shless JS, Paulo DL, Williams-Roberson S, Hass K, Bick SK, Chang S, Morgan VL, Englot DJ. Deep Learning Classification of Consciousness-Impairing Seizures with Intracranial Electroencephalography Recordings in Focal Epilepsy. American Association of Neurological Surgeons (AANS) Annual Meeting 2024. May 3 - 6, Chicago IL. Poster Presentation.

Doss DJ, Johnson GW, Makhoul GS, Rashingkar RV, Shless JS, Bibro CE, Paulo DL, Gummadavelli A, Reddy SB, Naftel RP, Dawant BM, Haas KF, Williams Roberson S, Bick SK, Morgan VL, and Englot DJ. Network State During Focal Impaired Awareness Seizures Resembles Deep Sleep: Possibilities for Neuromodulation. American Association of Neurological Surgeons (AANS) Annual Meeting 2024. May 3 - 6, Chicago IL. Poster Presentation.

Sainburg LE, Jansen AP, Johnson GW, Rogers BP, Chang CE, Englot DJ, Morgan VL. Thalamic fMRI activity changes after temporal lobe epilepsy surgery are related to connectivity and resection size. American Society for Stereotactic and Functional Neurosurgery (ASSFN) Biennial Meeting. Nashville, TN. June 2024. Poster Presentation.

Cavender AC, Makhoul GS, Bibro CE, Johnson GW, Doss DJ, Goodale SE, Gonzalez HFJ, Paulo DL, Bick SK, Chang S, Morgan VL, Englot DJ. Temporal Lobe Epilepsy Patients Demonstrate Global Neocortical Decreases in Functional Connectivity to Nucleus Basalis. American Society for Stereotactic and Functional Neurosurgery (ASSFN) Biennial Meeting. June 01-04, 2024; Nashville, TN, USA. Poster Presentation.

Doss DJ, Johnson GW, Makhoul GS, Shless JS, Bibro CE, Rashingkar RV, Paulo DL, Gummadavelli A, Williams-Roberson S, Haas KF, Bick SK, Morgan VL, Englot DJ. Brain Networks During Focal Impaired Awareness Seizures Resembles Deep Sleep. American Society for Stereotactic and Functional Neurosurgery (ASSFN) Biennial Meeting. June 01-04, 2024; Nashville, TN, USA. Poster Presentation.

Makhoul GS, Doss DJ, Johnson GW, Bibro CE, Paulo DL, Chang C, Wallace MT, Williams-Roberson S, Bick SK, Morgan VL, Englot DJ. Consistent Stimulation Response May Help Define Epileptic Networks: A Single Pulse Electrical Stimulation Study. American Society for Stereotactic and Functional Neurosurgery (ASSFN) Biennial Meeting. June 01-04, 2024; Nashville, TN, USA. Podium Presentation.

Johnson GW, Doss DJ, Makhoul GS, Cai LY, Bibro CE, Cavender AC, Paulo DL, Rogers BP, Reddy SB, Naftel RP, Dewant B, Chang CE, Wallace MT, Williams-Roberson S, Morgan VL, Bick SK, Englot DJ. Epilepsy & Tornados: Neuromodulating the Pre-Ictal Funnel Cloud. American Society for Stereotactic and Functional Neurosurgery (ASSFN) Biennial Meeting. June 01-04, 2024; Nashville, TN, USA. Poster Presentation.

Bibro CE, Doss DJ, Johnson GW, Makhoul GS, Cavender AC, Goodale SE, Paulo DL, Bick SK, Chang C, Morgan VL, Englot DJ. Thalamo-Cortical Connectivity Deterioration in Focal Epilepsy. American Society for Stereotactic and Functional Neurosurgery (ASSFN) Biennial Meeting. June 01-04, 2024; Nashville, TN, USA. Podium Presentation.

Shless JS, Doss DJ, Bick SK, Makhoul GS, Negi AS, Bibro CE, Rashingkar R, Gummadavelli A, Chang C, Gallagher MJ, Naftel RP, Reddy SB, Williams-Roberson S, Morgan VL, Johnson GW, Englot DJ. The Interictal Suppression Hypothesis is the Dominant Differentiator of Seizure Networks in Focal Epilepsy. American Society for Stereotactic and Functional Neurosurgery (ASSFN) Biennial Meeting. June 01-04, 2024; Nashville, TN, USA. Podium Presentation.Rashingkar

RV, Doss DJ, Johnson GW, Bibro CE, Shless JS, Paulo DL, Williams-Roberson S, Hass K, Bick SK, Chang S, Morgan VL, Englot DJ. Deep Learning Classification of Consciousness-Impairing Seizures with Intracranial Recordings in Focal Epilepsy. North American Neuromodulation Society (NANS) Annual Conference. January 18-21, 2024; Las Vegas, NV, USA. Poster presentation.

Bibro CE, Doss DJ, Johnson GW, Rashingkar RV, Paulo DL, Morgan VL, Chang C, Englot DJ. Subcortical to Neocortical Dynamic Functional Connectivity Differs in Patients with Focal Epilepsy: Opportunities for Neuromodulation. North American Neuromodulation Society (NANS) Annual Conference. January 18-21, 2024; Las Vegas, NV, USA. Poster presentation.

Doss DJ, Johnson GW, Shless JS, Bibro CE, Rashingkar RV, Paulo DL, Gummadavelli A, Williams-Roberson S, Haas KF, Bick SK, Morgan VL, Englot DJ. Network State During Focal Impaired Awareness Seizures Resembles Deep Sleep. North American Neuromodulation Society (NANS) Annual Conference. January 18-21, 2024; Las Vegas, NV, USA. Oral presentation.

Shless JS, Doss DJ, Paulo DL, Gallagher MJ, Naftel RP, Bibro CE, Rashingkar RV, Reddy SB, Bick SK, Williams-Roberson S, Morgan VL, Johnson GW, Englot DJ. Unsupervised Machine Learning to Uncover Network Signatures of Seizure Onset Zones. North American Neuromodulation Society (NANS) Annual Conference. January 18-21, 2024; Las Vegas, NV, USA. Oral Presentation.

