BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
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NAME	POSITION TITLE
Mamelak, Adam N.	Professor of Neurosurgery Director, Functional Neurosurgery Co-Director, Pituitary Center,
eRA COMMONS USER NAME (credential, e.g., agency login) MAMELAKA	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
Tufts University, Medford, MA	B.S.	05/85	Physics
Harvard Medical School, Boston, MA	M.D.	05/90	Medicine

A. Personal Statement

As a neurosurgeon with a specialty practice in epilepsy surgery I have been actively involved in both clinical and basic science research related to seizure localization, detection, and the physiological basis of learning and memory in hippocampus for over 15 years. In conjunction with Dr Ueli Rutishauser I have an ongoing research effort utilizing human medial temporal lobe single unit recording to discover the neuronal correlates of learning and memory. I routinely perform surgical removal of hippocampus needed for this research, and have previous experience with hippocampal neurogenesis from laboratory work in this area. Our research team is a recognized expert for human recordings and their analysis (spike trains, local field potentials) as well as computational modeling based on winner-take-all cortical microcircuits. We have also developed methods for similar behavioral neurophysiology single unit and field potential recordings in humans undergoing deep brain stimulation surgery, evaluating the role of the striatum in learning and memory. This work has resulted in several seminal publications in the field, including the first evidence in humans of neuronal l phase locking to the local theta rhythm as a predictor of successful recall. Given the clinical volume at Cedars-Sinai medical center, our well organized research team, and extensive experience I am well situated to collaborate on this project.

B. Positions and Honors

Positions and Employment

1990-1996	Resident, Neurological Surgery, University of California, San Francisco, CA
1994-1995	Research Associate, Epilepsy Research Laboratory, Medicine, University of California, San Francisco, CA
1996-1997	Post-Doctoral Scholar, Biology, California Institute of Technology, CA
1997-2008	Associate Professor and Section Head, Neurological Surgery, City of Hope Cancer Center, Duarte, CA
1997-2008	Director of Epilepsy Surgery, Huntington Memorial Hospital, Pasadena, CA
1997-present	Visiting Associate in Biology, California Institute of Technology, Pasadena, CA
2005-present	Director of Epilepsy Surgery, Cedars-Sinai Medical Center, Los Angeles, CA
2005-Present	Surgical Director, Pituitary Center, Cedars-Sinai Medical Center
2008-Present	Professor of Neurosurgery, Cedars Sinai Medical Center, Los Angeles, CA
2013-Present	Co-founder & Chief Executive Officer, Teal Light Surgical, LLC

Honors

1981	National Merit Scholarship Program Semi-Finalist
1985	Phi Betta Kappa, Tufts University
1985	Benjamin G. Brown Scholarship for Scientific Excellence, Tufts University
1985	Victor Prather Class of 1927 Prize, Tufts University
1986	Harvard Medical School Summer Research Fellowship
1987	IEEE Conference on "Neural Information Processing Systems- Natural and Synthetic" Traveling Scholarship
1988	Joseph P. Collins Research Fellowship, Harvard Medical School
1990	Sirgay Sanger Prize for best research paper related to the field of Psychiatry, Harvard Medical School
1990	Magna Cum Laude, Harvard Medical School
1995	First Place, American College of Surgeons Committee on Trauma Residents Paper Competition, N. California Chapter
1996	Huntington Medical Research Institute Postgraduate Neurosurgical Research Fellowship
1996	Young Clinician Investigator Award, American Association Neurological Surgeons
1996	Junior Investigator Award, American Epilepsy Society
1998	National Brain Tumor Foundation AANS/CNS Award for Best Translational Research by a Practicing Neurosurgeon.
2005	“America’s Top Doctors for Cancer” , “America’s Top Doctors”, “Best Doctor’s” Recognition
2012	Top Ten Poster Presentation, Congress of Neurological Surgeons Annual Meeting

C. Selected Peer-reviewed Publications (15 most relevant selected from 86 peer-reviewed publications)

Five most relevant to the current application

U. Rutishauser, O. Tudusciuc, S. Wang, **A.N. Mamelak**, I.B. Ross, R. Adolphs. Single-neuron correlates of impaired face processing in autism. ***Neuron***, 80(4):887-99, 2013.

Chesnekova V, Zonis S, Wawrowsky K, Tani Y, Ben-Shlomo A, Ljubomiv A, **Mamelak A,** Bannykh S, Melmed S. Clusterin and FOXL2 act concordantly to regulate pituitary gonadotroph-cell adenoma growth. *Molecular Enodcrinology* Dec;26(12):2092-103, 2012.

