

CURRICULUM VITAE

Jonathan J. Halford, M.D.

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BIRTHPLACE:

Durham, North Carolina; January 11, 1968

CURRENT POSITIONS:

Associate Professor of Neurology
Department of Neurology
Medical University of South Carolina (MUSC)
Charleston, SC

Staff Neurologist
Department of Neurology
Ralph H. Johnson Veterans Medical Center
Charleston, SC

Adjunct Associate Professor
Department of Electrical and Computer Engineering and School of Computing
College of Engineering and Science
Clemson University
Clemson, SC

EDUCATION

Bachelor of Arts, Religious Studies	August 1986 to May 1990
Graduated Cum Laude	
Duke University	
Durham, NC	

Doctor of Medicine	June 1991 to May 1996
Medical University of South Carolina	
Charleston, SC	

Internal Medicine Internship	July 1996 to June 1997
Department of Medicine	
Virginia Commonwealth University	
Richmond, VA	

Neurology Residency	July 1997 to December 1999
Combined Neurology-Psychiatry Residency	
Neurology Division, Department of Medicine	
Duke University Medical Center	
Durham, NC	

Psychiatry Residency

January 2000 to June 2002

Combined Neurology-Psychiatry Residency
Department of Psychiatry
Duke University Medical Center
Durham, NC

Clinical Neurophysiology Fellowship

July 2002 to August 2003

Neurology Division, Department of Medicine
Duke University Medical Center
Durham, NC

HONORS

Recipient of the Golden Apple Special Appreciation Award from the
Medical School Class of 1996 for teaching in Medical Neuroscience
Fellow, American Clinical Neurophysiology Society, 2014 – present

BOARD CERTIFICATION

Diplomate, Neurology, American Board of Psychiatry and Neurology, 5/2002 – 12/31/2012;
recertification 06/2012 – 06/2022

Diplomate, Psychiatry, American Board of Psychiatry and Neurology, 9/2003 – 12/31/2013;
recertification 06/2012 – 06/2022

Diplomate, American Board of Clinical Neurophysiology, Advanced Neurophysiology and
Epilepsy Monitoring; 10/2005 – 12/31/2015; Recertification in 06/2015 – 05/2025

Diplomate, American Board of Sleep Medicine; March 22, 2005 – no recertification possible
because replaced by the board exam below

Diplomate, American Board of Psychiatry and Neurology, Sleep Medicine Subspecialty
Certification; 03/2010 – 03/2020

Diplomate, American Board of Psychiatry and Neurology, Epilepsy Subspecialty Certification;
12/2013 – 12/2023 (The first time this board exam was offered was in 2013.)

MEDICAL LICENSURES:

South Carolina Active status: August 2003 – present

North Carolina Active status: March 2000 – September 2003

Inactive status: September 2003 – present

WORK EXPERIENCE

Associate Professor of Neurology, Medical University of South Carolina, Charleston, SC, July
2011 – present

Associate Professor of Psychiatry, Medical University of South Carolina, Charleston, SC, July
2011 – present

Staff Neurologist, Ralph H. Johnson VA Medical Center, Charleston, SC, July 2004 – present

Assistant Professor of Neurology, Medical University of South Carolina, Charleston, SC,
September 2003 – 2011

Assistant Professor of Psychiatry, Medical University of South Carolina, Charleston, SC, July
2005 – 2011

Neurology Consultant, Part-time, Dorothea-Dix Hospital, Raleigh NC, July 2002 – July 2003

Internal Medicine After-hours On-call Physician, Part-time, John Umstead Hospital, Butner NC.
March 2000 – July 2003
Clinical Neurophysiology Fellow, Duke Medical Center, July 2002 – July 2003
Psychiatry Resident, Duke Medical Center, January 2000 – June 2002
Neurology Chief Resident, Duke Medical Center, July 1999 – December 1999
Neurology Resident, Duke Medical Center, July 1997 – December 1999
Intern in Internal Medicine, Medical College of Virginia, Richmond VA, July 1996 – June 1997
Research Assistant (computer programming, MRI image processing), Center for Advanced
Imaging Research, MUSC, July 1995 – June 1996
Research Assistant, Dept. of Physical Medicine and Rehabilitation, MUSC, Spring 1993 – Fall
1994
Instructor of Gross Anatomy for the College of Medicine at MUSC, Fall 1993
Instructor in Anatomy and Physiology for the Health Careers Opportunity
Program at the Medical University of SC, July 1994
Instructor in Physiology for the Health Careers Opportunity Program at
MUSC, Summer 1993
Teaching Assistant in Medical Neuroscience, MUSC, Spring 1993
Teaching Assistant in Medical Gross Anatomy, MUSC, Fall 1991
Student Missionary, Seventh-day Adventist Church, Amazon region of Brazil, August 1986 –
February 1987
Computer Technician (computer programming, hardware installation), part-time, National
Biomedical Simulation Resource, Duke University, 1986 – 1990

PROFESSIONAL ACTIVITIES

Journal Review

Ad Hoc Reviewer, Epilepsy and Behavior, 2003 – present
Ad Hoc Reviewer, Epilepsia, 2011 – present
Ad Hoc Reviewer, Journal of Clinical Neurophysiology, 2013 – present