Johnson GW, Doss DJ, Paulo DL, Shless JS, Gummadavelli A, Kang H, Reddy SB, Naftel RP, Bick SK, Williams Roberson S, Dawant BM, Morgan VL, Englot DJ. Peri-Ictal Extension of The Interictal Suppression Hypothesis: SEEG Evidence. American Epilepsy Society (AES) Annual Meeting. December 1, 2023; Orlando, FL, USA. Poster Presentation.

Shless JS, Doss DJ, Gummadavelli A, Negi AS, Paulo DL, Gallagher MJ, Naftel RP, Reddy SB, Bick SK, Williams Roberson S, Chang C, Morgan VL, Johnson GW, Englot DJ. Suppressive Network Motifs Dominate Interictal SEEG Connectivity in Focal Epilepsy. American Epilepsy Society (AES) Annual Meeting. December 1, 2023; Orlando, FL, USA. Poster Presentation.

Gummadavelli A, Doss DJ, Johnson GW, Shless JS, Jacobs ML, Haas K, Bick SK, Terry DP, Chang C, Morgan VL, Englot DJ. Network Based Signatures of Focal Impaired Awareness Seizures in Focal Epilepsy. American Epilepsy Society (AES) Annual Meeting. December 1, 2023; Orlando, FL, USA. Poster Presentation.

Doss DJ, Johnson GW, Negi AS, Shless JS, Paulo DL, Gummadavelli A, Williams Roberson S, Haas K, Bick SK, Chang C, Morgan VL, Englot DJ. Age-Related Arousal Network Connectivity Changes in Temporal Lobe Epilepsy. American Epilepsy Society (AES) Annual Meeting. December 1, 2023; Orlando, FL, USA. Poster Presentation.

Johnson GW, Doss DJ, Paulo DL, Shless JS, Gummadavelli A, Kang H, Reddy SB, Naftel RP, Bick SK, Williams Roberson S, Dawant BM, Morgan VL, Englot DJ. Inward Connectivity to Seizure Onset Zones Peaks During Seizures: An Extension to the Interictal Suppression Hypothesis. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Printed Poster Presentation.

Chanbour H, Bendfeldt G, Johnson GW, Peterson K, Ahluwalia R, Younus I, Longo M, Abtahi AM, Stephens BF, Zuckerman SL. Longer screws decrease the risk of radiographic pseudarthrosis following elective anterior cervical discectomy and fusion. Cervical Spine Research Society (CSRS) Annual Meeting. November 29, 2023. Las Vegas, NV. Podium Presentation.

Johnson GW, Chanbour H, Chen J, Metcalf T, Iyan Y, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. What are the Bloodiest Adult Spinal Deformity Surgeries with the Longest Length of Stay?. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Printed Poster Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Roth SG, Wegner AM, Abtahi AM, Stephens BF, Zuckerman SL. What Does the Roussouly Classification Tell Us About Patients Undergoing Adult Spinal Deformity Surgery?. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Printed Poster Presentation.

Johnson GW, Chanbour H, Chen J, Metcalf T, Jonzzon S, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Spinopelvic Failure After Adult Spinal Deformity Surgery: Incidence and Predictors. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Digital Poster Presentation.

Chanbour H, Johnson GW, Chen J, Metcalf T, Roth SG, Wegner AM, Abtahi AM, Stephens BF, Zuckerman SL. Preoperative Inflection Point According to the Roussouly Classification Is a Predictor of Outcomes Following Adult Spinal Deformity Surgery. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Mini Oral Poster Presentation.

Chanbour H, Johnson GW, Bendfeldt G, Peterson K, Ahluwalia R, Younus I, Longo M, Abtahi AM, Stephens BF, Zuckerman SL. Longer screws decrease the risk of radiographic pseudarthrosis following elective anterior cervical discectomy and fusion. Vanderbilt Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Digital Poster Presentation.

Johnson GW, Chanbour H, Chen J, Metcalf T, Jonzzon S, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Neurologic Deficits Due to Proximal Junctional Kyphosis After Adult Spinal Deformity Surgery: Incidence and Improvement. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Printed Poster Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Jonzzon S, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Combined Anterior-Posterior vs. All-Posterior Approach in Adult Spinal Deformity Surgery: Which Strategy Is Superior?. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Printed Poster Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Younus I, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Selecting the Upper Instrumented Vertebrae in ASD Surgery: What Happens when You Stop in the Mid-Thoracic Spine?. North American Spine Society (NASS) Annual Meeting, October 18, 2023; Los Angeles, CA. Printed Poster Presentation.

Metcalf T, Chanbour H, Chen J, Johnson GW, Roth SG, Abtahi AM, Zuckerman SL, Stephens BF. MRI Vertebral Bone Quality Score Does Not Correlate with Traditional Measures of Bone Density and is Not Associated with Mechanical Complications in Adult Spinal Deformity Patients. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Digital Poster Presentation.

Chanbour H, Johnson GW, Chen J, Metcalf T, Roth SG, Wegner AM, Abtahi AM, Stephens BF, Zuckerman SL. Roussouly Classification in Adult Spinal Deformity Surgery: Are Postoperative Roussouly Types Predictors of Outcomes?. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Digital Poster Presentation.

Johnson GW, Chanbour H, Chen J, Metcalf T, Younus I, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Who is Discharged Home After Adult Spinal Deformity Surgery?. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Digital Poster Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Roth SG, Wegner AM, Abtahi AM, Stephens BF, Zuckerman SL. The Roussouly Classification in Adult Spinal Deformity: Are Lumbar Lordosis Apex and Upper/Lower Lordosis Arcs Predictors of Outcomes?. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Printed Poster Presentation.

Metcalf T, Chanbour H, Chen J, Johnson GW, Roth SG, Abtahi AM, Zuckerman SL, Stephens BF. Selecting an Upper Instrumented Vertebra of T9 or T10 is Protective Against Proximal Junctional Kyphosis and Failure When Compared to T11-L2 in Adult Spinal Deformity Patients. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Printed Poster Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Jonzzon S, Younus I, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Does Reoperation Within 6-Months of Adult Spinal Deformity Surgery Lead to Worse Outcomes?. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Printed Poster Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Roth SG, Wegner AM, Abtahi AM, Stephens BF, Zuckerman SL. Roussouly Classification in Adult Spinal Deformity Surgery: Is Preoperative Roussouly Type Associated with Outcomes?. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Digital Poster Presentation.