U.Rutishauser, O. Tudusciuc, D. Neumann, **A.N. Mamelak**, A.C. Heller, I.B. Ross, L. Philpott, W. Sutherling, R. Adolphs. Single-unit responses selective for whole faces in the human amygdala. ***Current Biology***, 21(10):1654-1660, 2011.

U. Rutishauser, IB. Ross, **AN. Mamelak**, EM. Schuman. Human memory strength is predicted by theta-frequency phase-locking of single neurons*.* ***Nature***, 464: 903-907, 2010.

Shih CC, **MamelakAN**, LeBon T, Forman SJ. Neurohematopoetic Stem Cells. *Nature Medicine*_8(6): 535-536, June 2002.

Ten other peer reviewed publications

S. Wang, O. Tudusciuc, **A.N. Mamelak**, I.B. Ross, R. Adolphs, U.Rutishauser. Neurons in the Human Amygdala Selective for Perceived Emotion. **Proceedings of the National Academy of Science** (PNAS), E3110-3119, 2014.

U. Rutishauser, EM. Schuman, **AN. Mamelak**. Activity of human hippocampal and amygdala neurons during retrieval of declarative memories. ***Proceedings of the National Academy of Science*** *(PNAS),* 105:329-34, 2008Rutishauser U, Schuman EM, **Mamelak AN**. Activity of human hippocampal and amygdala neurons during retrieval of declarative memories. *Proceedings of National Academy of Sciences (PNAS)* 105:1, 329-334, 2008.

Lin D, Najbauer J, Salvaterra PM, **Mamelak AN**, Barish ME; Garcia E, Metz M, Kendall SE, Bowers M, Kateb B; Kim SU, Johnson M, Aboody KS, Novel method for visualizing and modeling the spatial distribution of neural stem/progenitor cells within intracranial glioma. *Neuroimage* 37 (S1): S18-S26, 2008.

U. Rutishauser, **AN. Mamelak**, EM. Schuman. Single-trial learning of novel stimuli by individual neurons of the human hippocampus-amygdala complex. ***Neuron****,* 49:805-813, 2006.

Sutherling WW, **Mamelak AN**, Thyerlei D, Maleeva T, Minizod Y, Philpott L, Lopez N. Influence of magnetic source imaging for planning intracranial EEG in epilepsy. Neurology 71(13): 990-996, 2008.

Rizzuto DS, **Mamelak AN**, Sutherling WW, Andersen RA. Neural activity during the delayed reach task in humans. Nature Neuroscience 8 (4): 415-7, 2005

Mamelak AN, Lopez N, Akhtari M., Sutherling WW. Magentoencephalography directed surgery for neocortical epilepsy. *Journal of Neurosurgery* 97(4):859-867, 2002.

Astur RS, Taylor LB, **Mamelak AN**, Philpott L, Sutherland RJ. Humans with hippocampus damage display severe spatial memory impairments in a virtual Morris water task. Behavioural Brain Research 132(1):77-84, 2002.

Quattrochi, J.J., **Mamelak, A.N.**, Madison, R.D., Macklis, J.D., Hobson, J.A. Mapping neuronal inputs to REM sleep induction sites with carbachol fluorescent microspheres. *Science* 245:984-986, 1989.

Sutherling WW Akhtari M, , , Mosher J, Arthur D, Sands S, Weiss P, Lopez N, DiMauro M, Flynn E. Dipole Localization of human induced after-discharge seizure in simultaneous magnetoencephalography and electrocorticography. *Brain Topography* 14 (1): 101-116, 2001

D. Current Research Support

Title: Disordered Neuronal Learning and Plasticity as the Cause of Dystonia
Source: Gustavus and Louise Pfeiffer Research Foundation
Period: 06/14 – 06/16
Role: Co-Investigator

Maxine Dunitz Neurosurgical Institute (Internal Institutional Funding)
Fluorescence Lifetime Method for Guided Therapy of Brain Tumors
Role: PI

Title: The role of sleep memory formation and consolidation – A neurophysiological study in humans.

Source: Neurosurgery Research and Education Foundation
Period: 07/14-07/15
Role: PI

Title: Neural Correlated of Learning and Memory
Sponsor: Cedars-Sinai Medical Center Institutional Funding
Role: PI

Completed Research in last 3 years

Title: Intracranial study of free will and moral responsibility
Sponsor: Templeton Foundation/ Florida State University
Period: 9/11- 8/14
Role: Co-Investigator

Title: Disordered Neuronal Learning and Plasticity as the Cause of Dystonia (initial year)
Spnsor: Gustavus and Louise Pfeiffer Research Foundation
Period: 06/13 – 06/14
Role: Co-Investigator