

Curriculum Vitae
Robert P. Turner, MD, MSCR

Name: **Robert ('Rusty') P Turner, MD, MSCR, BCN, QEEGD**
Network Neurology Health LLC, Charleston SC
Associate Professor of Clinical Pediatrics, Medical University of South Carolina, Charleston SC
Associate Professor of Clinical Pediatrics & Neurology, University of South Carolina School of Medicine
& Palmetto Health Prisma Health Children's Hospital, Columbia SC
Dept of Pediatrics Community Faculty, Bon Secours Roper-St Francis Hospital System, Charleston SC
Dept of Pediatrics Community Faculty, HCA South Atlantic/Summerville Medical Center, Summerville SC
NeuroRead, 2680 Henderson Drive, Jacksonville NC 28546
Associate Researcher, MIND Research Institute, Irvine CA

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2245-C Ashley Crossing Drive
PMB 163
Charleston SC 29414

Phone: 843.670.1705

Fax: NA

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Citizenship and/or Visa Information: Citizen of the United States of America

EDUCATION:

<u>Institution/Location:</u>	<u>Dates:</u>	<u>Degree/Fields of Study:</u>
Hastings College 710 Turner Avenue, Hastings NE 68901 Phone: 402.463.2402; www.Hastings.edu	1976.08.01 - 1978.05.30	Emphasis: Piano; French, German, Spanish
University of Nebraska at Omaha (UNO) 6001 Dodge Street, Omaha NE 68182 Phone: 402.554.2800; www.UNOmaha.edu	1978.08.01 - 1980.05.10	Bachelor of Arts with Honors (BA) Major: General Science Graduation Date: 1980.05.10
Univ of Nebr at Omaha College of Graduate Studies 6001 Dodge Street, Omaha NE 68182 Phone: 402.554.2800; www.UNOmaha.edu/graduate-studies	1980.07.01 - 1984.06.30	<i>Master of Music in Piano Performance (non-degree)</i> <i>Emphasis: Piano Performance and Music Theory</i>
University of Nebraska Medical Center (UNMC) 42 nd and Emile, Omaha NE 68198 Phone: 402.559.4000; www.UNMC.edu	1980.07.01 - 1984.05.13	Doctor of Medicine (MD) Graduation Date: 1984.05.13
Medical University of South Carolina College of Graduate Studies (MUSC) 68 President Street, BE 101, Charleston SC 29425 Phone: 843.792.2300; www.GradStudies.MUSC.edu	2001.07.01 - 2003.05.16	Master of Science in Clinical Research (MSCR) Graduation Date: 2003.05.16
Columbia Biblical Seminary (CBS) 7435 Monticello Road, Columbia SC 29203 Phone: 800.777.2227; www.Seminary.CIU.edu	2003.12.01 - 2005.12.31	<i>Master of Divinity in Academic Studies (non-degree)</i> <i>Emphasis: Hebrew, Greek, Aramaic/Syriac</i>

POST-GRADUATE TRAINING:

INTERNSHIP (Pediatrics):

Location:

University of Nebraska Medical Center (UNMC)
42nd and Emile
Omaha NE 68198
Phone: 402.559.4000
Director: Robert Nelson MD
www.UNMC.edu

Dates:

1984.07.01 -
1985.06.30

Field of Study:

Pediatrics (Internship)

RESIDENCY (Pediatrics):

Location:

University of Nebraska Medical Center (UNMC)
42nd and Emile
Omaha NE 68198
Phone: 402.559.4000
Director: Robert Nelson MD
www.UNMC.edu

Dates:

1985.07.01 -
1986.06.30

Field of Study:

Pediatrics (Residency)

FELLOWSHIP (Neurology):

Location:

Medical College of Virginia Hospitals (MCV)
1250 East Marshall Street
Richmond VA 23219
Phone: 804.828.0445
Director: Edwin Myer MD
www.VCUHealth.org

Dates:

1986.07.01 -
1989.06.30

Fields of Study:

Child and Adult Neurology
EEG and Clinical Neurophysiology

FELLOWSHIP (Neurophysiology):

Location:

Medical College of Virginia Hospitals (MCV)
1250 East Marshall Street
Richmond VA 23219
Phone: 804.828.0445
Directors: William Campbell MD, Robert Leshner MD
www.VCUHealth.org

Dates:

1989.07.01 -
1990.06.30

Fields of Study:

EMG and Neuromuscular Diseases
EEG and Evoked Potentials
Clinical Neurophysiology

SPECIALTY / BOARD CERTIFICATIONS:	Date Certified (Diplomate):
(1) <u>National Board of Medical Examiners (NBME) (Certificate 220)</u>	1985.07.01 (no expiration)
(2) <u>American Board of Psychiatry and Neurology (ABPN) (Certificate 758)</u> <u>With Special Qualification in Child Neurology</u>	1990.10.30 (no expiration) MOC: Up to date 2020.01.01
(3) <u>American Board of Pediatrics (ABP) (Certificate 45795)</u>	1990.11.14 (Exp: 1997.11.14)
(4) <u>American Board of Electrodiagnostic Medicine (ABEM) (Certificate 1532)</u>	1991.04.14 (no expiration)
(5) <u>American Board of Clinical Neurophysiology (ABCN)</u>	1991.12.16 (no expiration)
(6) <u>American Society of Neurorehabilitation (Certified Member Certificate 220)</u>	1992.09.04 (no expiration)
(7) <u>American Board of Psychiatry and Neurology (ABPN) (Certificate 205)</u> <u>With Added Qualification in Clinical Neurophysiology</u>	1992.03.31 ; Recertified 2003 ; (Exp: 2013.03.31)
(8) <u>American Board of Psychiatry and Neurology (ABPN) (Certificate 24)</u> <u>With Added Qualification in Neurodevelopmental Disabilities</u>	2001.04.03 (Exp: 2011.12.31)
(9) <u>Biofeedback Certification International Alliance (BCIA) (Certificate 5639)</u> <u>Certification in Neurofeedback (BCN)</u>	2013.06.08 (Exp: 2022.12.31)
(10) <u>QEEG Certification Board (Certificate D089)</u> <u>Certification in Quantitative Electroencephalography (QEEG-D)</u>	2013.09.20 (Exp: 2022.01.01)
(11) <u>American Board of Psychiatry and Neurology (ABPN) (Certificate 447)</u> <u>With Added Qualification in Epilepsy</u>	2013.10.28 (Exp: 2023.10.28)

LICENSURE:	Location	License Number:	Issue Date:	Expiration:
	South Carolina	19821	1997.11.19	2020.12.31 (active)
	Minnesota	67657	2020.06.25	2022.12.31 (active)
	Nebraska	16985	1985.06.03 / 2020.08.03	2022.12.31 (active)
	Pennsylvania	469759	2020.02.10	2022.12.31 (active)
	Tennessee	60490	2020.05.28	2022.12.31 (active)
	Virginia	44435	1989.09.01	2006.12.31 (inactive status)
	Washington	61012819	2020.04.06	2022.12.31 (active)

CONTROLLED SUBSTANCE REGISTRATIONS

DEA:	Location	Registration Number:	Schedule:	Issue Date:	Expiration:
	SC	BT6839887	2,2N,3,3N,4,5	2001.02.07	2020.11.30
	MN	FT9615343	2,2N,3,3N,4,5	2020.08.11	2023.11.30

DHEC:	Location	Registration #:	Schedule:	Issue Date:	Expiration:
	SC	20-19821	2,2N,3,3N,4,5	2000.05.23	2020.10.01

MILITARY SERVICE: None

FACULTY APPOINTMENTS:

