



Jonathon J. Parker, MD, PhD

- Neurosurgery Resident, Dean's Office Operations - Dean Other
- Resident in Neurosurgery

Bio

BIO

Dr. Parker is currently a PGY6 Neurosurgery Resident at Stanford. He has focused his training and research on minimally invasive treatments for epilepsy and movement disorders in Adults and Children. He has focused his training to develop expertise in open microsurgical resection techniques, laser interstitial thermal therapy (LITT), focused ultrasound (MRgFUS), Deep Brain Stimulation (DBS), Responsive Neurostimulation (RNS), electrocorticography (ECoG), stereo-electro-encephalography (SEEG), and robotic-assisted surgery.

Dr. Parker completed a year long endowed fellowship in Adult and Pediatric Epilepsy & Functional Surgery with Dr. Gerald Grant and Dr. Casey Halpern. Guided by his surgical mentors, Dr. Parker has utilized state of the art approaches to improve epilepsy surgery by combining SEEG, 3D printing, whole brain tractography, and navigated operative exoscopes to guide safe surgical resections of epileptic foci. Dr. Parker's research revolves around optimizing SEEG techniques for intracranial evaluation of epileptic foci and clinically-relevant brain mapping via understanding the role of white matter in seizure propagation.

CLINICAL FOCUS

- Adult and Pediatric Epilepsy
- Stereo-electro-encephalography (SEEG)
- Adult and Pediatric Movement Disorders
- Deep Brain Stimulation (DBS)
- Responsive Neurostimulation (RNS)
- Electrocorticography (ECoG)
- Brain Mapping (awake craniotomy)
- Microsurgical Resection (epileptic focus, temporal lobectomy, callosotomy, hemispherectomy, and disconnection procedures)
- Neuro-Oncology
- Tumor Associated Epilepsy
- Residency

HONORS AND AWARDS

- Tashia and John Morgridge Endowed Postdoctoral Fellow in Pediatric Translational Medicine, Stanford Maternal & Child Health Research Institute (2019-2020)
- Henry Newman Award, Best Clinical Paper, San Francisco Neurological Society (2017)
- Alden Harken Basic Science Research Award, University of Colorado, Department of Surgery (2015)
- Inductee, Alpha Omega Alpha (2015)

- Christopher G Reed Biologist Award, Dartmouth College (2008)

PROFESSIONAL EDUCATION

- AB, Dartmouth College , Biology with High Honors (2008)
- PhD, University of Colorado, Anschutz Medical Campus , Cancer Biology (2013)
- MD, University of Colorado, School of Medicine , Medicine (2015)

INTERNET LINKS

- Linked In: <https://www.linkedin.com/in/jonathonjparker/>

Research & Scholarship

CURRENT CLINICAL INTERESTS

- Adult and Pediatric Epilepsy Surgery
- Adult and Pediatric Movement Disorders

RESEARCH PROJECTS

- Electrophysiologic Signatures of Cortical and White Matter Stimulation - Stanford / Maternal & Child Health Research Institute

Publications

PUBLICATIONS

- **Anticipatory human subthalamic area beta-band power responses to dissociable tastes correlate with weight gain.** *Neurobiology of disease*
Kakusa, B., Huang, Y., Barbosa, D. A., Feng, A., Gattas, S., Shivacharan, R., Lee, E. B., Kuijper, F. M., Saluja, S., Parker, J. J., Miller, K. J., Keller, C., Bohon, et al
2021; 105348
- **Interobserver Agreement for the CT Severity Grading Scales for Acute Traumatic Brain Injury (TBI).** *Journal of neurotrauma*
Creeden, S., Ding, V., Parker, J. J., Jiang, B., Li, Y., Lanzman, B., Trinh, A., Khalaf, A., Wolman, D., Halpern, C., Boothroyd, D., Wintermark, M.
2020
- **Postoperative outcomes following pediatric intracranial electrode monitoring: A case for stereoelectroencephalography (SEEG).** *Epilepsy & behavior : E&B*
Kim, L. H., Parker, J. J., Ho, A. L., Pendharkar, A. V., Sussman, E. S., Halpern, C. H., Porter, B. n., Grant, G. A.
2020; 104 (Pt A): 106905
- **Case Report on Deep Brain Stimulation Rescue After Suboptimal MR-Guided Focused Ultrasound Thalamotomy for Essential Tremor: A Tractography-Based Investigation.** *Frontiers in human neuroscience*
Saluja, S. n., Barbosa, D. A., Parker, J. J., Huang, Y. n., Jensen, M. R., Ngo, V. n., Santini, V. E., Pauly, K. B., Ghanouni, P. n., McNab, J. A., Halpern, C. H.
2020; 14: 191
- **Contemporaneous evaluation of patient experience, surgical strategy, and seizure outcomes in patients undergoing stereoelectroencephalography or subdural electrode monitoring.** *Epilepsia*
Kim, L. H., Parker, J. J., Ho, A. L., Feng, A. Y., Kumar, K. K., Chen, K. S., Ojukwu, D. I., Shuer, L. M., Grant, G. A., Graber, K. D., Halpern, C. H.
2020
- **Adverse Events and Bundled Costs after Cranial Neurosurgical Procedures: Validation of the LACE Index Across 40,431 Admissions and Development of the LACE-Cranial Index.** *World neurosurgery*
Jin, M. C., Wu, A. n., Medress, Z. A., Parker, J. J., Desai, A. n., Veeravagu, A. n., Grant, G. A., Li, G. n., Ratliff, J. K.
2020
- **Anatomic and Thermometric Analysis of Cranial Nerve Palsy after Laser Amygdalohippocampotomy for Mesial Temporal Lobe Epilepsy.** *Operative neurosurgery (Hagerstown, Md.)*
Huang, Y., Leung, S. A., Parker, J. J., Ho, A. L., Wintermark, M., Patel, S. H., Pauly, K. B., Kakusa, B. W., Beres, S. J., Henderson, J. M., Grant, G. A., Halpern, C. H.