Leadership Roles

Director, Adult Epilepsy Program, MUSC, 2005 – 2007
Director, Translational Research Unit, MUSC, 2011 – present
Associate Director for Technical Development, MUSC Clinical Neurophysiology Laboratory,
2012 – present
Director, Clinical Trials and Patient Registry Research (and Director of Translational Research
Unit), Departments of Neurology and Neurosurgery, MUSC, 2014 – present
Director, Associate Consortium Site for the VA Epilepsy Centers of Excellence Consortium at
the Charleston VAMC, 2012 – present

University Committee Membership

Member, Physicians Information Council, MUSC, 2005 – 2009
Member, Practice Partner Committee, MUSC 2009 – 2010
Member, Department of Neurosciences Grand Rounds Committee, Department of
Neurosciences, MUSC, 2009 – 2013

Member, IRB Committee, MUSC, 2010 – 2012

National Committee Membership

Co-Chairman, Research Committee, American Clinical Neurophysiology Society, 2013

Board Member, American Board of Clinical Neurophysiology, 2015 – present

EEG Research Core Committee, Human Epilepsy Project, 2015 – present

National Consortium Membership

Associate Site Member, Epilepsy Study Consortium, 2011 – present

Member, CCEMRC EEG Research Consortium, 2012 – present

Other Professional Activities

Coordinator, Military Epileptologist (VA) Special Interest Group Meeting, American Epilepsy Society Annual Meeting, 2010 – 2014

Co-Coordinator, Military Epileptologists (VA) Special Interest Group Meeting, American Epilepsy Society Annual Meeting, Boston, 2009

Coordinator, Routine Scalp EEG Spike Detection Special Interest Group Meeting, American Clinical Neurophysiology Society Meeting, San Diego, February 2010

Examiner for Oral Board Exam, American Board of Registration of Electroencephalographic and Evoked Potential Technologists (ABRET) March 2007, August 2007, and October 2011

Examiner for Oral Board Exam, American Board of Clinical Neurophysiology, Durham NC; October 11, 2008.

Exam Writer for Intraoperative Monitoring Exam, American Board of Registration of Electroencephalographic and Evoked Potential Technologists (ABRET) 2008-2010

SOCIETY MEMBERSHIPS

National Societies	American Academy of Neurology
	American Academy of Sleep Medicine
	American Clinical Neurophysiological Society
	American Epilepsy Society
	American Medical Association
Local Societies	South Carolina Neurological Society
	Charleston County Medical Society

CONFERENCE ATTENDANCE

American Epilepsy Society 2003 – 2014

American Clinical Neurophysiology Society, 2009 – 2015

IEEE International Engineering in Medicine and Biology Society (EMBS), 2012 - 2013

European Federation of Neurological Societies, Florence, Italy, September 2009

International Epilepsy Congress, Budapest, June 2009

7th International Conference of ICA and Blind Signal Source Separation 2007, London, UK

6th International Conference on ICA and Blind Signal Source Separation 2006, Charleston SC

American Neuropsychiatric Association in Fort Myers, FL in February 2001

American Academy of Neurology 1998 – 1999, 2011

MENTORSHIP

Ph.D. Thesis Committee, William B. Pressley M.S., Clemson University School of Computing. His thesis is based on my work and is entitled "A Computational Framework to Support the Automated Analysis of Routine Electroencephalography Data". Primary Mentor: Brian Dean, Ph.D (Clemson). PhD was awarded September 2010.

Ph.D. Thesis Committee, Chad G. Waters M.S., Clemson University School of Computing

Ph.D. Thesis Committee, Jing Zhou M.S. Clemson University Department of Electrical and Computer Engineering. Her thesis is based on my work and is entitled "A Study of Automatic Detection and Classification of EEG Epileptiform Transients". PhD was awarded May 2014.

PEER-REVIEWED PUBLICATIONS

1. Lee D, Kalu U, **Halford JJ**, Biton V, Cloyd J, Klein P, Bekersky I, Peng G, Dheerendra S, Tolbert D. Intravenous carbamazepine as short-term replacement therapy for oral carbamazepine in adults with epilepsy: pooled tolerability results from two open-label trials. *Epilepsia*. 2015; Jun;56(6):906-14
2. Sahlem GL, Badran BW, **Halford JJ**, Williams NR, Korte JE, Leslie K, Strachan M, Breedlove JL, Runion J, Bachman DL, Uhde TW, Borckardt JJ, George MS. Oscillating square wave Transcranial Direct Current Stimulation (tDCS) delivered during slow wave sleep does not improve declarative memory more than sham: A randomized sham controlled crossover study. *Brain Stimulation*. 2015; 8(3):528-34
3. **Halford JJ**, Shiau D, Desrochers JA, Kolls BJ, Dean BC, Waters CG, Azar NJ, Haas KF, Kutluay E, Martz GU, Sinha SR, Kern RT, Kelly KM, Sackellares JC, LaRoche SM. Inter-rater agreement on identification of electrographic seizures and periodic discharges in ICU EEG recordings. *Clinical Neurophysiology*. 2014 Nov 20. pii: S1388-2457(14)00799-8. doi: 10.1016/j.clinph.2014.11.008. [Epub ahead of print]
4. **Halford JJ**. One Ring to Dissolve Them All. *Epilepsy Currents*. 2015; Vol 15 No 1: 52-53
5. Zhou J, Schalkoff RJ, Dean BC, **Halford JJ**. A Study of Morphology-Based Wavelet Features and Multiple-Wavelet Strategy for EEG Signal Classification: Results and Selected Statistical Analysis. *Conf Proc IEEE Eng Med Biol Soc*. 2013 Jul; 5998-6002.
6. **Halford JJ**, Schalkoff RJ, Zhou J, Benbadis SR, Tatum WO, Turner RP, Sinha S, Fountain NB, Arain A, Pritchard PB, Kutluay E, Martz G, Edwards JC, Waters C, Dean BC. Standardized Database Development for EEG Epileptiform Transient Detection: EEGnet Scoring System and Machine Learning Analysis. *Journal of Neurosciences Methods*. 2013 Jan; 212(2): 308-316
7. Zhou J, Schalkoff RS, Dean BC, **Halford JJ**. Morphology-Based Wavelet Features and Multiple Mother Wavelet Strategy for Spike Classification in EEG Signals. *Conf Proc IEEE Eng Med Biol Soc*. 2012; 3959-62.
8. Bonilha L, **Halford JJ**, Morgan PS, Edwards JC. Hippocampal atrophy in temporal lobe epilepsy: the generator and receiver. *Acta Neurologica Scandinavica*: 2012 Feb;125(2):105-10.

