

BIOGRAPHICAL SKETCH

Mostafa Mahmoud Ahmed, M.D.

Proposed Project Role	Principal Investigator / Clinical Lead-Chief Medical Officer
Applicant Organization	The Pro Engineers LLC
Project	NeuroPatch™: Edge-AI Closed-Loop Neuromodulation Research Platform for Military-Relevant Autonomic Risk-State Awareness
Contact	mostafa@entiqar.com

A. EDUCATION AND TRAINING

Institution and Location	Degree / Training	Field	Completion
Brooke Army Medical Center, San Antonio, TX	Residency	Otolaryngology-Head and Neck Surgery	06/2018
University of Wisconsin School of Medicine and Public Health, Madison, WI	M.D.	Medicine	05/2012
Washington University in St. Louis, St. Louis, MO	B.A. (cum laude)	Biology, Neuroscience emphasis	05/2008

B. PERSONAL STATEMENT AND PROJECT QUALIFICATION

Dr. Ahmed is a board-certified otolaryngologist-head and neck surgeon with research and operational experience spanning cranial and cervical anatomy, neuro-otology, trauma care, facial nerve injury and regeneration, biosignal-related device development, human-research oversight, and military medicine. For the proposed NeuroPatch™ effort, he will provide overall scientific and clinical accountability; lead protocol and participant-safety review; coordinate clinical-site and regulatory-clinical integration; review endpoint definitions and physiological interpretation; and participate in design and milestone decisions. His prior service as a head and neck surgeon in deployed and military medical settings, academic appointments in surgery and biomedical engineering, IRB service, DHA SBIR technical leadership, peer-reviewed research, and medical-device consulting provide directly relevant experience for the project's noninterventional, sensing-only N=40 human-research component and its preclinical device-development pathway.

C. RESEARCH AND PROFESSIONAL EXPERIENCE

2026-Present- Otolaryngologist- Bethesda ENT and Sinus Center, Chevy Chase MD
 2024-Present - ENT device consultant, LamaMed Solutions, Inc., Hayward, CA.
 2024-Present - Chief Medical Officer, Homerian Health, LLC, Denver, CO.
 2024-Present - ENT device/study consultant for neural degeneration, Crownlands, San Francisco, CA.
 2022-2026 - Otolaryngologist, Centers for Advanced ENT Care - Montgomery Otolaryngology, Gaithersburg, MD.
 2022-Present - Visiting Scholar, Biomedical Engineering, University of Washington School of Medicine
 2018-2025 - Assistant Professor, Department of Surgery, Uniformed Services University, Bethesda, MD.
 2020-2022 - Physician-Scientist, RESTOR Laboratory, 59th Medical Wing, Lackland Air Force Base, TX.
 2019-2022 - Visiting Scholar, Department of Biomedical Engineering, University of Texas at Austin.
 2018-2022 - Attending surgeon and departmental leadership roles in Otolaryngology-Head and Neck Surgery at Carl R. Darnall Army Medical Center and Walter Reed National Military Medical Center.
 2020 - Head and Neck Surgeon, Task Force Medical 32, Baghdad Diplomatic Support Center, in support of Operation Inherent Resolve.
 2019-2021 - Head and Neck Surgeon, 499th Head and Neck Detachment, 1st Medical Brigade.

D. CERTIFICATION, LICENSURE, AND PROFESSIONAL SERVICE

Diplomate, American Board of Otolaryngology-Head and Neck Surgery, 2019-Present.
 Active medical licenses listed in the supplied CV: Maryland and Virginia. Verify current status before submission.
 Trauma Committee Member, American Academy of Otolaryngology-Head and Neck Surgery, 2021-Present; Imaging Committee Member, 2020-Present.
 Regional Health Command-Central Institutional Review Board Member, 2019-2021.
 Defense Health Agency Small Business Innovation Research: Team Chief, 2021-2023; Technical Expert, 2019-2020.
 Editorial Board, Otolaryngology-Head and Neck Surgery, 2018-Present (as listed in supplied CV; verify before submission).

E. SELECTED HONORS

Defense Meritorious Service Medal (2023); Army Meritorious Unit Commendation (2021); Army Commendation Medal (2018); multiple Army Achievement Medals (2013-2022).
 American Society of Pediatric Otolaryngology, William Potsic Basic Science Award - Second Place (2015).
 San Antonio Uniformed Services Health Education Consortium Basic Science Research Commanders' Award - Second Place (2015).
 The Spine Journal Outstanding Paper Award in Basic Science (2010).
 NIH Undergraduate Imaging Sciences Research Fellowship (2007-2008); Howard Hughes Medical Institute Undergraduate Research Fellowship (2006-2007).

F. SELECTED RESEARCH SUPPORT AND SCIENTIFIC EXPERIENCE

Collaborator, NIH R21, “Novel Approaches to Improving Accuracy of Rodent Facial Nerve Regeneration,” University of Washington School of Medicine, 2023-2025.

Co-Investigator, American Hearing Research Foundation, “Mitigating Noise-Induced Inflammatory Responses in the Inner Ear,” 2021-2022.

Co-Investigator, DoD Extramural Grant N3239814MPHX069, transgenic mouse facial nerve model of synkinesis, 2015-2018.

Co-Investigator, thoracic spinal cord contusion injury and thermal hyperalgesia research, University of Wisconsin School of Medicine, 2009-2012.

Research Assistant, NIH-supported neuronal growth-cone chemotaxis and patterned-substrate studies, Washington University School of Medicine, 2005-2008.

