*Curriculum Vitae*

**HAL BLUMENFELD, MD, PhD**

Departments of Neurology, Neuroscience, and Neurosurgery

Yale University School of Medicine, 15 York St, New Haven, CT 06520-8018

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**TITLE AND ACADEMIC APPOINTMENT:**

Mark Loughridge and Michele Williams Professor

Professor of Neurology, Neuroscience, and Neurosurgery

Director, Yale Clinical Neuroscience Imaging Center (CNIC)

Faculty, Yale Comprehensive Epilepsy Center, Core Center for Quantitative Neuroscience with

 Magnetic Resonance, Kavli Institute for Neuroscience, Wu Tsai Institute, Interdepartmental

 Neuroscience Program (INP), Combined Program in the Biological and Biomedical Sciences

Yale University School of Medicine

**EDUCATION:**

Harvard University - B.A. *cum laude*, Bioelectrical engineering, 1984.

Columbia University - M.A., Physiology and Cellular Biophysics, 1988.

 Ph.D., Physiology and Cellular Biophysics, 1990.

 M.D. 1992.

**CLINICAL EXPERIENCE AND BOARD CERTIFICATIONS:**

1992-93 Internal Medicine Intern, Columbia Presbyterian Medical Center, NY

1993-96 Neurology Resident, Massachusetts General Hospital, Boston, MA

1996-98 Epilepsy Fellow, Yale University School of Medicine, CT

1998- Attending on Yale Epilepsy Service

1998- Board Certification by American Board of Psychiatry and Neurology

2001- Board Certification by American Board of Clinical Neurophysiology

2018- American Board of Psychiatry and Neurology, Epilepsy Certification

**RESEARCH EXPERIENCE:**

1982-83 Neurophysiology Research Assistant, Mount Sinai Medical Center, NY

 Laboratory of Bernard Cohen, MD

1984-90 Doctoral Thesis - "Modulation of Intracellular Calcium in *Aplysia* Sensory

 Neurons." Columbia University College of Physicians and Surgeons, NY,

 Laboratory of Steven Siegelbaum, PhD and Eric Kandel, MD.

1998-00 Associate Research Scientist, Yale Departments of Neurobiology and Neurology

 Laboratory of David McCormick, PhD

2000-06 Assistant Professor, Yale Departments of Neurology and Neurobiology

2003-06 Assistant Professor, Yale Department of Neurosurgery (joint appointment)

2006-10 Associate Professor, Yale Departments of Neurology, Neurobiology, Neurosurgery

7/1/2010- Professor, Yale Departments of Neurology, Neuroscience, Neurosurgery

9/1/2011- Director, Yale Clinical Neuroscience Imaging Center (CNIC)

**ACADEMIC HONORS AND AWARDS:**

1983-84 John Harvard Scholarship - Highest Academic Honors

1984-92 Medical Scientist Training Program Fellowship

1990 Dean's Day Award for Medical Student Research

1992 Lamport Award for Biomedical Research

1992 Alpha Omega Alpha - Medical School Honors Society

1996 Top Scholar Fellow, Ortho-McNeil

1998-01 Howard Hughes Medical Institute Fellowship. Awarded; replaced by other grants.

1998-01 Pfizer Fellowship

1998-03 NIH, Research Career Award (K08)

1999 American Epilepsy Society, Young Investigator Award

2000-02 Charles A. Dana Foundation, Clinical Hypotheses in Neuroscience Award

2000 NIH Curing Epilepsy-Focus on the Future, Junior Investigator Travel Fellowship

2000 American Epilepsy Society, Presidential Symposium Speaker

2000-01 Epilepsy Foundation of America, Junior Investigator Award

2002-04 Patterson Trust, Research Grant

2004-08 NIH R01 “Neuronal firing and neuroimaging in spike-wave seizures”

2005- Blattmachr Fund, Research Grant

2005 American Neurological Association, John N. Whitaker Visiting Professorship

2005 American Academy of Neurology, Dreifuss-Penry Epilepsy Research Award

2006-10 NIH R01 “Functional neuroimaging in childhood absence epilepsy”

2007-12 Donaghue Foundation Investigator Award

2007 The Francis Gilman Blake Award.Awarded annually to that member of the

 faculty of the Yale School of Medicine designated by the senior class as the most

 outstanding teacher of the medical sciences.

2009-11 NIH R01 “Preventing spike-wave epileptogenesis: critical period & neuroimaging

 Biomarkers”

2011 Master of Arts, *privatim,* Yale University

2011-16 NIH R01 “Remote effects of focal hippocampal seizures on neocortical function”

2012- Member, Kavli Institute for Neuroscience at Yale

2012-17 NIH R01 “Functional neuroimaging in childhood absence epilepsy”

2014-16 NIH R21 “Deep brain stimulation to prevent impaired consciousness in epilepsy”

2015-20 Visiting Professor, Xiangya School of Medicine, Changsha, Hunan, China

2015 Yale Graduate Mentor Award. For the most outstanding mentor of graduate students

 in the sciences at Yale University.

2015- The Mark Loughridge and Michele Williams Professor, Yale University

2016-21 NIH R01 “Network mechanisms of seizure-induced cardiorespiratory impairment”

2016-21 NIH R01 “Remote effects of focal hippocampal seizures on neocortical function”

2017 American Epilepsy Society Clinical Science Research Recognition Award

2017-24 NIH R37 “Neuroimaging, neuronal firing and behavior in spike-wave seizures”

2017 Javits Neuroscience Investigator Award

2019-24 NIH UG3/UH3 “Thalamic stimulation to prevent impaired consciousness in epilepsy“

2021-26 NIH R01 “Remote effects of focal hippocampal seizures on neocortical function”

**TEACHING AND ADMINISTRATION :**

1984 Teaching Fellow,"Electronic Devices and Circuits," Harvard University, MA

1987-92 Neuroanatomy Instructor, Columbia University, NY

1991-92 Founder and Organizer, Student-run Columbia Neurosciences Society (C.N.S.), NY

1993-94 Neuroanatomy Instructor, Harvard University, MA

1994-96 Neurobiology Course Director, Harvard University, MA

 “Exploring the Mind through Biological Models and Human Disease”

1996-00 Neuroanatomy Instructor, Yale University School of Medicine, CT

1999- Clinical Neuroanatomy Course Director, “Neuroanatomy Case Conferences,”

 Yale University School of Medicine, CT

2002-10 Faculty Director, Yale Student Interest Group in Neurology, AAN

2002-11 Director of Medical Studies in Clinical Neurosciences, Yale University School of

 Medicine, CT

2002-04 Member of Yale Pre-Clinical Student Assessment Working Group

2003-10 Neurology Residency Application Advisor, Yale University School of Medicine, CT

2006-07 Yale LCME Education Committee

2010- Yale Neurology Department, Appointments and Promotions Committee

2011-16 Yale School of Medicine, Senior Appointments and Promotions Committee

2011-16 Yale Neurology Department, Neurology Residency Selection Committee

2011- Organizer, Yale Epilepsy Research Weekly Seminar Series

2011- Organizer, Yale Epilepsy Research Retreat

2011- Director, Yale Clinical Neuroscience Imaging Center (CNIC)

2016-20 Co-Organizer, Neuroimaging for the Clinical Neuroscientist Course, Yale University

2017-20 ILAE Neuroimaging Task Force

2021- Yale Office of Medical Student Research Thesis Awards Committee

2022- AES Research & Recognition Awards Committee

2023- ILAE Working Group on Updating Seizure Classification

**MEMBERSHIP IN PROFESSIONAL SOCIETIES:**

Society for Neuroscience

American Academy of Neurology

American Epilepsy Society

American Clinical Neurophysiology Society

American Neurological Association, elected 2009

**Editorial Boards and Review committees**

***Associate editor*:** *Neuroscience Letters* 1/1/2004 – 1/16/2009

***Standing review committees:***

Yale Bioimaging Scholar Awards Committee 10/2005 – 10/2011

American Epilepsy Society Scientific Programming Committee 12/2007 – 12/2009

American Epilepsy Society Investigator Workshop Committee 12/2009 – 12/2010

Yale Neurology Department Appointment & Promotion Committee 7/2010 –

Co-Chair, AES Clinical Investigator Workshop Committee 12/2010 – 12/2011

Chair, AES Clinical Investigator Workshop Committee 12/2011 – 12/2014

Yale Senior Appointments and Promotions Committee 7/2011 – 6/2016

Yale Neurology Residency Selection Committee 7/2011 – 5/2015

ASSC 17, Scientific Committee 1/2012 – 1/2013

Yale Pediatric Neurology Chief Search Committee 1/2012 – 5/2015

Yale Brain Research Scholar Awards Committee 12/2013 – 12/2016

***NINDS epilepsy benchmark steward:***

Prepare biannual reports on research progress in the study of 10/2008 – 10/2009

affective, attentional and cognitive comorbidities in epilepsy

***Ad hoc grant reviews:***

*NIH General Medical Sciences Special Emphasis Panel, NIH Biomedical Imaging Technology Study Section, NIH/NINDS Board of Scientific Counselors, Canadian Institutes of Health Research (CIHR), United States-Israel Binational Science Foundation, Thrasher Research Fund*

**Ad hoc journal reviews:**

*Neuron, PNAS, Journal of Neuroscience, Cerebral Cortex, Brain, Neuroimage, Annals of Neurology, Neurology, Nature Clinical Practice Neurology, Journal of Physiology, Epilepsia, PLOS One, Neuroimage Clinical, Annals of Clinical and Translational Neurology, American Journal of Neuroradiology, British Journal of Pharmacology, Human Brain Mapping, Neuroscience Letters, Journal of Neuroscience Methods, Epilepsy Research, Experimental Neurology, Brain Research, Physiology and Behavior, American Journal of Psychiatry, American Journal of Neuroradiology, Archives of General Psychiatry, NeuroReport*

**INVITED SYMPOSIA OR GRAND ROUNDS:**

2000 Yale University, Neurology Grand Rounds. New Haven, CT. "Consciousness and

 Seizures: Why are Patients With Absence Absent?"

