Erik A. Roberts, MD, PhD

University of Michigan, Dept. of Anesthesiology | 1500 E. Medical Center Drive, 1H241 UH | Ann Arbor, MI 48109-5048
(734) 418-8014 | roberter@med.umich.edu

Training and Education

University of Michigan, Department of Anesthesiology

Anesthesiology Residency, June 2021 – June 2025
Clinician-Scientist Translational Anesthesiology Research (C-STAR) Track

Boston University School of Medicine

MD-PhD, Biomedical Engineering, August 2012 – May 2021
Extracurricular Education: Harvard GSAS Business Club Mini-MBA, Boston University Startup Bootcamp,
Global Health Elective, Spectrum of Physician Advocacy Elective, Toastmasters Public Speaking Club

University of California, San Diego

BSc, Bioengineering, Magna Cum Laude, August 2008 – June 2012

Research Projects

University of Michigan, Department of Anesthesiology
Advisor: Michael Mathis, MD
Research Track Resident, 2023 – 2025
Applying machine learning to cardiac surgery-associated acute kidney injury data. Characterizing patient
and perioperative features associated with progression to chronic kidney disease. Identifying recovery
trajectories and morbidity risk profiles for kidney injury subtypes.

Boston University, Department of Mathematics & Statistics, Neural Dynamics Group
Advisor: Nancy Kopell, PhD
Graduate Research Assistant, June 2014 – May 2019
Created biophysical computational models of neural oscillations to better understand sleep architecture
and general anesthesia. Utilized statistical learning and signal processing techniques to analyze brain
electrical recordings. Developed software for neural simulation and data visualization.

UC San Diego, Department of Bioengineering, Cardiac Mechanics Research Group
Advisor: Andrew McCulloch, PhD
Research Assistant, January 2011 – June 2012
Developed computational model of heart cell molecular signaling.

Stanford School of Medicine, Department of Otolaryngology Head & Neck Surgery
Advisor: Nikolas Blevins, MD
Research Intern, Summer 2009 – 2011
Designed workflow to create patient-specific virtual models for surgical simulator.

Publications

Ramineni, A., **Roberts, E. A.**, Vora, M., Mahboobi, S. K., & Nozari, A. (2021). Anesthesia Considerations in Neurological Emergencies. *Neurologic Clinics*, *39*(2), 319-332.

Roberts, E. A. (2019). *Global neural rhythm control by local neuromodulation* (Doctoral dissertation, Boston University).

Sherfey J.S., Soplata A.E., Ardid S., **Roberts E.A.**, Stanley D.A., Pittman-Polletta B.R. & Kopell N.J. (2018) DynaSim: A MATLAB Toolbox for Neural Modeling and Simulation. *Front. Neuroinform*. 12:10.

Howe, W. M., Gritton, H. J., Lusk, N. A., **Roberts, E. A**., Hetrick, V. L., Berke, J. D., & Sarter, M. (2017). Acetylcholine release in prefrontal cortex promotes gamma oscillations and theta–gamma coupling during cue detection. *Journal of Neuroscience*, *37*(12), 3215-3230.

Kondabolu, K.*, **Roberts, E. A**.*, Bucklin, M., McCarthy, M. M., Kopell, N., & Han, X. (2016). Striatal cholinergic interneurons generate beta and gamma oscillations in the corticostriatal circuit and produce motor deficits. *Proceedings of the National Academy of Sciences*, 113(22), E3159-E3168.

Roberts, E. A., Troiano, C., & Spiegel, J. H. (2016). Standardization of Guidelines for Patient Photograph Deidentification. *Annals of plastic surgery*, *76*(6), 611-614.

Kondabolu, K., Kowalski, M. M., **Roberts, E. A.,** & Han, X. (2015). Optogenetics and deep brain stimulation neurotechnologies. In *Cognitive Enhancement* (pp. 441-450). Springer International Publishing.

* *indicates co-first authorship*

Poster Abstracts

Roberts E.A., Kopell N.J. (2017) GIMBL-Vis: A GUI-Based Interactive Multidimensional Visualization Toolbox for Matlab. *Organization for Computational Neurosciences*. Antwerp, Belgium.

Roberts E. A., Kondabolu K., Abdulkerim M., McCarthy M. M., Kopell N., & Han X. (2015). Enhanced cortico-striatal beta oscillations and synchrony mediated by optogenetic increase of striatal cholinergic tone. 2015 Neuroscience Meeting Planner. Chicago, IL: Society for Neuroscience.

Roberts E.A., Salisbury K., Chan S., & Blevins N.H. (2011). Tissue Modeling in a Patient-Specific Skull Base Surgical Simulator. *Otolaryngology — Head and Neck Surgery*. San Francisco, CA.

Teaching

BU BE402 – Control Systems in Biomedical Engineering, Boston University
  Teaching Fellow, Spring 2016 & 2017
    Taught weekly class discussion sections. Led exam review sessions.

Boston University School of Medicine
  Medical Curriculum Tutor, December 2013 – January 2017

Entrepreneurship

Harvard GSAS Business Club Mini-MBA, Summer 2018

Boston University Startup Bootcamp, Spring 2018

Leadership

Psychiatry Society at Boston University
Co-Leader, November 2013 – June 2014
Organized events to foster student interest in psychiatry.

Physicians for Human Rights at Boston University
Co-Founder, October 2013 – February 2014
Implemented a 6-part human trafficking education series.

Christian Medical Dental Associations at Boston University
Programming Coordinator, February 2013 – February 2014
Implemented school-wide events teaching about patient spiritual health.
Organized 5-part training on housing insecurity.

Student Health Advocates, University of California San Diego
Co-President, September 2011 – June 2012
Led weekly officer meetings. Planned student events.
Student Health Advocate, March 2010 – June 2012
Presented weekly around campus to promote student wellness.

Work Experience

The Guardian Newspaper, UCSD
Staff Photographer, October 2010 – June 2012
Photographed student events, recreational activities, areas of editorial interest.

AllMac
Computer Technician, September 2007 – January 2008
Provided direct customer support. Diagnosed and repaired Apple devices.

Service

International Anesthesia Research Society (IARS) Annual Meeting, *Abstract Reviewer,* 2024

Hyde Square Task Force, *Mentor,* 2014-2015
Supported high school student to be first in family to apply to college.

Awards/Honors

Michigan Medicine Making a Difference Award, 2022 and 2023

MIT Hacking Medicine Best Epilepsy Hack, 2017
Pitched mobile app for epilepsy patients, to provide community and support.

Phi Beta Kappa, 2012

University of California San Diego Provost Honors, 2009 – 2012

University of California San Diego Making of the Modern World Writing Showcase, May 2010