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## **EDUCATION AND TRAINING**

1988	H.S.	The Sidwell Friends School, Washington DC
1992	A.B.	Dartmouth College, Hanover NH Double Major: Music and Biochemistry Dartmouth Senior Fellow
1996	M.S.	Duke University, Department of Neurobiology, Durham NC Masters Thesis: Toward a Molecular Basis for Preferential Motor Reinnervation
1998	M.D.	Duke University School of Medicine, Durham NC
Jul 1998–Jun 1999		Internship – General Surgery Massachusetts General Hospital Boston, MA
Jul 1999–Dec 2003		Residency – Neurosurgery Massachusetts General Hospital Boston, MA
Dec 2003–Jun 2004		Chief Resident – Neurosurgery Massachusetts General Hospital Boston, MA
Jan 2005–Jun 2006		Fellowship – Functional Neurosurgery University of Toronto Toronto, ON, CA

## **ACADEMIC APPOINTMENTS**

Jun 2004–Dec 2004	Director of Trauma Service, Department of Neurosurgery Massachusetts General Hospital Boston, MA
Jul 2006–Jun 2013	Assistant Professor Department of Neurosurgery Vanderbilt University Nashville, TN
Jul 2013–Feb 2016	Associate Professor Department of Neurosurgery Vanderbilt University Nashville, TN

Jul 2011-Feb 2016	Director of Human Neurophysiological Research Department of Neurosurgery Vanderbilt University Nashville, TN
Jul 2012-Feb 2016	Director of Neurotrauma Department of Neurosurgery Vanderbilt University Nashville, TN
Jul 2013-Feb 2016	Director of Epilepsy Surgery Department of Neurosurgery Vanderbilt University Nashville, TN
Jan 2014-Feb 2016	Director of Functional Neurosurgical Fellowship Department of Neurosurgery Vanderbilt University Nashville, TN
Mar 2016 – Present	Professor of Neurosurgery Department of Neurosurgery University of Louisville Louisville, KY
Mar 2016 – Present	Chairman of Neurosurgery Department of Neurosurgery University of Louisville Louisville, KY

#### **OTHER POSITIONS AND APPOINTMENTS**

Mar 2008-July 2012	Quality/Safety Officer Department of Neurosurgery Vanderbilt University Nashville, TN
July 2008-Feb 2016	Affiliate Faculty Advisor, Robinson College Vanderbilt University Medical School Vanderbilt University Nashville, TN
Jan 2010-Feb 2016	Medical Director, Inpatient Neurosurgery Department of Neurosurgery Vanderbilt University Nashville, TN

Jan 2010-Feb 2016	Medical Director, Neurosurgery Operating Rooms Department of Neurosurgery Vanderbilt University Nashville, TN
Sept 2014-Feb 2016	Chief of Neurosurgery Tennessee Valley Health Care Veterans Administration Nashville, TN

#### **CERTIFICATION AND LICENSURE**

Nov 2009-present	Diplomate, American Board of Neurological Surgery
Nov 2001-Jan 2007	Massachusetts State Medical License
Jun 2005-Jan 2012	Michigan State Medical License
Jan 2006-2016	Tennessee State Medical License
Feb 2016-Present	Kentucky Medical License

#### **PROFESSIONAL MEMBERSHIPS AND ACTIVITIES**

2001-Present	American Association of Neurological Surgeons
2001-Present	Congress of Neurological Surgeons
2003-Present	American Society for Stereotactic and Functional Neurosurgery
	Jun 2012-Present Board of Directors
	Jun 2012-Present Director, Committee on Psychiatric Neurosurgery
	April 2013-Present Industry Relations Chair
	Jun 2014-Present Membership Committee Chair
2003-Present	World Society for Stereotactic and Functional Neurosurgery
	Jul 2006-May 2013 Website Editor
	Jul 2008-Present Industry Relations Chair
	Jun 2013-Sept 2015 Scientific Co-Chair WSSFN 2015 Meeting Committee
	Jun 2013-Present Board of Directors
2007-Present	Movement Disorders Society
2012-Present	American Epilepsy Society
2012-Present	North American Neuromodulation Society

