Kiefer James Forseth – Curriculum Vitae

EDUCATION	**University of California San Diego**	San Diego, California	2021 – 2028

Neurosurgery Residency
Neuroendovascular Fellowship
Neuroscience Postdoctoral Fellowship

	McGovern Medical School	Houston, Texas	2014 – 2021

Doctor of Medicine
Doctor of Philosophy in Computational Neuroscience

	Rice University	Houston, Texas	2010 – 2014

Bachelor of Science in Electrical Engineering
Bachelor of Music in Piano Performance

	Brophy College Preparatory	Phoenix, Arizona	2006 – 2010

CLINICAL EXPERIENCE	**University of California San Diego**	San Diego, California	2021 – 2028

Neurosurgery Resident – Managed complex patients with critical care, consult, primary, and ambulatory services while learning technical skills for cranial, spine, and endovascular operations.

RESEARCH EXPERIENCE	**University of California San Diego – Shadi Dayeh**	San Diego, California	2023 – 2028

Postdoctoral Fellow – Designed & implanted cutting edge high-density surface grid and stereotactic depth electrode arrays in animal models and humans to discern fine-scale neural dynamics.

	University of Texas Health Science Center – Nitin Tandon	Houston, Texas	2014 – 2021

Graduate Researcher – Resolved distributed network dynamics for language with invasive human electrophysiology, functional and structural imaging, and direct cortical stimulation.

	Abramson Center – Luca Pollonini	Houston, Texas	2013 – 2013

Undergraduate Researcher – Generated vasculature models from Near-Infrared Spectroscopy (NIRS) of tissue oxygenation in post-operative reconstructive surgery patients to anticipate complications.

	Barrow Neurological Institute – Lucy Treiman	Phoenix, Arizona	2008 – 2010

High School Research Intern and Technician – Maintained an animal colony and performed electrode implant surgeries with mice. Performed analysis of electroencephalography in behavioral experiments.

PROFESSIONAL EXPERIENCE	**Cyberonics** (now LivaNova)	Clearlake, Texas	2012 – 2013

Research & Development Intern – Optimized realtime seizure detection that runs on Aspire device. Integrated statespace analysis with convolution neural networks to classify seizure type from ECG.

GRANTS	**F30 DC017083** *NIH/NIDCD*	$121,167	2018 - 2021
	Hawkins Discovery Fellowship *University of Texas Health Science Center*	$31,043	2017 - 2018
	Cullen Fellowship *McGovern Medical School*	$42,588	2014 - 2017
	Finger Fellowship in Sustainable Health *Methodist Hospital*	$6,000	2013
	Vertical Integration of Research & Education in Math *Rice University*	$6,000	2011

HONORS		
	Young Investigator Award, American Epilepsy Society	2025
	Best Postdoctoral Abstract Award, Society for the Neurobiology of Language	2022
	Stereotactic & Func. Neurosurgery Basic Science Award, Congress of Neurological Surgeons	2020
	President's Research Scholarship, University of Texas Health Science Center	2019
	Dean's Research Scholarship, University of Texas Health Science Center	2019
	Best Oral Presentation in Basic Science, World Soc. for Stereotactic and Func. Neurosurgery	2019
	Ralph B. Arlinghaus PhD Scholarship, University of Texas Health Science Center	2019
	Worsham Endowed Fellowship, University of Texas Health Science Center	2018
	Best Predoctoral Abstract Award, Society for the Neurobiology of Language	2017
	Phil Layton Award for Excellence in the Arts, Rice University	2014
	Trustee Distinguished Scholar, Rice University	2010
	Walsh Engineering Scholar, Rice University	2010

ACTIVE WORK   First survival implant Of 864 microelectrode contacts for recording & stimulation of the porcine cortico-basal ganglia-thalamic motor circuit. **Forseth KJ**, Lee K, Lee H, Pizarro P, Roth D, Krueger L, Abraham M, Ben-Haim S, Khalessi A, Dayeh S. CNS (2025).

Microelectrophysiologic mapping of the visual system in preparation for whole eye transplant: circumferential recordings of the optic nerve & high-density surface recordings of early visual cortex. **Forseth KJ**, Abraham M, Yi J, Shukla K, Lee J, Hanneken A, Khalessi A, Dayeh S. CNS (2025).

High-intensity focused ultrasound is biomechanically compatible with a pediatric population. **Forseth KJ**, Seaton M, Ravindra V, Conner CR, Hersh D. AES (2025).

Intraoperative photogrammetry for quantitative measurement of cranial vault remodeling by fronto-orbital advancement. **Forseth KJ**, Schmidt J, Gosman A, Levy M, Khalessi A. CNS (2024).