2000 American Epilepsy Society Presidential Symposium. Los Angeles, CA. "The Neuronal Network of Generalized Epilepsies."

2001 Yale University, Seminar Series in Bioimaging Sciences. New Haven, CT. "Network Inhibition Hypothesis for Loss of Consciousness During Seizures."

2001 Harvard University, Brigham and Women's Neurosurgery Grand Rounds. Boston, MA. "Are Generalized Seizures Truly Generalized?"

2001 Columbia University, Biology and Neurobiology Dept. Seminar. New York, NY. “Why Do Seizures Cause Loss of Consciousness?”

2002 Yale University, Club Neurobiology. New Haven, CT. “Why Do Seizures Cause Loss

 of Consciousness?”

2002 Yale University, Psychiatry Department Seminar. New Haven, CT. “Seizures,

 Memory, Mood and Consciousness.”

2002 Yale University, Neurology Grand Rounds. New Haven, CT. “Idiopathic Generalized

 Epilepsies Revisited: Pathophysiology, Genetics, and Treatment.”

2002 Society for Neurosciences Symposium. Miami, FL. “Heterogeneous Expression of

 Molecules and Thalamocortical Network Activity in Generalized Seizures.”

2002 American Epilepsy Society Symposium. Seattle, WA. “Network Mechanism in

 Primary Generalized Epilepsy.”

2002 Yale/VA Statistical Parametric Mapping Seminar. West Haven, CT. “Applications of

 SPM in Ictal-Interictal SPECT Analysis”

2002 Queens College, Neuropsychology Dept. Seminar. Queens, NY. “Are ‘Generalized’

 Seizures Truly Generalized?”

2003 Association of Convulsive Therapy Symposium. San Francisco, CA. “Ictal imaging

 in ECT: Lead placement determines focal regions of activation.”

2003 Spectrum Psychiatric Group, Hamden, CT “Use of Antiepileptic Drugs: A Practical

 Review”

8/13/03 Magnetic Resonance Research Center Seminar. Yale University, New Haven, CT

 “CBF and Metabolism during Rodent Seizures”

3/3/04 Hebrew University School of Medicine, Physiology Dept. Seminar, Jerusalem, Israel.

 “Thalamocortical interactions during spike-wave seizures investigated through

 rodent fMRI”

3/3/04 Hebrew University School of Medicine, Neurology Dept. Seminar, Jerusalem, Israel.

 “Sleeping on the job: How bad habits in the temporal lobe rub off on neighboring

 neocortex.”

3/10/04 University of Syracuse School of Medicine, Neurology Dept. Grand Rounds,

 Syracuse, NY. “Sleeping on the job: How bad habits in the temporal lobe rub off on

 neighboring neocortex.”

10/14/04 Child Neurology Society Symposium. Ottawa, Ontario. “The Physiology of

 Generalized Seizures.”

3/18/05 International Symposium: Epilepsy and Sleep Update at Kempenhaeghe, Heeze,

 Netherlands “From molecules to networks: cortical/subcortical interactions in the

 pathophysiology of idiopathic generalized epilepsy.”

4/6/05 West Virginia School of Medicine, Neuroscience Seminar, Morgantown, WV. “Ups

 and downs of neuronal activity and neuroimaging during seizures.”

4/20/05 UMDNJ, Robert Wood Johnson Medical School, New Brunswick, NJ. “Epilepsy and

 consciousness: What makes complex partial seizures complex?”

5/25/05 NYU Medical Center, New York, Neurology Dept. Grand Rounds “Networks,

 Neurons, and Molecules in Seizure Generation.”

6/10/05 Dartmouth-Hitchcock Medical Center, Neurology Dept. Grand Rounds “Great

 ExSPECTations: Consciousness, Epilepsy, and Functional Neuroimaging”

6/21/05 Society for Nuclear Medicine Symposium, Toronto, Canada “A Window to the Soul:

 SPECT Imaging of Ictal and Postical Unconsciousness”

9/1/05 Yale fMRI Seminar, New Haven, CT “Functional Neuroimaging in Childhood

 Absence Epilepsy”

9/13/05 University of Alabama Dept of Neurology Grand Rounds, Birmigham, AL “Epilepsy

 and Consciousness: Why Are Patients with Absence Seizures Absent?”

9/14/05 University of Alabama, Neurology/Neurosurgery Epilepsy Conference, Birmigham,

 AL “Why Do Focal Temporal Lobe Seizures Cause Loss of Consciousness?”

10/20/05 National Academy of Neuropsychology, 3 hour invited workshop, Tampa, FL

 “Neuroanatomy through Clinical Cases”

11/14/05 Society for Neuroscience Session Chair, Washington, DC “Epilepsy: Animal Models

 and Human Studies II”

11/28/05 Connecticut Neuropsychological Society, Dr. James Tweedy Memorial

 Lecture, New Haven, CT “Epilepsy and Consciousness”

12/3/05 American Epilepsy Society Symposium Chair, Washington, DC “Impaired

 Consciousness in Epilepsy: Mechanisms and Consequences”

12/3/05 American Epilepsy Society Symposium, Washington, DC “Neuroimaging and Loss

 of Consciousness in Epilepsy”

2/17/05 Epileptic Disorders Workshop, Rome, Italy. Discussant on "Generalized seizures :

 From clinical phenomenology to underlying systems and networks"

2/17/05 Epileptic Disorders Workshop, Rome, Italy. Session Chair, "Absence seizures and

 cortico-thalamic systems”

3/7/06 Tel Aviv University and Weill/Cornell Neurology Symposium, Tel Aviv, Israel “Why

 do seizures cause loss of consciousness?”

3/9/06 Massachusetts General Hospital, Neurology Dept. Grand Rounds, Boston, MA

 “Epilepsy and Consciousness”

4/5/06 Albert Einstein School of Medicine, Neuroscience Seminar, New York, NY

 “Why are Patients with Absence Seizures Absent?”

5/3/06 Brown University, Neurology Dept. Grand Rounds, Providence, RI

 “Epilepsy as a Window to Understanding Consciousness”

9/15/06 Yale University, Department of Psychiatry Grand Rounds, New Haven, CT

 “Epilepsy and Consciousness”

10/30/06 Columbia University, Epilepsy Research Seminar, New York

 “Why do seizures cause loss of consciousness?”

2/23/07 SUNY Downstate, Neurology Dept. Grand Rounds, Brooklyn, NY

 “Epilepsy and Consciousness”

3/9/07 Thomas Jefferson University, Neurology Grand Rounds, Philadelphia, PA

 “Epilepsy as a Window to Understanding Consciousness”

3/21/07 Yale University, Department of Neurology Grand Rounds, New Haven, CT

 “Does Early Treatment Prevent Epilepsy?”

4/5/07 First International Epilepsy Symposium, Herzlia, Israel

 “Molecules to Networks: Basic Mechanisms and New Therapeutic Targets”
4/23/07 UC Irvine, Distinguished Speaker, UCI MD/PhD Lecture Series, Irvine, CA

 “Neurobiology of Consciousness: Networks, Epilepsy, and Brain Function”

5/9/07 International Epilepsy Symposium, Invited speaker, Ann Arbor, MI

 “Role of Sodium Channel Upregulation in Partial and Generalized Epilepsy”

6/5/07 F.C. Donders Center for Cognitive Neuroimaging Seminar Speaker, Netherlands

 “Neural basis of fMRI signal increases and decreases in epilepsy”

6/6/07 Keynote speaker, Dutch ENP Neuroscience Meeting, Netherlands

 “Brain imaging of epilepsy and impaired consciousness”

12/2/07 Investigator’s Workshop Speaker, American Epilepsy Society, Philadelphia, PA

 “fMRI of ictal activity in animal models”

12/7/07 Association for Research in Nervous and Mental Disease *with* The New York

 Academy of Medicine, Conference Speaker, New York, NY

 “Epileptic Unconsciousness”

12/12/07 Yale School of Medicine, Grand Rounds, Dept. of Pediatrics, New Haven, CT

 “An ounce of prevention:  Can early treatment block development of genetic

 epilepsy?”