9. Sackellares JC, Shiau DS, **Halford JJ**, LaRoche SM, Kelly KM. Quantitative EEG Analysis for Automated Detection of Nonconvulsive Seizures in Intensive Care Units. *Epilepsy & Behavior*. 2011; 22(Suppl 1):S69-73.
10. Chien JH, Shiau D-S, **Halford JJ**, Kelly KM, Kern RT, Yang MC, Zhang J, Sackellares JC, Pardalos PM. Signal Regularity-Based Automated Seizure Prediction Algorithm on Scalp EEG. *Cybernetics and Systems Analysis* 2011; 47(4): 586-597.
11. **Halford JJ**, Pressly WB, Benbadis SR, Tatum WO, Turner RP, Arain A, Prichard PB, Edwards JC, Dean BC. Web-based Collection of Expert Opinion on Routine Scalp EEG: Software Development and Inter-rater Reliability. *Journal of Clinical Neurophysiology* 2011; 28: 178-184.
12. **Halford JJ**, Ben-Menachem E, Kwan P, Ness S, Schmitt J, Eerdekens M, Novak G. A randomized, double-blind, placebo-controlled study of the efficacy, safety and tolerability of adjunctive carisbamate treatment in patients with partial-onset seizures. *Epilepsia* 2011; 52(4): 816-825.
13. **Halford JJ**. Response to "Spike Detection Algorithm Performance and Methods of Acquiring Expert Opinion". *Clinical Neurophysiology* 2010; 121(11): 1968-1969.
14. **Halford JJ**, Shiau D-S, Kern RT, Stroman C, Kelly KM, Sackellares JC. Seizure Detection Software Used to Complement the Visual Screening Process for Long-Term EEG Monitoring. *American Journal of Electroneurodiagnostic Technology* 2010; 50: 133-147.
15. Kelly KM, Shiau D-S, Kern, RT, Chien J-H, Yang MC, Yandora, K, Valeriano, JP, **Halford JJ**, Sackellares JC. Assessment of a scalp EEG-based automated seizure detection system. *Clinical Neurophysiology* 2010; 121(11): 1832-1843
16. Shiau D-S, **Halford JJ**, Kelly KM, Kern RT, Inman M, Chien J-H, Pardalos PM, Sackellares JC. Signal Regularity-Based Automated Seizure Detection System for Scalp EEG Monitoring. *Cybernetics and Systems Analysis* 2010; 46(6): 922-935.
17. Bonilha L, Edwards JC, Kinsman SL, Morgan PS, Fridriksson J, Rorden C, Rumboldt Z, Roberts DR, Eckert MA, **Halford JJ**. Hippocampal gray matter loss and hippocampal deafferentation in patients with temporal lobe epilepsy. *Epilepsia* 2010; 51(4): 519-528.
18. Sperling MR, Greenspan A, Cramer J, Kwan P, Kälviäinen R, **Halford JJ**, Schmitt J, Haas M, Yuen E, Cook T, and Novak G. Carisbamate as adjunctive treatment of partial onset seizures in adults in two randomized, placebo-controlled trials. *Epilepsia* 2010; 51(3): 333-343.
19. **Halford JJ**. Computerized Epileptiform Transient Detection in Scalp EEG: Obstacles to Progress and the Example of Computerized ECG Interpretation. *Clinical Neurophysiology* 2009; 120: 1909-1915
20. Bonilha L, **Halford J**, Rorden C, Roberts D, Rumbolt Z, Eckert M. Automated MRI analysis for identification of hippocampal atrophy in temporal lobe epilepsy. *Epilepsia* 2009; 50(2):228-233
21. Bonilha L, **Halford JJ**. The influence of hippocampal atrophy on extra-hippocampal gray matter loss in temporal lobe epilepsy. *Neurology* 2009; 72(23):2052

