Clifford G. Andrew, M.D., Ph.D.
Neurology Resident 1976-79; Neuromuscular Fellow 1979-80; Assistant Professor of Neurology 1980-86; Currently: Assistant Professor of Neurology Part-time, Johns Hopkins University, Baltimore, Maryland, MD; neurol@jhmi.edu; website www.neurol.org

My time at Hopkins came at an important crossroads in my life: having completed my MD/PhD (Biochemistry) at Duke's Medical Scientist Training Program with mentor Stan Appel, honing my clinical skills for long, continuing career in Neurology. In 1976 the department had 4 professors: Daniel Drachman, John Freeman, Richard Johnson & Guy McKhann who amazed us with trans-Atlantic sailing. There were "young Turk" assistant professors Jack Griffin, and David Zee; and incoming resident Justin McArthur (1981). We learned to "See one, do one, and show one." and "If you don't get your work done in 24 hours you just have to stay up late!" During this time we moved laboratories, clinics, and wards to the Adolf Meyer Building and I learned three things: 1) art of compassionate care for patients; 2) the importance of applying rigorous science to evidence-based medicine (1998 Physicians' Health Study II, 2008 Harvard Personal Genome Project PGP-84, and 2018 NIH All Of Us Research Precision Medicine; and 3) the importance of life beyond career: sailing the Chesapeake Bay in a 22-foot Bristol; raising 6 children, and 8 grandchildren; leadership in Cub, Boy, Explorer Scouts, UU Church of Annapolis, teaching Hominid Evolution at UUCA's Camp Beagle "Vacation Darwin School", USNA Secular Midshipmen, and UU Humanists & Naturalists; section thru-hiking the Appalachian Trail's 2200 miles from GA to ME.

Selected Publications: Andrew CG, Drachman DB, Pestronk A, Narayan O. Susceptibility of skeletal muscle to Coxsackie A2 virus infection: effects of botulinum toxin and denervation. Science. 1984 Feb 17; 223 (4637):714-6. PubMed PMID: 6320369.

Almon RR, Andrew CG, Appel SH. Serum globulin in myasthenia gravis: inhibition of alpha-bungarotoxin binding to acetylcholine receptors. Science. 1974 Oct 4; 186 (4158):55-7. PubMed PMID: 4421998.

Almon RR, Andrew CG, Appel SH. Acetylcholine receptor in normal and denervated slow and fast muscle. Biochemistry. 1974 Dec 31; 13 (27):5522-8. PubMed PMID: 4457111.

Andrew CG, Appel SH. Macromolecular characterization of muscle membranes. I. Proteins and sialic acid of normal and denervated muscle. J Biol Chem. 1973 Jul 25; 248 (14):5156-63. PubMed PMID: 4268694.

Andrew CG, Almon RR, Appel SH. Macromolecular characterization of muscle membranes. II. Acetylcholine receptor of normal and denervated muscle. J Biol Chem. 1974 Oct 10; 249 (19):6163-5. PubMed PMID: 4422889.

Andrew CG, Roses AD, Almon RR, Appel SH. Phosphorylation of muscle membranes: identification of a membrane-bound protein kinase. Science. 1973 Nov 20; 182 (4115):927-9. PubMed PMID: 4355523.

Andrew CG, Almon RR, Appel SH. Macromolecular characterization of muscle membranes. III. Endogenous membrane kinase and phosphorylated protein substrate from normal and denervated muscle. J Biol Chem. 1975 May 25; 250 (10):3972-80. PubMed PMID: 236307.

Honors and Awards: President, Anne Arundel Medical Society, 1997-1998
Delegate, Maryland Medical Society Med Chi House of Delegates, 1998-2014
"Best Neurologist Annapolis" Annapolis *Capital* Readers' Choice Poll 2014
"Best Neurologist Anne Arundel County" Maryland *Gazette* Readers' Choice Poll 2014.

Rahila Ansari, M.D., M.S.
Assistant Professor of Neurology
Case Western Reserve University School of Medicine
Neurologist, Cleveland VA Medical Center

My research is in device development to restore function to patients with amputations, or with weakness due to pathologies such as myopathies and spinal cord injuries. My approach to helping these patients utilizes my background in biomedical and polymer engineering, in addition to my clinical training in neurology and neuromuscular diseases. My neurology residency at Johns Hopkins Hospital laid the groundwork for my clinical understanding of neurological pathophysiology and patient needs. The inspiration for my research came from working with Kathryn Wagner in the Johns Hopkins Muscular Dystrophy Clinic. By using "smart" materials and devices my goal has been to augment strength and enhance function, while decreasing muscle strain. One of my projects is to restore a safer gait pattern and reduce the risk of falls in patients with inclusion body myositis, by providing mechanical assistance to the quadriceps using microprocessor based stance-controlled orthotics. Some of my other projects involve using "smart" materials where their stiffness or shape adjusts in response to measured pressure and shear forces. I am developing these technologies to construct prosthetic liners that adjust in real-time to improve fit, while decreasing the risk of skin breakdown. My other principal research area is Functional Electrical Stimulation (FES). In paraplegic patients with cervical spinal cord injuries, walking can be restored by implanting nerve cuff electrodes. These electrodes have multiple contacts, and depending on which contact is used, specific nerve fascicles can be selectively stimulated, which improves fine motor control. My work within the larger FES Center at Case and the VA focuses on chronic neurophysiologic changes within the nerve and its innervated muscles as a function of stimulation. Additionally, I study the fascicular selectivity and stability of these multi-contact nerve cuff electrodes. Due to the interdisciplinary nature of my work, I have forged multiple interdepartmental and cross-institutional collaborations with basic scientists and engineers, with a common goal of more rapidly translating technology into clinical application. This would not have been possible without the clinical training I received at Hopkins, or without the guidance from my mentors.

Selected Publications:

Freeberg MJ, Pinault GCJ, Tyler DJ, Triolo RJ, Ansari R. "Chronic nerve health after implantation of femoral nerve cuff electrodes." Manuscript submitted to *Neurology*.

Freeberg MJ, Ansari R, Pinault GCJ, Lombardo LM, Miller ME, Tyler DJ, Triolo RJ. "Intraoperative stimulated responses predict chronic performance of 8-contact composite flat interface nerve electrodes on human femoral nerves." Manuscript submitted to *IEEE Transactions on Neural Systems and Rehabilitation Engineering.*

Robinson J, Ansari R, Katirji. "Myopathies and NMJ Disease." In Salardini A, Biller J (eds). *The Hospital Neurology Book, 1st Edition*. New York, McGraw-Hill Education. 2016.