Metcalf T, Chanbour H, Chen J, Johnson GW, Roth SG, Abtahi AM, Zuckerman SL, Stephens BF. Pelvic Non-Response is Associated with Failure to Restore Low Lumbar Lordosis and a Higher Rate of Mechanical Complications in Adult Spinal Deformity Patients. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Digital Poster Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Roth SG, Wegner AM, Abtahi AM, Stephens BF, Zuckerman SL. Is There a Difference in Coronal Malalignment Based on Roussouly Classification of Patients Undergoing Adult Spinal Deformity Surgery?. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Digital Poster Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Roth SG, Wegner AM, Abtahi AM, Stephens BF, Zuckerman SL. Does the Spinal Shape as Described by the Roussouly Classification Explain Proximal Junctional Kyphosis After Adult Spinal Deformity (ASD) Surgery?. Congress of Neurological Surgeons (CNS) Annual Meeting 2023. September 9, Washington D.C., USA. Printed Poster Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Roth SG, Wegner AM, Abtahi AM, Stephens BF, Zuckerman SL . Does the Roussouly Classification Provide Unique Insight into the Sagittal Alignment of Patients Undergoing Adult Spinal Deformity Surgery?. Congress of Neurological Surgeons (CNS) Annual Meeting, September 9, 2023; Washington, D.C. Digital Poster Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Roth SG, Wegner AM, Abtahi AM, Stephens BF, Zuckerman SL. In Patients with a Pelvic Incidence-Lumbar Lordosis Within 10° and Mechanical Complications, Does the Roussouly Classification Explain their Failures?. Congress of Neurological Surgeons (CNS) Annual Meeting, September 9, 2023; Washington, D.C. Digital Poster Presentation.

Doss DJ, Johnson GW*, Negi AS, Shless JS, Paulo DL, Gummadavelli A, Williams-Roberson S, Bick SK, Morgan VL, Englot DJ. Ictal Functional Connectivity Abnormalities in Focal Impaired Awareness Seizures. ILAE 35th International Epilepsy Congress. September 2, Dublin, Ireland. Mini Oral Presentation. *Presenting Author.

Chanbour H, Chen J, Johnson GW, Metcalf T, Jonzzon S, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Combined Anterior-Posterior vs. All-Posterior Approach in Adult Spinal Deformity Surgery: Which Strategy Is Superior?. Scoliosis Research Society (SRS) Annual Meeting. September 6, 2023; Seattle, WA, USA. Podium Presentation.

Metcalf T, Chanbour H, Chen J, Johnson GW, Roth SG, Abtahi AM, Zuckerman SL, Stephens BF. Pelvic Non-Response is Associated with Failure to Restore Low Lumbar Lordosis and a Higher Rate of Mechanical Complications in Adult Spinal Deformity Patients. Scoliosis Research Society (SRS) Annual Meeting. September 6, 2023; Seattle, WA, USA. Podium Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Younus I, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Selecting the Upper Instrumented Vertebrae in ASD Surgery: What Happens when You Stop in the Mid-Thoracic Spine?. Scoliosis Research Society (SRS) Annual Meeting. September 6, 2023; Seattle, WA, USA. E-Point Oral Presentation.

Metcalf T, Chanbour H, Chen J, Johnson GW, Roth SG, Abtahi AM, Zuckerman SL, Stephens BF. MRI Vertebral Bone Quality Score Does Not Correlate with Traditional Measures of Bone Density and is Not Associated with Mechanical Complications in Adult Spinal Deformity Patients. Scoliosis Research Society (SRS) Annual Meeting. September 6, 2023; Seattle, WA, USA. E-Point Oral Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Roth SG, Wegner AM, Abtahi AM, Stephens BF, Zuckerman SL . Does the Roussouly Classification Provide Unique Insight into the Sagittal Alignment of Patients Undergoing Adult Spinal Deformity Surgery?. North American Spine Society (NASS) Annual Meeting, October 18, 2023; Los Angeles, CA. Podium Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Roth SG, Wegner AM, Abtahi AM, Stephens BF, Zuckerman SL. Does the Spinal Shape as Described by the Roussouly Classification Explain Proximal Junctional Kyphosis After Adult Spinal Deformity (ASD) Surgery?. North American Spine Society (NASS) Annual Meeting, October 18, 2023; Los Angeles, CA. Podium Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Younus I, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Selecting the Upper Instrumented Vertebrae in ASD Surgery: What Happens when You Stop in the Mid-Thoracic Spine?. North American Spine Society (NASS) Annual Meeting, October 18, 2023; Los Angeles, CA. Poster Presentation.

Chanbour H, Chen J, Johnson GW, Metcalf T, Jonzzon S, Younus I, Roth SG, Abtahi AM, Stephens BF, Zuckerman SL. Does Reoperation Within 6-Months of Adult Spinal Deformity Surgery Lead to Worse Outcomes?. North American Spine Society (NASS) Annual Meeting, October 18, 2023; Los Angeles, CA. Podium Presentation.

Chanbour H, Johnson GW, Chen J, Metcalf T, Roth SG, Wegner AM, Abtahi AM, Stephens BF, Zuckerman SL. Preoperative Inflection Point According to the Roussouly Classification Is a Predictor of Outcomes Following Adult Spinal Deformity Surgery. North American Spine Society (NASS) Annual Meeting, October 18, 2023; Los Angeles, CA. Podium Presentation.

Metcalf T, Chanbour H, Chen J, Johnson GW, Young M, Bowers M, Lugo-Pico J, Abtahi AM, Zuckerman SL, Stephens BF. Choosing an upper instrumented vertebra (UIV) of T9-T10 over T11-L2 will reduce mechanical complications in adult spinal deformity (ASD) surgery. North American Spine Society (NASS) Annual Meeting, October 18, 2023; Los Angeles, CA. Podium Presentation.

Metcalf T, Chanbour H, Chen J, Johnson GW, Roth SG, Abtahi AM, Zuckerman SL, Stephens BF. MRI Vertebral Bone Quality Score Does Not Correlate with Traditional Measures of Bone Density and is Not Associated with Mechanical Complications in Adult Spinal Deformity Patients. North American Spine Society (NASS) Annual Meeting, October 18, 2023; Los Angeles, CA. Podium Presentation.