<u>Years:</u>	<u>Rank:</u>	<u>Institution:</u>	<u>Departments:</u>
1990.07.01 – 1993.06.30	Assistant Professor	Medical College of Virginia Hospitals 1250 East Marshall Street Richmond VA 23219; Phone: 804.762.6161	Neurology and Pediatrics
1993.07.01 – 1997.06.30	Clinical Assistant Professor	Medical College of Virginia Hospitals 1250 East Marshall Street Richmond VA 23219; Phone: 804.762.6161	Neurology and Pediatrics
1997.07.01 – 2000.06.30	Clinical Assistant Professor	Medical University of South Carolina 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221	Neurology and Pediatrics
2000.07.01 – 2004.06.30	Assistant Professor	Medical University of South Carolina 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221	Neurology, Pediatrics, & Neurosurgery
2004.07.01 – 2010.06.30	Associate Professor	Medical University of South Carolina 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221	Neurosciences, Pediatrics, Biostatistics, Bioinformatics, & Epidemiology
2010.07.01 – 2012.06.30	Assoc. Professor with Tenure	Medical University of South Carolina 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221	Neurosciences, Pediatrics, and Biostatistics & Epidemiology
2012.07.01 – 2013.06.30	Assoc. Professor with Tenure	Medical University of South Carolina 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221	Neurosciences, Pediatrics, and Public Health Sciences
2003.07.01 – To Present	Associate Researcher	MIND Research Institute 111 Academy, Suite 100 Irvine CA 92617 Phone: 949.345.8700	Research Division, Irvine CA
2013.07.01 – 2014.06.30	Associate Clinical Professor	Medical University of South Carolina 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221	Neurosciences
2014.02.01 – To Present	Associate Professor of Clinical Pediatrics & Neurology	University of South Carolina School of Medicine (USC-SOM) Department of Pediatrics 9 Medical Park, Suite 200A Columbia SC 29203 Phone: 803.434.7950	Pediatrics and Neurosciences
2020.04.01 – To Present	Associate Professor of Clinical Pediatrics	Medical University of South Carolina Shawn Jenkins Children’s Hospital Department of Pediatrics Division of Pediatric Neurology 135 Rutledge Avenue Charleston SC 29425 Phone: 843.792-3307	Pediatrics Inpatient Pediatric Neurology Consultant

ADMINISTRATIVE APPOINTMENTS:

<u>Years:</u>	<u>Rank:</u>	<u>Institution/Department:</u>
1990.07.01- 1993.06.30	Director, Pediatric Neurology	Children's Hospital 2924 Brook Road Richmond VA 23220 Phone: 804.228.5818
1990.07.01- 1994.06.30	Associate Director, Muscular Dystrophy Association (MDA) Clinics	Children's Hospital 2924 Brook Road Richmond VA 23220 Phone: 804.228.5818
1994.07.01- 1997.06.30	Director, Clinical Neurophysiology	Children's Hospital 2924 Brook Road Richmond VA 23220 Phone: 804.228.5818
2002.07.01- 2004.06.30	Medical Director, MUSC Clinical Neurophysiology Laboratory	MUSC Neurology and Neurosurgery 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221
2002.07.01- 2006.06.30	Director, MUSC Pediatric Epilepsy Program	MUSC Neurosciences 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221
2006.07.01- 2008.06.30	Medical Director, MUSC Clinical Neurophysiology Laboratory	MUSC Neurosciences 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221
2011- Present	Gold Humanism Honor Society, MUSC Chapter Faculty Advisor	MUSC College of Medicine Dean's Office Clinical Sciences Building, Suite 601 Charleston SC 29403 Phone: 843.792.2081

HOSPITAL APPOINTMENTS / PRIVILEGES:

<u>Years:</u>	<u>Rank:</u>	<u>Institution:</u>	<u>Location:</u>
1990.07.01- 1993.06.30	Active	Medical College of Virginia Hospitals 1250 East Marshall Street Richmond VA 23219 Phone: 804.828.0445	Richmond VA
1993.07.01- 1997.06.30	Active	St Mary's Hospital (Bon Secours) 5801 Bremono Road Richmond VA 23226 Phone: 800.762.6161	Richmond VA
1993.07.01- 1997.06.30	Active	Henrico Doctor's Hospital 1602 Skipwith Road Richmond VA 23229 Phone: 804-289-4500	Richmond VA
1993.07.01- 1997.06.30	Active	Johnston-Willis Hospital 1401 Johnston Willis Drive Richmond VA 23235 Phone: 804.483.5000	Richmond VA
1993.07.01- 1997.06.30	Active	Chippenham Medical Center 7101 Jahnke Road Richmond VA 23225 Phone: 804.483.0000	Richmond VA
1993.07.01- 1997.06.30	Active	Children's Hospital of Richmond 2924 Brook Road Richmond VA 23220 Phone: 804.228.5818	Richmond VA
1993.07.01- 1997.06.30	Consulting	Richmond Memorial Hospital 1300 Westwood Avenue Richmond VA 23227 Phone: 804.254.6000	Richmond VA
1993.07.01- 1997.06.30	Consulting	Charter Westbrook Hospital 1500 Westbrook Avenue Richmond VA 23227 Phone: 804.266.9671	Richmond VA
1993.07.01- 1997.06.30	Consulting	Tucker Psychiatric Pavilion	Richmond VA
1993.07.01- 1997.06.30	Consulting	West End Behavioral Care (Psychiatric Institute)	Richmond VA
1993.07.01- 1997.06.30	Consulting	Cumberland Hospital for Children & Adolescents New Kent VA 23124	Cumberland VA
1993.07.01- 1997.06.30	Consulting	Medical College of Virginia Hospitals 1000 East Broad Street Richmond VA 23219 Phone: 804.828.0445	Richmond VA

HOSPITAL APPOINTMENTS / PRIVILEGES (con't):

<u>Years:</u>	<u>Rank:</u>	<u>Institution:</u>	<u>Location:</u>
2014.06.14 – Present	Community Faculty (non-admitting)	Bon Secours St Francis Hospital 2095 Henry Tecklenburg Drive Charleston SC 29414 Phone: 843.402.1000	Charleston SC
2014.05.28 – Present	Community Faculty (non-admitting)	Roper Hospital 316 Calhoun Street Charleston SC 29401 Phone: 843.724.2000	Charleston SC
2018.04.21 – Present	Community Faculty (non-admitting)	Mount Pleasant Hospital 3500 Highway 17 North Mt Pleasant SC 29644 Phone: 843.606.7000	Mt Pleasant SC
2019.10.20 – Present	Community Faculty (non-admitting)	HCA Trident/Summerville Medical Center 295 Midland Parkway Summerville SC 29485 Phone: 843-832-5000	Charleston SC
2020.04.01 – Present	Associate Professor of Clinical Pediatrics (non-admitting)	Medical University of South Carolina Shawn Jenkins Children's Hospital Department of Pediatrics Division of Pediatric Neurology 135 Rutledge Avenue Charleston SC 29425 Phone: 843.792-3307	Charleston SC

OTHER EXPERIENCE:

<u>Years:</u>	<u>Rank:</u>	<u>Institution:</u>	<u>Specialty:</u>
1993.07.01– 1997.06.30	Private Practice	Pediatric Neurology Associates PC 5875 Bremo Road, Suite 310 Richmond VA 23226 Phone: 804-287-7080	Pediatric Neurology, Epilepsy, and Neurophysiology
1997.10.01– 1999.12.31	Private Practice	Pediatric Neurology Consultants LLC P.O. Box Charleston SC 29464	Pediatric Neurology
2013.07.01- 2020.01.31	Private Practice	Network Neurology LLC 1941 Savage Road, Suite 100-E Charleston SC 29407 Phone: 843-735-5920	Pediatric Neurology, Epilepsy, EEG/qEEG, Neurophysiology, Neurofeedback, and Neuromodulation
2020.02.01- Present	Consulting Practice	Network Neurology Health LLC 2245-C Ashley Crossing Drive PMB 163 Charleston SC 29414 Phone: 843-670-1705	Inpatient Pediatric Neurology Consultant, Telemedicine Consulting in EEG/qEEG, Neurophysiology, Child Neurology, Neurofeedback, Neuromodulation, and Forensic Neurology (mTBI/Concussion)

Membership in Professional/Scientific Societies:

National-International Affiliations:

AACPDM: American Academy for Cerebral Palsy and Developmental Medicine
AAN: American Academy of Neurology, Associate Clinical Member
AAP: American Academy of Pediatrics, Fellow
AAEM: American Association of Electrodiagnostic Medicine, Fellow
ASAM: American Society of Addiction Medicine
ABCN: American Board of Clinical Neurophysiology, Associate Examiner
ABRET: American Board of Registration of EEG and EP Technologists, Inc., Examiner
ACNS: American Clinical Neurophysiology Society, Fellow
AES: American Epilepsy Society