#### **HONORS AND AWARDS**

1990	Dartmouth Award for Excellence in Teaching
1991	Dartmouth Senior Fellowship
1994-1997	Medical Scientist Training Program, NIH Scholarship
2002	AANS Award for Resident Research in Head Trauma
2001-2002	Ruth L. Kirschstein National Research Service Award
2005-2006	Michael J. Fox Fellowship for Parkinson's Disease Research
2010	Vanderbilt Candle Award for Outstanding Teaching and Mentoring

## COMMITTEE ASSIGNMENTS AND ADMINISTRATIVE SERVICES

Jan 2010-Feb 2016	Member, Medical Center Electronic Record Advisory Committee Department of Neurosurgery Vanderbilt University Nashville, TN
Jul 2012-Feb 2016	Founding Member, Vanderbilt Initiative in Surgery and Engineering (VISE) Department of Neurosurgery Vanderbilt University Nashville, TN
Oct 2012-Feb 2016	Member, Curriculum 2.0 Planning Committee Vanderbilt University Medical School Nashville, TN
Jun 2015-Feb 2016	Member, Faculty Senate Vanderbilt University Nashville, TN
February 2016-Present	Member, Operating Room Executive Committee Jewish Hospital Louisville, KY
February 2016-Present	Member, Medical Council University of Louisville Medical School Louisville, KY
February 2016-Present	Member, Executive Committee University of Louisville Physicians Louisville, KY
April 2016-Present	Member, Board of Directors University of Louisville Physicians Louisville, KY
January 2017-Present	Member, Clinical Optimization Steering Committee University of Louisville Physicians Louisville, KY
May 2017-Present	Member, HR & Compensation Committee University of Louisville Physicians Louisville, KY

## EDUCATIONAL ACTIVITIES

### ***Course Instruction***

1990-1991	Teaching Assistant in Organic Chemistry	Dartmouth College
1993	Duke University Sex Education Program	Durham City Public Schools
1996	Instructor of the Neurologic Examination	Duke University
1995-1998	Teaching Assistant in Neuroanatomy	Duke University
2001	Neurobiology Study Group Instructor	Harvard Medical School
2002	Neuroanatomy Lab Instructor	Harvard Medical School
2006-2010	Neuroscience Intercession Lecturer	Vanderbilt University
2006-2009	Faculty, Frameless Stereotaxic Surgery	Medtronic Activa Course
2006-2009	Faculty, Intrathecal Baclofen Therapy	Medtronic ITB Course
2008-present	Lecturer, Interventional Pain Fellowship	Vanderbilt University
2010-present	Faculty, Brain and Behavior	Vanderbilt University
2010-present	Plenary Lecturer, Goodman Oral Boards	AANS Review Course
2013-Present	Faculty, Continuity Clinical Experience	Vanderbilt University

### ***Post-Doctoral Fellows***

2006–2007	Hong Yu, MD. Neurosurgical Functional Research Fellow: Physiological brain atlas development for deep brain stimulation. Vanderbilt University. Current Position: Assistant Professor of Neurosurgery, Vanderbilt University
2006-2008	David Sun, MD, PhD. Neurosurgical Functional Research Fellow: Clinical outcomes of epilepsy surgery. Vanderbilt University. Current Position: Director of Epilepsy Surgery, Norton Neuroscience Institute
2008-2009	Brad Folley, PhD. The effects of deep brain stimulation on frontal emotional and cognitive function. Vanderbilt University. Current Position: Director of Neuropsychology, Norton Neuroscience Institute
2008-2010	Todd Shanks, MD. Neurosurgical Functional Research Fellow: Clinical outcomes of DBS surgery. Vanderbilt University. Current Position: Director of DBS Surgery, Norton Neuroscience Institute
2014-2015	Wendell Lake, MD, MS. Neurosurgical Functional Research Fellow: Cognitive effects of VIM thalamic stimulation. Vanderbilt University.