Metcalf T, Chanbour H, Chen J, Johnson GW, Roth SG, Abtahi AM, Zuckerman SL, Stephens BF. Pelvic Non-Response is Associated with Failure to Restore Low Lumbar Lordosis and a Higher Rate of Mechanical Complications in Adult Spinal Deformity Patients. North American Spine Society (NASS) Annual Meeting, October 18, 2023; Los Angeles, CA. Podium Presentation.

Janson A, Johnson GW, Rogers BP, Englot DJ, Morgan VL. Indirect Structural Changes Lead to Changes in Function After Temporal Lobe Epilepsy Resection. Vanderbilt Institute for Surgery and Engineering Annual Symposium; December 7, 2022; Nashville, TN, USA. Poster presentation.

Sainburg LE, Janson A, Johnson GW, Jiang JW, Rogers BP, Chang CE, Englot DJ, Morgan VL. Structural disconnection relates to functional changes after temporal lobe epilepsy surgery. Vanderbilt Institute for Surgery and Engineering Annual Symposium; December 7, 2022; Nashville, TN, USA. Poster presentation.

Janson A, Johnson GW, Rogers BP, Englot DJ, Morgan VL. Indirect Structural Changes Lead to Changes in Function After Temporal Lobe Epilepsy Resection. International Society for Magnetic Resonance in Medicine (ISMRM). June 2023, Toronto, Canada. Poster Presentation.

Doss DJ, Johnson GW, Negi AS, Shless JS, Paulo DL, Gummadavelli A, Williams Roberson S, Bick SE, Morgan VL, Englot DJ. Differences in Network Connectivity During Focal Impaired Awareness and Focal Aware Seizures. Vanderbilt University Institute of Imaging Sciences (VUIIS). October 2022, Nashville, TN. Poster Presentation.

Janson A, Johnson GW, Rogers BP, Englot DJ, Morgan VL. Structural Brain Network Alterations After Temporal Lobe Epilepsy Surgical Resection. Vanderbilt University Institute of Imaging Sciences (VUIIS). October 2022, Nashville, TN. Poster Presentation.

Sainburg LE, Janson A, Johnson GW, Jiang JW, Rogers BP, Chang CE, Englot DJ, Morgan VL. Structural disconnection may underly functional changes after temporal lobe epilepsy surgery. Vanderbilt University Institute of Imaging Sciences (VUIIS). October 2022, Nashville, TN. Poster Presentation.

Shless JS, Doss DJ, Johnson GW, Gummadavelli A, Bick SK, Paulo DL, Negi AS, Haris HH, Williams Roberson S, Englot DJ. Widespread Network Connectivity in Intracranial EEG: an Electrographic Biomarker for Responsive Neuromodulation Treatment in Temporal Lobe Epilepsy North American Neuromodulation Society. January 2023, Las Vegas, NV. Oral Presentation.

Gummadavelli A, Doss DJ, Johnson GW, Shless JS, Negi A, Morgan VL, Englot DJ. Temporal Lobe Epilepsy Patients Demonstrate Altered Age-Related Segregation Patterns in Brainstem Arousal Networks. North American Neuromodulation Society. January 2023, Las Vegas, NV. Poster Presentation.

Doss DJ, Johnson GW, Negi AS, Shless JS, Paulo DL, Gummadavelli A, Williams Roberson S, Bick SK, Morgan VL, Englot DJ. Connectivity During Focal Impaired Awareness and Focal Aware Seizures: Opportunities for Neuromodulation to Preserve Consciousness. North American Neuromodulation Society. January 2023, Las Vegas, NV. Oral Presentation.

Negi AS, Johnson GW, Doss DJ, Gummadavelli A, Paulo DL, Shless JS, Bick SK, Morgan VL, Englot DJ. Directed connectivity of propagation zones during resting state in epilepsy to guide neuromodulation and resection. North American Neuromodulation Society. January 2023, Las Vegas, NV. Poster Presentation

Sainburg LE, Janson AP, Johnson GW, Jiang JW, Rogers BP, Chang CE, Englot DJ, Morgan VL. Structural disconnection may underly functional changes after temporal lobe epilepsy surgery. Vanderbilt University Institute of Imaging Sciences (VUIIS) Annual Retreat, Nashville, TN. Poster Presentation.

Doss DJ, Johnson GW, Narasimhan S, Jiang JW, Gonzalez HFJ, Paulo DL, Chang CE, Morgan VL, Constantinidis C, Dawant BM, Englot DJ. Deep learning segmentation of the Nucleus Basalis of Meynert for Deep Brain Stimulation Surgical Planning. Congress of Neurological Surgeons (CNS) Annual Meeting, San Francisco, CA. Oral presentation.

Johnson GW, Doss DJ, Jiang JW, Narasimhan S, Paulo DL, Morgan VL, Bick SK, Englot DJ. Seizure Onset and Propagative Zones Exhibit Distinct Local Structure-Function Coupling: A Combined Diffusion MRI and SEEG Study. American Epilepsy Society (AES) Annual Meeting, December 2022, Nashville, TN. Poster presentation.

Paulo DL, Johnson GW, Doss DJ, Jiang JW, Narasimhan S, Gonzalez HFJ, Bick SK, Englot DJ. SEEG Directed Connectivity Over Euclidean Distance May Help Distinguish Seizure Onset and Propagative Zones. American Epilepsy Society (AES) Annual Meeting, December 2022, Nashville, TN. Poster presentation.

Doss DJ, Johnson GW, Narasimhan S, Jiang JW, Gonzalez HFJ, Paulo DL, Chang CE, Morgan VL, Constantinidis C, Dawant BM, Englot DJ. Patient Specific Segmentation of the nucleus basalis of Meynert in Temporal Lobe Epilepsy using Deep Learning. American Epilepsy Society (AES) Annual Meeting, December 2022, Nashville, TN. Poster presentation.

Shless JS, Johnson GW, Doss DJ, Jiang JW, Negi AS, Paulo DL, Morgan VL, Bick SK, Englot DJ. High Inward vs. Low Outward Resting-State Functional Connectivity Characterizes Seizure Onset Zones in Focal Epilepsy. American Epilepsy Society (AES) Annual Meeting, December 2022, Nashville, TN. Poster presentation.