2/27/08 University of Cincinnati, Grand Rounds, Dept. Neurology and Center for Imaging

 Research, Cincinnati, OH

 “Neuroimaging and Consciousness in Childhood Absence Epilepsy”

3/11/08 Quantitative Neuroscience with Magnetic Resonance (QNMR) Symposium, Yale

 University School of Medicine, New Haven, CT “fMRI and Epilepsy”

3/19/08 UCSF Medical School, Grand Rounds, Dept. Neurology, San Francisco, CA

 “Consciousness and Epilepsy”

4/9/08 Yale School of Medicine, Magnetic Resonance Research Center Seminar,

 New Haven, CT “Imaging biomarkers of spike-wave epilepsy prevention”

4/16/08 JFK Johnson Rehabilitation Institute, Neuropsychology Grand Rounds, Edison NJ

 “Epilepsy and Consciousness”

4/29/08 University of Minnesota, Neuroengineering Seminar, Mineapolis, MN

 “Seeing is not always believing: Paradoxical neuroimaging in epilepsy”

5/16/08 Yale School of Medicine, Autism Program, Child Study Center, Science Meeting

 “Early treatment: Potential for preventing epilepsy and associated disability”

11/5/08 Columbia University, Radiology Didactic Lecture, New York, NY

 “Great ExSPECTations: Epilepsy surgery localization and ictal SPECT”

11/5/08 Columbia University, Radiology Grand Rounds, New York, NY

 “Ups and downs of fMRI changes in epilepsy: Neural basis of BOLD fMRI”

12/2/08 Club Neurobiology seminar speaker, Yale University School of Medicine

 “Can we understand consciousness? New insights from epilepsy imaging, physiology,

 and behavior”

12/6/08 Investigator’s Workshop Speaker, American Epilepsy Society, Seattle, WA

 ”Neuroimaging and IGE: Monitoring anti-epileptogenesis”

12/7/08 Investigator’s Workshop Speaker, American Epilepsy Society, Seattle, WA

 “Ups and downs of fMRI changes in epilepsy: fundamental animal studies”

12/08/08 Platform Session “Surgery/Imaging,” Session Moderator, American Epilepsy Society,

 Seattle, WA

12/11/08 Georgetown University School of Medicine, Clinical/Basic Epilepsy Research Seminar

 Washington, DC “Network effects of rat limbic seizures on neocortical function”

1/20/09 Montreal Neurological Institute, Killam Lecture, Montreal, Canada

 “Epilepsy and consciousness: Why are patients with absence seizures absent?”

2/16/09 Tel Aviv University and Weill/Cornell Neurology Symposium, Tel Aviv, Israel

 “Neuroimaging tools for monitoring epileptogenesis and epilepsy prevention”

 “Neuroimaging and impaired consciousness in epilepsy”

4/6/09 Grass Lecture, Wake Forest School of Medicine, Winston-Salem, NC

 “The consciousness system: New insights from epilepsy”

6/4/09 Mind Science Foundation Symposium Speaker (ASSC), Berlin, Germany

 “Why do seizures cause loss of consciousness?”

6/30/09 28th International Epilepsy Congress Symposium Speaker, Budapest, Hungary

 “Effects of treatment: Can epilepsy be prevented?”

11/3/09 Cognitive Science Symposium, Yale University, New Haven, CT

 "Epilepsy as a Window to Understanding the Consciousness System"

11/12/09 National Academy of Neuropsychology, 3 hour invited workshop, New Orleans, LA

 “Neuroanatomy through Clinical Cases”

11/20/09 Cold Spring Harbor Laboratory, Neuroscience Seminar, Cold Spring Harbor, NY

 “Consciousness and Epilepsy: Do Limbic Seizures put the Neocortex to Sleep?”

2/16/10 Yale University MBCC (Mind, Brain, Culture, and Consciousness) Working Group

 Seminar “Epilepsy and the Consciousness System”

3/5/10 University of Rochester Department of Neurology, Grand Rounds, Rochester, NY

 “Fundamental Mechanisms of Impaired Consciousness in Epilepsy”

3/15/10 Quantitative Neuroscience with Magnetic Resonance (QNMR) Symposium, Yale

 University School of Medicine, New Haven, CT “Epilepsy Imaging and Physiology”

5/7/10 Schneider Children’s Hospital, Pediatric Neurology Conference, New Hyde Park, NY

 “Research Advances in Childhood Absence Epilepsy”

5/10/10 Mayo Clinic Department of Neurology, Visiting Professor (“Resident’s Choice”) and Neurology Grand Rounds, Rochester, MN

 “The Consciousness System: Cortical-subcortical Networks and Epilepsy”

5/11/10 Mayo Clinic Department of Neurology, Neurology Resident Lecture, Rochester, MN

 “Clinical Neuroanatomy Case Conference”

6/4/10 Emory School of Medicine, Neurology Grand Rounds, Atlanta, GA

 “Brain Networks: Imaging, Consciousness, and Epilepsy”

6/4/10 Emory School of Medicine, Neurology Teaching Lecture, Atlanta, GA

 “Clinical Neuroanatomy Case Conference: Higher Order Cortical Functions”

12/5/10 Investigator’s Workshop Speaker, American Epilepsy Society, San Antonio, Tx

 “Childhood absence epilepsy: fMRI cautionary notes and treatment biomarkers”

12/16/10 Blythedale Children’s Hospital, Neurology Grand Rounds, Valhalla, NY

 “Research Advances in Childhood Absence Epilepsy”

3/11/11 North Shore LIJ, Department of Neurology Grand Rounds, Manhasset, NY

 “Research Advances in Epilepsy Imaging and Physiology”

3/31/11 University of Iowa Medical School Neurology Grand Rounds, Iowa City, IA

 “Impaired consciousness in epilepsy: Mechanisms and consequences”

4/7/11 Yale Magnetic Resonance Research Center fMRI Seminar, New Haven, CT

 “Neuroimaging and Behavior in Childhood Absence Seizures”

5/13/11 Yale Epilepsy CME Symposium, New Haven, CT

 “Ictal SPECT in Epilepsy Localization”

5/18/11 Albany Medical College Neuropharmacology and Neuroscience Seminar

 "Sleeping on the job:  Decreased cortical arousal in limbic seizures"

5/19/11 Albany Medical College Neurology Grand Rounds, Albany NY

 "Why do seizures cause impaired consciousness? Imaging, physiology and behavior"

7/20/11 University of Melbourne Epilepsy Retreat Moderator and Speaker, Australia

 “Epilepsy and Consciousness”

8/30/11 International League Against Epilepsy, Plenary Session Organizer and Chair, Rome
 “Impaired consciousness in epilepsy: mechanisms and clinical significance”

8/30/11 International League Against Epilepsy, Plenary Session Speaker, Rome, Italy

 “Overview: From Basic Mechanisms to Impaired Driving in Epileptic

 Unconsciousness”

9/13/11 NYU School of Medicine, Child Neurology Grand rounds, New York, NY

 “Childhood Absence Epilepsy: A Wolf in Sheep’s Clothing?”

9/23/11 Yale Dean's Workshop, New Haven, CT

 “Neuroimaging of Impaired Consciousness in Epilepsy”

11/4/11 Cardiff University, School of Biosciences Research Symposium, Cardiff, UK

 “Cortical-subcortical mechanisms of impaired consciousness in limbic seizures”

12/5/11 Investigator’s Workshop Speaker, American Epilepsy Society, Baltimore, MD

 “Role of subcortical structures in epileptic unconsciousness”

1/12/12 Massachusetts General Hospital Neurology Grand Rounds, Boston, MA

 “Consciousness and Epilepsy”

2/2/12 Albert Einstein College of Medicine, Neurology Grand Rounds, NY, NY

 "Brain Imaging, Consciousness and Epilepsy"

3/7/12 Yale School of Medicine, Neurology Grand Rounds, New Haven, CT

 “Epilepsy and Consciousness”

3/22/12 Saint Francis Hospital Medicine Grand Rounds, Hartford, CT

 “Epilepsy as a Disorder of Consciousness”

5/1/12 Yale School of Medicine, Club Neurobiology Seminar Speaker, New Haven, CT

 "Sleeping on the job: Inhibition of subcortical arousal in limbic seizures"

5/10/12 Yale Epilepsy CME Symposium, New Haven, CT

 “Driving and epilepsy”

5/14/12 Lehrhaus Presentation, Hebrew Institute of White Plains, White Plains, NY

 “To Limp, Fall, Stammer and Inspire: Neurology in the Bible”

9/6/2012 University of Connecticut, Hartford Hospital Neurology Grand Rounds, Hartford, CT

 “Update on Childhood Absence Epilepsy: EEG, fMRI and Behavior”

11/1/12 Korea Neurological Association, Plenary Speaker, Seoul, Korea

 “Epilepsy and Consciousness”

11/1/12 Korea Neurological Association, Parallel Session Speaker, Seoul, Korea

 “Combined electrophysiology-neuroimaging studies in epilepsy”

11/30/12 American Epilepsy Society Special Interest Group speaker

 "Slow down, you're going too fast: Groovy frontal rhythms in TLE"

12/5/12 UCLA Neuroscience Grand Rounds, Los Angeles, CA

 “Consciousness and Epilepsy”

12/6/12 University Washington Center for Human Development and Disability Seminar,

 Seattle, WA “Childhood Absence Epilepsy: A Wolf in Sheep’s Clothing?”