### ***Medical Students***

#### ***Research***

2009-2011	Sarah Borne. Emphasis Research Project: Near Infra-red Imaging (NIRS) of emotional states in DBS Patients. Vanderbilt University Medical School. Current Position: Resident in Neurosurgery, Cleveland Clinic
2009-2011	Neil Manus. Emphasis Research Project: Affective coding in the basal ganglia: Correlations between neuronal modulation and autonomic measures. Vanderbilt University Medical School. Current Position: Resident in Emergency Medicine, Albert Einstein Medical Cntr

- 2009-2010 Laura Tortura. Emphasis Research Project: A randomized trial of RAPRL vs VIM Thalamic stimulation in the control of unilateral tremor. Vanderbilt University Medical School.  
Current Position: Resident in Emergency Medicine, North Shore, Long Island Medical Center.
- 2009-Present Andrea Brock. Medical Scholars Research: Functional optical imaging of sensory modules in human cortex. Vanderbilt University Medical School.  
Current Position: Resident in Neurosurgery, University of Utah
- 2011-2012 Walter Jermankowicz. Independent Research: Electrophysiological features predicting optimal stimulation efficacy in DBS for PD. Vanderbilt University Medical School.  
Current Position: Resident in Neurosurgery, University of Miami
- 2011 Anne Wilson. Emphasis Research Project: Response of basal ganglia neurons to auditory emotional induction . Vanderbilt University Medical School.  
Current Position: Completing MD degree
- 2011-Present Neil Issar, Emphasis Research Project: Deep Brain Stimulation of the Posterior Subthalamic Region for post-traumatic tremor. Vanderbilt University Medical School.  
Current Position: Completing MD/JD degree

#### ***Clinical Apprenticeship***

Andrea Brock	Evan Shelby	Anne Wilson	Kevin Kumar
Sarah Borne	Robert Baum	Nicholas Luibrand	Elena Magrans
Neil Manus	Stacey Doran	Colin Martyn	Neil Issar
Zach Yondea	Joe Crivelli		

#### ***Graduate Students***

- 2008-2010 Srivisan Pallavaram. Creation of a novel technique for atlas creation of human physiologic data. Thesis committee member. Dept of Bioengineering. Vanderbilt University.
- 2009-2011 Jutta Mayer. Modulation in working memory function with DBS. Dept of Psychology. Vanderbilt University.
- 2009-2010 Joseph Kim. Modulation in working memory function with DBS. Dept of Psychology. Vanderbilt University.
- 2008-present Kevin Kumar. Role and Prevention of Manganese Toxicity in the Pathogenesis of Parkinson's Disease. Thesis committee member. Dept of Neuroscience. Vanderbilt University.

#### ***Undergraduate Students***

##### ***Research Apprenticeship***

- 2007-2008 Timothy Flerlage. Affective consequences of DBS stimulation, Vanderbilt University.
- 2007-2008 Jessica Galella. Differential effects of DBS stimulation laterality on emotional performance. Vanderbilt University.
- 2009-2010 Jessica Islam. Near Infra-red Imaging (NIRS) of emotional states in DBS Patients. Neuroscience 292 Honors Research Project, PI. Vanderbilt University.

- 2009-2011 Alice Wang. Decreased GABAergic Interneurons in the Entorhinal cortex of Patients with Schizophrenia and Bipolar Disorder. Neuroscience 292 Honors Thesis Committee Member. Vanderbilt University.
- 2009-2010 Laura Allen. Human neurophysiological response to emotional music and altered perception of affective musical content with DBS. Vanderbilt University.
- 2009-2011 Aaron Albritton. Alterations in emotional perception during deep brain stimulation and correlated changes in prefrontal near infrared spectroscopy. Dept of Psychology. Vanderbilt University.

### ***Clinical Shadowing***

Channing Cochran	Julia Roseman	Daniel Eshaghian	Lei Qu
Kurt Niesner	Chelsea Samson	Nathan Luibrand	Leah Hyman
Sishir Mannava	Ryan Moore	Nicholas Luibrand	Sara Yap
Mir Isaamullah	Lance Lyons	Colin Martyn	Chloe Cavanaugh
Olivia Roman	Adan Horta	Lucas Wonderly	

### **CLINICAL ACTIVITIES**

- 2008-2012 Co-investigator ANS, St. Jude Neurological  
A clinical study for essential tremor therapy: Multi-center trial of a novel current-based deep brain stimulation system in the treatment of essential tremor.
- 2010-present Co-investigator ANS, St. Jude Neurological  
A clinical study for the surgical management of treatment resistant depression: Multi-center trial of DBS stimulation of Brodmann's area 25 to treat refractory depression.
- 2012-present Co-investigator Boston Scientific  
A clinical study for Parkinson's Disease therapy: Multi-center trial of a novel deep brain stimulation system in the treatment of Parkinson's Disease.