Ansari R, Katirji B. "Serum Muscle Enzymes in Neuromuscular Disease." In Katirji B, Kaminski HJ, Ruff RL (eds). *Neuromuscular Disorders in Clinical Practice, 2nd Edition*. New York, Springer. 2013.

Honors/Awards:

American Academy of Neurology Abstract of Distinction - Chronic Nerve Health Following Implantation of Nerve Cuff Electrodes, 2018
Spotlight article on Orthotics in IBM research in the O&P Almanac, 2016
Keynote Lecture at Annual American Orthotics and Prosthetics Association Meeting, 2015

Anthony O. Asemota, MD, MPH
Department of Neurosurgery
Johns Hopkins Hospital
Baltimore, MD

During my time as a senior research coordinator and subsequently as a postdoctoral research fellow (2012-2014) in the neurology department at Johns Hopkins, I had the exciting opportunity of managing the accelerated cure project (principal investigator - Dr. Arun Venkatesan), a multicenter study investigating potential factors associated with development of multiple sclerosis and other demyelinating diseases. I maintained a repository of blood/serum samples for the Johns-Hopkins arm of the study, and was also charged with collating and organizing relevant patient data following closure of the study. In addition, I participated in various projects where I applied my knowledge of statistics and honed my expertise in studying various neuro-inflammatory and neuro-infectious diseases which led to publications in high-ranking journals and presentations at national meetings. Subsequently I completed a general surgery/oncology research fellowship, and I am presently undertaking a research fellowship in pituitary/skull base neurosurgery at the Johns-Hopkins Department of Neurosurgery and aspiring to complete residency training in neurosurgery. In the current era of big data, my exposure and time in neurology department certainly helped advance my skills and awareness in conducting data-driven research for understanding some of the very challenging and complex epidemiological associations pertinent to neurological diseases.

Selected Publications:

Asemota AO, George BP, Bowman SM, Haider AH, Schneider EB. Causes and trends in traumatic brain injury for United States adolescents. Journal of Neurotrauma. 2013 Jan 15;30(2):67-75.

Asemota AO, George BP, Cumpsty-Fowler CJ, Haider AH, Schneider EB. Race and insurance disparities in discharge to rehabilitation for patients with traumatic brain injury. Journal of Neurotrauma. 2013 Dec 15;30(24):2057-65.

Thakur KT, Motta M, Asemota AO, Kirsch HL, Benavides DR, Schneider EB, McArthur JC, Geocadin RG, Venkatesan A. Predictors of outcome in acute encephalitis. Neurology. 2013 Aug 27;81(9):793-800.

Mo AZ, Asemota AO, Venkatesan A, Ritzl EK, Njoku DB, Sponseller PD. Why no signals? Cerebral anatomy predicts success of intraoperative neuromonitoring during correction of scoliosis secondary to cerebral Palsy. Journal of Pediatric Orthopaedics. 2017 Dec 1;37(8):e451-8.

Sutter R, Kaplan PW, Cervenka MC, Thakur KT, Asemota AO, Venkatesan A, Geocadin RG. Electroencephalography for diagnosis and prognosis of acute encephalitis. Clinical Neurophysiology. 2015 Aug 1;126(8):1524-31.

Asemota AO, Thakur K, Geocadin R, Venkatesan A. Thrombocytopenia as a prognostic factor in encephalitis (P4. 318).). Neurology. 2014 Apr 8;82(10 Supplement):P4-318.

Asemota AO, Wang H, Selvarajah S, Hui X, Schneider EB, Venkatesan A. Common Comorbidities among Multiple Sclerosis Patients in the United States: An Analysis of In-patient Hospitalizations (P5. 154). Neurology. 2014 Apr 8;82(10 Supplement):P5-154.

Laura J. Balcer, MD, MSCE
Professor of Neurology, Population Health and Ophthalmology, Vice Chair, Neurology, NYU School of Medicine 222 E. 41st Street, 14th Floor, New York, NY 10017
Laura J. Balcer, MD, MSCE, is a neurologist, neuro-ophthalmologist and epidemiologist at the NYU School of Medicine. Dr. Balcer is Vice Chair of Neurology and Professor of Neurology, Population Health and Ophthalmology at NYU. She is Adjunct Professor of Neurology and Epidemiology and Biostatistics at the University of Pennsylvania. Dr. Balcer currently co-leads national collaborative clinical and research efforts in the neuro-ophthalmology of multiple sclerosis (MS) and concussion. Her research at John Hopkins (MD '91) focused on basic science and animal models of myasthenia gravis in the laboratory of Dr. Daniel Drachman. During the past 20 years, Dr. Balcer's team's research has focused on development of visual function tests for clinical trials in MS. Her team, including Dr. Peter Calabresi, received the 2015 Barancik Prize for Innovation in MS Research. More recently, Dr. Balcer's team has investigated new vision-based tests for sideline diagnosis of concussion. She has mentored >80 trainees, and leads a PI site for a U01 proposal to investigate biomarkers for chronic traumatic encephalopathy (CTE) among retired football athletes. Dr. Balcer's time at Johns Hopkins and subsequent training have thus led to an enjoyable and productive career of research and mentoring, lifelong clinical learning and much treasured collaborations.

Selected Publications:

Balcer LJ, McIntosh KR, Nichols JC, Drachman DB. Suppression of immune responses to acetylcholine receptor by interleukin 2-fusion toxin: in vivo and in vitro studies. J Neuroimmunol 1991;31: 115-22.

Drachman DB, McIntosh KR, Reim J, Balcer L. Strategies for treatment of myasthenia gravis. Ann NY Acad Sci 1993;681:515-28.

Fisher JB, Jacobs DA, Markowitz CE, Galetta SL, Volpe NJ Nano-Schiavi ML, Baier ML, Frohman EM, Winslow H, Frohman TC, Calabresi PA, Maguire MG, Cutter GR, Balcer LJ. Relation of visual function to retinal nerve fiber layer thickness in multiple sclerosis. Ophthalmology 2006;113:324-32.

Talman LS, Bisker ER, Sackel DJ, Long, Jr., DA, Galetta KM, Ratchford JN, Lile DJ, Farrell SK, Loguidice MJ, Remington G, Conger A, Frohman TC, Jacobs DA, Markowitz CE, Cutter GR, Ying GS, Dai Y, Maguire MG, Galetta SL, Frohman EM, Calabresi PA, Balcer LJ. Longitudinal study of vision and retinal nerve fiber layer thickness in MS. Ann Neurol 2010;67:749-60.