22. **Halford JJ**, LaPointe M. Clinical Perspectives on Lacosamide. *Epilepsy Currents* 2009; 9(1): 1-9
23. **Halford JJ**. Detection of Paroxysmal EEG Discharges using Multi-taper Blind Signal Source Separation. *Lecture Notes in Computer Science* 2007 Sept; 4666: 601-608
24. Bonilha L, **Halford J**, Rorden C, Li LM, Patel A, Rumbolt Z, Morgan P. Microstructural white matter abnormalities in nodular heterotopia with overlying polymicrogyria. *Seizure* 2007, 16(1):74-80.
25. Bonilha L, Rorden C, **Halford JJ**, Eckert M, Appenzeller S, Cendes F, Li LM. Asymmetrical extra-hippocampal grey matter loss related to hippocampal atrophy in patients with medial temporal lobe epilepsy. *J Neurol Neurosurg Psychiatry* 2007, 78(3):286-94.
26. **Halford J**, Mazeika G, Slifer S, Speer M, Saunders AM, Strittmatter WJ, Morgenlander JC. APOE2 allele increased in tardive dyskinesia. *Movement Disorders* 2006; 21(4):540-542
27. **Halford JJ**. Neurophysiologic correlates of psychiatric disorders and potential applications in epilepsy. *Epilepsy and Behavior* 2003. 4(4):375-385.
28. Dell DL, **Halford JJ**. Dementia presenting as postpartum depression. *Obstetrics & Gynecology* 2002; 99(5 Pt 2):925-928

BOOK CHAPTERS

Chien J-H, Shiao D-S, Sackellares JC, **Halford JJ**, Kelly KM, Pardalos PM. 'Using Relative Power Asymmetry as a Biomarker for Classifying Psychogenic Nonepileptic Seizure and Complex Partial Seizure Patients' in Data Mining for Biomarker Discovery. Editors: Pardalos PM, Xanthopoulos P, Zervakis M. New York: Springer, 2012. pp. 57-78

Halford JJ. 'Antiepileptic Medications'. Editor Edwards JC. In Handbook of Epilepsy: Diagnosis and Management. MUSC University Press. Charleston SC USA. 2010. pp.173-176

Halford JJ. 'Neurophysiologic Correlates of Psychiatric Disorders and Potential Applications in Epilepsy' in Behavioral Aspects of Epilepsy: Principles and Practice. Editors: S Schachter and G Holmes. Demos Medical Publishing, 2007

COLLABORATIVE GROUP AUTHORSHIP

Wechsler R, Hauser RA, French J, and The Clinician Investigator Collaborative. Who's helping whom? Manuscript support and transfer of value. *Annals of Neurology*. Accepted for publication in 2015.

Morrell MJ; On behalf of the RNS System in Epilepsy Study Group. Responsive cortical stimulation for the treatment of medically intractable partial epilepsy. *Neurology*. 77: 1295-1301, 2011

Chung S, Sperling MR, Biton V, Krauss G, Hebert D, Rudd GD, Doty P, SP754 Study Group. Lacosamide as adjunctive therapy for partial-onset seizures: a randomized controlled trial. *Epilepsia*. 51(6):958-67, 2010

NES Treatment Workshop 2003: Member and video-EEG scorer. Benbadis SR et al. Interrater reliability of EEG-video monitoring. *Neurology*. 73:843-846, 2009.

ABSTRACT PRESENTATIONS

1. **Halford J**, Martz G, Kutluay E, Waters CG, Dean BC, Soussou W, Duff E. Quality Assessment of EEG from “Dry Electrode” System in Veterans. American Clinical Neurophysiology Society Annual Meeting in Atlanta GA, February 2014.
2. Hartmann M, Koren J, Furbass F, Weinkopf M, Schnabel K, **Halford J**, Baumgartner C, Kluge T. NeuroTrend: Rapid Review of Continuous EEGs from ICUs. American Clinical Neurophysiology Society Annual Meeting in Atlanta GA, February 2014.
3. Mahulikar A, Iadi P, **Halford J**, Claasen J, LaRoche S, Foreman B. Generalized Periodic Discharges: Inter-Rater Agreement. American Clinical Neurophysiology Society Annual Meeting in Atlanta GA, February 2014.
4. **Halford J**, Waters CG, Martz G, Kutluay, E, Dean BC, Soussou W. Quality Assessment of Electroencephalography Obtained From A “Dry Electrode” System in Veterans. American Epilepsy Society Annual Meeting in Washington DC, December 2013
5. Shiau D, Schnabel K, Desrochers J, Kern R, Sackellares J, **Halford J**. Automated Detection of Electrographic Seizures in Pediatric EMU Patients Through Analysis of Scalp EEG. American Epilepsy Society Annual Meeting in Washington DC, December 2013.
6. McGuire R, Frei M, Kern R, Shiau D, **Halford J**, Olin B, Begnaud J. Software Analysis of Seizure Severity and Post-Ictal Duration. American Epilepsy Society Annual Meeting in Washington DC, December 2013
7. Furbass F, **Halford JJ**, Baumgartner C, Schnabel K, Weinkopf M, Hartmann M, Gruber A, Koren J, Herta J, Perko H, Kluge T. Assessment of Automated EEG Analysis and Trending for Critically Ill Patients. American Epilepsy Society Annual Meeting in Washington DC, December 2013.
8. Furbass F, **Halford J**, Herta J, Koren J, Perko H, Schnabel K, Weinkopf M, Gruber A, Kluge T, Baumgartner C, Hartmann M. NeuroTrend: Computational EEG analysis for critically ill patients based on the standardized terminology of the ACNS. World Congress of Neurology in Vienna Austria in September 2013.
9. **Halford JJ**, Waters CG, Tatum WO, Dean BC. Web Technology to Facilitate an Interactive EEG Teaching. American Clinical Neurophysiology Society Annual Meeting in Miami FL in February 2013
10. Waters CG, Dean BC, **Halford JJ**. EEGnet: A Web Platform for Collaborative EEG Research. American Clinical Neurophysiology Society Annual Meeting in Miami FL in February 2013.
11. **Halford J**, Waters CG, Wolfe BJ, Benbadis SR, Tatum WO, Turner RP, Arain A, Fountain NB, Sinha SR, Pritchard PB, Martz GU, Kutluay E, Edwards JC, Dean BC. Comparison of Binary and Ordinal Scoring for Epileptiform Transient Detection. American Epilepsy Society Annual Meeting in San Diego CA, December 2012.