Negi AS, Johnson GW, Doss DJ, Shless JS, Paulo DL, Morgan VL, Bick SK, Englot DJ. Frequency Band-Specific Directed Connectivity Patterns in Focal Epilepsy: A Single Pulse Electrical Stimulation Study. American Epilepsy Society (AES) Annual Meeting, December 2022, Nashville, TN. Poster presentation.

Jiang JW, Narasimhan S, Johnson GW, Gonzalez HFJ, Doss DJ, Paulo DL, Terry DP, Chang CE, Morgan VL, Englot DJ. Abnormal Functional Connectivity of the Posterior Hypothalamus and Nucleus Basalis of Meynert in People with Mesial Temporal Lobe Epilepsy. American Epilepsy Society (AES) Annual Meeting, December 2022, Nashville, TN. Poster presentation.

Sainburg LE, Janson AP, Johnson GW, Jiang JW, Rogers BP, Chang CE, Englot DJ, Morgan VL. Structural Disconnection Mediates Thalamic fMRI Activity Changes After Temporal Lobe Epilepsy Surgery. American Epilepsy Society (AES) Annual Meeting, December 2022, Nashville, TN. Poster presentation.

Herrington J, Sainburg LE, Janson AP, Johnson GW, Rogers BP, Englot DJ, Morgan VL. Creation of Personalized Node Abnormality Maps in Temporal Lobe Epilepsy. American Epilepsy Society (AES) Annual Meeting, December 2022, Nashville, TN. Poster presentation.

Pourmotabbeda H, Martin CG, Goodale SE, Jiang JW, Johnson GW, Kang H, Morgan VL, Englot DJ, Chang CE, Vigilance-related alterations in the functional connectivity of arousal and autonomic structures. American Epilepsy Society (AES) Annual Meeting, December 2022, Nashville, TN. Poster presentation.

Doss DJ, Johnson GW, Narasimhan S, González HFJ, Paulo DL, Dawant BM, Chang CE, Morgan VL, Constantinidis C, Englot DJ. Deep learning segmentation of the nucleus basalis of Meynert for patient-specific DBS targeting. American Society for Stereotactic and Functional Neurosurgery (ASSFN) Biennial Meeting, June 2022, Atlanta, GA. Poster presentation.

Paulo DL, Qian H, Subramanian D, Johnson GW, Bick SK. Caudate Beta Power Increases after Incorrect Trial Feedback during a Verbal Memory Task in Parkinson's Disease Patients. American Society for Stereotactic and Functional Neurosurgery (ASSFN) Biennial Meeting, Atlanta, GA. Poster presentation.

Englot DJ, Negi AS, Doss DJ, Jiang JW, Narasimhan S, Paulo DL, Williams Roberson S, Bick SK, Chang CE, Morgan VL, Johnson GW. Neurostimulation responses offer insight into localizing properties and mechanistic underpinnings of epileptogenic regions. American Association of Neurological Surgeons (AANS) Annual Meeting, Philadelphia, PA.

González HFJ, Narasimhan S, Goodale SE, Johnson GW, Wills KE, Paulo DL, Jacobs ML, Konrad PE, Morgan VL, Chang C, Englot DJ. Relating Neurocognition and Connectivity between Arousal Structures and Intrinsic Connectivity Networks in Temporal Lobe Epilepsy. Vanderbilt Institute for Surgery and Engineering Annual Symposium; December 15, 2021; Nashville, TN, USA. Poster presentation.

Narasimhan S*, Negi AS*, González HFJ, Johnson GW, Jiang JW, Doss D, Paulo DL, Chang C, Dawant B, Morgan VL, Englot DJ. Abnormalities in Voxel-Wise Thalamic Connectivity in Patients with Temporal Lobe Epilepsy. Vanderbilt Institute for Surgery and Engineering Annual Symposium; December 15, 2021; Nashville, TN, USA. Poster presentation.

Jiang JW, Narasimhan S, Johnson GW, González HFJ, Doss DJ, Paulo DL, Negi AS, Chang C, Morgan VL, Englot DJ. Abnormal Resting-State fMRI Connectivity of Hypothalamic Subregions in Patients with Mesial Temporal Lobe Epilepsy. Vanderbilt Institute for Surgery and Engineering Annual Symposium; December 15, 2021; Nashville, TN, USA.

Doss DJ, Johnson GW, Narasimhan S, Jian JW, González HFJ, Paulo DL, Negi AS, Dawant BM, Chang C, Morgan VL, Englot DJ. Segmentation of the Nucleus Basalis of Meynert in MRI Using Deep Learning. Vanderbilt Institute for Surgery and Engineering Annual Symposium; December 15, 2021; Nashville, TN, USA. Poster presentation.

Paulo DL*, Narasimhan S*, González HFJ, Johnson GW, Doss D, Jiang JW, Negi AS, Ball T, Li R, Rodriguez W, Konrad PE, Neimat JS, Shah HM, Bick SK, Dawant B, Englot DJ. DBS Electrode Positioning with Multisite Microelectrode Recordings, Macrostimulation, an Atlas-Based Prediction Maps. Vanderbilt Institute for Surgery and Engineering Annual Symposium; December 15, 2021; Nashville, TN, USA. Poster presentation.

Johnson GW, Wills KE, Cai LY, Negi AS, Jiang JW, Narasimhan S, Paulo DL, González HFJ, Sonmezturk HH, Williams Roberson S, Morgan VL, Englot DJ. Distant cortico-cortical evoked potentials can localize ictal onset in focal epilepsy: a deep learning study. Vanderbilt University Institute of Imaging Sciences (VUIIS) Annual Retreat 2021, Vanderbilt, TN. Abstract submitted.

*Paulo DL, *Wills KE, Johnson GW, González HFJ, Rolston JD, Naftel RP, Reddy SB, Morgan VL, Kang H, Williams Roberson S, Narasimhan S, Englot DJ. SEEG Functional Connectivity Measures to Identify Epileptogenic Zones: Stability, Medication Influence, and Recording Condition. North American Neuromodulation Society Annual Meeting, Jan 2022, Orlando, FL. Oral presentation.