### **GRANTS AND CONTRACTS**

#### ***Contracts***

- Jul 2006-present Co-investigator Medtronic Neurological Inc.  
Implantable Systems Performance Registry (ISPR).  
Site PI: Peter Konrad, MD, PhD

#### ***Grants***

- Jul 2008-Jun 2010 Co-Primary Investigator Vanderbilt Discovery Grant  
Assessment of frontal cortical function in Parkinson's Disease after deep brain stimulation;  
A behavioral and functional neuroimaging study.  
Co-PI: Sohee Park, PhD
- Jul 2010-Jun 2015 Co-Investigator NIH R-01-EB006136-0  
Computer assisted functional Neurosurgery.  
PI: Benoit Dawant, PhD

Jul 2011-Jun 2014                      Co-Investigator                      NIH R-21-NS071259  
Novel Apparatus for placing electrodes for deep brain stimulation.  
PI: Michael Fitzpatrick, PhD

Jul 2011-Jun 2014                      Co-Primary Investigator                      NIH R-21-NS0707136  
The Impact of Deep Brain Stimulation on Frontal-Subcortical Emotional Processing  
Co-PI: Brad Folley PhD

Jan 2018-Dec 2022                      Co-Primary Invesitagor                      NIH R-01- NS100996-01A1  
Modulating Inhibitory Action Control Systems with Subthalemic Nucleus Stimulation  
Using a Parkinson's disease model, we investigate hypotheses about how neurophysiological properties and deep brain stimulation of specific subregions and hemispheres of the subthalamic nucleus are linked to inhibitory action control mechanisms in the brain.  
Co-PI: Nelleke Van Wouwe PhD

## **EDITORIAL WORK**

May 2013-present                      Ad Hoc Reviewer for NIH Study Section,  
Clinical Neuroscience and Neurodegeneration (CNN)

## **ABSTRACTS AND PRESENTATIONS**

### ***Invited Lectures***

#### ***Regional***

Mar 2008                      DBS: New Treatments for Old Disorders  
Nashville Adventure Science Center Brain Awareness Lecture Series  
Nashville, KY

#### ***National***

Dec 2008                      DBS for Depression and Properties of Limbic Cortex  
University of Louisville  
Louisville, KY

Feb 2009                      DBS for Depression/Properties of Limbic Cortex  
UCLA  
Los Angeles, CA

Aug 2010                      Surgical Exploration of Emotional Processing in the Basal Ganglia  
University of Pittsburgh  
Pittsburgh, PA

Oct 2010                      Surgical Exploration of Emotional Processing in the Basal Ganglia  
Brown University  
Providence, RI

Mar 2011                      Surgical Exploration of Emotional Processing in the Basal Ganglia  
UCSD  
San Diego, CA



Jan 2011	Imaging Use In Neurosurgery: Challenges for Future Imaging Standards NIH Workshop on Imaging Standards Gaithersburg, MD
Jan 2012	Advances in DBS Surgery University of Tennessee Medical Center Knoxville, TN
Dec 2013	Deep Brain Stimulation: A Tool for Discovery North American Neuromodulation Society Meeting, Las Vegas, NV
Feb 2014	Cognitive and Emotional Processing in the Human Basal Ganglia University of Florida Gainesville, FL
Apr 2014	Debate: Selective hippocampal resection vs. Temporal Lobectomy American Association of Neurological Surgeons Annual Meeting San Francisco, CA
February 2015	Computer aided targeting: State of the Art and Image Guided Neurosurgery Limitations Memphis, TN
June 2017	A Big Data Approach to Stereotactic Neuromodulation Stony Brook University Neurology/Neurosurgery Grand Rounds Stony Brook, NY
September 2017	Novel Robotic Approaches to Mesial Temporal Ablation Stanford University Neurosurgery Grand Rounds Stanford, CA
October 2017	Case-based Discussion Session - Stereotactic and Functional Congress of Neurological Surgeons Annual Meeting Boston, MA
October 2017	Case-based Discussion Session – Epilepsy Congress of Neurological Surgeons Annual Meeting Boston, MA
October 2017	Functional Neurosurgery Update Congress of Neurological Surgeons Annual Meeting Boston, MA
April 2018	Unilateral Versus Bilateral Ventral Intermediate Nucleus Deep Brain Stimulation for Axial Essential Tremor Symptoms American Academy of Neurology 70th Annual Meeting Los Angeles, CA