AAPB: Association for Applied Psychophysiology and Biofeedback
BCIA: Biofeedback Certification International Alliance
CNS: Child Neurology Society, Member
ECNS: EEG and Clinical Neurophysiology Society
IHF: Innovative Health Foundation, Member of the Board
IBQE: International Board of Quantitative Electrophysiology, Member of the Board
ISNR: International Society for Neuroregulation and Research, Board Member-At-Large
IQCB: International QEEG Certification Board, Member of the Board
SBCNA: Southeast Biofeedback and Clinical Neurophysiology Association, Member of the Board

Local & State Affiliations:

Medical Campus Outreach, MUSC, Charleston SC
(1997-2013)
Robert Wilson Medical History Club, MUSC, Charleston SC
(1997-2013)
Waring Library Society, MUSC, Charleston SC
(1997-2013)
Quality Assurance/Medical Care Committee, Children's Hospital, Richmond VA
(1994-1997)
Physician Sub-Committee of the Corporate Planning Committee, Board of Trustees of Children's Hospital
(1994-1997)
Physician's Advocacy and Advisory Committee (PAAC) of the South Carolina Medical Association (SCMA)
(2000-Present)
South Carolina Recovering Professionals Program (SCRPP)
(2000-Present)
South Carolina Society of Addiction Medicine (SCSAM)
(2000-Present)

Editorial Positions: *Epilepsia* (Invited Reviewer)

Epilepsia Invited Reviewer 2005-Present
Journal of Child Neurology Invited Reviewer 2010-Present
Clinical EEG and Neuroscience Invited Reviewer 2019-Present

Extramural Research (ACTIVE and INACTIVE):

ACTIVE:

Funding Organization: Dr Caroline Leaf (www.DrLeaf.com)	Co-PI
PI: Robert P Turner MD MSCR (\$12,000) eIRB: Sterling IRB ID# 7281-RPTurner; Protocol #NN-2019-01 UDAK: MUCU 2258000 27511 7125 00 Location: Network Neurology LLC, Charleston SC Title: Psychological and Neurophysiological effects of a non-pharmacological intervention in subjects with mental health and neurological symptoms	01/2019-Current

Extramural Research (ACTIVE and INACTIVE):

Funding Organization: MIND Research Institute and MUSC Neurosciences (renewal)	PI
PI: Robert P. Turner, MD, MSCR (\$54000) eIRB: Pro00007683 UDAK: MUCU 2258000 27511 7125 00 Location: MUSC, Charleston, SC Title: Prevention of photoparoxysmal abnormalities through patterned auditory stimulation	03/2012-02/2014
Funding Organization: MIND Research Institute and MUSC Neurosciences	PI
PI: Robert P. Turner, MD, MSCR (\$60000) eIRB: Pro00007683 UDAK: MUCU 2258000 27511 7125 00, MUSC, Charleston, SC Title: Prevention of photoparoxysmal abnormalities through patterned auditory stimulation	01/2010-02/2012
RO1 NS 052448	Co-Investigator
PI: Dorothea Jenkins, MD Safety of N-Acetylcysteine in Maternal Chorioamnionitis Role: Co-Investigator (EEG Interpretation) (Pediatric Epileptologist/Clinical Neurophysiologist)	2007– 2012
Epilepsy Protocol #K826-05-3001	Co-Investigator
PI: Jonathan J. Halford, MD; King Pharmaceuticals, Inc. Title: 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, Pts w Epilepsy who Require Intermittent Medical Intervention to Control Episodes of Acute Repetitive Seizures.	
Epilepsy Protocol #E2007-G000-304	Co-Investigator
PI: Jonathan J. Halford, MD; Eisai Medical Research, Inc. Title: 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	
Epilepsy Protocol #E2007-G000-307	Co-Investigator
PI: Jonathan J. Halford, MD; Eisai Medical Research, Inc. Title: A 14-Month Open-Label Extension Phase of the Double-Blind, Placebo-Controlled, Dose-Escalation, Parallel-Group Studies to Evaluate the Efficacy and Safety of E2007 (perampanel) Given as Adjunctive Therapy in Subjects with Refractory Partial Seizures	
Epilepsy Protocol #CARIS-EPY-3013/3014	Co-Investigator
PI: Jonathan J. Halford, MD; Johnson & Johnson Pharmaceutical Research & Development, LLC Title: Carisepin in Epilepsy	
Neuroradiology Protocol #MH 110 (HR# 16540)	Co-Investigator
PI: Zoran Rumboldt, MD; Bracco Diagnostics, Inc. Title: A Phase III, Multi-Center, Open-Label Study to Evaluate Safety And Efficacy Of Multihance at the Dose of 0.10 Mmol/Kg In Magnetic Resonance Imaging In The Central Nervous System in Pediatric Patients	
Funding Organization: MUSC University Research Committee, Fundable Score 1.47 (11/18/03)	
PI: Robert P. Turner, MD, MSCR (\$6500) Location: MUSC Inpatient GCRC Title: The effect of music periodicity on interictal epileptiform discharges (IEDs)	12/2003-10/2006 Data Analysis

Extramural Research (ACTIVE and INACTIVE):

Funding Organization: M.I.N.D. Research Institute and MUSC Neurosciences Data analysis

PI: Robert P. Turner, MD, MSCR (\$47500) 09/2005-08/2007

Location: Thad E. Saleeby Center, Hartsville, SC

Title: The generalized Mozart effect in reducing seizures in individuals with special needs

RO1 CA 78-957-01A1 Ronald T. Brown, PhD (PI) 1999 – 2004 Co-Investigator

NIH/NCI (National Cancer Institute) Learning Impairments Among Survivors of Childhood Cancer

MEMFX2 (Long-Term Effectiveness of MPH in Survivors of Childhood Brain Tumors & Leukemia)

Multi-site investigation: St. Jude Children's Research Hospital; Duke University Medical Center

Role: Co-Investigator (Pediatric Neurologist)

U17/CCU421926-01 Anbesaw W. Selassie, DrPH (PI) 8/1/02 - 7/31/05 Co-Investigator

CDC/NCIPC (National Center for Injury Prevention and Control)

SC TBIFR (The South Carolina Traumatic Brain Injury Follow-up Registry)

Role: Co-Investigator (Neurologist/Epileptologist)

U17/CCU421926-01 Anbesaw W. Selassie, DrPH (PI) 8/1/02 - 7/31/05 Co-Investigator

CDC/NCIPC (National Center for Injury Prevention and Control)

SC TBIFR – SSA Subproject (Subproject of the SSA assessment of SSI/SSDI assistance after TBI)

Role: Co-Investigator (Neurologist/Epileptologist)

MM-0304-03/03 Anbesaw W. Selassie, DrPH (PI) 2004-2008 Consultant

CDC/NCIPC (National Center for Injury Prevention and Control)

SC EESD (South Carolina Epidemiological Studies of Epilepsy and Seizure Disorders)

Role: Co-Investigator (Neurologist/Epileptologist)

MM-0685-04/04 Anbesaw W. Selassie, DrPH (PI) 2004-2008 Consultant

CDC/NCIPC

SC HOPE (South Carolina Health Outcome Project on Epilepsy)

Role: Co-Investigator (Neurologist/Epileptologist)

Awards, Honors, Memberships in Honorary Societies:

Years:	Honor/Award:
1973-1976	National Honor Society, Westside High School
1973-1976	Junior Davis Cup Tennis Team, United States Central Region
1974	National Honor Award for Piano Performance, National Federation of Music Clubs
1975	National Honor Award for Piano Performance, National Federation of Music Clubs
1975-1976	Golden Jubilee National Music Award for Piano Performance, College of St Mary
1975-1976	National Merit Scholar, Westside High School
1976-1978	Academic, Science, and Music Scholarships, Hastings College
1976-1978	Dean's List, Hastings College
1977-1978	Outstanding Sophomore, National Honorary Society, Chapter of Alpha Chi, Hastings College
1978-1980	University of Nebraska Honors Program, Full Member
1979-1980	Who's Who Among Students in American Colleges & Universities
1976-1980	Magna Cum Laude , Bachelor of Arts With Honors , University of Nebraska at Omaha
1984-1985	UNMC Clerkship Committee Award for Outstanding Contributions to Medical Student Education
1989-1990	Who's Who in American Christian Leadership – American Christian Leadership Council
1990-1991	Who's Who Among Rising Young Americans - Citation
1992-1993	Who's Who in Health and Medical Services - West
1992-1993	Who's Who Among Rising Young Americans - Citation
1992-Present	Examiner, American Board of Clinical Neurophysiology
1994-1995	Who's Who Worldwide - Who's Who Worldwide Registry, Inc.
1996-1997	Best Doctors in America, Southeast Region - Richmond VA
2000-2001	2001 Faculty Excellence Award , Outstanding Attending, 1 st runner up, MUSC Class of 2001
2002-2003	2003 Faculty Excellence Award , Outstanding Attending Finalist, MUSC Class of 2003
2002-2003	Honored Member, Strathmore's Who's Who
2004	2004 Faculty Excellence Award , Outstanding Attending Finalist, MUSC Class of 2004
2004	2004 Oath Address , 2004 College of Medicine Oath Ceremony, May 20, 2004
2004	AREA Award (Accountability/Respect/Excellence/Adaptability), 2004, UMA-MUHA Ambulatory Services
2005	2005 Faculty Excellence Award , Outstanding Attending Finalist, MUSC Class of 2005, 2006, and 2007
2005	2005 Golden Apple Award Nominee – MUSC AMSA and College Of Medicine
2006	2006 Faculty Excellence Award , Faculty Excellence Committee, MUSC Class of 2007
2008	MUSC-MUHA Physician of the Month , February 2008
2008	Candidate Marshall, MUSC 179 th Commencement, 16 May 2008
2008	MUSC College of Medicine Teacher of the Month , November 2008
2008	MUSC College of Medicine Teacher of the Month , December 2008
2009	2009 Golden Apple Award Winner – MUSC AMSA and College Of Medicine, MUSC Classes of 2010 & 2011
2009	2009 AAMC Humanism in Medicine Award - MUSC COM Nominee: 1 st – 4 th year classes
2009	2009 Faculty Excellence Award , Faculty Excellence Committee, MUSC Classes of 2009-2010
2009	MUSC College of Medicine Teacher of the Month , September 2009
2009	Tenure granted by MUSC Board of Trustees (December 2009)
2010	2010 Faculty Excellence Award , Nominee/Finalist, Faculty Excellence Committee, MUSC Classes of 2010-2011
2010	2010 Leonard Tow Humanism in Medicine Award (Arnold P. Gold Foundation)
2011-Present	Chapter Advisor, Paul B. Underwood MUSC Gold Humanism Honor Society
2012	MUSC College of Medicine Teacher of the Month , January 2012
2012	MUSC College of Medicine Teacher of the Month , February 2012
2012	White Coat Ceremony, MUSC COM Class of 2016
2013	MUSC College of Medicine Teacher of the Month , January 2013
2013	2013 Compassionate Doctor Award (Patients' Choice Registry)

Community Service:

Physician Advocacy and Assistance Committee (PAAC) of the South Carolina Medical Association (SCMA)

Caduceus Groups, South Carolina Recovering Professional Program (SCRPP)

Charleston Running Club, Active Member

Area 62 South Carolina Alcoholics Anonymous - Area 62 Archivist

Area 62 South Carolina Alcoholics Anonymous - District 70 Alternate Treasurer

Character Training Seminars, Institute for Basic Life Principles, Dorchester County Jail

Palmetto Medical Initiative, Macindi, Uganda

Mayor's Charleston Youth Summit, Mayor Joe Riley

Interdenominational Medical Missionary Work, Tegucigalpa, Honduras

Board of Directors, Rainbow Games, Inc, Richmond VA (1987-1997)

Medical Advisory Board, Family Policy Council, Inc. (1987-1997)

Major Clinical Interests:

Clinical Research and Trials for non-invasive neuromodulation therapies for persons with intractable epilepsy
and other neurological dysfunctions

Clinical, Teaching, and Research in Quantitative Electroencephalography Functional Neuroimaging in Clinical Practice

Clinical Research in Pediatric Epilepsy

Clinical Teaching in Neurology and Dynamic Neuroanatomy, Neurophysiology, Neuro-Dynamics, and Neuro-Connectomics

Clinical Research in Theology, Spirituality, and Health

Mechanisms and Novel Non-Invasive Treatments of Pediatric Epilepsy and Epileptogenesis

Clinical Neurophysiology and Monitoring of the Nervous System and Clinical Neurophysiology the Human EEG

Extramural Professional Activities:

Examiner, American Board of Clinical Neurophysiology, Inc. (ABCN)

Examiner, American Board of Registration of Electroencephalographic & Evoked Potential Technologists, Inc. (ABRET)

Member, Physician Advocacy and Assistance Committee (PAAC) of the South Carolina Medical

Member, Association Family Health Scientific Research Board, Growing Families International

Member Medical Advisory Board, Crafty K-9 (seizure-alert, protection, and therapy dogs)

UNIVERSITY, RESIDENCY, and FELLOWSHIP ACADEMIC ACHIEVEMENTS (1976-1990):

University of Nebraska Honors Program (1976-1980)

Senior Thesis (Dr Rosalie Saltzman):	Medicine of the Whole Person
Honors Program Thesis (Dr Rosalie Saltzman):	Biblical and Talmudic Medicine: Medical and Ethical Aspects
Senior Project (Dr Gordon Mundell):	Polyglot Aphasia: Clinical and Rehabilitative Aspects
International Economics Project (Dr Donald Joy):	Business and Ethics
Senior Piano Recital (Dr Clarke Mullen):	Baroque, Romantic, and Classical 90 minute Program

Department of Pediatrics, University of Nebraska Medical Center, Non-Published Clinical Studies (1984-1986)

Immunology (Dr Roger Kobiashi):	Clinical Aspects Rubella Vaccination and Immunity
Ambulatory Pediatrics (Dr Carol Angle):	Standardization of Routine Health Care, Birth – 20 Years
Neonatology (Dr Robert Nelson):	Standardization of Normal Newborn Care

Department of Neurology, Medical College of Virginia, Areas of Clinical Interest / Research (1986-1990)

Experimental Protocol Drug Study in Dialysis Patients (Co-PI: Drs Dominca Sica and Robert Leshner)

Cooperative Aneurysm Study of Nicardipine in Subarachnoid Hemorrhage (PI: Dr Paul Muizelaar)

Safety of Intravenous Valproate in Children (PI: Dr John “Jack” M Pellock)

Epidemiology and Outcome of Febrile Status Epilepticus in Twins (PI: Drs John “Jack” M Pellock and Robert DeLorenzo)

Use of Lioresal Intrathecal in the Management of Spastic Cerebral Palsy (PI: Dr John Ward)

Selective Dorsal Rootlet Rhizotomy in the Management of Spasticity (PI: Drs John Ward and Robert Leshner)

Abstract: Pseudo-pseudo-ulnar Clawing: A Presentation of C8 Radiculopathies, presented at the American Academy of Neurology Annual Meeting, April 1990, Poster Session (Mentor: Dr William Campbell)

Medical Student Mentoring/Advisor/Instructor: 3rd - 4th year COM Students:

- 2003 Benjamin B. Elder (**Class of 2004: Faculty Advisor**)
2003 J. Michael Stone (**Class of 2004: Faculty Advisor**)
2005-2006 Christopher Bowers (Epilepsy Research Assistant)
2005 Eboni I. Lance (Class of 2007: Pediatric Epilepsy Rotation)
2005 Laura Taylor (Class of 2007: Pediatric Epilepsy Rotation)
2005 Lara C. Lambert (Class of 2007: Pediatric Epilepsy Rotation)
2006 Erin Bailey (Class of 2008: Pediatric Epilepsy Rotation)
2006 Elisabeth Bowden (Class of 2008: Pediatric Epilepsy Rotation)
2006-2008 Caroline Norment (Epilepsy Research Assistant)
2007 Joshua M. Henry (Class of 2009: Pediatric Epilepsy Rotation)
2007 Sarah Coker (Class of 2009: Pediatric Epilepsy Rotation)
2007 Matthew Kappus (Class of 2009: Pediatric Epilepsy Rotation)
2008 Maggie R. Pierson (Class of 2009: Pediatric Epilepsy Rotation)
2008 Ashley L. Kuklantz (Class of 2010: Pediatric Epilepsy Rotation)
2008 Laura Martin (Class of 2012: Epilepsy/Music Research)
2008 Jennifer L. Zurosky (**Class of 2010: Faculty Advisor**)
2008 Joshua L. Fuller (**Class of 2010: Faculty Advisor**)
2009-2010 Sarah Beth Hughes (Epilepsy Research Assistant)
2009 Neal Goodbar (Class of 2010: Pediatric Epilepsy Rotation)
2009 Annie Chen (Class of 2010: Pediatric Epilepsy Rotation)
2009 Tamara Johnson (Class of 2010: Pediatric Epilepsy Rotation)
2009 Stuart Saunders (Class of 2010: Pediatric Epilepsy Rotation)
2009 Megan A. White (Class of 2010: Pediatric Epilepsy Rotation)
2009 Ashley Kaiser-Rickey (Class of 2010: Pediatric Epilepsy Rotation)
2009 Stetson Bickley (Class of 2010: Pediatric Epilepsy Rotation)
2009 Annie Chen (Class of 2010: Pediatric Epilepsy Research Elective – Poster & Paper)
2009 Joshua L. Fuller (Class of 2010: Pediatric Epilepsy Rotation)
2009 Jennifer L. Zurosky (Class of 2010: Pediatric Epilepsy Rotation)
2009 Blakely Andrews (Class of 2011: Pediatric Epilepsy Rotation)
2009 Charles “Chas” Peyton (Class of 2011: Pediatric Epilepsy Rotation)
2010-2011 Lee Anne Tetrick (Epilepsy Research Assistant)
2010 Sarah Bishop (Class of 2010: Pediatric Epilepsy Rotation)
2010 William “Billy” Grimes (Class of 2011: Pediatric Epilepsy Rotation)
2010 Morgan Glass (Class of 2010: Pediatric Epilepsy Rotation)
2010 Erek Majek (Class of 2011: Pediatric Epilepsy Rotation)
2010 Jefferson “Naylor” Brownell (Class of 2011: Pediatric Epilepsy Rotation)
2010 John Hungerford (Class of 2011: Pediatric Epilepsy Rotation)
2010 Robert Bolen (Class of 2011: Pediatric Epilepsy Rotation)
2010 Wade Reardon (Class of 2011: Pediatric Epilepsy Rotation)
2010 Day Burruss (Class of 2011: Pediatric Epilepsy Rotation)
2010 Day Burruss (**Class of 2011: Faculty Advisor**)
2010 William Berglind (**Class of 2012: Faculty Advisor**)
2011 Letitia Bolds (Class of 2011: Pediatric Epilepsy/Neurology Rotation)
2011 Nadia Roessler (Class of 2012: Pediatric Epilepsy Rotation – Visiting Student, France)
2012 Fernando Nicholas “Nick” Galan (**Class of 2013: Faculty Advisor**)
2012 David Matthew Braddy (**Class of 2013: Faculty Advisor**)
2012 Bobbi Jean Dulcie (**Class of 2013: Faculty Advisor**)
2012 Jonathan William Brock (**Class of 2013: Faculty Advisor & GHHS Mentor**)
2012 Justin Douglas Moody (**Class of 2013: Faculty Advisor & GHHS Mentor, Hooding Ceremony**)
2012 Leah Danielle Fryml (**Class of 2013: Faculty Advisor; Hooding Ceremony**)
2013 Catherine “Catie” Haar (**Class of 2014: Faculty Advisor**)
2013 Armina T Omole (**Class of 2014: Faculty Advisor**)
2013 Jason Jamier Bethea (**Class of 2014: Faculty Advisor**)
2014 Greg Franklin (**Class of 2016: Faculty Advisor**)

Peer-Reviewed Journal Articles, Abstracts, Reviews, and Letters to the Editor:

Swatzyna RJ, Arns M, Tarnow JD, **Turner RP**, Barr E, MacImerney EK, Hoffman AM, Boutros NN. Isolated Epileptiform Activity in Children and Adolescents: Prevalence, Relevance, and Implications for Treatment. *European Child & Adolescent Psychiatry* June 2020.

Turner RP. Clinical Application of Combined EEG-qEEG Functional Neuroimaging in the Practice of Pediatric Neuroscience. *Clinical EEG & Neuroscience* October 2019.

Swatzyna RJ, Tarnow JD, **Turner RP**, et al. The Treatment of Children and Adolescents with Interictal Epileptiform Discharges: A Pharmac-EEG Model. August 2019.

Tarnow JD, **Turner RP**, Swatzyna RJ, Kozlowski G, et al. Integration of EEG into Psychiatric Practice: A Step Toward Precision Medicine for Autism Spectrum Disorder. *Journal of Clinical Neurophysiology* 34(3):1. November 2016.

Jenkins DD, Wiest DB, **Turner RP**, et al. Fetal and Neonatal Effects of N-Acetylcysteine When Used for Neuroprotection in Maternal Chorioamnionitis. *The Journal of Pediatrics* (www.JPeds.com) 2016;168:67-76.

Turner RP. The Neurofeedback Book: An Introduction to Basic Concepts in Applied Psychophysiology – Review. *Biofeedback* Spring 2016, Volume 44, Issue 1, pp 50-52. DOI: 10.5298/1081-5937-44.1.09.

Cronjé FJ, Sommers LS, Faulkner JK, Meintjes WAJ, Van Wijk CH, **Turner RP**. Effect of a faith-based education seminar on self-assessed physical, mental and spiritual (religious) health. *International Journal of Psychiatry in Medicine* January 2013.
Journal of Religion and Health 2015.

ABSTRACT: Introduction: This study measured the effect of faith-based education on self-assessed physical, mental & spiritual health.

Methods: While pre-registering for a 5-day, faith-based education seminar, individuals without prior exposure were invited to complete an on-line survey made up of (1) the Duke University Religion Index (DUREL); (2) Negative Religious Coping (RCOPE); (3) Perceived Stress Scale (PSS); (4) Center for Epidemiology and Statistics - Depression Scale (CES-D); (5) Brief Illness Perception Questionnaire (BIPQ); and (6) State Trait Anxiety Inventory (STAI).

The survey was repeated after ± 10 days on-site on the last day of the seminar and off-site after 30 & 90 days respectively. Of the 655 invited, 139 declined; 431 responded but failed to meet all inclusion criteria; 85 (47♂; 38♀; range: 18-75 yrs) were eligible and their data analyzed: 49 (4 surveys); 23 (3 surveys) & 13 (2 surveys). There was no solicitation other than a single e-mail reminder.

The study was approved by the Human Research Ethics Committee of the Univ of Stellenbosch, South Africa.

Results: Median values of all indices dropped significantly immediately following the seminar (STAI for State $p < 0.0001$ & Trait Anxiety $p < 0.0001$; PSS $p < 0.0001$; BIPQ $p < 0.0001$; and CES-D $p < 0.0001$). Changes were sustained over 3 months. No significant changes occurred after the 2nd survey. Differential changes in RCOPE reflected the seminar content. DUREL did not change significantly.

Discussion: The study supports the hypothesis that this faith-based seminar has a lasting statistically & clinically significant effect on self-assessed spiritual, mental and physical health parameters. Keywords: religion, mental health.

Turner R, Bodner M, Bowers C, Norment C. Reduction of Seizure Occurrence from Exposure to Auditory Stimulation in Individuals with Neurological Handicaps: A Randomized Controlled Trial. *PLoS ONE*. 11 October 2012.