Negi AS, Johnson GW, Wills KE, Narasimhan S, Paulo DL, Jiang JW, González HFJ, Sonmezturk HH, Williams Roberson S, Morgan VL, Englot DJ. Reciprocal Functional Connectivity of Amygdala in Mesial Temporal Lobe Epilepsy: a Single-Pulse Electrical Stimulation Study. North American Neuromodulation Society Annual Meeting, Jan 2022, Orlando, FL. Oral presentation.

Jiang JW, Narasimhan S, González HFJ, Johnson GW, Paulo DL, Negi AS, Morgan VL, Englot DJ. Resting-State fMRI Connectivity of the Hypothalamus in Patients with Temporal Lobe Epilepsy. North American Neuromodulation Society Annual Meeting, Jan 2022, Orlando, FL. Poster presentation.

González HFJ, Narasimhan S, Goodale SE, Johnson GW, Wills KE, Paulo DL, Jacobs ML, Konrad PE, Morgan VL, Chang C, Englot DJ. Relationships of Neurocognition and Abnormal Functional MRI Connectivity Between Subcortical Arousal Structures and Intrinsic Connectivity Networks in Patients with Temporal Lobe Epilepsy. North American Neuromodulation Society Annual Meeting, Jan 2022, Orlando, FL. Oral presentation.

Narasimhan S, González HFJ, Johnson GW, Wills KE, Paulo DL, Jiang JW, Negi AS, Morgan VL, Englot DJ. Lateralization of Mesial Temporal Lobe Epilepsy Using Resting-State Network fMRI and SEEG Connectivity. North American Neuromodulation Society Annual Meeting, Jan 2022, Orlando, FL. Oral presentation.

Johnson GW, Wills KE, Cai CY, Negi AS, Narasimhan S, Paulo DL, Samudra NP, González HFJ, Sonmezturk HH, Williams Roberson S, Englot DJ. Localizing Ictal Onset in Focal Epilepsy with Neural Network Trained on Cortico-Cortical Evoked Potentials. American Epilepsy Society Annual Meeting; 2021 June, Chicago, Illinois. In-person poster presentation.

Janson A, Johnson GW, Rodgers BR, Landman B, Englot DJ, Morgan VL. Hippocampal Pathology Affects Local and Global Network Controllability in Temporal Lobe Epilepsy; American Epilepsy Society Annual Meeting; 2021 June, Chicago, Illinois. In-person poster presentation.

Wills KE, Paulo DL, Johnson GW, González HFJ, Rolston JD, Naftel RP, Reddy SB, Morgan VL, Kang H, Williams Roberson S, Narasimhan S, Englot DJ. The Impact of Anti-Epileptic Drugs, Time, and Recording Conditions on SEEG Functional Connectivity in Epilepsy. American Epilepsy Society Annual Meeting; 2021 June, Chicago, Illinois. In-person poster presentation.

Narasimhan S, González HFJ, Johnson GW, Wills KE, Paulo, DL, Morgan VL, Englot DJ. Connectivity between Resting-State Networks and Mesial Temporal Regions may Distinguish between Right and Left Mesial Temporal Lobe Epilepsy. Congress of Neurosurgical Surgeons Annual Meeting; 2021 June, Austin, Texas. Oral presentation.

González HFJ, Narasimhan S, Goodale SE, Johnson GW, Wills KE, Paulo, DL, Jacobs ML, Konrad PE, Morgan VL, Chang C, Englot DJ. Functional connectivity alterations between intrinsic networks and arousal structures and their neurocognitive correlates in TLE. American Epilepsy Society Annual Meeting; 2021 June, Chicago, Illinois. In-person poster presentation.

Narasimhan S, González HFJ, Johnson GW, Wills KE, Paulo, DL, Morgan VL, Englot DJ. Correlation and Network-Based Connectivity between Mesial Temporal Structures and Default Mode Network may help Lateralize Temporal Lobe Epilepsy. American Epilepsy Society Annual Meeting; 2021 June, Chicago, Illinois. Oral presentation.

González HFJ, Narasimhan S, Goodale SE, Johnson GW, Wills KE, Paulo, DL, Jacobs ML, Konrad PE, Morgan VL, Chang C, Englot DJ. Defining subcortical and intrinsic network dysfunction in TLE using resting-state fMRI and neuropsychological testing. Congress of Neurosurgical Surgeons Annual Meeting; 2021 June, Austin, Texas. Poster presentation.

Nanda A, Englot DJ, Johnson GW, Rubinov M. Signatures of criticality in simple models of neural timeseries; OHBM Annual Meeting; 2021 June, Seoul, Korea. Poster presentation

Janson A, Johnson GW, Rodgers BR, Landman B, Englot DJ, Morgan VL. Decreased Structural and Functional Brain Network Controllability in Temporal Lobe Epilepsy; OHBM Annual Meeting; 2021 June, Seoul, Korea. Poster presentation

Narasimhan S, González HFJ, Johnson GW, Wills KE, Konrad PE, Morgan VL, Englot DJ. Multimodal Directed Connectivity in Mesial Temporal Lobe Epilepsy Patients. Vanderbilt Institute for Surgery and Engineering Symposium; 2020 December; Nashville, TN, USA. Oral Presentation.

González HFJ, Narasimhan S, Goodale SE, Wills KE, Johnson GW, Konrad PE, Morgan VL, Chang C, Englot DJ. FMRI Functional Connectivity Perturbations Between Arousal Structures and Resting-State Networks in Persons with Temporal Lobe Epilepsy. Vanderbilt Institute for Surgery and Engineering Symposium; 2020 December; Nashville, TN, USA. Oral Presentation.

Wills KE, Paulo D, Johnson GW, González HFJ, Rolston JD, Naftel RP, Morgan VL, Narasimhan S, Englot DJ. Evaluating the Effect of Anti-Epileptogenic Drugs on Functional Connectivity Measures in Stereo-Electroencephalography. Vanderbilt Institute for Surgery and Engineering Symposium; 2020 December; Nashville, TN, USA. Oral Presentation.

Janson A, Johnson GW, Levine KK, Rodgers BP, Landman B, Englot DJ, Morgan VL. Altered Dynamic Response of Brain Networks in Temporal Lobe Epilepsy. Vanderbilt Institute for Surgery and Engineering Symposium; 2020 December; Nashville, TN, USA. Oral Presentation.