1/15/13 UC Irvine, Depts of Anatomy and Neurobiology EpiCenter Seminar, Irvine, CA

 “Many seizure types, one final common path: Impaired consciousness in epilepsy”

5/10/13 Yale Epilepsy CME Symposium, New Haven, CT

 “Controversies in seizure classification”

5/30/13 Toronto Sick Kids Centre for Brain & Behavior Annual Symposium speaker
“Abnormal Connectivity and Early Life Seizures”

7/9/13 Cognitive Neuroscience Summer Institute, Lake Tahoe, CA

 “Consciousness and Seizures”

10/9/13 University of Pennsylvania Neurology Grand Rounds, Philadelphia, PA

 “Epilepsy and Consciousness”

11/6/13 Invited speaker, 6th International Workshop on Seizure Prediction, San Diego, CA

 “Neurostimulation to increase consciousness in complex partial seizures”

1/29/14 Neurology Grand Rounds, Rutgers University- NJ Medical School, Newark, NJ

 “Brain Networks: Imaging, Consciousness, and Epilepsy”

2/16/14 Neurosurgery Grand Rounds, Rashid Hospital, Dubai, United Arab Emirates

 “Neuroimaging and physiology of impaired consciousness in epilepsy”

3/3/14 Yale University Epilepsy Research Presentation, New Haven, CT

 "Impaired consciousness and sudden death in epilepsy"

3/18/14 NYU Department of Neurology Grand Rounds, New York, NY

 “Consciousness and Epilepsy”

4/7/14 Yale University Epilepsy Research Presentation, New Haven, CT

 “Prospective evaluation of driving safety in epilepsy”

4/9/14 Neurology Grand Rounds, New York Medical College, Valhalla, NY

 “Impaired consciousness in epilepsy: Mechanisms and consequences”

5/21/14 Cornell Neurology Grand Rounds, New York, NY

 “Deep brain stimulation to increase consciousness during seizures”

9/10/14 Yale University, Department of Neurology Grand Rounds, New Haven, CT

 “The mechanism of impaired consciousness in absence seizures”

12/7/14 American Epilepsy Society Investigator Workshop speaker, Seattle, WA

 “Large-scale network effects of focal seizures: Consciousness and SUDEP”

12/9/14 American Epilepsy Society Special Interest Group speaker, Seattle, WA
 “The thalamus, consciousness and temporal lobe epilepsy”

1/14/15 Mt Sinai School of Medicine, Neurology Grand Rounds, New York, NY

 “Consciousness and epilepsy: New insights from networks to neurons”

2/18/15 Tel Aviv University and Weill/Cornell Neurology Symposium, Tel Aviv, Israel

 “Impaired consciousness in epilepsy: Mechanisms, networks, functional imaging”

2/18/15 Tel Aviv University and Weill/Cornell Neurology Symposium, Tel Aviv, Israel

 “Seizure-related impaired consciousness: Clinical implications and driving”

3/24/15 Mt Sinai School of Medicine, Psychotherapy Conference Speaker, New York, NY

 “Consciousness”

3/27/15 2015 Goldring Lecture, Washington University in St Louis, School of Medicine

 “Consciousness Networks in Epilepsy”

4/16/15 2015 Pierre Gloor Lecture, Montreal Neurological Institute, Montreal, Canada

 “Consciousness and Epilepsy: Network Mechanisms Following Pierre Gloor”

5/12/15 Xiangya School of Medicine, Grand Rounds Speaker, Changsha, Hunan, China

 “Mechanisms and treatment of impaired consciousness in epilepsy”

6/12/15 Columbia P&S, Neurology Grand Rounds, New York, NY
“Consciousness and the brain: Normal networks and transient impairment by epilepsy”

7/6/15 Weill-Cornell/James McDonnell Foundation Consortium Speaker, ICM Paris, France

 “Network mechanisms of transient impaired consciousness in epilepsy”

7/8/15 Association for the Scientific Study of Consciousness Symposium, Paris, France

 “Impaired levels of consciousness in focal and generalized seizures”

8/31/15 Yale Interdepartmental Neuroscience NeuroDay Tag Team Talk, West Haven, CT

 “Physiological Markers of Human Conscious Visual Perception”

9/2/15 Pennsylvania State Center for Neural Engineering Seminar, University Park, PA

 “Deep brain stimulation to improve ictal and postictal consciousness”

9/2/15 Pennsylvania State University Neuroscience Seminar, University Park, PA

 “Impaired Consciousness in Epilepsy: Mechanisms and Treatment”

10/26/15 Yale University Epilepsy Research Seminar, New Haven, CT

 "Switching Consciousness Back On During and After Seizures"

12/7/15 American Epilepsy Society Merritt-Putnam Symposium speaker, Pennsylvania, PA

 "Networks in Cognition & Epilepsy Surgery"

1/12/16 Epilepsy Grand Rounds series at George Washington University, Washington, DC

 “Epilepsy and Consciousness: from Neurotransmitters to Driving Safety”

1/27/16 Beth Israel Deaconess, Epilepsy Research Seminar, Boston, MA

 “Impaired consciousness in generalized and focal seizures”

1/27/16 Beth Israel Deaconess, Neuroscience Research Seminar, Boston, MA

 “Network mechanisms of impaired arousal in focal seizures: Implications for restoring

 ictal consciousness by neurostimulation”
2/24/16 NYU Department of Neurology Epilepsy Seminar, New York, NY

 “Epilepsy and Consciousness”

4/8/16 Cleveland Clinic Epilepsy Grand Rounds speaker, Cleveland, OH

 “Consciousness Lost and Found: Mechanisms and Treatment of Impaired

 Consciousness in Epilepsy”

4/8/16 Cleveland Clinic Advanced Research in Medicine speaker, Cleveland, OH

 “Epilepsy Video Case Vignettes, Neuroscience Research and Q&A”

4/11/16 Pitié-Salpêtrière Hospital, ICM Institut du Cerveau et de la Moelle épinière Neurotalk

 “Epilepsy and Consciousness”

5/17/16 Yale Neuroimaging for the Clinical Neuroscientist, Seminar Series

 “Rediscovering Electroencephalography as a Functional Neuroimaging Method”

5/19/16 UCSF Neurosurgery Grand Rounds, San Francisco, CA

 “Restoring Consciousness during Seizures with Deep Brain Stimulation”

6/1/16 NYU Center for Brain Imaging Seminar, New York, NY

 “Consciousness Lost and Found: Mechanisms and Treatment of Impaired

 Consciousness in Epilepsy”

6/14/16 Association for the Scientific Study of Consciousness Tutorial, Buenos Aires, Agentina

 “Impaired levels of consciousness in focal and generalized seizures”

9/13/16 12th European Congress on Epileptology, Symposium, Prague, Czech Republic

 “Common mechanism of loss of consciousness in seizures”
9/20/16 Neuroscience School of Advanced Studies, Course Lecturer, Bressanone, Italy

 “Consciousness and seizure disorders”

9/26/16 Yale Epilepsy Research Seminar, New Haven, CT

 “Consciousness lost and found: Normal consciousness, impaired consciousness in

 epilepsy, and restored consciousness with neurostimulation”

10/28/16 Bern Sleep-Wake Symposium, Keynote speaker, Bern, Switzerland

 “Clinical and experimental control of seizures and arousal/consciousness in modern

 Neurology”

1/31/17 CURE Seminar Speaker, University of British Columbia, Vancouver, Canada

 “Impaired Consciousness in Focal Seizures: Network Mechanisms and Treatment

 with Deep Brain Stimulation”

2/1/17 University of British Columbia Neurology Grand Rounds Speaker, Vancouver, Canada

 “Why are Children with Absence Seizures Absent? fMRI, EEG and Behavioral

 Findings”

2/24/17 University of Calgary, Clinical Neuroscience Grand Rounds, Calgary, Canada

 “Consciousness Lost and Found: Impaired Consciousness in Epilepsy Restored by

 Neurostimulation”

2/24/17 University of Calgary, Hotchkiss Brain Institute seminar speaker, Calgary, Canada

 “Cognitive Action Potentials: Brain Networks in Normal Consciousness and Epilepsy”

4/24/17 Wisconsin Sleep Center Seminar, University of Wisconsin, Madison, WI

 “Modulation of arousal in normal consciousness, epilepsy and neurostimulation”

6/21/17 McGill Neurology Residency Lecture, Montreal, Canada

 “Clinical Neurology and Neuroscience Research: Career Choice or Resonance State?”

6/21/17 McGill Neurology Donald Baxter Lecture, Montreal, Canada
“Imaging Brain Networks in Epilepsy and Altered Consciousness”

8/31/17 WONOEP Keynote Speaker, Mon St. Benet, Spain

 “Epilepsy Regional Network Identification with Imaging Techniques”

9/4/17 Institute d’Investigacions Biomediques Seminar Speaker, Barcelona, Spain

 “Mechanisms of Normal Consciousness and Impaired Consciousness in Epilepsy”

9/5/17 ILAE/IEC Parallel Session Speaker, Barcelona, Spain “’Interictal’ EEG discharges

 and cognitive dysfunction: investigations and management”

11/3/17 UCSD Department of Neurosciences Grand Rounds, San Diego, CA

 “Investigating Normal Consciousness and its Impairment by Epilepsy”

11/17/17 Yale Epilepsy CME Symposium, New Haven, CT

 “Driving in Epilepsy”

2/20/18 Yale Clinical Neuroscience Imaging Research Symposium speaker, New Haven, CT

 "Clinical Neuroscience Imaging Research at Yale: Opportunities for the Future"
3/1/18 Yale Magnetic Resonance Research Center Seminar, New Haven, CT

 “Brain signals of conscious awareness”

3/5/18 Whistler Brain Connectivity Workshop Proffered Speaker, Whistler, BC Canada

 “EEG and fMRI Signals of Conscious Visual Awareness”
3/9/18 Neuroscience in Intensive Care International Symposium, Washington, DC

 “Unconsciousness During Epileptic Seizures”
3/20/18 Florida Atlantic University Neuroscience Seminar, Boca Raton, FL

 “Network Inhibition Hypothesis: Depressed Subcortical Function in Seizures”

4/8/18 Washington University in St. Louis, Synapse Undergraduate Neuroscience speaker

 “Neuroanatomy through Clinical Cases”

4/9/18 Washington University in St. Louis School of Medicine, Pediatric Neurology Seminar

 “Absence epilepsy and consciousness: From basic models and fMRI to driving safety”

4/12/18 Yale Center for Neuroepidemiology and Clinical Neurological Research Chalk Talk

 “Clinical trial of DBS to improve consciousness in temporal lobe seizures”

5/29/18 NYU Department of Neurology Grand Rounds, New York, NY

 “Dynamic cortical-subcortical networks in normal and impaired consciousness”

6/25/18 Association for the Scientific Study of Consciousness Tutorial, Krakow, Poland

 “Functional neuroanatomy of cortical-subcortical networks for arousal and conscious

 perception”