Balcer LJ, Raynowska J, Nolan R, Galetta SL, Kapoor R, Benedict R, Phillips G, LaRocca N, Hudson L, Rudick R; Multiple Sclerosis Outcome Assessments Consortium. Validity of low-contrast letter acuity as a visual performance outcome measure for multiple sclerosis. Mult Scler 2017;23:734-747.

Galetta KM, Liu M, Leong DF, Ventura RE, Galetta SL, Balcer LJ. The King-Devick Test of rapid number naming for concussion detection: meta-analysis and systematic review of the literature. Future Medicine: Concussion 2015;1:CNC8

Akhand O, Galetta MS, Cobbs L, Hasanaj L, Webb N, Drattell J, Amorapanth P, Rizzo JR, Nolan R, Serrano L, Rucker JC, Cardone D, Jordan BD, Silverio A, Galetta SL, Balcer LJ. The new Mobile Universal Lexicon Evaluation System (MULES): a test of rapid picture naming for concussion sized for the sidelines. J Neurol Sci 2018;387:199-204.

Honors/Awards:

Editor-in-Chief Elect, *Journal of Neuro-Ophthalmology*, North American Neuro-Ophthalmology Society, 2019

Barancik Prize for Innovation in MS Research, National Multiple Sclerosis Society, 2015

AOA Faculty Teaching Award, Membership in AOA, Delta Chapter of New York, 2016

Kyra J. Becker, M.D.
Professor Emeritus, Neurology & Neurological Surgery, University of Washington School of Medicine

I was a Neurology Resident (1990-1993) and Neurocritical Care Fellow (1993-1995) at Hopkins during which time my clinical interests were nurtured by Daniel Hanley and my research interests by Richard Traystman and Patricial Hurn. My time at Hopkins shaped my career; in fact, my first significant publication (oral tolerance for the treatment of stroke) was inspired by a journal club presentation by one of my co-residents. This paper was written during my time as a research fellow at NINDS, after which I moved to Seattle and had a career as a vascular neurologist at the University of Washington (UW). While at UW, I started the stroke program and ran a translational research laboratory that focused on the contribution of the post-ischemic immune response to stroke outcome. In fact, it was the inspiration from that journal club at Hopkins that laid the foundation for my entire line of research – that antigen specific immune responses occur after stroke and that these responses can be manipulated to improve outcome. I will be forever thankful for the friends and colleagues I developed during my 6 years at JHH and I value these relationships every day.

Selected Publications:

Becker KJ, McCarron R, Ruetzler C, Laban O, Flanders K, Sternberg E, Hallenbeck JM. Immunologic tolerance to myelin basic protein decreases stroke size in transient focal cerebral ischemia. *Proc Natl Acad Sci USA* 94:10873-78, 1997.

Becker KJ, Kindrick DL, Lester MP, Shea C, Ye Z-C. Sensitization to brain antigens following stroke is augmented by lipopolysaccharide. *J Cereb Blood Flow Metab.* 25:1634-1644, 2005.

Becker KJ, Kindrick D, McCarron R, Hallenbeck JM, Winn R. Adoptive transfer of MBP-tolerized splenocytes to naïve animals reduces infarct size: A role for lymphocytes in ischemic brain injury? *Stroke* 34:1809-1815, 2003.

Becker KJ, Tanzi P, Zierath D, Buckwalter M. Antibodies to Myelin Basic Protein are associated with cognitive decline after stroke. *J Neuroimmunol*. 295-296:9-11, 2016.

Becker KJ, Buckwalter M. Stroke, Inflammation and the Immune Response: Dawn of a New Era. *Neurotherapeutics* 13: 659-660, 2016.

Becker KJ, Baxter AB, Bybee HM, Tirschwell DL, Abouelsaad T, Cohen WA. Active extravasation of contrast is an independent predictor of death in primary intracerebral hemorrhage. *Stroke* 30:2025-2032, 1999.

Becker KJ, Baxter AB, Cohen WA, Tirschwell DL, Bybee HM, Newell DW, Winn HR, Longstreth WT Jr. Withdrawal of support in intracerebral hemorrhage leads to self-fulfilling prophecies. *Neurology* 56: 766-772, 2001.

Honors/Awards/Responsibilities:

Robert G. Siekert New Investigator Award in Stroke, American Heart Association, 1997
University of Washington Department of Neurology Teaching Award, 2002
Neurological Devices Panel of the Medical Devices Advisory Committee, Center for Devices and Radiological Health, Food and Drug Administration, 2000-2004 (Chair, 2003-2004)
Chair, International Stroke Conference (ISC), 2014-2016

Gregory K. Bergey, M.D.

Professor Department of Neurology, Johns Hopkins School of Medicine, Director, Johns Hopkins Epilepsy Center

I came to Hopkins to do my neurology residency (1979-1983) after a post-doctoral fellowship in neurophysiology with Phil Nelson at the NIH. Those were the days before a resident match and Hopkins was still a relatively new department. I was impressed not just with the energy of the faculty, but also with their commitment to academic neurology. Even the best researchers were great clinicians and attendings. Because I was initially a cellular physiologist, after residency I moved across town to the University of Maryland departments of neurology and physiology where I later helped establish the Maryland Epilepsy Center and worked with Alan Krumholz among others. I was fortunate to be able to return to Hopkins in 1999, then chaired by Jack Griffin. By then my clinical interests had developed and my research had evolved from cellular physiology to studies of human seizure dynamics, something that fit well with my clinical investigations of closed loop neurostimulation. I have been active in the American Epilepsy Society as a board member and one of the founding editors of their successful journal Epilepsy Currents. Here at Hopkins over the past two decades over 75% of our epilepsy fellows go on to full-time academic positions, reflecting the continued mission of Hopkins Neurology.

Selected Publications:

Bergey G, Bigalke H, Nelson PG. Differential effects of tetanus toxin on inhibitory and excitatory synaptic transmission in mammalian spinal cord neurons in culture: a presynaptic locus of action. J Neurophysiol 1987;57:121-131.

Franaszczuk PJ, Bergey GK, Kaminski MJ. Analysis of mesial temporal seizure onset and propagation. Using the directed transfer function method. Electroencephalogr Clin Neurophysiol 1994;91:413-427.