ABSTRACT: Background: The purpose of this work was to determine in a clinical trial the efficacy of reducing or preventing seizures in patients with neurological handicaps through sustained cortical activation evoked by passive exposure to a specific auditory stimulus (particular music). The specific type of stimulation had been determined in previous studies to evoke anti-epileptiform/anti-seizure brain activity.

Methods: The study was conducted at the Thad E. Saleeby Center in Harshville, South Carolina, which is a permanent residence for individuals with heterogeneous neurological impairments, many with epilepsy. We investigated the ability to reduce or prevent seizures in subjects through cortical stimulation from sustained passive nightly exposure to a specific auditory stimulus (music) in a three-year randomized controlled study. In year 1, baseline seizure rates were established. In year 2, subjects were randomly assigned to treatment and control groups. Treatment group subjects were exposed during sleeping hours to specific music at regular intervals. Control subjects received no music exposure and were maintained on regular anti-seizure medication. In year 3, music treatment was terminated and seizure rates followed. We found a significant treatment effect ($p = 0.024$) during the treatment phase persisting through the follow-up phase ($p = 0.002$). Subjects exposed to treatment exhibited a significant 24% decrease in seizures during the treatment phase, and a 33% decrease persisting through the follow-up phase. Twenty-four percent of treatment subjects exhibited a complete absence of seizures during treatment.

Conclusion/Significance: Exposure to specific auditory stimuli (i.e. music) can significantly reduce seizures in subjects with a range of epilepsy and seizure types, in some cases achieving a complete cessation of seizures. These results are consistent with previous work showing reductions in epileptiform activity from particular music exposure and offers potential for achieving a non-invasive, non-pharmacologic treatment of epilepsy. **Trial Registration:** www.Clinicaltrials.gov NCT01459692.

Halford JJ, Schalkoff RJ, Zhou J, Benbadis SR, Tatum WO, **Turner RP**, Sinha S, Fountain NB, Arain A, et al. Standardized Database Development for EEG Epileptiform Transient Detection: EEGnet Scoring System and Machine Learning Analysis.

Journal of Neurosciences Methods. Volume 212, Issue 2, 30 January 2013, Pages 308-316.

ABSTRACT: The routine scalp electroencephalogram (rsEEG) is the most common clinical neurophysiology procedure. The most important role of rsEEG is to detect evidence of epilepsy, in the form of epileptiform transients (ETs), also known as spike or sharp wave discharges. Due to the wide variety of morphologies of ETs and their similarity to artifacts and waves that are part of the normal background activity, the task of ET detection is difficult and mistakes are frequently made. The development of reliable computerized detection of ETs in the EEG could assist physicians in interpreting rsEEGs. We report progress in developing a standardized database for testing and training ET detection algorithms. We describe a new version of our EEGnet software system for collecting expert opinion on EEG datasets, a completely web-browser based system. We report results of EEG scoring from a group of 11 board-certified academic clinical neurophysiologists who annotated 30-s excerpts from rsEEG recordings from 100 different patients. The scorers had moderate inter-scorer reliability and low to moderate intra-scorer reliability. In order to measure the optimal size of this standardized rsEEG database, we used machine learning models to classify paroxysmal EEG activity in our database into ET and non-ET classes. Based on our results, it appears that our database will need to be larger than its current size. Also, our non-parametric classifier, an artificial neural network, performed better than our parametric Bayesian classifier. Of our feature sets, the wavelet feature set proved most useful for classification.

Halford J, Waters CG, Wolfe BJ, Benbadis SR, Tatum WO, **Turner RP**, Arain A, Fountain N, Sinha SR, et al. Comparison of Binary & Ordinal Scoring for Epileptiform Transient Detection.

American Epilepsy Society 2012 Annual Meeting Abstract

ABSTRACT: RATIONALE: Reliable computerized detection of epileptiform transients (ETs), characterized by interictal spikes and sharp waves in the electroencephalogram (EEG), is a useful goal since this would assist physicians in reviewing scalp EEG recordings. It is our goal to create standardized datasets to help train automated ET detection algorithms. In this study, we used EEGnet, a distributed web-based platform for the analysis of scalp EEG recordings to compare the inter-rater reliability for marking ETs. Two different methods of scoring were compared. The first method involved labeling paroxysmal activity as either epileptiform or non-epileptiform (binary scoring). The second method involved labeling paroxysmal activity on a scale of 0-4, depending on the degree of epileptiform appearance (ordinal scoring).

METHODS: One hundred 30-second routine scalp EEG segments from 100 different patients were selected for analysis. Fifty of these segments were selected because they contained ETs from patients with known epilepsy and the other fifty were selected because they contained benign paroxysmal activity (exaggerated alpha activity, wicket spikes, and small sharp spikes) which could easily be misinterpreted by an inexperienced reviewer. Scoring was performed in three phases by ACNS board certified academic neurophysiologists. In the first phase, seven scorers marked all of the paroxysmal activity in the segments (including epileptiform activity, other EEG activity, and artifacts). In the second phase, eleven scorers marked each paroxysmal event as either artifact, epileptiform activity, or non-epileptiform EEG activity. In the third phase, the eleven scorers categorized all of the events marked by at least one scorer (in phase two) as epileptiform as well as some randomly-selected non-epileptiform events as either non-epileptiform, or epileptiform on a scale of 1-4. For inter-rater analysis, we examined all pair-wise rater agreement scores using the kappa statistic and generated a composite score based on the average agreement score across all pairs for both the binary and the ordinal data, using Cicchetti-Allison weights. We also calculated the reliability coefficient described in Wilson et al (1996) using the Spearman correlation.

RESULTS: The average kappa value for the data with binary scores was 0.40 +/- 0.12 with correlations with a range of 0.12-0.59. The average kappa value for the data with ordinal scores was 0.42 +/- 0.078 with a range of 0.30-0.62. The kappa values were not significantly different between the binary and ordinal scoring, but the variability of the kappa values were greater for the binary in comparison to the ordinal scoring data. The reliability coefficient was not significantly different for the binary scoring method (0.89) compared to the ordinal scoring method (0.91).

CONCLUSIONS: Inter-rater agreement for categorizing paroxysmal activity as epileptiform activity was moderate. The inter-rater agreement for binary and ordinal scoring were not significantly different, although there was decreased variability for the ordinal scoring.

Hudspeth MP, **Turner RP**, Dixon TC, Ragucci DP. Severe pruritus and hypothermia as the primary manifestations of Human Herpes Virus-6 encephalitis after pediatric cord blood transplantation (Letter to the Editor).

Bone Marrow Transplantation 2012. 47:153-154.

Halford JJ, Pressly WB, Benbadis SR, Tatum WO, **Turner RP**, Arain A, Pritchard PB, Edwards JE, Dean BC. Web-based collection of expert opinion on routine scalp EEG: Software Development and Interrater Reliability.

Journal of Clinical Neurophysiology 2011;28(2):178-84.

ABSTRACT: Computerized detection of epileptiform transients (ETs), characterized by interictal spikes and sharp waves in the EEG, has been a research goal for the last 40 years. A reliable method for detecting ETs would assist physicians in interpretation and improve efficiency in reviewing long-term EEG recordings. Computer algorithms developed thus far for detecting ETs are not as reliable as human experts, primarily due to the large number of false-positive detections. Comparing the performance of different algorithms is difficult because each study uses individual EEG test datasets. In this article, we present EEGnet, a distributed web-based platform for the acquisition and analysis of large-scale training datasets for comparison of different EEG ET detection algorithms. This software allows EEG scorers to log in through the web, mark EEG segments of interest, and categorize segments of interest using a conventional clinical EEG user interface. This software platform was used by seven board-certified academic epileptologists to score 40 short 30-second EEG segments from 40 patients, half containing ETs and half containing artifacts and normal variants. The software performance was adequate. Interrater reliability for marking the location of paroxysmal activity was low. Interrater reliability of marking artifacts and ETs was high and moderate, respectively.

Barley JL, Mooney JF, Glazier SS, Johnson T, Kornegay AL, **Turner RP**, Edwards JC. Sudden Appearance of New Upper Extremity Motor Function While Performing Neurophysiologic Intraoperative Monitoring During Tethered Cord Release: A Case Report.