12. Chien J, LaRoche SM, **Halford JJ**, Sackellares JC, Kelly KM, Shiau DS. Automated Detection of Periodic Discharges in ICU Patients Through Analysis of Scalp EEG. American Epilepsy Society Annual Meeting in San Diego CA, December 2012.
13. Shiau DS, **Halford JJ**, LaRoche S, Kelly KM, Kern RT, Sackellares JC. Automated Detection of Nonconvulsive Seizures in ICU through Analysis of Scalp EEG. American Epilepsy Society Annual Meeting in Boston, December 2011.
14. Skinner HJ, Shiau DS, **Halford JJ**, Sackellares JJ. Inter-Hemisphere Asymmetries in EEG Signal Properties in Patients with Temporal Lobe Epilepsy Versus Non-Epileptic Seizures. American Epilepsy Society Annual Meeting in Boston, December 2011.
15. **Halford JJ**, Pressley WB, Benbadis SR, Tatum WO IV, Edwards JC, Pritchard PB, Turner RP, Arain A, Dean BC. Paroxysmal Electroencephalographic Event Labeling and Categorization Using Distributed Clinical Research Software. Presented at the American Academy of Neurology Annual Meeting in Honolulu Hawaii in April 2011.
16. Bonilha L, **Halford JJ**, Edwards J. Hippocampal atrophy in patients with medial temporal lobe epilepsy: differences between the 'generator' and the 'receiver'. Presented at the American Epilepsy Society Annual Meeting in San Antonio TX in December 2010.
17. Maru N and **Halford JJ**. Is There a Relationship Between Allergies/Medication Intolerances and Nonepileptic Events?: A Retrospective Analysis. Presented at the American Epilepsy Society Annual Meeting in San Antonio TX in December 2010.
18. **Halford JJ**, Shiau D-S, Chien J, Kelly K, Kern R, Pardalos P, Sackellares JC. Interictal EEG Dynamics in Patients with Non-epileptic Seizures versus Those with Temporal Lobe Epilepsy. Presented at the American Epilepsy Society Annual Meeting in San Antonio TX in December 2010.
19. Shiau D-S, LaRoche S, **Halford JJ**, Kelly K, Kern R, Chien J, Valeriano J, Pardalos, Sackellares JC. Quantitative EEG Trending for Monitoring Non-Convulsive Seizures in ICU Patients. Presented at the American Epilepsy Society Annual Meeting in San Antonio TX in December 2010.
20. **Halford JJ**, Ben-Menachem E, Kwan P, Ness S, Schmitt M, Novak G. Efficacy, Safety, and Tolerability of Carisbamate 800 and 1200 mg/day as Adjunctive Therapy in Patients with Partial Onset Seizures: Randomized, Double-Blind, Placebo-Controlled Trial. Accepted for platform presentation at the European Conference on Epileptology in Rhodes, Greece June 2010.
21. **Halford JJ**, Chien J-H, Shiau D-S, Georgiev PG, Zhang J, Pardalos PM, Sackellares JC. State Transitions in Brain Network of Neurocortical Epilepsy. American Clinical Neurophysiology Society Annual Meeting in San Diego in February 2010.
22. Bonilha L, Edwards J, Morgan P, **Halford J**. How common is brain atrophy in patients with mesial temporal lobe epilepsy? American Epilepsy Society Annual Meeting, Boston 2009.