Franaszczuk, PJ, Bergey GK, Durka PJ, Eisenberg HM. Time-Frequency anal-ysis using the matching pursuit algorithm applied to seizures originating from the mesial temporal lobe. Electroencephalogr Clin Neurophysiol 1998;106:513-521

Jouny CC, Franaszczuk PJ, Bergey GK. Signal complexity and synchrony of epileptic seizures: is there an identifiable preictal period? Clini Neurophysiol 2005;116:552-558.

Jouny CC, Bergey GK, Franaszczuk PJ. Partial seizures are associated with early increases in signal complexity. Clin Neurophysiol 2010;121:7-13.

Anderson WS, Kudela P, Bergey GK, Franaszczuk PJ. Epileptic seizures from abnormal networks: why some seizures defy predictability. Epilepsy Res 2012; 99:202-213.

Bergey, GK, Morrell, MJ, Mizrahi, EM, et al.. Long-term treatment with responsive brain stimulation in adults with medically intractable partial onset seizures. Neurology 2015; 84:810-817.

Honors/Awards

Distinguished Scholar Award and Lecture, Hans Berger Symposium 2007
American Epilepsy Society Service Award 2010

Bridgette "Jeanne" Billioux, M.D.
Staff Clinician, International Neuroinfectious Diseases Unit
Division of Neuroimmunology and Neurovirology, Division of Intramural Research, National Institute of Neurological Disorders and Stroke, National Institutes of Health

My Hopkins training (2010-2013) was an incomparable experience that largely shaped the neurologist I am now, and helped lead me down my somewhat unconventional career path. Influenced by many incredible neurologists as well as fascinating and complex patients seen while at Hopkins, I eventually decided upon Neuroimmunology/Neurovirology as my field of choice. In particular, I remember the riveting lectures Dr. Dick Johnson gave us, detailing his adventures around the world, piecing together the mysteries of various infectious agents and their effects on the nervous system. At the time, I was frankly awed by his remarkable undertakings and couldn't imagine I'd ever be so fortunate to have such a colorful career, or much less be able to accomplish even a modicum of what he had. Nevertheless, I pursued my Neuroimmunology/Neurovirology fellowship at the NIH, where I have since studied various viruses and their effects on the nervous system. Mid-fellowship, I was given the opportunity to study the neurological manifestations of Ebola in Liberia. This project has expanded, leading to various collaborations and publications, and has cemented my interest in international clinical research. Undoubtedly, I have Dr. Johnson as well as many others at Hopkins to thank for the inspiration and training.

Selected Publications:

Billioux, Bridgette Jeanne; Avindra Nath, Eric Stavale, Joseph Dorbor, Michael Sneller, Mosoka Fallah, Bryan R. Smith. Cerebrospinal Fluid Examination in Survivors of Ebola Virus Disease. *JAMA Neurology*. 2017 Jul 17.

Billioux, Bridgette Jeanne. Neurological Complications and Sequelae of Ebola Virus Disease. *Current Infectious Disease Reports.* 2017 May; 19(5):19.

Leibovitch, Emily; Lin, Cheng Major; Billioux, Bridgette Jeanne; Graves, Jennifer; Waubant, Emanuelle; Jacobson, Steven. Prevalence of salivary human herpesviruses in pediatric multiple sclerosis cases and controls. *Multiple Sclerosis*. 2018 Mar1.

Leibovitch, Emily; Caruso, Breanna; Ha, Seung-Kwon; Schindler, Matthew; Lee, Nathanael; Luciano, Nicholas; Billioux, Bridgette Jeanne; Guy, Joseph; Yen, Cecil; Sati, Pascal; Silva, Alfonso; Recih, Daniel S; Jacobson, Steven. Herpesvirus trigger accelerates neuroinflammation in a nonhuman primate model of multiple sclerosis. *PNAS*. 2018 Oct 30; 115(44):11292-11297.

Enose-Akahata, Yoshimi; Breanna Caruso, Benjamin Haner, Emily Charlip, Govind Bhagavatheeshwaran, Bridgette Jeanne Billioux, Joan Ohayon, William M. Switzer and Steven Jacobson. Development of neurologic diseases in a patient with primate T lymphotropic virus type 1 (PTLV-1): Evidence for simian to human transmission of PTLV-1. *Retrovirology.* 2016 Aug 12;13(1):56.

Honors/Awards:

STAT Wunderkind Award, 2017
National Institute of Neurological Disorders and Stroke Group Merit Award for Neuro-Ebola Team, 2016
Health and Human Services 2015 Departmental Awards: Secretary's Award for Distinguished Service for Ebola Clinical Research Response Team, 2016

Gretchen L. (Dike) Birbeck, MD MPH DTMH
Epilepsy Research Director and the Edward A. & Alma Rykenboer Professor of Neurology, University of Rochester, Rochester, NY

I arrived in Baltimore (1994-1998) fresh from several months working in a rural Zambian hospital. Having decided that my life's work was meant to be in Africa, I initially struggled to conceive of how I could possibly carve out an academic neurology career based there. "RTJ" helped me see the way. With his support and the kind flexibility of my fellow residents, I was able to spend several months of my chief year in Zambia. I never looked back. My overarching professional goal is to elucidate the mechanisms of common neurology disorders in sub-Saharan Africa and identify risk factors for the secondary medical and social morbidities resulting from these conditions so that feasible, affordable, evidence-based interventions aimed at preventing or ameliorating neurologic illness/injury can be evaluated and, if warranted, broadly implemented. With so few neurologists in the region, there is a lot to do. My research program encompasses observational epidemiologic studies of new onset seizure in people with HIV and clinical trials of neuroprotective interventions for pediatric cerebral malaria. My mentees study TB meningitis, coma, nutritional neuropathies, health-related stigma, and mHealth apps to track Ebola outbreaks. A bit chaotic but never boring!