Journal of Pediatric Orthopaedics September 2010;30(6)624-28.

ABSTRACT: Tethered cord syndrome occurs when the distal spinal cord or filum adheres to adjacent structures resulting in progressive sensorimotor deficits in the lower extremities, fecal and/or urinary incontinence, and musculoskeletal deformities. Tethering of the distal cord may be idiopathic, may be associated with an intraspinal abnormality such as a lipoma, but most commonly the distal spinal cord remnant is adherent to the area of the original dysraphism repair in patients with myelodysplasia. Surgery to untether the cord is indicated in patients with worsening pain symptoms, progressive limb deformity or spasticity, or before any acute correction of an associated spinal deformity. Neurophysiologic intraoperative monitoring is used to minimize the risk of inadvertent nerve root or spinal cord injury during the untethering procedure and to assess any changes in cord function at the time of an associated spinal deformity correction. We present a patient with a lumbar level myelodysplasia, Chiari II malformation, severe scoliosis, and tethered cord that underwent concurrent scoliosis correction and tethered cord syndrome surgery, who demonstrated immediate intraoperative improvement in neurophysiologic responses in a previously flaccid upper extremity after untethering. These monitoring changes correlated with clinical improvements noted by physicians and family postoperatively.

Turner RP. Neurophysiologic Intraoperative Monitoring during Selective Dorsal Rhizotomy.

Journal of Clinical Neurophysiology 2009;26(2)82-84.

ABSTRACT: Selective dorsal rootlet rhizotomy (SDR) is a neurosurgical procedure designed to reduce spasticity in the legs, although preserving motor and sensory function, of appropriately selected children with spastic quadraparesis. This is accomplished by neurophysiologically guided (e.g., selective) severing of specific dorsal rootlets in the cauda equina. This decreases facilitatory input to spinal anterior motor neurons, thereby reducing spasticity in the legs. This first portion of this article discusses the neurophysiologic intraoperative monitoring techniques during SDR, with the understanding that there are no universally agreed upon protocols nor standards of care. The second portion of the article reviews supporting data for the utility of SDR and long-term outcomes. With major benefits attributed to the selective nature of the procedure, SDR was increasingly used in the 1980-1990's after its introduction by Fasano et al. (*Neurochirurgie*. 1976;22:23-34; *Acta Neurochir*. 1977;suppl 24:53-57; *Child's Brain*. 1978;4:289-305) and revision by Peacock and colleagues (*S Afr Med J*. 1981;60:849-850; *S Afr Med J*. 1982;62:119-124). More extensive SDR discussions of its history, theoretical and physiological bases, patient selection criteria, neurosurgical techniques, and postoperative and long-term management, may be found elsewhere.

Bahdori HR. Williams VC. **Turner RP**. Rumboldt Z. Reigart JR. Fowler SL. Chavis PS. Maria BL.

Acute disseminated encephalomyelitis following infectious mononucleosis.

Journal of Child Neurology, March 2007;22(3):324-8.

ABSTRACT: Two months following an Epstein-Barr virus infection, a 17-year-old white female presented with seizures, intermittent visual changes, and altered mental status. Magnetic resonance imaging showed white matter changes of acute disseminated encephalomyelitis with a predilection for posterior cerebral artery distributions but without radiological evidence of arteritis. Epstein-Barr virus titers and polymerase chain reaction analysis results for the virus were consistent with postinfectious acute disseminated encephalomyelitis. The symptoms and signs improved following treatment with high-dose corticosteroids and intravenous immunoglobulin. Although Epstein-Barr virus can cause acute viral encephalomyelitis, the authors report a case of acute disseminated encephalomyelitis months after acute Epstein-Barr virus infection.

Li Z, **Turner RP**, Smith G. Childhood paroxysmal kinesigenic dyskinesia: Report of 7 cases with early age onset.

Epilepsy & Behavior 2005;6:435-439.

ABSTRACT: We report on seven children who developed abnormal involuntary movements as early as 11½ years after unremarkable term births. The paroxysmal episodes of abnormal movements were typically precipitated by sudden, voluntary movements, or a startle. The clinical features in each case were consistent with the diagnosis of paroxysmal kinesigenic dyskinesia (PKD). The episodes of abnormal movements are described. EEG was obtained in all cases, and video/electroencephalography (VEEG) monitoring was performed to exclude the possibility of epilepsy in six patients. VEEG studies revealed multiple events consistent with PKD; no ictal epileptiform discharges were recorded. The apparent benign nature of the disorder, as well as treatment options with antiepileptic drugs, was discussed with the parents, and most chose no pharmacologic treatment. We discuss clinical characteristics of PKD, treatment with anticonvulsant therapy, and recent insights into its possible pathophysiology.

Turner RP. The acute effect of music on interictal epileptiform discharges.

Epilepsy & Behavior 2004;5:662-668.

ABSTRACT: This study was a prospective, randomized, single-blinded, crossover, placebo-controlled, pilot clinical trial investigating the effect of Mozart's Sonata for Two Pianos (K448) on the frequency of interictal epileptiform discharges (IEDs) from the EEGs of children with benign childhood epilepsy with centrotemporal spikes, or "rolandic" epilepsy. The goal was to demonstrate decreased frequency of IEDs with exposure to K448. Four subjects were recruited and 4-hour awake EEG recordings performed. IED frequency per minute was averaged over each of three epochs per hour. Mean IED count per epoch, standard deviations, and variance were calculated. Only complete waking epochs were analyzed. Two subjects demonstrated sufficient waking IEDs for statistical analysis, consisting of three epochs of K448-related effects. Significant decreases in IEDs per minute (33.7, 50.6, and 33.9%) were demonstrated comparing baseline with exposure to K448, but not to control music (Beethoven's Für Elise).

Li Z and Turner RP. Pediatric Tick Paralysis: Discussion of two cases and literature review. *Pediatric Neurology* 2004;31(4):304-307.

ABSTRACT: This report describes two cases of tick paralysis in children diagnosed within a 3-month period (May-July 2002) in rural South Carolina. Differing presenting symptoms consisted of acute onset of ataxia in one patient and acute ascending paralysis in the other. Ticks were present on the scalp of both patients and were removed immediately. Both girls demonstrated improvement of signs and symptoms within hours and complete recovery within 24 hours of tick removal. The diagnosis of tick paralysis must be considered in any patient, particularly children, who present with either acute ataxia or acute ascending paralysis. As in any clinical encounter, careful history and thorough general and neurologic examinations must be performed to exclude the possibility of tick attachment.

Turner RP. Can a Piano Sonata Help Children with Epilepsy? *Neurology Reviews* 2004; Mar; 12(3):13.

Wildi SM, Cox MH, Clark LL, Turner RP, Hawes RH, Hoffman BJ, Wallace MB. Assessment of health state utilities and quality of life in patients with malignant esophageal dysphagia. *American Journal of Gastroenterology* 2004;99(6):1044-49.

ABSTRACT: OBJECTIVES: Palliation of terminal conditions such as malignant dysphagia must take into account individual preferences for aggressive or nonaggressive care, with a focus on quality of life. Despite this, there are very few data on patients' preferences for palliative therapy. This study is designed to quantitatively determine individual preferences for palliation of malignant dysphagia using health state utilities (HSU).
METHODS: HSU were measured using three methods: time trade-off (TTO), visual analog scale (VAS), and the EQ-5D. Patients with esophageal cancer were asked to rate their own state of health and of three standardized scenarios of local, regional, and metastatic disease.
RESULTS: Fifty patients with esophageal cancer were enrolled. Using the TTO method, the utilities of their own health state were 0.80 (95% CI 0.59–0.99) for localized, 0.54 (0.37–0.70) for regional, and 0.52 (0.32–0.71) for metastatic cancer showing no significant difference in mean utility scores for the three staging groups. VAS and EQ5D gave statistically similar values to TTO. Patients consistently rated their own utility better than the utility of standardized scenarios with similar stage and prognosis. Independent of their staging, patients with high dysphagia scores rated their utility worse than patients with low dysphagia scores.
CONCLUSIONS: These results confirm the perceived poor state of health of patients with esophageal cancer and are substantially lower than previous estimates in operated patients. Cost-effectiveness models must take into account significant differences between patients' assessment of their own state of health, and that of a "societal" perspective of others with a similar disease. All three methods provided similar estimates. Given the ease of use of VAS and EQ-5D, these methods may be preferable to TTO.