***International***

- Feb 2008      Surgical Treatment of Depression  
National Hospital of Neurology and Neurosurgery  
Mexico City, Mexico
- Oct 2012      Surgical Advances in Functional Neurosurgery  
Bandung Padjadjaran University  
Bandung, Indonesia

## PUBLICATIONS

### *Peer Reviewed*

- 1 Yousif NJ, Denny AD, Forte R, Matloub HS, Sanger JR, **Neimat J**. 1994. 'The effect of frostbite on the reconstructed ear', *Ann Plast Surg*, 32: 132-4.
- 2 Williams ZM, **Neimat J**, Cosgrove GR, Eskandar EN. 2004. 'Stereotactic and Functional Neurosurgery Resident Award: Responses of subthalamic neurons during visually guided movements in patients with Parkinson disease', *Clin Neurosurg*, 51: 307-13.
- 3 Amirnovin R, **Neimat JS**, Roberts JA, Eskandar EN. 2005. 'Multimodality treatment of trigeminal neuralgia', *Stereotact Funct Neurosurg*, 83: 197-201.
- 4 **Neimat JS**, Hoh BL, McKenna MJ, Rabinov JD, Ogilvy CS. 2005. 'Aneurysmal expansion presenting as facial weakness: case report and review of the literature', *Neurosurgery*, 56: 190.
- 5 Williams ZM, **Neimat JS**, Cosgrove GR, Eskandar EN. 2005. 'Timing and direction selectivity of subthalamic and pallidal neurons in patients with Parkinson disease', *Exp Brain Res*, 162: 407-16.
- 6 Hamani C, **Neimat J**, Lozano AM. 2006. 'Deep brain stimulation for the treatment of Parkinson's disease', *J Neural Transm Suppl*: 393-9.
- 7 **Neimat JS**, Hamani C, Lozano AM. 2006. 'Neural stimulation for Parkinson's disease: current therapies and future directions', *Expert Rev Neurother*, 6: 101-9.
- 8 **Neimat JS**, Patil PG, Lozano AM. 2006. 'Novel surgical therapies for Tourette syndrome', *J Child Neurol*, 21: 715-8.
- 9 Hamani C, **Neimat JS**, Lozano AM. 2007. 'Deep brain stimulation and chemical neuromodulation: current use and perspectives for the future', *Acta Neurochir Suppl*, 97: 127-33.
- 10 Hodaie M, **Neimat JS**, Lozano AM. 2007. 'The dopaminergic nigrostriatal system and Parkinson's disease: molecular events in development, disease, and cell death, and new therapeutic strategies', *Neurosurgery*, 60: 17-28; discussion 28-30.
- 11 Lipsman N, **Neimat JS**, Lozano AM. 2007. 'Deep brain stimulation for treatment-refractory obsessive-compulsive disorder: the search for a valid target', *Neurosurgery*, 61: 1-11; discussion 11-3.
- 12 **Neimat JS**, Hamani C, Giacobbe P, Merskey H, Kennedy SH, Mayberg HS, Lozano AM. 2008. 'Neural stimulation successfully treats depression in patients with prior ablative cingulotomy', *Am J Psychiatry*, 165: 687-93.
- 13 Pallavaram S, D'Haese PF, Kao C, Yu H, Remple M, **Neimat J**, Konrad P, Dawant B. 2008. 'A new method for creating electrophysiological maps for DBS surgery and their application to surgical guidance', *Med Image Comput Comput Assist Interv*, 11: 670-7.
- 14 Remple MS, Sarpong Y, **Neimat JS**. 2008. 'Frontiers in the surgical treatment of Parkinson's disease', *Expert Rev Neurother*, 8: 897-906.
- 15 Yu H, **Neimat JS**. 2008. 'The treatment of movement disorders by deep brain stimulation', *Neurotherapeutics*, 5: 26-36.