Select Publications:

1. Thakur, K.T., et al., *Global HIV neurology: a comprehensive review.* AIDS, 2018.
2. Potchen, M.J., et al., *1.5 Tesla Magnetic Resonance Imaging to Investigate Potential Etiologies of Brain Swelling in Pediatric Cerebral Malaria.* Am J Trop Med Hyg, 2018. **98**(2): p. 497-504.
3. Seydel, K.B., et al., *Brain swelling and death in children with cerebral malaria.* N Engl J Med, 2015. **372**(12): p. 1126-37.
4. Birbeck, G.L., A.C. Meyer, and A. Ogunniyi, *Nervous system disorders across the life course in resource-limited settings.* Nature, 2015. **527**(7578): p. S167-71.
5. Birbeck, G.L., et al., *Evidence-based guideline: Antiepileptic drug selection for people with HIV/AIDS: report of the Quality Standards Subcommittee of the American Academy of Neurology and the Ad Hoc Task Force of the Commission on Therapeutic Strategies of the International League Against Epilepsy.* Neurology, 2012. **78**(2): p. 139-45.
6. Birbeck, G.L., et al., *Blantyre Malaria Project Epilepsy Study (BMPES) of neurological outcomes in retinopathy-positive paediatric cerebral malaria survivors: a prospective cohort study.* Lancet Neurol, 2010. **9**(12): p. 1173-81.
7. Birbeck, G., et al., *The social and economic impact of epilepsy in Zambia: a cross-sectional study.* Lancet Neurol, 2007. **6**(1): p. 39-44.

Awards:

2017	American Neurological Association Soriano Lectureship Award
2013	International League against Epilepsy, Ambassador for Epilepsy Award
2007	US Paul Rogers Society, Global Health Research Ambassador

Dr. Jaishri Blakeley
The Marjorie Bloomberg Tiven Professor of Neurofibromatosis
Professor of Neurology, Neurosurgery and Oncology, Johns Hopkins University School of Medicine
I was attracted to Johns Hopkins University (JHU) Neurology residency (2002-2005) by a sense of both community and inventiveness that I thought would be perfect for molding me into a neuro-critical care specialist. During residency, my plans shifted after I cared for a patient with glioblastoma and I was drawn to Neuro-Oncology. I established relationships with John Laterra, Skip Grossman, and Henry Brem and committed to being the first neurologist on the NCI T32 Neuro-Oncology training fellowship (2005-2007). During this time, I worked in the Hunterian Laboratory where I learned invaluable skills for assessing intratumoral pharmacokinetics (PK) but also learned that my talents are not in bench science. I did, however, find my passion for writing and conducting early phase therapeutic trials using both biologic and functional endpoints through collaborations with Skip Grossman, Xiaobu Ye, John Laterra, Henry Brem, Jinyuan Zhou, Peter Van Zijl and Jon Weingart. In 2007, I joined the faculty and launched the Johns Hopkins Comprehensive Neurofibromatosis Center (JHCNC). JHCNC is now one of the pre-eminent clinical and research centers for neurofibromatosis (NF) in the world and a major contributor to initiatives such as the Department of Defense Neurofibromatosis Clinical Trials Consortium, the Response Endpoints in Neurofibromatosis and Schwannomatosis International Consortia and a Specialized Programs of Research Excellence (SPORE) focused on neurofibromatosis type 1 (NF1). In 2012, the Neurofibromatosis Therapeutic Acceleration Program (NTAP) was founded to harness intellectual power, essential resources and strategic collaborations to develop therapies for the peripheral nerve sheath tumors (PNST) afflicting patients with NF1. Through NTAP, I oversee research projects ranging from basic discovery to clinical trials. My greatest academic impact has been in advancing therapeutics for rare oncologic diseases effecting the nervous system through clinical-translational research including tumor PK and pharmacodynamics studies, imaging biomarkers and incorporation of patient focused endpoints. However, my greatest contribution overall has been pulling together both learners and experts from many areas to address the most urgent health needs of people with NF and neuro-oncologic disease both in the clinic and in the lab through innovative, collaborative programs like NTAP. There is no question that this intense focus on collaboration and patient-centered research is a direct result of being a member of the JHU Department of Neurology. I have had very active and multi-disciplinary mentorship continually throughout my career and every idea has been met with (cautious) optimism and unwavering support.

Selected publications:

Blakeley JO, Olson J, Grossman SA, He X, Weingart J, Supko JG; New Approaches to Brain Tumor Therapy (NABTT) Consortium. Effect of blood brain barrier permeability in recurrent high grade gliomas on the intratumoral pharmacokinetics of methotrexate: a microdialysis study. J Neurooncol. 2009; 9:51-8.

Blakeley JO, Ye X, Duda DG, Halpin CF, Bergner AL, Muzikansky A, Merker VL, Gerstner ER, Fayad LM, Ahlawat S, Jacobs MA, Jain RK, Zalewski C, Dombi E, Widemann BC, Plotkin SR. Efficacy & Biomarker Study of Bevacizumab for Hearing Loss Resulting From Neurofibromatosis Type 2-Associated Vestibular Schwannomas. J Clin Oncol. 2016; 34:1669-75.

Blakeley JO, Coons SJ, Corboy JR, Leidy NK, Mendoza TR, Wefel JS. Clinical outcome assessment in malignant glioma trials: measuring signs, symptoms, and functional limitations. Neuro Oncol. 2016 Mar;18 Suppl 2:ii13-ii20.

Ferrer M, Gosline SJC, Stathis M, Zhang X, Guo X, Guha R, Ryman DA, Wallace MR, Kasch-Semenza L, Hao H, Ingersoll R, Mohr D, Thomas C, Verma S, Guinney J, Blakeley JO. Pharmacological and genomic profiling of neurofibromatosis type 1 plexiform neurofibroma-derived schwann cells. Sci Data. 2018 12;5:180106.

Blakeley JO, Wolkenstein P, Widemann BC, Lee J, Le LQ, Jackson R, Stathis M, Verma SK. Creating a comprehensive research strategy for cutaneous neurofibromas. Neurology. 2018;10;91(2 Supplement 1):S1-S4.

Jiang S, Eberhart CG, Lim M, Heo HY, Zhang Y, Blair L, Wen Z, Holdhoff M, Lin D, Huang P, Qin H, Quinones-Hinojosa A, Weingart JD, Barker PB, Pomper MG, Laterra J, van Zijl PCM, Blakeley JO, Zhou J. Identifying Recurrent Malignant Glioma after Treatment Using Amide Proton Transfer-Weighted MR Imaging: A Validation Study with Image-Guided Stereotactic Biopsy. Clin Cancer Res. 2018 Oct 26.

Blakeley JO, Grossman SA, Chi AS, Mikkelsen T, Rosenfeld MR, Ahluwalia MS, Nabors LB, Eichler A, Ribas IG, Desideri S, Ye X; Adult Brain Tumor Consortium.. Phase II Study of Iniparib with Concurrent Chemoradiation in Patients with Newly Diagnosed Glioblastoma. Clin Cancer Res. 2018 Aug 21.