Turner RP. The acute effect of music periodicity on Rolandic spikes. *Epilepsia* 2003; 44 (Suppl. 9):S58(Abst. 1.159).

ABSTRACT: 1.159 THE ACUTE EFFECT OF MUSIC PERIODICITY ON ROLANDIC SPIKES: A RANDOMIZED, SINGLE-BLINDED, CROSSOVER, PILOT CLINICAL TRIAL OF THE ACUTE EFFECT OF MUSIC WITH LONG-TERM PERIODICITY AND REPEATED MELODIC LINE (M-LTP/RML) ON INTERICTAL SPIKE DISCHARGES (ISD) IN CHILDREN WITH BENIGN CHILDHOOD EPILEPSY WITH CENTROTEMPORAL SPIKES (BCECTS).
Rationale: To investigate the effect of exposure to music with longterm periodicity and repeated melodic line (M-LTP/RML) on frequency of interictal spike discharges (ISDs) in children with benign childhood epilepsy with centrotemporal spikes (BCECTS). The goal of this pilot study was to demonstrate decreased ISDs due to exposure to MLTP/RML. Exposure to M-LTP/RML (Mozart's Sonata for Two Pianos, K448) has been shown to enhance spatial-temporal functioning. Both antiepileptiform and antiseizure properties of M-LTP/RML have been demonstrated by the seminal work of John Hughes, without validation by clinical trial (Gates JR. Letter to the editor: the Mozart effect. *Epilepsy Behav* 2002;3:483; Hughes JR. Review: the Mozart effect. *Epilepsy Behav* 2002;2:396–417). A mechanism of this effect, not due to relaxation or enjoyment of the music, has been proposed based on the trion model of Mountcastle's columnar organization of the neocortex (Rauscher FH, Shaw GL. Key components of the Mozart effect. *Percept Mot Skills* 1998;86:835–41; ShawGL, Bodner M. Music enhances spatial-temporal reasoning: towards a neurophysiological basis using EEG. *Clin Electroencephalogr* 1999;30:151–5).
Methods: Four subjects with BCECTS, aged 5–9 years, were recruited for this prospective, randomized, single-blinded, crossover, pilot clinical study. ISD frequency/minute was averaged over each of three periods/hour, over 4 h of continuous EEG monitoring: (a) Silence, 15 min; (b) Exposure, M-LTP/RML or control (placebo) music (Beethoven's Fur Elise) (18 min); and (c) Wash-out period, 27 min. Mean ISD count/epoch, standard deviations, variance, and correlation data were calculated.
Results: A significant (>30%) decrease in mean ISDs was demonstrated comparing baseline with exposure to M-LTP/RML, but not to control music, in two subjects demonstrating sufficient ISDs for data collection and statistical analysis.
Conclusions: Demonstration of decreased ISDs from exposure to MLTP/RML indicates an effect on mechanisms of spike generation. If reproducible in a sufficiently powered prospective, randomized clinical trial, this effect would contribute to understanding epileptogenesis and new treatment strategies for aborting and preventing seizures. A larger clinical trial is proposed to study this effect on spikes as well as seizures, with subsequent studies of mechanisms indicated. [Supported by Outpatient General Clinical Research Center (GCRC), Medical University of South Carolina.]

Turner RP. The effect of music periodicity on Rolandic spikes: A randomized, single-blinded, crossover, clinical trial. *Annals of Neuro* 2003;54(Suppl. 7):S134.

Turner RP. Letter to the Editor. *Epilepsy & Behavior* 2003;4(5):592-93.

Turner RP, Campbell WW, Pridgeon, RM. The Pseudo-pseudo-ulnar Claw Hand. *Neurology* 1990;40(Suppl. 1):341.

Scholarly Chapters, Books, and Monographs:

- 1) **Turner RP**. Chapter 59: Realization of Neurofeedback-Based Healthcare in a Neurology Practice.
In: Evans JR & Dellinger MB, Ed: **Neurofeedback: The First 50 Years**. Elsevier, 2020.
- 2) Evans JR & **Turner RP** Editors: **Rhythmic Stimulation Procedures in Neuromodulation**.
Elsevier Academic Press 2017.
- 3) **Turner RP**. Chapter 28: Paroxysmal, Nonepileptic Disorders of Childhood.
In: Maria BL, Ed: *Current Management in Child Neurology*, 4th ed. Hamilton, BC Decker, 2009
- 4) **Turner RP**. Chapter 31: Pediatric Epilepsy: Co-morbidity and Quality of Life.
In: Maria BL, Ed: *Current Management in Child Neurology*, 4th ed. Hamilton, BC Decker, 2009
- 5) **Turner RP**. Hemimegalencephaly.
In: Gilman S: *MedLink Neurology*. San Diego: MedLink Corp, 2009, 2008, 2007,
- 6) **Turner RP**. Megalencephaly.
In: Gilman S: *MedLink Neurology*. San Diego: MedLink Corp, 2009, 2008, 2007,
- 7) **Turner RP**. Breath-holding spells.
In: Gilman S: *MedLink Neurology*. San Diego: MedLink Corp, 2009, 2008, 2007,
- 8) Selassie A (PI), Wannamaker B, Pickelsimer E, **Turner RP**, Smith G, Bailey W, Tyrell M.
The South Carolina Epidemiological Studies of Epilepsy & Seizure Disorders (SCESESD)–
Final Report. Department of HHS, Centers for Disease Control and Prevention, 2007.
- 9) **Turner RP**. Chapter 26: Paroxysmal, Nonepileptic Disorders of Childhood.
In: Maria BL, Ed: *Current Management in Child Neurology*, 3rd ed. Hamilton, BC Decker, 2005
- 10) **Turner RP**. Chapter 29: Pediatric Epilepsy: Co-morbidity and Quality of Life.
In: Maria BL, Ed: *Current Management in Child Neurology*, 3rd ed. Hamilton, BC Decker, 2005
- 11) **Turner RP** & Griesemer DA. Hemimegalencephaly.
In: Gilman S: *MedLink Neurology*. San Diego: MedLink Corp, 2001, 2005
- 12) **Turner RP** & Elder BB. Megalencephaly.
In: Gilman S: *MedLink Neurology*. San Diego: MedLink Corp, 2003

Posters/Abstracts:

- 1) Paroxysmal Electroencephalographic Event Labeling and Categorization Using Distributed Clinical Research Software
Halford JJ, Pressly WBS, Benbadis SR, Tatum WO, Edwards JC, Pritchard PB, **Turner RP**.
American Clinical Neurophysiology Society Annual Meeting, Orlando, FL, March 2009
- 2) Importance of Long-term Video EEG to Differentiate Epilepsy from Non-Epileptic Events in Children: MUSC Four-Year Experience
Turner RP, Chen A; MUSC Student Research Day, November 2009
- 3) A clinical trial of the acute effect of music on human interictal epileptiform discharges
Turner RP 2nd International Congress for the Interdisciplinary Research on the Effects and the Experience of Music (Mozart & Science 2008), Vienna, Austria, November 2008
- 4) Long-Term Music Exposure Significantly Decreases Seizure Frequency in Neurologically-Impaired Individuals
Turner RP, Bodner M, Norment C; MUSC Student Research Day, November 2008
- 5) Neurosomatic Outcomes of Traumatic Brain Injury: A Population-Based Study.
Turner RP, Selassie AW, Ferguson PL, Wagner J, Lineberry L, Gu J.
58th Annual Meeting of the American Academy of Neurology, March, 2006
- 6) Use of seizure and epilepsy codes in emergency department and inpatient discharges – SC, USA.
Ferguson PL, Smith G, Selassie AW, **Turner RP**, Wannamaker BB, Tyrell M, Pope A, Cavins KA
26th International Epilepsy Congress, Aug 28–Sep 1, 2005, Paris, France
- 7) Predictors of new onset of epilepsy within 2 years following TBI: Population-based follow-up study.
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