7/3/18 Neuroscience School of Advanced Studies, Course Lecturer, Venice, Italy

 “Consciousness and Seizures Disorders”

8/28/18 European Congress on Epileptology Parallel Session Speaker, Vienna, Austria

 “Methods and concepts to explain the role of thalamus in temporal lobe epilepsy”

11/2/18 Florida International University, Miami, FL, Biomedical Engineering Seminar
 “Impaired Consciousness in Focal Seizures: Neuroimaging, Physiology and

 Treatment with Deep Brain Stimulation”

11/16/18 Neurology Grand Rounds at North Shore University Hospital, Manhasset, NY

11/29/18 Stanford Neurosciences Institute Seminar, Stanford, CA

 “Brain mechanisms of normal and impaired consciousness”
12/1/18 American Epilepsy Society Investigators Workshop Speaker, New Orleans, LA
 “Absence seizures as a pathological deviant of the normal quiet disengaged state”

2/26/19 Yale Clinical Neuroscience Imaging Center Symposium Speaker, New Haven, CT

 “Neuroimaging of normal and impaired consciousness”

3/4/2019 Yale MACSIE (Monday Afternoon Coffee Seminars in Epilepsy) Speaker, New Haven

 “Brain networks in consciousness and epilepsy”

3/29/19 Yale Epilepsy CME Symposium, New Haven, CT

 “Driving and Epilepsy”
4/4/19 UCL Centre for Neuroimaging Techniques Seminar, Queen Square, London

 “Neuroimaging, electrophysiology and behavior in normal and impaired

 consciousness”

4/5/19 Pitie-Salpetriere ICM Seminar, Paris, France

 “Network mechanisms of normal and impaired consciousness”
4/17/19 University of Connecticut Psychology Colloquium Speaker, Storrs, CT

 “Consciousness and Epilepsy”

6/22/19 International League Against Epilepsy/International Epilepsy Congress (ILAE/IEC)

 Parallel Session Speaker, Bangkok, Thailand “Probing Cortico-subcortical Networks to

 Reverse Unconsciousness during Epileptic Seizures”
6/24/19 International League Against Epilepsy/International Epilepsy Congress (ILAE/IEC)

 Speaker, Bangkok, Thailand “Video-session: is this epilepsy or not?”
7/1/19 Jingtao Xi’an, China Seminar

 “Cortical and subcortical networks in normal consciousness and epilepsy”

7/4/19 University of Electronic Science and Technology, Chengdu, China Seminar

 “Brain Circuits in Normal and Impaired Consciousness”
8/4/19 Tel Aviv University, Psychological Science and Neuroscience Seminar, Tel Aviv, Israel

 “Cortical and Subcortical Mechanisms of Conscious Perception”

8/13/19 Mayo Clinic Department of Neurology Research Seminar, Rochester, MN

 “Thalamic Stimulation to Prevent Impaired Consciousness in Epilepsy”

9/13/19 Society for Innovative Neurosciences in Neurosurgery Speaker, New Haven, CT

 “Mechanisms and Neurosurgical Treatment of Impaired Consciousness in Epilepsy”

9/20/19 Yale Anesthesia Interdisciplinary Symposium Speaker, New Haven, CT

9/26/19 Weill Cornell Key Note Speaker for Neurosurgery CME Symposium, New York, NY

 “Consciousness and Epilepsy”
12/2/19 Yale MACSIE (Monday Afternoon Coffee Seminars in Epilepsy) Speaker, New Haven

 “Stimulation of the Thalamus for Arousal Restoral in TLE (START) Brain Initiative

 Clinical Trial”

12/7/19 American Epilepsy Society Investigator Workshop Speaker
 “Mechanisms and Treatment of Impaired Consciousness in Epilepsy”

1/13/20 Alpine Brain Imaging Meeting Symposium Speaker, Champéry, Switzerland

 “Neuroimaging and Electrophysiology in Large Data Sets Reveal Neural Sequence of

 Human Conscious Perception: Detect, Pulse, Switch and Wave”
2/24/20 Kellaway Endowed Lectureship in Epilepsy, Baylor College of Medicine, Houston, TX

 “Consciousness, Epilepsy and Neurostimulation”

3/10/20 European Winter Conference on Brain Research, Symposium Organizer and Speaker

 Villars, Switzerland – *arrived on site but cancelled due to COVID-19*

 “Neuroimaging and Neurostimulation to Restore Consciousness in Epilepsy”

6/9/20 North Shore University Hospital/Northwell Neuropsychology Seminar, Manhasset, NY

 “Brain Mechanisms of Conscious Awareness” – *changed to teleconference*

9/16/20 Pitie-Salpetriere ICM Seminar, Paris, France

 “Consciousness, Epilepsy and Neurostimulation” – *changed to teleconference*

10/1/20 Columbia MD/PhD Student Research Symposium Speaker

 “Neural Mechanisms of Consciousness in Normal and Altered Brain States”

11/5/20 University of Illinois Chicago, Neurology Grand Rounds, Chicago, Illinois

 “Neural Mechanisms of Normal and Altered Consciousness”

11/6/20 Open Mind Consortium Workshop Speaker

12/18/20 Yale Neurosurgery Clinical Neuroscience Grand Rounds, New Haven, CT

 “Deep Brain Stimulation to Restore Consciousness in Temporal Lobe Epilepsy”

2/3/21 School of Health Sciences at Touro, Faculty Research Keynote Speaker, NY, NY

 “From Patient to Lab and Back to Patient Again: Clinical Inspiration for Fundamental

 Translational Research”

2/10/21 American Clinical Neurophysiology Symposium Speaker

 “Novel DBS & Consciousness”

5/4/21 Yale Nuclear Medicine Grand Rounds, New Haven, CT

 “Pearls and pitfalls of SPECT interpretation for epilepsy”

11/2/21 European Human Brain Project Seminar, Work Package 2 - Networks underlying brain

 cognition and consciousness. “Identifying the brain networks in visual consciousness:

 subcortical and cortical electrophysiology and fMRI independent of report”

11/2/21 Yale Neuropsychology Seminar, New Haven, CT

 “Neuroanatomy through Clinical Cases”

11/29/21 Monday Afternoon Coffee Seminar in Epilepsy (MACSIE), New Haven, CT

 “START Trial: Stimulation of the Thalamus for Arousal Restoral in Temporal lobe

 epilepsy”

12/5/21 American Epilepsy Society Investigator Workshop Speaker

 “Stimulation of the Thalamus for Arousal Restoral in Temporal lobe epilepsy: START”

1/26/22 NYU Department of Neurology, Epilepsy Seminar Speaker, New York, NY

 “START Clinical Trial: Stimulation of the Thalamus for Arousal Restoral in Temporal

 lobe epilepsy”

3/13/22 Dartmouth-Hitchcock Epilepsy Meeting Keynote Speaker, Stowe, VT

 “Stimulation of the Thalamus for Arousal Restoral in TLE (START) Clinical Trial”

4/8/22 Yale Neurocritical Care / Stroke Research Seminar, New Haven, CT

 “START Trial: Stimulation of the Thalamus for Arousal Restoral in Temporal lobe

 epilepsy”

5/10/22 Neuroscience School of Advanced Studies, Course Lecturer, Venice, Italy

 “Consciousness and Seizure Disorders”

5/31/22 Neuromodulation & Bioelectronic Medicine (NBM) Seminar Series, Mayo Clinic,

 Rochester, MN. “START Clinical Trail: Stimulation of the Thalamus for Arousal

 Restoral in Temporal Lobe Epilepsy”

9/14/22 New York Medical College Neurology Grand Rounds, Valhalla, NY

 “Deep Brain Stimulation to Restore Consciousness in Temporal Lobe Epilepsy”

11/17/22 Yale MRRC Neuroscience Series, New Haven, CT

 “Shared dynamic changes in subcortical arousal across perceptual modalities”

11/18/22 Yale Neurology Department Grand Rounds, New Haven, CT

 “Impaired Consciousness in Epilepsy”

12/1/22 Vanderbilt Institute for Surgery and Engineering Seminar, Nashville, TN

 “Stimulation of the Thalamus for Arousal Restoral in Temporal Lobe Epilepsy (START)

 Clinical Trial”

12/3/22 American Epilepsy Society Presidential Symposium Speaker, Nashville, TN

 “Excitation and Inhibition During Temporal Lobe Epileptic Seizures”

2/7-8/23 Israeli League Against Epilepsy Symposium Speaker, Herzliya, Israel

 “Mechanisms and Treatment of Impaired Consciousness in Focal Seizures”

3/27/23 Tel Aviv University Psychological Sciences Colloquium, Tel Aviv, Israel

 “Shared subcortical arousal systems across perceptual modalities”

5/9/23 Mayo Clinic Department of Neurology, Pellar Visiting Professorship, Jacksonville, FL

8/11/23 Brazilian Neuromodulation Society Speaker, Sao Paolo, Brazil

2/--/24 Gordon Research Conference, Speaker Ventura, CA

 “Thalamic modulation of cortical arousal in normal consciousness and epileptic

 unconsciousness”

**PUBLICATIONS:**

**1. NEUROSCIENCE BOOKS:**

Blumenfeld, H., *Neuroanatomy through Clinical Cases.* (2002). Sinauer Associates, Inc.,

 Publishers. Sunderland, MA. 1-951.

Blumenfeld, H., *Neuroanatomy through Clinical Cases, 2nd Edition.* (2010). Sinauer Associates,

 Inc., Publishers. Sunderland, MA.

Blumenfeld, H., *Neuroanatomy through Clinical Cases, 3rd Edition.* (2022). Oxford University

 Press, New York, NY.