23. **Halford J**, Kälviäinen R, Ben-Menachem E, Schmitt J., Wiegand F, Novak G. An open-label extension of two placebo-controlled studies of carisbamate as adjunctive treatment of partial onset seizures in adults: 18-month update. American Epilepsy Society Annual Meeting, Boston, 2009.
24. Kelly K, Shiau D, Kern R, Chien J, Pardoalos P, Valeriano J, **Halford J**, Sackellares JC. Epileptic seizure prediction by scalp EEG analysis. American Epilepsy Society Annual Meeting, Boston, 2009.
25. **Halford J**, Shiau D, Kern R, Chien J, Kelly K, Valeriano J, Pardalos P, Sackellares J. Validation Study of an automated seizure detection algorithm in scalp EEG. American Epilepsy Society Annual Meeting, Boston, 2009.
26. Sackellares JC, Shiau D, Chien J, **Halford J**, Kelly KM Epileptic Seizure Prediction by Scalp EEG Analysis. Presented at the American Neurological Association 134th Annual Meeting in Baltimore. October 2009. Annals of Neurology Vol 66 (suppl 13) pp. S13-14.
27. Kälviäinen R, Ben-Menachem E, Rosenfeld R, **Halford JJ**, Wiegand F, Schmitt J, Novak G. Six Month Efficacy and Tolerability Results of Carisbamate as Adjunctive Treatment of Partial Onset Seizures: Experience From Two Open Label Extension Studies. European Federation of Neurological Societies Meeting. Florence, Italy. September 2009.
28. Kälviäinen R, Ben-Menachem E, Rosenfeld R, **Halford JJ**, Wiegand F, Schmitt J, Novak G. Six Month Efficacy and Tolerability Results of Carisbamate as Adjunctive Treatment of Partial Onset Seizures: Experience From Two Open Label Extension Studies. 28th International Epilepsy Congress, Budapest. June 2009.
29. Shiau DS, Chien JH, **Halford J**, Kelly KM, Sackellares JC Epileptic Seizure Prediction by Scalp EEG Analysis. Fourth International Workshop on Seizure Prediction (ISPW4). Kansas City, June 2009
30. Pressly WB, **Halford JJ**, Dean BC. Distributed Clinical Research Software for Studying Paroxysmal Electroencephalographic Events. American Clinical Neurophysiology Society. Orlando, FL March 2009.
31. Dean BC, Pressly WB, **Halford JJ**. Optimal Window Lengths for EEG Spike Detection Using Independent Component Analysis as a Preprocessing Step. American Clinical Neurophysiology Society. Orlando, FL March 2009.
32. **Halford JJ**, Pressly WB, Dean BC. Paroxysmal Electroencephalographic Event Labelling and Categorization Using Distributed Clinical Research Software. American Clinical Neurophysiology Society. Orlando, FL March 2009.
33. Sperling M, Greenspan A., Cramer J., Kwan P., Kailvainen R., **Halford J.**, Schmitt J., Haas M., Novak G. Carisbamate as adjunctive treatment of partial onset seizures in adults in two international, randomized, placebo-controlled trials. American Epilepsy Society Annual Meeting, Seattle. December 2008.
34. Bonilha L, Rorden C, Rumbolt Z, Roberts D, **Halford JJ**. Impaired connectivity in patients with medial temporal lobe epilepsy: relationship with hippocampal deafferentation

and regional brain atrophy. American Epilepsy Society Annual Meeting, Seattle. December 2008.

35. **Halford JJ**, McDonald CR, Rumbolt Z, Roberts DR, Bonilha L. Voxel based morphometry and cortical thickness analysis of medial temporal lobe epilepsy – same or different? American Epilepsy Society Annual Meeting, Seattle. December 2008.

36. **Halford JJ**, Rumboldt Z, Roberts D, Rorden C, Morgan P, Bonilha L “Hippocampal deafferentation and extra-temporal atrophy in temporal lobe epilepsy” American Epilepsy Society Annual Meeting, Philadelphia. December 2007

37. Bonilha L, Eckert M, Rorden C, Rumboldt Z, Roberts D, **Halford JJ** “Can automated voxel-wise analysis of MRI help the detection of hippocampal sclerosis?” American Epilepsy Society Annual Meeting, Philadelphia. December 2007

38. **Halford, J.** “Analysis of Temporal Lobe Paroxysmal Events Using Independent Component Analysis”. American Epilepsy Society Annual Meeting, San Diego. December 2006

39. **Halford, J.** Husain, A. “Stimulus-Sensitive Status Epilepticus” at the American Epilepsy Society Annual Meeting, Seattle. December 2002

40. Vincent DJ, **Halford J**, Steedman J, Wright AC, Webb J, Pecheny A, Bohning DE, Frey D, Cure J, Horton J, Young J, Dannels WR, George MS: “An Initial Clinical Study Using Echoplanar BOLD fMRI to Determine Language Location by Hemisphere. 2nd International Conference on Functional Mapping of the Human Brain. June 17-21, 1996, Boston, MA.

41. Vincent DJ, Bryant AE, Roberts DR, **Halford JJ**, Worthington WC, Vera CL, George MS: "Preliminary Results of Multi Modality Presurgical Evaluation for Intractable Epilepsy." 26th Annual Meeting Society for Neuroscience, Washington, November 16-21, 1996.

RESEARCH GRANTS

NIH/NINDS (SBIR-IIB- 2R44NS064647-05A1) High Performance Seizure Monitoring and Alert System

Goal: The aims of this project are to a hand-held EEG recording and spike/seizure detection system which will provide real-time alerts to clinicians

Role: Co-I (site PI) for this multicenter study (PI – Deng-Shan Shiua at Optima Neurosciences, Inc.)

\$120,000; 2015-2018

Human Epilepsy Project

Sponsored by the Epilepsy Study Consortium

Role: site PI for one site (MUSC) for this multicenter foundation study

\$ 40,000; 2014-2017

547-SSE-301: A Randomized, Double-Blind, Placebo-Controlled Study To Evaluate the Efficacy and Safety of SAGE-547 Injection in the Treatment of Subjects with Super-Refractory Status Epilepticus

Sage Therapeutics

Role: site PI for one site (MUSC) in this multicenter phase III study

\$100,000; 2015-2017

SAGE-547 Injection – EEG Monitoring

SAGE Therapeutics, Inc.

Role: Sub-investigator who was one of the expert EEG reviewers for the study (PI: Aatif Husain)
\$4000; 2014

DZNS-EP-1025: An Open-Label, Safety and Tolerability Study of Chronic Intermittent Use of Diazepam Nasal Spray in Adolescents and Adults with Cluster Seizures

Accorda Therapeutics, Inc.