Recent Honors:

2010 Frank Ford Memorial Teaching Award, Johns Hopkins University, Department of Neurology
2014 Children's Tumor Foundation Humanitarian Award
2018 Installation as the Inaugural Marjorie Bloomberg Tiven Professor in Neurofibromatosis

James B. Brewer, M.D., Ph.D.
Professor and Chair, Department of Neurosciences
Director, Shiley-Marcos Alzheimer's Disease Research Center
UCSD, San Diego, CA

My time at Johns Hopkins from 2001-2004 with my co-residents, Rebecca Gottesman, Sarah Berman, Jeff Rumbaugh, and Andy Mammen as well as the Child Neurology co-residents, David Leiberman and Lori Jordan, was formative and a time of tremendous growth for me. I remember the nights and days before the new work hour rules were instituted in our final year. They were tough times, but filled with remarkable neurology cases and our faculty heroes were always engaged and supportive. I see it as a huge honor to have trained under these giants of neurology, and will long value the education that they and my co-residents provided. I applied for a K award in my final year of residency and moved it to UC San Diego upon completing my training. At UC San Diego, I started a lab where my outstanding Neurosciences graduate students pushed me toward productivity. The lab started as a cognitive neurosciences lab and morphed to an Alzheimer's neuroimaging biomarkers laboratory, where I continue my work in directing the Alzheimer's Disease Research Center P30 grant, which was just renewed for its 35th-40th years. I recently also began the role of department chair here, which reminds me of the times before work hour rules were instituted. I will never forget the times I had and the colleagues I met at Hopkins.

Selected Publications:

Brewer JB. (2009) Fully-automated volumetric MRI with normative ranges: translation to clinical practice. *Behavioural Neurology* 21: 21-8.

Murphy EA, Holland D, Donohue M, Hagler DJ Jr., Dale AM, Brewer JB, and The Alzheimer's Disease Neuroimaging Initiative. (2010) Six-Month Neuroanatomical Change in MTL Structures is Associated with Subsequent Memory Decline in Elderly Controls. *NeuroImage* 53(4):1310-7.

Seibert TS, Hagler DJ, Brewer JB (2011) Early parietal response in episodic retrieval revealed with MEG. *Human Brain Mapping* 32(2) 171-181.

Seibert TM, Murphy EA, Kaestner EA, Brewer JB (2012) Interregional correlations in Parkinson disease and Parkinson-related dementias with resting functional MR imaging. *Radiology* 263(1), 226-234.

Hales JB and Brewer JB (2012) The path to memory is guided by strategy: distinct networks are engaged in associative encoding under visual and verbal strategy and influence memory performance in healthy and impaired individuals. *J Cogn Neuro* 24(6), 1398-1410.

Reas ET, Brewer JB (2013) Imbalance of incidental encoding across tasks: An explanation for non-memory-related hippocampal activations. *Journal of Experimental Psychology* 142 (4):1171-1179.

Tan CH, Fan CC, Mormino EC, et al., and the Alzheimer's Disease Neuroimaging Initiative (2018) Polygenic hazard score: an enrichment marker for Alzheimer's associated amyloid and tau deposition. *Acta Neuropathol* 135(1):85-93.

Honors/Awards:
Distinguished Investigator, Academy of Radiology Research, 2013

David Buchholz, M.D.
Associate Professor of Neurology,
Johns Hopkins University,
Baltimore, MD

Post-residency I joined the faculty of the Department of Neurology at Johns Hopkins as an Assistant Professor and was later promoted to Associate Professor, a title which I retain. For 14 years from 1983 to 1997 I served primarily as a dedicated clinician, practicing and teaching general neurology, and secondarily in a number of outpatient and quality assurance administrative roles, with clinical research activity particularly in the field of neurogenic dysphagia and related publications as well.

Over the years my main interest became migraine; not migraine as I was taught (including in my neurology training at Johns Hopkins) but migraine radically redefined both diagnostically and therapeutically. In 1997 I left my full-time faculty position and set up a solo private practice at Johns Hopkins at Green Spring Station where I remain today. My proudest accomplishment is the publication of *Heal Your Headache: The 1-2-3 Program for Taking Charge of your Pain* (Workman Publishing, 2002) which over the past 16 years has become by far the most widely read book ever written on the subject, now in its 18th printing with over 200,000 copies in print.

Selected Publications:

Buchholz DW: Clinically-probable brainstem stroke presenting primarily as dysphagia and nonvisualized by MRI. *Dysphagia* 8:235-238, 1993.

Buchholz DW: Dysphagia associated with neurological disorders. *Acta Oto-Rhino-Laryngologica Belgica* 48: 143-155, 1994.

Buchholz DW: Neurogenic dysphagia: What is the cause when the cause is not obvious?

Dysphagia 9:24-255, 1994.

Buchholz DW, Reich SR: The menagerie of migraine. *Seminars in Neurology* 16:83-93, 1996.

Neumann S, Buchholz D, Ravich W, Jones B: Psychogenic dysphagia: a long-term follow-up study. *Dysphagia* 14:128, 1999.

Buchholz DW, Prosiegel M: Hausige mit Dysphagie einhergehende Neurologische Erkrangkungen. In Bartlome G., Buchholz DW, Hannig C, Neumann S, Prosiegel M, Schroter-Morasch H, and Wuttge-Hannig A (eds.) Diagnostik und Therapie neurologisch bedingter Schluckstörungen, 2nd Edition, Gustav Fischer Verlag, Stuttgart, 1999.

Buchholz, D: Heal Your Headache: The 1-2-3 Program for Taking Charge of Your Pain. Workman Publishing, New York, 2002.

Ian John Butler, M.B., B.S., F.R.A.C.P
Professor, Departments of Pediatrics and Neurology, McGovern Medical School at The University of Texas Health Science Center, Houston, Texas.