Cavanna AE, Nani A, Blumenfeld H, Laureys S (Eds). *Neuroimaging of Consciousness.*

 (2013). Springer Publ, NY.

Faingold CL, Blumenfeld H (Eds). *Neuronal Networks in Brain Function, CNS Disorders, and*

 *Therapeutics.* (2014). Elsevier, NY.

**2. MULTI-MEDIA EDUCATIONAL RESOURCES:**

Blumenfeld, H., 2000. *neuroexam.com.* An interactive online guide to the neurologic

 examination, with streaming video demonstrations http://www.neuroexam.com

Blumenfeld, H. 2001. *The NeuroExam Video*. Sinauer Associates, Inc., Publishers.

 A videotaped demonstration of the neurologic exam.

Blumenfeld, H. 2005. *Ictal-interictal SPECT Analyzed by SPM (ISAS).* Online guide to SPECT

 image analysis for epilepsy, with software and normal database. <http://spect.yale.edu/>

Blumenfeld H. 2006. Neurology SPECT & PET – Epilepsy Section. Society of Nuclear

 Medicine Continuing Medical Education. <http://www.snm.org/llsap/>

**3. PEER-REVIEWED ORIGINAL RESEARCH:**

Guffanti, A.A., Blumenfeld, H. and Krulwich, T.A. (1981). ATP synthesis in an uncoupler-

 resistant mutant of *Bacillus megaterium.* *J. Biol. Chem.* 256, 8416-8421.

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 *Aplysia*.." In *Regulation et Plasticite Synaptiques*. *J. Physiol. (Paris)* 81, 349-357.

Castellucci, V.F., Blumenfeld, H., Goelet, P. and Kandel, E.R. (1989). Inhibitor of protein

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Blumenfeld, H., Cha, J.H. and Cudkowicz, M.E. (1996). Trimethoprim and sulfonamide-

 associated meningoencephalitis with MRI correlates. *Neurology*, 46: 556-558.

Scott P, Barsan W, Frederiksen S, ... Blumenfeld H, ... Brennan KM. (1996). A randomized trial

 of tirilazad mesylate in patients with acute stroke (RANTTAS). *Stroke,* 27(9): 1453-1458.

Kalkanis, S.N., Blumenfeld, H., Sherman, J.C., Krebs, D.E., Irizarry, M.C., Parker, S.W. and

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Shapiro, B.E., Soto, O., Shafqat, S. and Blumenfeld, H. (1997). Adult botulism. *Muscle and*

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 during spike-wave seizures and generalized tonic-clonic seizures in WAG/Rij rats. *J Cereb*

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**5. ABSTRACTS:**

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**6. NON-SCIENTIFIC PUBLICATIONS:**

*Let's Go: Greece, Israel & Egypt*. St. Martin's Press, New York, 1982.

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**RESEARCH SUPPORT**

**1. Active Support:**

## Project Title/P.I. Agency Amount Period of Support Effort

Thalamic stimulation to prevent impaired consciousness in epilepsy

Hal Blumenfeld NIH UG3/UH3 NS112826 $500K – 1.5M/yr 9/1/2019-8/31/2024 20% The goals of this project are to develop methods and perform an early feasibility clinical

trial of thalamic deep brain stimulation to improve consciousness in temporal lobe

seizures.

Neuroimaging, neuronal firing and behavior in spike-wave seizures
Hal Blumenfeld NIH R37 NS100901 $ 250,000/yr 8/15/17 - 6/30/24 25%

NINDS Javits Neuroscience Award

This project will investigate the neural mechanisms of impaired behavior as well as EEG and fMRI changes in a rodent model of absence seizures.

Remote effects of focal hippocampal seizures on neocortical function

Hal Blumenfeld NIH R01 NS066974 $ 296,667/yr 2/1/11 - 11/30/26 25%

This project will investigate mechanisms of impaired function and methods to restore

normal function in the neocortex during focal limbic seizures in rodent models.

Accelerating research on Consciousness: An adversarial collaboration to test contradictory predictions of Global Neuronal Workspace and Integrated Information Theory
Lucia Melloni Templeton World Charity Foundation

 $1.2M/yr 9/1/2019-8/31/2024 5%

 My role as co-investigator and site PI on this project is to acquire and analyze fMRI data

 using a novel behavioral testing paradigm to investigate mechanisms of consciousness.

The Mark Loughridge and Michele Williams Professorship of Neurology

Hal Blumenfeld Loughridge Williams Foundation $3M endowment 2/1/15-

 This endowed professorship was established to support my research and teaching

activities in the Yale Department of Neurology devoted to the field of epilepsy

Novel Neuroimaging Methods in Epilepsy

Hal Blumenfeld Blattmachr Fund $25,000/yr 2/1/05-1/31/21 No salary

 This project uses novel imaging approaches to investigate physiological changes that

 occur during and after epileptic seizures.

Yale Alzheimer’s Disease Research Center Research Education Core (Role: Core Co-Lead)

Stephen Strittmatter NIH/NIA 1P30AG066508-02 6/15/20 – 4/30/25 5%

 $1,987,768 ($175,000 for Education Core)

The overall objective of the Yale ADRC Research Education Core (REC) is to serve as an

institutional hub for all educational, didactic and career development activities aimed at

promoting future leaders that will bridge clinical and basic sciences to improve clinical

outcomes and quality of life of individuals with dementing disorders.

Clinical and Translational Science Award

Robert Sherwin NIH CTSA UL1 TR001863 12/1/23-11/30/24 No salary

My role as an investigator on this project is to conduct human neuroimaging research on patients with epilepsy.

**2. Pending Support:**

**3. Completed Research:**

High Frequency Burst Firing in Visual Cortex

Hal Blumenfeld NIH K08 NS02060 $105,570/yr 7/1/98 - 6/30/01 75%

The goals of this project were to perform *in vitro* recordings of brain slices and dissociated cells to study ionic and pharmacologic mechanisms of burst firing in cortical and thalamic neurons.

High Frequency Burst Firing in Visual Cortex

Hal Blumenfeld NIH K08 NS02060 $122,350/yr 7/1/01 - 6/30/03 75%

Competitive renewal of K08 NS02060 above.

Shared Cellular Mechanisms of Visual Information Processing and Epileptic Seizures

Hal Blumenfeld Pfizer $65,000/yr 7/1/98 - 6/30/01 20%

This project investigated the role of thalamocortical circuits in normal visual information processing and in seizures through corticothalamic stimulation of LGN thalamic slices.

Cellular Mechanisms of Thalamic Neuronal Burst Firing During Spike-wave Seizures

Hal Blumenfeld EFA $40,000/yr 7/1/01 - 6/30/02 15%

 This project used an *in vivo* rat model of generalized epilepsy to investigate the role of

 corticothalamic interactions in epilepsy and normal sleep rhythms.

Role of Corticothalamic Network Interactions in Sleep and Epilepsy

Hal Blumenfeld Patterson Trust $60,000/yr 2/1/02-1/31/03 5%

 This project investigated the cellular and network mechanisms of normal sleep rhythms

and epileptic seizures.

Mechanisms of Seizure Spread and Generalization Studied by SPECT Difference Imaging

of ECT-induced Seizures

Hal Blumenfeld Dana Foundation $33,000/yr 1/1/00-12/31/02 5%

This project investigated cerebral blood flow changes using SPECT imaging during unilateral or bilateral ECT-induced seizures in human subjects undergoing ECT treatment for depression.

Mechanisms of Selective Thalamocortical Network Activation in Spike-Wave Seizure

Hal Blumenfeld Patterson Trust $40,000/yr 2/1/03-1/31/04 5%

 This project investigates the cellular and network mechanisms of normal sleep rhythms

and epileptic seizures.

Spatiotemporal Responses to Odors in Rat Olfactory Bulb by fMRI

Fahmeed Hyder NIH RO1 DC03710 $ 204,750/yr 4/1/02-3/31/07 No salary

 My role as consultant on this project is to develop electrophysiological recordings from

the rat olfactory bulb to be done in parallel with fMRI measurements.

Energetics of Neuronal Populations by fMRI, MH67528

Fahmeed Hyder NIH R01 MH67528 $ 225,000/yr 08/16/02-07/31/07 10%

 My role as co-investigator on this project is to conduct electrophysiological recordings to

determine the physiological basis of BOLD fMRI measurements.

Clinical and Basic Neurobiology of Nervous System Diseases

George Heninger NIH R25 MH079336 $74,806/yr 9/01/06-8/31/08 5%

My role as collaborator on this project is to assist in developing application-oriented neuroscience educational materials for graduate students.

Neuronal firing and neuroimaging in spike-wave seizures

Hal Blumenfeld NIH R01 NS049307 $ 231,250/yr 7/1/04-3/31/09 15%

This project investigated relationships between *in vivo* recordings of neuronal activity and fMRI signals in rodent spike-wave seizures.

Epileptogenic Tissue Localization using EEG-fMRI

Robert T. Constable NIH R01 NS047605 $250,000/yr 7/01/05-6/30/09 5%

My role as co-investigator on this project is to assist in interpreting the relationships

between regions involved in EEG-fMRI, SPECT and intracranial EEG studies.

Axonal Growth Cone Signal Transduction

Stephen Strittmatter NIH R01 NS033020 $250,000/yr 7/01/05-6/30/10 No salary

My role as consultant on this project is to provide phenotypic analysis of epileptogenesis

in knock-out and knock-in mice with altered LGI1 genes.