Convergent hierarchical dynamics within the language network for speech listening and silent reading. Snyder K, **Forseth KJ**, Hickok G, Tandon N. AANS (2024).

Computational lesions of distributed state dynamics simulate focal aphasia. **Forseth KJ**, Tandon N. SfN (2023).

PUBLICATIONS   Dynamical network state sequences for language production. **Forseth KJ**, Pitkow X, Fischer-Baum S, Tandon N. *In Review*.

Supplementary motor area in speech initiation: a large-scale intracranial EEG evaluation of stereotyped word articulation. Bullock L, **Forseth KJ**, Woolnough O, Rollo P, Tandon N. iScience(2025).

Thalamo-cortical evoked potentials during stimulation of the DRTt demonstrates synaptic filtering. Conner CR, **Forseth KJ**, Lozano M, Fenoy A. Neurotherapeutics (2024).

The spatiotemporal dynamics of semantic integration in the human brain. Murphy E, **Forseth KJ**, Donos C, Snyder K, Rollo PS, Tandon N. Nature Communications (2023).

Minimally invasive C1-3 posterior spinal Ffsion with intraoperative O-arm navigation: 2D operative video. Lewis CS, Stone LE, **Forseth KJ**, Pham MH. Operative Neurosurgery (2023).

A cost analysis of MR-guided laser interstitial thermal therapy for adult refractory epilepsy. Brandel M, Kunwar N, Alattar A, Kang K, **Forseth KJ**, Rennert R, Shih J, Ben-Haim S. Epilepsia (2023).

The critical role of the ventral temporal lobe in word retrieval. Snyder KM, **Forseth KJ**, Donos C, Rollos PS, Fischer-Baum S, Breier J, Tandon N. Epilepsia (2023).

Event-related phase synchronization propagates rapidly across human ventral visual cortex. Woolnough O, **Forseth KJ**, Rollo PS, Roccaforte ZJ, Tandon N. NeuroImage (2022).

Dataset of human intracranial recordings during famous landmark identification. Woolnough O, Kadipasaoglu C, Conner CR, **Forseth KJ**, Rollo P, Rollo M, Baboyan V, Tandon N. Nature Scientific Data(2022).

Spatiotemporal dynamics of orthographic and lexical processing in the ventral visual pathway. Woolnough O, Donos C, Rollo PS, **Forseth KJ**, Lakretz Y, Crone N, Fischer-Baum S, Dehaene S, Tandon N. Nature Human Behavior (2021).

Language prediction mechanisms in human auditory cortex. **Forseth KJ**, Rollo PS, Hickok G, Tandon N. Nature Communications (2020).

Human retrosplenial cortex mediates face and scene recognition. Woolnough O, Rollo PS, **Forseth KJ**, Kadipasaoglu CM, Ekstrom A, Tandon N. Current Biology (2020).

NetDI: methodology elucidating the role of power and dynamical brain network features that underpin word production. Yellapantula S, **Forseth KJ**, Tandon N, Aazhang B. eNeuro (2020).

Uncovering the functional anatomy of the human insula during speech. Woolnough O, **Forseth KJ**, Rollo PS, Tandon N. eLife (2019).

Dynamic brain interactions during picture naming. Giahi-Saravani A, **Forseth KJ**, Tandon N, Pitkow X. eNeuro (2019).

A lexical semantic hub for heteromodal naming in middle fusiform gyrus. **Forseth KJ**, Kadipasaoglu CM, Conner CR, Hickok G, Knight RT, Tandon N. Brain (2018).

Development of grouped icEEG for the study of cognitive processing. Kadipasaoglu CM, **Forseth KJ**, Whaley M, Conner CR, Rollow MJ, Baboyan VG, Tandon N. Frontiers in Psychology (2015).

Self-contained diffuse optical imaging system for RT detection & localization of vascular occlusions. Pollonini L, **Forseth KJ**, Dacso CC, Parazynski S, Friedman JD. 37th Annual International Conference of the IEEE EMBC (2015).

PATENTS   Methods for optimizing the planning and placement of probes in the brain via multimodal 3D analyses of cerebral anatomy. Tandon N, Kadipasaoglu CM, Pham K, Donos C, **Forseth KJ**, Rollo PS. USPA 17/181345, filed Aug 2021, issued Aug 2023.

Imaging system for intra-operative and post-operative blood perfusion monitoring. Pollonini L, Parazynski SE, **Forseth KJ**. USPA 14/537509, filed Jun 2015, issued Sep 2018.