My background included training as a pediatrician (Australia) and in both pediatric and adult neurology (Australia, United Kingdom). I was instructed by Queen Square, London, trained neurologists and electromyographers and was taught that myasthenia gravis was a "presynaptic disorder" based on electrophysiological parameters. Imagine my surprise after rotating with Dan Drachman and assisting him in performing "motor point biopsies" that I realized that my knowledge base was incomplete. Shortly thereafter as a resident, I had an unique opportunity to collaborate with established investigative biochemists and geneticists while describing a new neurometabolic disorder.[1] Subsequently, with encouragement and advice from faculty, (Guy McKhann, John Freeman, Mark Moliver) and a couple of years of concentrated effort, we demonstrated the pivotal role of defective biogenic amine metabolism and designed specific innovative treatment.[2] After several false starts, Dan Drachman encouraged submission of my first basic neuroscience manuscript to one of his favorite journals.[3] I finally could call myself a "triple threat" in academic neurology. In 1976, I transported my wife (Patricia) and three children to Houston to establish the division of child neurology at this new medical school in Houston, Texas. I persuaded Harvey Singer to take over my Tourette Syndrome clinic in Baltimore. We continued to collaborate long distance since our cerebrospinal fluid studies of biogenic amines were beginning to be fruitful.[4] Initially, I was concerned at moving to an academic position in a new and growing medical school. Fortunately, my extensive training, particularly my formative experiences at Johns Hopkins (1972-1976), enabled me to grow and thrive in this dynamic environment in the largest medical center in the world (Texas hyperbole).

Selected Publications:

Phenylketonuria Due to Deficiency in Dihydropteridine Reductase, S. Kaufman, N.A. Holtzman, S. Milstien, I.J. Butler, A. Krumholz, New Eng J Med, 293:785-790, 1975.

A Disorder of Biogenic Amines in Dihydropteridine Reductase Deficiency, I.J. Butler, S.H. Koslow, A. Krumholz, N.A. Holtzman, S. Kaufman, Annals of Neurol., 3:224-230, 1978.

The Effect of Disuse on Cholinergic Enzymes, I.J. Butler, D.B. Drachman, A.M. Goldberg, J Physiol, 274:593-600, 1978.

Biogenic Amine Metabolism in Tourette Syndrome, I.J. Butler, S.H. Koslow, W.E. Seifert, R.M. Caprioli, H.S. Singer, Annals of Neurol., 6:37-39, 1979.

Progressive Neurologic Deterioration and Renal Failure Due to Storage of Glutamyl Ribose-5-Phosphate, J.C. Williams, I.J. Butler, H. S. Rosenberg, R. Verani, C.I. Scott, S.B. Conley, New Eng J Med, 311:152-155, 1984.

Mutations in the Early Growth Response 2(EGR2) Transcription Factor are Associated with Hereditary Myelinopathies. L.E. Warner, P. Mancias, I.J. Butler, C.M. McDonald, L. Keppen, K.G. Koob, J.R. Lupski, Nature Genetics, 18:382-384, 1998.

Biogenic amine metabolism in juvenile neurocardiogenic syncope with dysautonomia. I.J. Butler, J.E. Lankford, S.S. Hashmi, M.T. Numan. Ann Clin Transl Neurol 1:251-257, 2014.

Honors and Awards:

Jacobo Geissler Distinguished Chair in West Syndrome Research 2014.
The University of Texas System Board of Regents Outstanding Teachers Award 2016.

Nathaniel Carter, M.D.
President/CEO Maryland Center for Neuro-Ophthalmology & Neuro-Otology, PC,
Columbia, Maryland

Two of my first three years as post-doctoral fellow (1994-1997) were spent studying axonal transport with a truly brilliant and scholarly scientist, Paul Hoffman, MD., PhD. This exposure gave me an appreciation for bench research and an understanding of the various challenges facing the faculty, and basic science and clinical post-docs. As an active member and later as the first physician President of the Johns Hopkins Postdoctoral Association (JHPDA), I had first-hand knowledge of post-doc fellow concerns while having the unique honor of working directly with a legendary civil rights activist, pioneer in cardiothoracic surgery, and Dean of Postdoctoral Fellows; Levi Watkins, Jr., M.D. My clinical training as a subspecialty neurologist was enhanced under the tutelages of Neil Miller, M.D. (neuro-ophthalmology) and David Zee, M.D (neuro-otology). Working with these two iconic clinicians/scientist has resulted in numerous enduring personal and professional friendships. The intellectually stimulating years at Hopkins provided me with tools to have a fulfilling and unique career as a multi-subspecialty neurologist in private practice.

Selected Publications:

Carter N, Miller NR. Fourth Nerve Palsy Caused by Ehrlichiosis Chaffeensis. *J Neuro-ophthalmology* 1997, 17(1): 47-50.

Carter N, Zee DS. The anatomical localization of saccades using functional imaging studies and transcranial magnetic stimulation. *Current Opinion in Neurology* 1997,10:10-17.

Miller NR, McCarthy EF, Carter N, Tamargo R, Green WR. Lytic Paget disease as a cause of orbital cholesterol granuloma. *Arch Ophthalmol. 1999*;117:1084-1086.

Carter, N, Schafffer S, Situation of Postdocs: Purpose, Perseverence, Vision. Science-Next Wave. 1996; August 2.

Mackenzie C. Cervenka, M.D.
Associate Professor of Neurology, Johns Hopkins School of Medicine, Baltimore, MD
Medical Director, Johns Hopkins Adult Epilepsy Diet Center
Medical Director, Johns Hopkins Epilepsy Monitoring Unit

My fellowship training in epilepsy and clinical neurophysiology in the Department of Neurology at Johns Hopkins (2008-2010) and experience as a faculty member in the epilepsy division after completing fellowship have provided me with a unique foundation which I have built on to pursue a career as a clinician scientist investigating the use of ketogenic diet therapies for adult epilepsy. I have been fortunate to work with inspirational mentors and colleagues and through their support and encouragement, I began the first Adult Epilepsy Diet Center which is a multidisciplinary center to provide ketogenic diet therapies to adults with intractable epilepsy. Our mission is also to train clinicians and dietitians on management of adults with ketogenic diet therapies to broaden the availability of these effective treatments worldwide. To achieve this goal, our team offers a ketogenic diet training program and I have become a member of the International League Against Epilepsy Dietary Treatments Task Force. Most recently, I also began conducting clinical trials examining the treatment of refractory status epilepticus with the ketogenic diet. My training and mentorship at Johns Hopkins have provided me with the essential tools to become a leader in the study of ketogenic diet therapies for epilepsy.

Selected Publications:

Cervenka MC, Kossoff EH. Dietary treatment of intractable epilepsy. Continuum: Lifelong Learning in Neurology, 2013;19(2):756-766.

Cervenka MC, Henry BJ, Felton EA, Patton K, Kossoff EH. Establishing an Adult Epilepsy Diet Center: experience, efficacy and challenges. Epilepsy and Behavior. 2016;58:61-8.