Childhood absence epilepsy Rx PK-PD-pharmacogenetics

Tracy Glauser NIH U01NS045911 $2,000,000/yr 9/30/2003-10/31/2010 1%

 The major goals of this project are: this 32 center, 446 patient multicenter study examines

the optimum therapy for Childhood Absence Epilepsy and the PK, genetic and clinical

factors underlying the inter-individual response to therapy. As site PI I was responsible for

the overall direction and successful completion of the clinical trial and the correlative

studies at my site.

Preventing spike-wave epileptogenesis: critical period & neuroimaging biomarkers (R01 ARRA)

Hal Blumenfeld NIH R01 NS049307 $ 250,000/yr 9/1/09 - 8/31/11 30%

This project will investigate fMRI resting functional connectivity and diffusion tensor imaging as biomarkers of spike-wave epileptogenesis in rodent models.

Glutamate Metabolism in Epileptic Human Hippocampus

Anne Williamson NIH R01 NS052462 $ 264,672 /yr 12/1/06-11/30/11 No salary

 My role as consultant on this project is to develop *in vivo* methods for EEG monitoring of

 seizures in rat epilepsy models used for *in vitro* physiology studies.

Neurobehavioral Correlates of Mental Stress Ischemia

Robert Soufer NIH R01HL059619 $458,807 2/1/07-1/31/12 5%

 My role as consultant is to develop methods for analyzing and interpreting

human PET data using statistical parametric mapping.

Impaired Consciousness in Epilepsy: Mechanisms and Consequences

Hal Blumenfeld Donaghue Inv Award $109,428/yr 1/01/07 – 12/31/12 10%

 This project will investigate mechanisms of impaired driving performance in epilepsy

using a combination of behavioral testing, neuroimaging, and intracranial EEG.

Electrical and optogenetic deep brain stimulation to reverse ictal cortical dysfunction

Hal Blumenfeld Swebilius Foundation $20,000/yr 11/1/12-10/31/13 No salary

 This project will test deep brain stimulation in animal models as a method for preventing

loss of consciousness in focal limbic seizures

Preventing Cognitive Impairment in Epilepsy

Hal Blumenfeld Loughridge Williams Foundn. $20,000/yr 2/1/07-1/31/14 No salary

This project investigates methods for identifying and preventing impaired consciousness during and following seizures in patients with epilepsy.

Impact of Initial Therapy and Response on Long Term Outcome in Children with CAE

Tracy Glauser NIH U01NS045911 $2,000,000/yr 7/1/2010-6/30/2014 1%

The major goals for this project are: Determine if ethosuximide maintains its superior effectiveness (freedom from failure) over the long term along with better seizure freedom, seizure remission, cognitive and safety outcomes than lamotrigine or valproic acid in the 32 center, 446 patient cohort from the Childhood Absence Epilepsy clinical trial. My role as site PI for this study is to follow long-term outcome of patients with childhood

absence epilepsy randomized to different modes of therapy.

Mechanisms of Impaired Breathing and Arousal in Seizures

Hal Blumenfeld Swebilius Foundation $15,000/yr 2/1/14-1/31/15 No salary

 This project will use multi-modal recordings in an animal model to determine the

mechanisms of breathing impairment and decreased arousal in limbic seizures

Energetics of Neuronal Populations by fMRI

Fahmeed Hyder NIH R01 MH067528 $ 250,000/yr 12/1/09 - 11/30/15 10%

 My role as co-investigator on this project is to conduct electrophysiological recordings to

determine the physiological basis of BOLD fMRI measurements.

Deep brain stimulation to prevent impaired consciousness in epilepsy

Hal Blumenfeld NIH R21 NS083783 $150,000/yr 3/01/14 – 2/28/17 5%

This project will investigate therapeutic benefits of thalamic stimulation to improve cortical function and consciousness during focal seizures in rodent models.

Functional Neuroimaging in Childhood Absence Epilepsy

Hal Blumenfeld NIH R01 NS055829 $218,750/yr 08/01/06 - 01/31/18 25%

The goal of this project is to identify anatomical and physiological mechanisms of

impaired attention in childhood absence epilepsy using functional neuroimaging, EEG

and behavioral testing.

Cortical tuber in epilepsy

Angelique Bordey NIH R21 NS093510 $ 150,000/yr 9/1/15 - 8/31/17 2%

 My role as co-investigator on this project is to conduct electrophysiological recordings and

MRI DTI measurements in tuberous sclerosis and epilepsy.

Neurophysiologic measurements of neuronal ensembles

Hal Blumenfeld NIH P30 NS052519 $ 399,573/yr 7/01/05-12/31/17 No salary

(Center PI, DSF Hyder)

Core Center for Quantitative Neuroscience with Magnetic Resonance (QNMR)

Neurophysiologic measurements of neuronal ensembles

 As Core Director for neurophysiology, my role is to supervise electrophysiological

recordings of large neuronal ensembles, and multimodal EEG-fMRI studies

Quantitative Analyses of Nuclear Cardiac and Neurologic Images via Cloud Computing

Yi-Hwa Liu CT Bioscience Innovation Fund

$198,768/yr 2/1/2017-1/31/2020 1%

 The goal of this project is to develop a universal web-based system for brain and cardiac

image quantitative analyses via cloud computing technology.

Pilot study for a novel paradigm to study consciousness
Liad Mudrik Templeton World Charity Foundation

 $191,022/yr 1/28/19 – 1/23/20 3%

 My role as co-investigator and site PI on this project is to acquire and analyze fMRI data

 using a novel behavioral testing paradigm to investigate mechanisms of consciousness.

Network mechanisms of seizure-induced cardiorespiratory impairment

Hal Blumenfeld NIH R01 NS096088 $250,000/yr 9/1/16 - 8/31/22 25%

The goal of this project is to investigate mechanisms of impaired breathing and cardiac

function during and following seizures in rodent models.

Energetics of Neuronal Populations by fMRI

Fahmeed Hyder NIH R01 MH067528 $ 250,000/yr 3/1/17 - 2/28/22 5%

My role as co-investigator on this project is to help develop simultaneous calibrated fMRI

and Ca2+ imaging to study R-fMRI on the basis of neurovascular and neurometabolic

coupling in mice with genetically encoded Ca2+ reporters like Snap25-GCaMP6.

**4. Mentored grants (for PhD or MD students, Postdocs, or Faculty):**

Listing only grants as primary mentor with support of one year or longer.

Cortical-Subcortical Network Interactions in Temporal Lobe Epilepsy

A. LeBron Paige EFA $40,000/yr 7/1/02 – 6/30/03

 This project used SPECT imaging to investigate long range network interactions in

 human epilepsy.

Mechanisms of selective network activation in rodent spike-wave seizures

Hrachya Nersesyan EFA $40,000/yr 7/1/03 – 6/30/04

 This project used an *in vivo* rat model of absence seizures to investigate selective

regions involved through fMRI and electrophysiology recordings.

Control of excitability in rodent spike-wave seizures by voltage-gated sodium channels

Angelika Lampert EFA $40,000/yr 7/1/05 – 6/30/06

This project investigates the role of enhanced sodium currents in spike-wave seizures using *in vitro* patch clamp recordings.

Neuronal firing and neuroimaging in spike-wave seizures

Marisa Spann

 Supplement to NIH R01 NS049307 $21,480/yr 5/1/06 – 3/31/08

This project uses fMRI and related methods to investigate spike-wave seizures.

Functional neuroimaging, neuro-energetics and electrophysiology in spike-wave seizures in the WAG/Rij rat, a model of human absence epilepsy.

Damien Ellens HHMI $30,500/yr 7/1/07 – 6/30/08

 This project uses a rat model of absence seizures to investigate relationships between

 fMRI signals and underlying neuronal activity

Neuroimaging, energetics, and neuronal activity in spike-wave seizures

Dario Englot NIH NRSA F30NS059074 $40,972/yr 12/17/07 – 12/16/10

 This project investigates the neuroenergetic and physiological basis of neuroimaging

 signals using fMRI and electrophysiological studies of rodent seizure models

Functional neuroimaging of the effects of ethosuximide on epileptogenesis in a rodent model of spike-wave epilepsy

Matthew Vestal HHMI $30,500/yr 7/1/08 – 6/30/09

This project investigates neuroimaging changes during epileptogenesis and its prevention in the WAG/Rij rat model

Neuroimaging biomarkers and prevention of spike-wave epilepstogenesis

Asht M. Mishra EFA $45,000/yr 1/1/09 – 12/31/09

This project investigates diffusion tensor imaging and resting fMRI connectivity as biomarkers of epileptogenesis in rodent models.

Impaired consciousness in epilepsy: consequences for driving performance

Pimen Kurashvili Civilian Research & Development Foundation

 $11,500 3/10/08 – 6/10/09

 This project investigates driving performance in patients with epilepsy using a virtual

 reality driving simulator to determine which types of seizures impair driving

Developing a responsiveness in epilepsy scale (RES) for evaluation of inpatients with epilepsy

Li Yang Chinese Scholarship Council Fellowship

 $24,000/yr 10/1/08 – 9/31/10

This project investigates impaired consciousness during epileptic seizures using a new behavioral testing battery derived from the JFK coma recovery scale

Neuroimaging biomarkers of network dysfunction in childhood absence epilepsy

Xiaoxiao Bai EFA $45,000/yr 1/1/10 – 12/31/10

This project investigates diffusion tensor imaging and resting fMRI connectivity as biomarkers of epileptogenesis in human patients with childhood absence epilepsy.

Subcortical control of neocortical slowing during focal hippocampal seizures

Joshua Motelow NIH NRSA F30NS071628 $40,972/yr 9/1/10 – 8/31/13

 This project investigates the mechanisms of neocortical slow activity in a rodent model of

limbic seizures using neuroimaging and direct physiological measurements.