- 16 Pallavaram S, Dawant BM, Koyama T, Yu H, **Neimat J**, Konrad PE, D'Haese PF. 2009. 'Validation of a fully automatic method for the routine selection of the anterior and posterior commissures in magnetic resonance images', *Stereotact Funct Neurosurg*, 87: 148-54.
- 17 Pallavaram S, Dawant BM, Li R, **Neimat JS**, Remple MS, Kao C, Konrad PE, D'Haese PF. 2009. 'A method to correct for brain shift when building electrophysiological atlases for deep brain stimulation (DBS) surgery', *Med Image Comput Comput Assist Interv*, 12: 557-64.
- 18 Remple MS, Hayes CH, Kao CQ, Charles PD, **Neimat JS**, Konrad P. 2009. 'Subthalamic Nucleus Neuronal Firing Rate Increases with Parkinson's Disease Progression: 966', *Neurosurgery*, 65: 422.
- 19 D'Haese PF, Pallavaram S, Konrad PE, **Neimat J**, Fitzpatrick JM, Dawant BM. 2010. 'Clinical accuracy of a customized stereotactic platform for deep brain stimulation after accounting for brain shift', *Stereotact Funct Neurosurg*, 88: 81-7.
- 20 Lozano AM, **Neimat JS**. 2010. 'Neurostimulation: from verification to exploration', *Neurobiol Dis*, 38: 327-8.
- 21 Pallavaram S, Dawant BM, Remple MS, **Neimat JS**, Kao C, Konrad PE, D'Haese PF. 2010. 'Effect of brain shift on the creation of functional atlases for deep brain stimulation surgery', *Int J Comput Assist Radiol Surg*, 5: 221-8.
- 22 Forbes J, Cooper C, Jermakowicz W, **Neimat J**, Konrad P. 2011. 'Microvascular decompression: salient surgical principles and technical nuances', *J Vis Exp*: e2590.
- 23 Konrad PE, **Neimat JS**, Yu H, Kao CC, Remple MS, D'Haese PF, Dawant BM. 2011. 'Customized, miniature rapid-prototype stereotactic frames for use in deep brain stimulator surgery: initial clinical methodology and experience from 263 patients from 2002 to 2008', *Stereotact Funct Neurosurg*, 89: 34-41.
- 24 Remple MS, Bradenham CH, Kao CC, Charles PD, **Neimat JS**, Konrad PE. 2011. 'Subthalamic nucleus neuronal firing rate increases with Parkinson's disease progression', *Mov Disord*, 26: 1657-62.
- 25 Bourne SK, Conrad A, Konrad PE, **Neimat JS**, Davis TL. 2012. 'Ventricular width and complicated recovery following deep brain stimulation surgery', *Stereotact Funct Neurosurg*, 90: 167-72.
- 26 Charles D, Tolleson C, Davis TL, Gill CE, Molinari AL, Bliton MJ, Tramontana MG, Salomon RM, Kao C, Wang L, Hedera P, Phibbs FT, **Neimat JS**, Konrad PE. 2012. 'Pilot study assessing the feasibility of applying bilateral subthalamic nucleus deep brain stimulation in very early stage Parkinson's disease: study design and rationale', *J Parkinsons Dis*, 2: 215-23.
- 27 Charles PD, Dolhun RM, Gill CE, Davis TL, Bliton MJ, Tramontana MG, Salomon RM, Wang L, Hedera P, Phibbs FT, **Neimat JS**, Konrad PE. 2012. 'Deep brain stimulation in early Parkinson's disease: enrollment experience from a pilot trial', *Parkinsonism Relat Disord*, 18: 268-73.
- 28 D'Haese PF, Pallavaram S, Li R, Remple MS, Kao C, **Neimat JS**, Konrad PE, Dawant BM. 2012. 'CranialVault and its CRAVE tools: a clinical computer assistance system for deep brain stimulation (DBS) therapy', *Med Image Anal*, 16: 744-53.
- 29 Stoker MA, Forbes JA, Hanif R, Cooper C, Nian H, Konrad PE, **Neimat JS**. 2012. 'Decreased Rate of CSF Leakage Associated with Complete Reconstruction of Suboccipital Cranial Defects', *J Neurol Surg B Skull Base*, 73: 281-6.
- 30 Bourne SK, Conrad A, **Neimat JS**, Davis TL. 2013. 'Linear measurements of the cerebral ventricles are correlated with adult ventricular volume', *J Clin Neurosci*, 20: 763-4.
- 31 D'Haese PF, Pallavaram S, Kao C, **Neimat JS**, Konrad PE, Dawant BM. 2013. 'Effect of data normalization on the creation of neuro-probabilistic atlases', *Stereotact Funct Neurosurg*, 91: 148-52.