G. SELECTED PEER-REVIEWED PUBLICATIONS

1. Lally CJW, Ryan M, Ahmed MM, et al. Measurement of Incus and Stapes Velocity Following Sound Stimulus in the Setting of Incudostapedial Joint Separation and Reconstruction. *Otol Neurotol.* 2022;43(2):251-255. doi:10.1097/MAO.0000000000003387. PMID:35015751.
2. Ahmed MM, Allard RJ, Esquivel CR. Noise-Induced Hearing Loss Treatment: Systematic Review and Meta-analysis. *Mil Med.* 2021. doi:10.1093/milmed/usaa579. PMID:33428745.
3. Ryan M, Lally J, Adams JK, et al. Mechanical Energy Dissipation Through the Ossicular Chain and Inner Ear Using Laser Doppler Vibrometer Measurement of Round Window Velocity. *Otol Neurotol.* 2020;41(3):e387-e391. doi:10.1097/MAO.0000000000002509. PMID:31821262.
4. Ahmed MM, Connor MP, Palazzolo M, et al. Effect of High-Dose Vocal Fold Injection of Cidofovir and Bevacizumab in a Porcine Model. *Laryngoscope.* 2017;127(3):671-675. doi:10.1002/lary.26185. PMID:27452286.
5. Turney SG, Ahmed M, Chandrasekar I, et al. Nerve Growth Factor Stimulates Axon Outgrowth Through Negative Regulation of Growth Cone Actomyosin Restraint of Microtubule Advance. *Mol Biol Cell.* 2016;27(3):500-517. doi:10.1091/mbc.E15-09-0636. PMID:26631553; PMCID:PMC4751601.
6. Lee HK, Ahmed MM, King KC, et al. Persistent Phosphorylation of NKCC1 and WNK1 in the Epicenter of the Spinal Cord Following Contusion Injury. *Spine J.* 2014;14(5):777-781. doi:10.1016/j.spinee.2013.06.100. PMID:24239489.
7. Ahmed MM, Piper JM, Hansen NA, et al. Novel Magnet-Retained Prosthetic System for Facial Reconstruction. *JAMA Facial Plast Surg.* 2014;16(1):55-57. doi:10.1001/jamafacial.2013.1760. PMID:24177286.
8. Ahmed MM, Lake WB, Resnick DK. Progressive Severe Kyphosis as a Complication of Multilevel Cervical Percutaneous Facet Neurotomy: A Case Report. *Spine J.* 2012;12(10):e5-e8. doi:10.1016/j.spinee.2012.09.037. PMID:23063423.
9. Ahmed MM, King KC, Pearce SM, et al. Novel Targets for Spinal Cord Injury-Related Neuropathic Pain. *Ann Neurosci.* 2011;18(4):162-167. doi:10.5214/ans.0972.7531.1118413. PMID:25205949; PMCID:PMC4116958.
10. Hasbargen T, Ahmed MM, Miranpuri G, et al. Role of NKCC1 and KCC2 in the Development of Chronic Neuropathic Pain Following Spinal Cord Injury. *Ann N Y Acad Sci.* 2010;1198:168-172. doi:10.1111/j.1749-6632.2010.05462.x. PMID:20536931.

H. PATENTS, TECHNOLOGY TRANSFER, AND SYNERGISTIC ACTIVITIES

Co-inventor: “Negative Pressure Oronasal Apparatus,” U.S. Patent Application No. 16/985,829, filed August 5, 2020; licensed to Inquis Medical, LLC.

Co-inventor on seven provisional patent applications related to otorhinolaryngological medical devices and surgical methods, filed September 6, 2022, as listed in the supplied CV.

Book chapter: “Temporal Bone Trauma,” Cummings Otolaryngology - Head and Neck Surgery, 7th ed. (2020).

Book chapter: “Myosin Transport and Neuronal Function,” Encyclopedia of Neuroscience (2009).

Educational module: American Academy of Otolaryngology, Temporal Bone Trauma Module.

National and international presentations on austere ENT surgery, facial nerve synkinesis, vocal fold therapeutics, and spinal cord injury-related neuropathic pain.

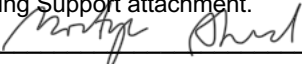
I. COLLABORATORS AND AFFILIATIONS FOR CONFLICT-OF-INTEREST REVIEW

Current and recent institutional/industry affiliations listed in the supplied CV: University of Washington School of Medicine; Centers for Advanced ENT Care - Montgomery Otolaryngology; Homerian Health, LLC; LamaMed Solutions, Inc.; Crownlands; Uniformed Services University; 59th Medical Wing/RESTOR Lab; University of Texas at Austin; Walter Reed National Military Medical Center; and Carl R. Darnall Army Medical Center. Current status must be verified by Dr. Ahmed before submission.

Selected research collaborators and project leaders identified in the supplied CV: Shelly Sakiyama-Elbert, Dwayne Simmons, Richard Williams, Daniel Resnick, Paul Bridgman, Christopher Esquivel, and coauthors identified in the selected publications above. This list is provided to support conflict-of-interest review and should be supplemented by the PI if additional active collaborators, advisors, trainees, or financial relationships exist.

J. PI CERTIFICATION / VERIFICATION BEFORE SUBMISSION

- ☐ Current employment, academic appointments, consulting roles, and dates are accurate.
- ☐ Medical licensure and board-certification status are current.
- ☐ Collaborators, affiliations, and financial relationships are complete for conflict-of-interest review.
- ☐ Selected publications, patents, honors, and research-support entries are accurate.
- ☐ The proposed role and effort in the NeuroPatch™ project are accepted and consistent with the application budget and Current/Pending Support attachment.

PI Review:  Date: 8/6/2026