Role: site PI for one site (MUSC) in this multicenter phase III study
\$125,000; 2015-2016

GWEP1424: A randomized, double-blind, placebo-controlled study to investigate the efficacy and safety of cannabidiol (GWP42003-P) in children and young adults with Dravet syndrome

GW Research LTD

Role: site PI for one site (MUSC) in this multicenter phase III study
\$100,000; 2015-2016

GWEP1414: A randomized, double-blind, placebo-controlled study to investigate the efficacy and safety of cannabidiol (GWP42003-P; CBD) as adjunctive treatment for seizures associated with Lennox-Gastaut syndrome in children and adults

GW Research LTD

Role: site PI for one site (MUSC) in this multicenter phase III study
\$100,000; 2015-2016

Cliniscan EEG Spike and Seizure Event Detection Study

Picofemto, Inc.

Goal: Standardized dataset development for automated seizure and spike detection.

Role: PI

\$27,500; 2015

A Phase III, Pivotal Trial of Detecting Generalized Tonic-Clonic Seizures with a Seizure Detection System in Epilepsy Patients

LGCH, Inc.

Role: site PI for one site (MUSC) in this multicenter phase III study (PI: Jose Cavasos MD PhD)

\$150,000; 2013-2014

EEG Data Collection and Hardware Testing

Optima Neurosciences, Inc.

Goal: Standardized dataset development and automated seizure detection hardware testing.

Role: PI

\$65,000; 2012-2013

CEMC101.01: Utility of Intravenous Lacosamide Compared with Fosphenytoin in the Treatment of Patients with Frequent Nonconvulsive Seizures (TRENdS)

UCB Pharma, Inc.

Role: site PI for one site (MUSC) in the multicenter phase II study.

\$100,000; 2012-2014

NIH/NINDS (SBIR-I-R43NS076045-01A1) Validation of a Novel Automated Seizure Detection and EEG Trending System

Goal: The aims of this project are to create a novel seizure detection algorithm and EEG trending system for use in the ICU.

Role: Co-I (site PI) for this multicenter study (PI – Deng-Shan Shiu at Optima Neurosciences, Inc.)

\$80,000; 2012-2013

NIH/NINDS (SBIRII-R44S064647): High Performance Seizure Monitoring and Alert System.

Goal: Specific Aims of the project are to create a bedside seizure-detection system for the ICU.

Role: Co-I (site PI) in this multicenter study (PI - Deng-Shan Shiau at Optima Neurosciences, Inc.)

\$300,000; 2011-2014

E2007 G000 332: A Double-blind, Randomized, Placebo-controlled, Multicenter, Parallel-group Study with an Open-label Extension Phase to Evaluate the Efficacy and Safety of Adjunctive Perampanel in Primary Generalized Tonic-Clonic Seizures.

Eisai, Inc.

Role: site PI for one site of this multicenter phase III clinical trial.

\$100,000; 2011-2013;

NO1358: A Randomized, Double-Blind, Placebo-Controlled, Multicenter, Parallel-Group Study to Evaluate the Efficacy and Safety of Brivaracetam in Subjects with Partial Onset Seizures.

UCB Pharma, Inc.

Role: site PI for one site (MUSC) in the multicenter phase III study.

\$100,000; 2010-2011

1318A: An Open-Label Study to Assess the Safety and Tolerability of Intravenous Carbamazepine as Short-Term Replacement of Oral Carbamazepine in Adult Patients with Epilepsy

Lundbeck, Inc.

Role: site PI for one site (MUSC) in the multicenter phase III study.

\$100,000; 2010-2011

Continuous EEG Monitoring Data Collection for Seizure Detection and Prediction.

Optima Neurosciences, Inc.

Goal: Continuous EEG monitoring data collection for continued development of seizure detection software.

Role: PI.

\$45,000; 2010-2011

NIH/NINDS (R01-NS050582-01A1) On Line Real Time Seizure Prediction.

Goal: Specific Aims of the project are to test seizure-prediction algorithms of extracranial and intracranial datasets.

Role: Co-investigator (site PI) for one site in this multicenter study (PI - Chris Sackellares MD at Optima Neurosciences, Inc.) \$80,000; 2008-2010

SP0962: An Open-Label Extension Study to Assess the Safety and Seizure Frequency Associated with Long-Term Oral Lacosamide for Uncontrolled Primary Generalized Tonic-Clonic Seizures in Subjects with Idiopathic Generalized Epilepsy. UCB Pharma.
Role: site PI for one site (MUSC) in the multicenter phase IV study.
\$50,000; 2010-2011

NP10004: Responsive Neurostimulator RNS System Pivotal Clinical Investigation. Neuropace, Inc.
Role: Co-I (Assessment Team Leader) for one site of this multicenter phase III study (MUSC site PI – Jonathan Edwards MD)
\$200,000; 2008-2010

EPY3013/3014: A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, Multicenter Study to Evaluate the Efficacy, Safety and Tolerability of Carisbamate as Adjunctive Therapy in Subjects With Partial Onset Seizures, Followed by an Open-Label Extension Study. Johnson and Johnson Pharmaceutical Research Division.
Role: site PI for one site (MUSC) in the multicenter phase III study.
\$250,000; 2009-2010

2007-G000-304: A Double-Blind, Placebo-Controlled, Dose-Escalation Parallel-Group Study to Evaluate the Efficacy and Safety of E2007(perampanel) Given as Adjunctive Therapy in Subjects with Refractory Partial Seizures. Eisai Medical Research, Inc.
Role: site PI for one site (MUSC) in this multicenter phase III study.
\$150,000; 2008-2010.