- 32 Hedera P, Phibbs FT, Dolhun R, Charles PD, Konrad PE, **Neimat JS**, Davis TL. 2013. 'Surgical targets for dystonic tremor: considerations between the globus pallidus and ventral intermediate thalamic nucleus', *Parkinsonism Relat Disord*, 19: 684-6.
- 33 Issar NM, Hedera P, Phibbs FT, Konrad PE, **Neimat JS**. 2013. 'Treating post-traumatic tremor with deep brain stimulation: report of five cases', *Parkinsonism Relat Disord*, 19: 1100-5.
- 34 Laxton AW, **Neimat JS**, Davis KD, Womelsdorf T, Hutchison WD, Dostrovsky JO, Hamani C, Mayberg HS, Lozano AM. 2013. 'Neuronal coding of implicit emotion categories in the subcallosal cortex in patients with depression', *Biol Psychiatry*, 74: 714-9.
- 35 Balachandran R, Fritz MA, Dietrich MS, Danilchenko A, Mitchell JE, Oldfield VL, Lipscomb WW, Fitzpatrick JM, **Neimat JS**, Konrad PE, Labadie RF. 2014. 'Clinical testing of an alternate method of inserting bone-implanted fiducial markers', *Int J Comput Assist Radiol Surg*, 9: 913-20.
- 36 Camalier CR, Konrad PE, Gill CE, Kao C, Remple MR, Nasr HM, Davis TL, Hedera P, Phibbs FT, Molinari AL, **Neimat JS**, Charles D. 2014. 'Methods for Surgical Targeting of the STN in Early-Stage Parkinson's Disease', *Front Neurol*, 5: 25.
- 37 Charles D, Konrad PE, **Neimat JS**, Molinari AL, Tramontana MG, Finder SG, Gill CE, Bliton MJ, Kao C, Phibbs FT, Hedera P, Salomon RM, Cannard KR, Wang L, Song Y, Davis TL. 2014. 'Subthalamic nucleus deep brain stimulation in early stage Parkinson's disease', *Parkinsonism Relat Disord*, 20: 731-7.
- 38 Liu Y, Konrad PE, **Neimat JS**, Tatter SB, Yu H, Datteri RD, Landman BA, Noble JH, Pallavaram S, Dawant BM, D'Haese PF. 2014. 'Multisurgeon, multisite validation of a trajectory planning algorithm for deep brain stimulation procedures', *IEEE Trans Biomed Eng*, 61: 2479-87.
- 39 McIntosh LG, Mannava S, Camalier CR, Folley BS, Albritton A, Konrad PE, Charles D, Park S, **Neimat JS**. 2014. 'Emotion recognition in early Parkinson's disease patients undergoing deep brain stimulation or dopaminergic therapy: a comparison to healthy participants', *Front Aging Neurosci*, 6: 349.
- 40 Tolleson C, Stroh J, Ehrenfeld J, **Neimat J**, Konrad P, Phibbs F. 2014. 'The factors involved in deep brain stimulation infection: a large case series', *Stereotact Funct Neurosurg*, 92: 227-33.
- 41 Tomycz L, Forbes J, Ladner T, Kahn E, Maris A, **Neimat J**, Konrad P. 2014. 'Open thoracic cordotomy as a treatment option for severe, debilitating pain', *J Neurol Surg A Cent Eur Neurosurg*, 75: 126-32.
- 42 Charles D, Konrad PE, Davis TL, **Neimat JS**, Hacker ML, Finder SG. 2015. 'Deep brain stimulation in early stage Parkinson's disease', *Parkinsonism Relat Disord*, 21: 347-8.
- 43 Claassen DO, van den Wildenberg WP, Harrison MB, van Wouwe NC, Kanoff K, **Neimat JS**, Wylie SA. 2015. 'Proficient motor impulse control in Parkinson disease patients with impulsive and compulsive behaviors', *Pharmacol Biochem Behav*, 129: 19-25.
- 44 Gilbert HB, **Neimat J**, Webster RJ, 3rd. 2015. 'Concentric Tube Robots as Steerable Needles: Achieving Follow-the-Leader Deployment', *IEEE Trans Robot*, 31: 246-58.
- 45 Gunduz A, Morita H, Rossi PJ, Allen WL, Alterman RL, Bronte-Stewart H, Butson CR, Charles D, Deckers S, de Hemptinne C, DeLong M, Dougherty D, Ellrich J, Foote KD, Giordano J, Goodman W, Greenberg BD, Greene D, Gross R, Judy JW, Karst E, Kent A, Kopell B, Lang A, Lozano A, Lungu C, Lyons KE, Machado A, Martens H, McIntyre C, Min HK, **Neimat J**, Ostrem J, Pannu S, Ponce F, Pouratian N, Reymers D, Schrock L, Sheth S, Shih L, Stanslaski S, Steinke GK, Stypulkowski P, Troster AI, Verhagen L, Walker H, Okun MS. 2015. 'Proceedings of the Second Annual Deep Brain Stimulation Think Tank: What's in the Pipeline', *Int J Neurosci*, 125: 475-85.
- 46 Hacker ML, Tonascia J, Turchan M, Currie A, Heusinkveld L, Konrad PE, Davis TL, **Neimat JS**, Phibbs FT, Hedera P, Wang L, Shi Y, Shade DM, Sternberg AL, Drye LT, Charles D. 2015. 'Deep brain stimulation may reduce the relative risk of clinically important worsening in early stage Parkinson's disease', *Parkinsonism Relat Disord*, 21: 1177-83.