Johnson GW, Narasimhan S, González HFJ, Wills KE, Konrad PE, Haas K, Naftel RP, Rolston JD, Dawant BM, Morgan VL, Englot DJ. Improved Epileptogenic Zone Detection in Focal Epilepsy by Combining SEEG Functional Connectivity with White-Matter Structural Connectivity. Poster Presentation. American Society for Stereotactic and Functional Neurosurgery; 2020 June; Boston, MA, USA. Poster Presentation.

Wills KE, González HFJ, Johnson GW, Haas KF, Morgan VL, Narasimhan S, Englot DJ. Altered Thalamo-Occipital Brain Networks Exist in People with Mesial Temporal Lobe Epilepsy. North American Neuromodulation Society; 2021 January; Orlando, FL, USA.

González HFJ, Narasimhan S, Johnson GW, Goodale SE, Wills KE, Konrad PE, Morgan VL, Chang C, Englot DJ. FMRI Directional Connectivity Abnormalities of Cortical and Subcortical Arousal Regions in Temporal Lobe Epilepsy. North American Neuromodulation Society; 2021 January; Orlando, FL, USA.

Johnson GW, Cai LY, Narasimhan S, González HFJ, Wills KE, Morgan VL, Englot DJ. Using Diffusion Imaging to Predict Unilateral vs. Bilateral Mesial Temporal Lobe Epilepsy. North American Neuromodulation Society; 2021 January; Orlando, FL, USA.

Narasimhan S, González HFJ, Johnson GW, Wills KE, Konrad PE, Morgan VL, Englot DJ. Relating Effective Connectivity in Resting State fMRI and SEEG in Unilateral Mesial Temporal Lobe Epilepsy. North American Neuromodulation Society; 2021 January; Orlando, FL, USA.

Morgan VL, Schilling KG, Johnson GW, Englot DJ, Chang C, Rogers BP, Spatio-temporal evolution of network connectivity from the seizure focus in TLE. American Epilepsy Society; 2020 December; Seattle, WA, USA.

Wills KE, González HFJ, Johnson GW, Haas KF, Morgan VL, Narasimhan S, Englot DJ. People with Mesial Temporal Lobe Epilepsy Have Altered Thalamo-Occipital Brain Networks. American Epilepsy Society; 2020 December; Seattle, WA, USA.

González HFJ, Narasimhan S, Treuting RL, Johnson GW, Wills KE, Chang C, Morgan VL, Englot DJ. Examination of subcortical fMRI causal connectivity patterns in temporal lobe epilepsy. American Epilepsy Society; 2020 December; Seattle, WA, USA.

Narasimhan S, González HFJ, Johnson GW, Wills KE, Goodale SE, Morgan VL, Englot DJ. Epileptic Zone Identification Using fMRI Metrics Model Fit to SEEG Metrics. American Epilepsy Society; 2020 December; Seattle, WA, USA.

González HFJ, Narasimhan S, Johnson GW, Wills KE, Konrad PE, Chang C, Morgan VL, Rubinov M, Englot DJ. Basal Forebrain is a Central Network Hub of Perturbed Functional Connections in Temporal Lobe Epilepsy. American Society for Stereotactic and Functional Neurosurgery; 2020 June; Boston, MA, USA.

Narasimhan S, Kundassery KB, Gupta K, Johnson GW, Wills KE, Goodale SE, Haas K, Rolston JD, Naftel RP, Morgan VL, Dawant BM, González HFJ, Englot DJ. Resting-State SEEG Analysis of Directed Network Connectivity to Map Epileptic Networks. American Society for Stereotactic and Functional Neurosurgery; 2020 June; Boston, MA, USA.

Wills KE, González HFJ, Johnson GW, Morgan VL, Narasimhan S, Englot DJ. Temporal Lobe Epilepsy Exhibits Differing Effects on Thalamic Arousal Nuclei Functional Connectivity. American Society for Stereotactic and Functional Neurosurgery; 2020 June; Boston, MA, USA.

González HFJ, Narasimhan S, Gupta K, Johnson GW, Kundassery KB, Wills KE, Morgan VL, Englot DJ. Nucleus basalis MRI functional connectivity abnormalities in patients with temporal lobe epilepsy. American Epilepsy Society Annual Meeting; December 6-10, 2019; Baltimore, MD.

González HFJ, Narasimhan S, Gupta K, Johnson GW, Kundassery KB, Wills KE, Morgan VL, Englot DJ. Nucleus basalis MRI functional connectivity abnormalities in patients with temporal lobe epilepsy. Vanderbilt Kennedy Center Science Day; September 17, 2019; Nashville, TN.

González HFJ, Narasimhan S, Johnson GW, Wills KE, Konrad PE, Rubinov M, Morgan VL, Englot DJ. The nucleus basalis as a key network hub of aberrant connectivity in temporal lobe epilepsy. North American Neuromodulation Society Annual Meeting; January 23-26, 2020; Las Vegas, NV, USA.

Narasimhan S, Kundassery KB, Gupta K, Johnson GW, Wills KE, Goodale SE, Rolston JD, Naftel RP, Morgan VL, González HFJ, Englot DJ. Analysis of directed network properties may identify seizure onset zones in resting-state stereo-EEG. North American Neuromodulation Society Annual Meeting; January 23-26, 2020; Las Vegas, NV, USA.

Gupta K, González HFJ, Johnson GW, Goodale SE, Kundassery KB, Wills KE, Rolston JD, Dawant BM, Morgan VL, Englot DJ. Localization of epileptogenic zones using network analysis of resting-state stereo-EEG data. American Epilepsy Society Annual Meeting; December 6-10, 2019; Baltimore, MD.

González HFJ, Narasimhan S, Johnson GW, Wills KE, Konrad PE, Chang C, Morgan VL, Rubinov M, Englot DJ. Nucleus Basalis is a Central Network Structure of Perturbed Functional Connections in Temporal Lobe Epilepsy. Vanderbilt Institute for Surgery and Engineering Annual Symposium; December 11, 2019; Nashville, TN, USA.

Wills KE, González HFJ, Johnson GW, Morgan VL, Narasimhan S, Englot DJ. Differential Effects of Temporal Lobe Epilepsy on the Functional Connectivity of Key Thalamic Arousal Nuclei. Vanderbilt Institute for Surgery and Engineering Annual Symposium; December 11, 2019; Nashville, TN, USA.