K826-05-3001: A Phase 3, Randomized, Double-Blind, Parallel, Placebo-Controlled, Multicenter Study, with Optional Open-Label Continuation, of the Efficacy and Safety of Vanquix™ Auto-Injector (Diazepam Injection) for the Management of Selected, Refractory, Patients with Epilepsy who Require Intermittent Medical Intervention to Control Episodes of Acute Repetitive Seizures. King Pharmaceuticals, Inc.
Role: site PI for one site (MUSC) in this multicenter phase III study.
\$50,000; 2008-2010.

EPY3001/3004: A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, Multi-center Study to Evaluate the Efficacy, Safety and Tolerability of RWJ 333369 (carisbamate) as Adjunctive Therapy in Subjects with Partial Onset Seizures Followed by an Open-Label Extension Study. Johnson and Johnson Pharmaceutical Research Division.
Role: site PI for one site (MUSC) in this multicenter phase III study.
\$250,000; 2006-2010

Computer-Aided Diagnosis of Subtle Brain Injury. South Carolina Health Science Foundation (Duke Endowment).
Role: co-I (PI: Mark Eckert PhD at MUSC).
\$90,000; 2007-2008

SP754: A Multicenter, Double-blind, Randomized, Placebo-controlled, Parallel-group Trial to Investigate the Efficacy and Safety of SPM 927 (400 and 600mg / day) as Adjunctive Therapy in Subjects with Partial Seizures with or without Secondary Generalization. Schwarz Biosciences.
Role: site PI for one site (MUSC) in this multicenter phase III study.
\$150,000; 2006-2007

SP756: An Open-label Extension Trial to Determine Safety and Efficacy of Long-term Oral SPM 927 in Patients with Partial Seizures. Schwarz Biosciences.
Role: site PI for one site (MUSC) in this multicenter phase III study.
\$100,000; 2006-2008

SELECTED INVITED PRESENTATIONS

"Epilepsy", second-year medical school class, College of Medicine, MUSC, 3/25/2005
"Status Epilepticus", Dept. of Emergency Medicine Faculty, MUSC, 10/5/2005
"Paroxysmal Event Detection Using Independent Component Analysis", Dept. of Neurology Grand Rounds, Medical College of Georgia, Augusta, GA, 2/9/2006
"Epilepsy", second-year medical school class, College of Medicine MUSC, 4/7/2006
"Paroxysmal Event Detection Using Independent Component Analysis", Dept. of Neurology Grand Rounds, Wake Forest University Baptist Medical Center, Winston Salem, NC, 6/13/2006
"Epilepsy Monitoring and Intracranial Recording", Dept. of Physics, Clemson University, 1/10/07
"Event Detection in EEG using Independent Component Analysis", MUSC-Clemson Bioengineering Collaboration Seminar, 4/2/07
"Epilepsy", first-year medical school class, College of Medicine MUSC, 4/21/2007
"Sleep Disorders", first-year medical school class, College of Medicine, MUSC, 2/25/2008
"Epilepsy", Emergency Nurses Association, ART Building at MUSC, 4/10/08
"Spells, EEG, and Artificial Intelligence", Neurosciences Grand Rounds, MUSC, 5/10/08
"Introduction to EEG", National Sleep Medicine Course, Chicago, 8/10/08
"Nocturnal Epilepsy", National Sleep Medicine Course, Chicago, 8/10/08
"Sleep Disorders", MUSC Annual Pediatric Neurology Conference at Kiawah Island SC, 3/20/09
"Epilepsy Surgery Update", MUSC Annual Pediatric Neurology Conference at Kiawah Island SC, 3/20/09
"Epilepsy Monitoring", South Carolina Neurological Association Annual Meeting, Charleston SC, 10/2/09
"Computer Detection of Seizures & Spikes in Scalp Electroencephalography", Neuroscience Grand Rounds, MUSC, 11/12/09
"Misinterpretation of Routine Scalp EEG and Automated Spike Detection", Neurology Grand Rounds, University of Florida, 3/30/10
"Remote Access to Clinical EEG Data within the VA System"; December 6, 2010; American Epilepsy Society "Military Epileptologist" Special Interest Group Meeting; San Antonio TX
"Workshop: Electroclinical Correlation: Human-Computer Interfacing for Identification and Reporting of EEG"; February 10, 2012; American Clinical Neurophysiology Society Meeting; San Antonio, TX
"Automated Detection of Spikes and Seizures in EEG"; January 31, 2013; MUSC Neurology Grand Rounds

“Do We Need Automated Seizure Detection? Man vs. Machine”; February 7, 2013; American Clinical Neurophysiology Society Meeting; Miami, FL

“Computer-Based Expert Consensus in EEG”; February 9, 2013; American Clinical Neurophysiology Society Meeting; Miami, FL

“Novel Technologies for Outpatient EEG Recording and Review”; June 25, 2014; NYU Epilepsy Center in New York, NY

“Brain Stimulation in Epilepsy” on June 6, 2014 at Brain Stimulation Symposium in Charleston SC

Keynote Speaker, “Standardized Database Development for EEG Spike and Seizure Detection” on June 29, 2015 at the Workshop in Epilepsy Engineering at the University of Surrey, Guildford, Surrey, United Kingdom