- 47 Morone PJ, Sweeney AD, Carlson ML, **Neimat JS**, Weaver KD, Abou-Khalil BW, Arain AM, Singh P, Wanna GB. 2015. 'Temporal Lobe Encephaloceles: A Potentially Curable Cause of Seizures', *Otol Neurotol*, 36: 1439-42.
- 48 Pallavaram S, D'Haese PF, Lake W, Konrad PE, Dawant BM, **Neimat JS**. 2015. 'Fully automated targeting using nonrigid image registration matches accuracy and exceeds precision of best manual approaches to subthalamic deep brain stimulation targeting in Parkinson disease', *Neurosurgery*, 76: 756-65.
- 49 Schrock LE, Mink JW, Woods DW, Porta M, Servello D, Visser-Vandewalle V, Silburn PA, Foltynie T, Walker HC, Shahed-Jimenez J, Savica R, Klassen BT, Machado AG, Foote KD, Zhang JG, Hu W, Ackermans L, Temel Y, Mari Z, Changizi BK, Lozano A, Auyeung M, Kaido T, Agid Y, Welter ML, Khandhar SM, Mogilner AY, Pourfar MH, Walter BL, Juncos JL, Gross RE, Kuhn J, Leckman JF, **Neimat JS**, Okun MS, Tourette Syndrome Association International Deep Brain Stimulation D, Registry Study G. 2015. 'Tourette syndrome deep brain stimulation: a review and updated recommendations', *Mov Disord*, 30: 448-71.
- 50 Tramontana MG, Molinari AL, Konrad PE, Davis TL, Wylie SA, **Neimat JS**, May AT, Phibbs FT, Hedera P, Gill CE, Salomon RM, Wang L, Song Y, Charles D. 2015. 'Neuropsychological effects of deep brain stimulation in subjects with early stage Parkinson's disease in a randomized clinical trial', *J Parkinsons Dis*, 5: 151-63.
- 51 van Wouwe NC, van den Wildenberg WP, Ridderinkhof KR, Claassen DO, **Neimat JS**, Wylie SA. 2015. 'Easy to learn, hard to suppress: The impact of learned stimulus-outcome associations on subsequent action control', *Brain Cogn*, 101: 17-34.
- 52 Arain AM, Azar NJ, Lagrange AH, McLean M, Singh P, Sonmezturk H, Konrad P, **Neimat J**, Abou-Khalil B. 2016. 'Temporal lobe origin is common in patients who have undergone epilepsy surgery for hypermotor seizures', *Epilepsy Behav*, 64: 57-61.
- 53 Bick SK, Folley BS, Mayer JS, Park S, Charles PD, Camalier CR, Pallavaram S, Konrad PE, **Neimat JS**. 2016. 'Subthalamic Nucleus Deep Brain Stimulation Alters Prefrontal Correlates of Emotion Induction', *Neuromodulation*.
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