2019

- **Simulating Episode-Based Bundled Payments for Cranial Neurosurgical Procedures.** *Neurosurgery*
Medress, Z., Ugiliweneza, B., Parker, J., Wang, D., Burton, E., Boakye, M., Skirboll, S.
2019
- **Robot-assisted versus manual navigated stereoelectroencephalography in adult medically-refractory epilepsy patients.** *Epilepsy research*
Kim, L. H., Feng, A. Y., Ho, A. L., Parker, J. J., Kumar, K. K., Chen, K. S., Grant, G. A., Henderson, J. M., Halpern, C. H.
2019; 159: 106253
- **Adjunctive repetitive transcranial magnetic stimulation delivers superior quality of life for focal epilepsy compared to anti-epileptic drugs: A meta-analytic utility prediction study.** *Brain stimulation*
Mahajan, U. V., Parker, J. J., Williams, N. R., Bhati, M. T., Ku, S. n., Grant, G. n., Fisher, R. S., Stein, S. C., Halpern, C. H.
2019
- **Targeted genomic CRISPR-Cas9 screen identifies MAP4K4 as essential for glioblastoma invasion.** *Scientific reports*
Prolo, L. M., Li, A. n., Owen, S. F., Parker, J. J., Foshay, K. n., Nitta, R. T., Morgens, D. W., Bolin, S. n., Wilson, C. M., Vega L, J. C., Luo, E. J., Nwagbo, G. n., Waziri, et al
2019; 9 (1): 14020
- **Stereotactic laser ablation for completion corpus callosotomy.** *Journal of neurosurgery. Pediatrics*
Huang, Y. n., Yecies, D. n., Bruckert, L. n., Parker, J. J., Ho, A. L., Kim, L. H., Fornoff, L. n., Wintermark, M. n., Porter, B. n., Yeom, K. W., Halpern, C. H., Grant, G. A.
2019: 1–9
- **Intratumoral heterogeneity of endogenous tumor cell invasive behavior in human glioblastoma.** *Scientific reports*
Parker, J. J., Canoll, P., Niswander, L., Kleinschmidt-DeMasters, B. K., Foshay, K., Waziri, A.
2018; 8 (1): 18002
- **A Human Glioblastoma Organotypic Slice Culture Model for Study of Tumor Cell Migration and Patient-specific Effects of Anti-Invasive Drugs** *JOVE-JOURNAL OF VISUALIZED EXPERIMENTS*
Parker, J. J., Lizarraga, M., Waziri, A., Foshay, K. M.
2017
- **Cost-effectiveness of focused ultrasound, radiosurgery, and DBS for essential tremor.** *Movement disorders*
Ravikumar, V. K., Parker, J. J., Hornbeck, T. S., Santini, V. E., Pauly, K. B., Wintermark, M., Ghanouni, P., Stein, S. C., Halpern, C. H.
2017
- **Frontal and occipital horn ratio is associated with multifocal intraparenchymal hemorrhages in neonatal shunted hydrocephalus.** *Journal of neurosurgery. Pediatrics*
Oushy, S. n., Parker, J. J., Campbell, K. n., Palmer, C. n., Wilkinson, C. n., Stence, N. V., Handler, M. H., Mirsky, D. M.
2017; 20 (5): 432–38
- **Vocal Tremor: Novel Therapeutic Target for Deep Brain Stimulation.** *Brain sciences*
Ravikumar, V. K., Ho, A. L., Parker, J. J., Erickson-DiRenzo, E., Halpern, C. H.
2016; 6 (4)
- **Gefitinib selectively inhibits tumor cell migration in EGFR-amplified human glioblastoma.** *Neuro-oncology*
Parker, J. J., Dionne, K. R., Massarwa, R. n., Klaassen, M. n., Foreman, N. K., Niswander, L. n., Canoll, P. n., Kleinschmidt-Demasters, B. K., Waziri, A. n.
2013; 15 (8): 1048–57
- **Preoperative evaluation of pineal tumors.** *Neurosurgery clinics of North America*
Parker, J. J., Waziri, A. n.
2011; 22 (3): 353–58, vii-viii

PRESENTATIONS

- FUS Likely Dominates DBS and Stereotactic Radiosurgery for Medically-Refractory ET - 6th International Symposium on Focused Ultrasound