Narasimhan S, Kundassery KB, Gupta K, Johnson GW, Wills KE, Rolston JD, Naftel RP, Morgan VL, Dawant BM, González HFJ, Englot DJ. Identification of Epileptogenic Zones Using Directed Network Properties in Resting-State SEEG. Vanderbilt Institute for Surgery and Engineering Annual Symposium; December 11, 2019; Nashville, TN, USA.

Kundassery KB, González HFJ, Johnson GW, Wills KE, Narasimhan S, Englot DJ. Overview of Brain Imaging and Electrophysiology Network (BIEN) Lab. Vanderbilt Institute for Surgery and Engineering Annual Symposium; December 11, 2019; Nashville, TN, USA.

Johnson GW and Calawerts B, Devine E, Leverson G, Fang R, Jiang J. “Modified Type II Thyroplasty’s Effects on Larngeal Function in an Ex Vivo Canine Model”. Poster Presentation. American Laryngological Association Annual Meeting. Chicago, IL. May 17-22, 2016.

Under Review

AD-HOC PEER REVIEWER

Nature Medicine
2025

Nature Neuroscience
2025

Network Neuroscience
2024

Frontiers in Neuroscience
2023

Epilepsy & Behavior
2022 - 2023

Neuropsychiatric Disease & Treatment
2022

Brain & Behavior
2021 - 2023

AWARDS AND HONORS

NANS 1st Place Oral Abstract
North American Neuromodulation Society (NANS) Annual Meeting
2025

ILAE Bursary Award
International League Against Epilepsy
2023
NANS Travel Award
North American Neuromodulation Society
2023
Third Place Oral Presentation
Vanderbilt Institute of Surgery and Engineering Annual Symposium
2021
MSTP Travel Award
Vanderbilt Medical Scientist Training Program
2020
BRET Travel Award
Vanderbilt Graduate School
2019 - 2022
Leroy UC Kelling Memorial Scholarship
University of Wisconsin - Madison
2015
Tau Beta Pi – National Engineering Honor Society
University of Wisconsin - Madison
2014
Graduated with Highest Distinction, GPA 3.98
Department of Biochemistry: University of Wisconsin - Madison
Dean’s Honor List (9 semesters)
University of Wisconsin - Madison
2011 - 2015
International Baccalaureate
New York, NY
2009
Graduated Summa Cum Laude
Minnetonka High School - Minnesota
2009
Valedictorian
Minnetonka High School - Minnesota
2009

GRANTS AND FELLOWSHIPS

Anthropic AI for Science Award - in-kind compute credits for AI-assisted research (not funding to the institution)
09/2026
Mayo Clinic Small Grant Program (Elder) - Brain-state Foundation Modeling (BFM) for development of novel neuromodulation strategies; multiple PI with Kai Miller
07/2026 - 07/2027
NRSA F31 Individual Pre-Doctoral Fellowship - 1F31NS120401
08/2021 - 02/2023
VUIIS Grant Enhancement Fellowship
2021 - 2024
Dissertation Enhancement Grant – Vanderbilt University
2022 - 2023
MSTP T32 Training Grant - T32GM007347-39
2017 - 2020

INVITED TALKS

Oral Presentations
Seminar - American Society for Stereotactic and Functional Neurosurgery (ASSFN)
2024
Neurosurgery Grand Rounds Sub-Internship Presentation – WashU, St. Louis
2023
Neurosurgery Grand Rounds Sub-Internship Presentation – Mayo Clinic, Rochester
2023
Electrocorticography Presentation – Mayo Clinic, Rochester: Miller & Hermes
2023
Podium Presentation Neurosurgery – Vanderbilt University Medical Center
F31 Successful Applications Seminar Presentation – VISE
2022
2022
Neurosurgery Grand Rounds – Vanderbilt University Medical Center
2021
Vanderbilt Medical Scientist Training Program – Graduate Presentation
2020
Vanderbilt University Medical Center – Neurology Research Group
2020
Panels
Vanderbilt Institute for Surgery and Engineering – Parameterization, Therapeutics, and Delivery
2020
Tau Beta Pi Engineering Honor Society – Recent Graduates Career Panel
2020

TEACHING EXPERIENCE

Graduate Student Mentor
Vanderbilt MSTP
2019 - 2023
Advanced Physics Tutor
University of Wisconsin - Madison
2012 - 2015

SKILLSETS

PROGRAMMING

Coding Language Proficiency
Python, Matlab, Bash (WSL2, Ubuntu), C++, Java, R, HTML, CSS, JavaScript, High performance computing clusters
Software Package Proficiency
PyTorch for Deep Learning, MRtrix3, FSL, Freesurfer, ANTs, ROBEX, Fieldtrip, EEGLab, Singularity

ELECTRICAL SKILLS

Analog
Analog circuit design, analysis, and troubleshooting. Stability and integrity analysis of electrical testers. Analog design of SERDES.
Digital
Digital signal processing, cryptography, microprocessor design, FPGAs, digital design of SERDES
Computer Servers
Design, build, implementation, and maintenance of compute nodes and network attached storage (NAS) servers.

WET-LAB SKILLS

Biochemical techniques

PCR primer design for site-directed mutagenesis, gel electrophoresis, DNA purification, Gibson assembly, heat-shock transformation, IPTG-induced expression, protein purification with nickel column, SDS-PAGE, kinetic assay for catalytic efficiency, FRET

COMMUNITY SERVICE

Foster Parent
Bethany, TN
2020 - 2023

Mini-MSTP Middle School Program
Vanderbilt MSTP
2017 - 2023

Hospice Overnight Vigil Volunteer
Agrace Hospice – Madison, WI
2011 - 2015

F. H. King Community Gardener
UW-Madison, WI
2010 - 2015

Memorial Blood Center Drive Chair
Minneapolis, MN
2005 - 2009

PERSONAL INTERESTS

Tesla Coils

Designed and built a 465 W Tesla Coil that transfers energy wirelessly 15 ft. http://www.youtube.com/watch?v=PbuU79QgslE

Tea

High mountain oolong

Knitting

Cable knit sweaters

Tube Amplifiers

Build all-tube audio amplifiers.