Impaired consciousness in epilepsy

Andrew Bauerschmidt Doris Duke $33,000/yr 7/1/11 – 6/30/12

 This project investigates impaired consciousness using a combination of bedside

evaluations and computerized testing in epilepsy inpatients.

*In vivo* multiphoton microscopy to investigate network dynamics in epileptogenesis

Markus Wolfel Kavli Neuroscience Institute $60,000/yr 11/1/11 – 10/31/12

 This project investigates the roles of inhibitory and excitatory cell populations in seizures

using *in vivo* multiphoton microscopy in mouse epilepsy models.

Neural correlates of impaired consciousness in childhood absence epilepsy

Jennifer Guo NIH NRSA F31NS077540 $46,800/yr 12/1/11 – 11/30/14

 This project investigates impaired attentional vigilance in childhood absence epilepsy

using simultaneous behavioral testing, EEG and fMRI.

Mechanisms of impaired consciousness in limbic seizures
Wei Li Chinese Scholarship Council Fellowship

 $24,000/yr 10/1/12 – 9/31/14

This project investigates impaired consciousness in limbic seizures using high field fMRI and biosensor probes in rodent epilepsy models.

Neuroimaging biomarkers of epilepsy prevention in a rodent model of spike-wave epilepsy
Qiong Zhan Chinese Scholarship Council Fellowship

 $24,000/yr 10/1/12 – 9/31/14

This project investigates resting fMRI and diffusion tensor imaging as biomarkers of epileptogenesis in a rat spike-wave seizure model.

Restoring consciousness during seizures using optogenetic stimulation

Moran Furman EFA $45,000/yr 1/1/13 – 12/31/13

This project investigates potential therapeutic benefits of electrical and optogenetic stimulation of subcortical structures in limbic seizures coupled with fMRI.

Neurostimulation to prevent impaired consciousness in epilepsy

Abhijeet Gummadavelli HHMI-CURE $40,000/yr 7/1/13 – 6/30/14

 This project investigates the benefits of thalamic and brainstem stimulation on rat cortical

function and behavior during limbic seizures .

Impaired consciousness and driving ability in epileptic seizures
Yang Si Chinese Scholarship Council Fellowship

 $24,000/yr 10/1/13 – 9/31/15

This project investigates impaired consciousness during epileptic seizures using prospective behavioral testing and a computerized driving simulator.

Identifying mechanisms of impaired breathing and arousal during and after seizures

Adam Kundishora HHMI-CURE $40,000/yr 7/1/14 – 6/30/15

 This project investigates the subcortical networks causing impaired arousal and

altered cardiorespiratory function in seizures.

Seizure networks and epileptogenesis

Jason Gerrard NIH KL2 TR000140 Junior Faculty Scholars Award, YCCI

 $120,000/yr 09/01/2014 – 09/01/2016

The goal of this study was to utilize a combination of high-definition neurophysiology and

metabolomics to study epileptogenesis and seizure networks in parallel within an animal

model and human patients.

Using Noninvasive Electroencephalography and Cerebral Oximetry Monitoring to Understand Brain Physiology in Critically Ill Patients with Sepsis

Emily Gilmore NIH KL2 TR000140 Junior Faculty Scholars Award, YCCI

 $120,000/yr 09/01/2014 – 09/01/2016

The goal of this study was to utilize noninvasive physiological monitoring to investigate

brain physiology and prognosis with sepsis in the intensive care unit.

fMRI and neural activity underlying impaired behavior in absence seizures

Cian McCafferty EFA $45,000/yr 7/1/15 – 6/30/16

This project relates impaired behavior during spike-wave seizures to changes in neural activity using fMRI and electrophysiology measurements in rodent models.

Understanding Potentially Harmful EEG Patterns in Patients with Acute Brain Injury and Critical Illness

Emily Gilmore American Brain Foundation, Clinical Research Training Fellowship

 $65,000/yr 07/01/2015 – 06/30/2017

The goal of this study was to investigate the prognostic importance of EEG patterns in

acute brain injury in patients with critical illness.

Transient and sustained switching in cortical and subcortical attention networks
Rong Li Chinese Scholarship Council Fellowship

$28,800/yr 10/1/15 – 9/30/16
This project investigates mechanisms of cortical and subcortical network switching in attention tasks through quantitative analysis of human fMRI data.

Mechanisms of impaired arousal and breathing in seizures
Jingwen Xu Chinese Scholarship Council Fellowship

 $28,800/yr 1/15/16 – 1/14/18

This project investigates the subcortical networks causing impaired arousal and

altered breathing function in seizures in rodent models.

Multimodal measures of seizure severity: fMRI, neuronal and behavioral impact of absence seizures

John Andrews HHMI-CURE $40,000/yr 7/1/16 – 6/30/17

This project relates impaired behavior during spike-wave seizures to changes in neural activity using fMRI and electrophysiology measurements in rodent models.

Modulation of cortical and subcortical arousal in focal limbic seizures
Zongwei Yue Chinese Scholarship Council Fellowship

 $28,800/yr 9/1/16 – 8/31/18

This project investigates the cortical and subcortical networks causing impaired arousal in seizures in rodent models using whole-cell *in vivo* recordings.

Mechanisms of cortical network switching in attention
Jiajia Li Chinese Scholarship Council Fellowship

 $28,800/yr 10/1/16 – 9/30/17

This project investigates mechanisms of network switching in attention tasks through quantitative analysis of human intracranial EEG data.

Mapping Cortical Language Boundaries in Neurosurgical Planning: Validation of a novel fMRI protocol

Christopher Benjamin NIH KL2 Junior Faculty Scholars Award, YCCI

 $120,000/yr 07/01/2016 – 06/01/2018

The goal of this study was to validate a novel, non-invasive form of functional MRI (fMRI)

for mapping the brain’s language areas prior to surgery, in comparison to the current gold

standard for language mapping in epilepsy patients, direct brain stimulation.

Behavioral impairment in rodent seizure models

Benjamin Gruenbaum NIH T32 Investigative Medicine Award

 $45,000/yr 1/1/17 – 12/31/19
 The goal of this project is to develop novel behavioral paradigms to evaluate attention in

rodent epilepsy models under normal conditions and during seizures.

Electronic motivational interviewing for veterans with psychogenic nonepileptic seizures
Benjamin Tolchin VA VISN1 CDA $160,680/yr 10/01/18 – 9/30/20

The goal of this project is to investigate the therapeutic benefits of electronic motivational

interviews in psychogenic nonepileptic seizure in the veteran population.

Mechanisms of auditory conscious perception

Kate Christison-Lagay NIH T32 Anesthesia $47,000/yr 1/1/18 – 12/31/19

This project investigates mechanisms of human auditory conscious perception using

intracranial EEG recordings and behavioral analysis.

Multi-modal study of visual and auditory conscious perception using EEG, fMRI, and pupillometry
Mariana de Mello Gusso CAPES Foundation Scholarship

 $24,000/yr 9/1/18 – 8/31/20

This project investigates cortical and subcortical mechanisms of conscious perception in

human subjects using EEG, fMRI, pupillometry and behavioral measurements.

Neurobiology of cortical systems

Sharif Kronemer NIH T32 NS007224 $30,000/yr 9/1/18 – 8/31/19

 The goal of this project is to investigate mechanisms of normal human conscious

 visual perception using fMRI, EEG, pupillometry and machine learning.

Neuronal Mechanisms of Unconsciousness in an Absence Seizure Model

Benjamin Gruenbaum FAER Mentored Research Training Grant

 $125,000/yr 7/1/19 – 6/30/21

 The goal of this project is to investigate mechanisms of impaired consciousness in an

animal model of absence seizures using electrophysiology and behavioral testing.

Digital Reaction Test in Epilepsy

Heinz Krestel Horizon 2020 Research Framework of the European Commission

Global Fellowship, Marie Sklodowska Curie Actions Fellowship

 $95,000/yr 04/1/19 – 3/31/22

The goal of this project is to develop an automated digital system for real time detection of
interictal epileptiform activity and performing synchronized behavioral testing.

Thalamic Contributions to Functional Network Abnormalities in Alzheimer's Disease

Carolyn Fredericks NIH K23 AG059919 $194,292/yr 8/1/19-5/31/24

The proposed work seeks to enable earlier detection and identify new targets for therapy,

by using advanced neuroimaging technologies to study structural and functional changes

in thalamic nuclei during healthy aging versus Alzheimer’s disease.

EEG and MRI Biomarkers to Predict Post-Traumatic Epilepsy

Jennifer Kim NIH K23NS112596 $151,000/yr 07/01/20 – 06/30/25

 This project investigates computational analysis of EEG and MRI in patients with

traumatic brain injury to determine biomarkers predictive of epileptogenesis.

Network mapping of focal epilepsy using lesions and deep brain stimulation

Frederic Schaper AES Postdoc Fellowship $50/000/yr 07/01/21 – 06/30/22

 This project uses computational analysis of neuroimaging and neurostimulation data to

 Map cortical and subcortical networks in focal epilepsy.

Mechanisms of subcortical arousal in focal limbic seizures
Sheila Shixin Liu Chinese Scholarship Council Fellowship

 $30,000/yr 12/1/21 – 11/30/23

This project investigates mechanisms of impaired cholinergic subcortical arousal in a mouse model of focal limbic seizures.

Neurobiology of cortical systems

Shanae Aerts NIH T32 NS007224 $35,000/yr 9/1/22 – 8/31/23

 The goal of this project is to investigate mechanisms of normal human conscious

 auditory perception using fMRI, EEG, pupillometry and machine learning.