Cervenka MC, Henry BJ, Kossoff EH. Is there a role for diet monotherapy in adult epilepsy? Epilepsy and Behavior Case Reports. 2017;7:6-9.

Van der Louw E, Williams TJ, Henry-Barron B, Cervenka MC. Ketogenic diet therapy for epilepsy during pregnancy: A case series. Seizure. 2017;45;198-201.

Cervenka MC, Hocker SE, Koenig MA, Bar B, Henry- Barron BJ, Kossoff EH, Hartman AL, Probasco JC, Benavides DR, Venkatesan A, Hagen EC, Dittrich D, Stern T, Radzik B, Depew M, Caserta FM, Nyquist PA, Kaplan PW, Geocadin RG. A phase I/II multicenter ketogenic diet study for adult super-refractory status epilepticus. Neurology. 2017;88(10):938-943.

McDonald TJW, Ratchford EV, Henry-Barron BJ, Kossoff EH, Cervenka MC. Impact of the modified Atkins diet on cardiovascular health in adults with epilepsy. Epilepsy and Behavior. 2018:79:82-86.

McDonald TJW, Henry-Barron BJ, Felton EA, Gutierrez EG, Barnett J, Fisher B, Lwin M, Jan A, Vizthum D, Kossoff EH, Cervenka MC. Improving compliance in adults with epilepsy on a modified Atkins diet: A randomized trial. Seizure: Europ J Epilepsy. 2018:60:132-138.

Honors/Awards:

Johns Hopkins School of Medicine Clinician Scientist Career Development Award 2013-2014

Mentor of the Year, Johns Hopkins Neurology Junior Faculty Mentoring Program 2018

Top Doctors, Baltimore Magazine 2018

Gerald Dal Pan, MD, MHS
Director, Office of Surveillance and Epidemiology
United States Food and Drug Adminstration

My time at Hopkins was exciting and formative from the very first day. My first rotation was the inpatient pediatric neurology service - a real shock after having just completed a three-year residency in Internal Medicine, especially since most of the patients on the Pediatric Neurology service were under one-year old (or so it seemed). I was very intimidated by Harvey Singer's encyclopedic knowledge of inborn errors of metabolism and all the eponym-based pediatric neurological diseases. I was intrigued by John Freeman's sit-on-the-floor-and-play-with-the-child method of the neurological exam. Harvey and John were two of my most valued teachers.
By far the most important happening during my residency occurred in the Fall of 1989 (just a few months into our first year), when Russ Margolis, then a Hopkins Psychiatry resident and now a Hopkins Professor of Psychiatry, and his wife Leslie (both college classmates of mine) gave me the name of someone they thought I might like meeting. I called Kathi on a Sunday evening while on call at Key (now Bayview) – we've been together ever since and have now been married for 24 years. After residency, I completed a Master of Health Science in Clinical Epidemiology at the Johns Hopkins School of Hygiene and Public Health and fellowship in Clinical Neurovirology at Hopkins with Justin McArthur. I then joined the Neurology faculty at Hopkins, where I remained through late 1995. I then went to a small pharmaceutical company in Baltimore, where I learned an immense amount about drug development. In 2000, I joined the Food and Drug Administration, where I started as a clinical reviewer of centrally-acting analgesics. In 2003, I moved to a managerial position in the FDA drug safety office and became the director of that office in 2005, a position I've held since then. Running FDA's post-market drug safety monitoring office, where I am responsible for a staff of over 350 physicians, pharmacists, and scientists who monitor the safety of all marketed human medicines and therapeutic biologics in the United States has been as challenging as it's been rewarding. Since 2008, I also serve as one of two co-chairs of the World Health Organization Advisory Committee on the Safety of Medicinal Products since 2008. I've been fortunate to maintain academic endeavors through research projects and publications at FDA, including mentoring Masters- and PhD-level dissertations in the area of drug safety. I'm still on the part-time faculty in Neurology at Hopkins, where I teach residents, though not as much as I'd like. I also am involved in the Hopkins Center for Drug Safety and Effectiveness.

Recent Publications:

McMahon AW, Dal Pan G. Assessing Drug Safety in Children - The Role of Real-World Data. N Engl J Med. 2018. PubMed PMID: 29874532.

Chai G, Xu J, Osterhout J, Liberatore MA, Miller KL, Wolff C, Cruz M, Lurie P, Dal Pan G. New Opioid Analgesic Approvals and Outpatient Utilization of Opioid Analgesics in the United States, 1997 through 2015. Anesthesiology. 2018;128:953-966.

Misu T, Kortepeter CM, Muñoz MA, Wu E, Dal Pan GJ. An Evaluation of "Drug Ineffective" Postmarketing Reports in Drug Safety Surveillance. Drugs Real World Outcomes. 2018 Jun;5(2):91-99. PubMed PMID: 29476420

Sinha MS, Freifeld CC, Brownstein JS, Donneyong MM, Rausch P, Lappin BM, Zhou EH, Dal Pan GJ, Pawar AM, Hwang TJ, Avorn J, Kesselheim AS. Social Media Impact of the Food and Drug Administration's Drug Safety Communication Messaging About Zolpidem: Mixed-Methods Analysis. JMIR Public Health Surveill. 2018 PubMed PMID: 29305342

Larry E. Davis, M.D.
Distinguished Professor, University of New Mexico and Chief, Neurology Service, Veterans Affairs Health Care System, Albuquerque NM

My wife and I came to Baltimore following a two year stint in the US Public Health Service. During that time I worked for the US Centers for Disease control chasing Midwest outbreaks of "encephalitis" which were mainly foci of viral meningitis. Midway through that stint I was sent on three-day notice to the jungles of Nigeria to work with the International Committee of the Red Cross to help with their Nigerian Civil war. Famine had developed as the civil war troops withdrew to their old territory. That experience was an eye opener as I worked in grass clinics with only a stethoscope around my neck seeing 200 Nigerians per half day with a limited number of medicines. My only research effort was to develop a rapid method, not requiring clinicians or nurses, to measure children with significant malnutrition. Using the new method we determined how much Red Cross food we gave to their village. I called the simple method, the Left Arm Circumference Method. To my amazement, 40 years later on a trip to Ethiopia, I discovered the method is still in widespread use throughout Africa. On arrival to Baltimore in the fall of 1970, my wife and I got Hopkins simple rental housing and I started off to work as a resident. I knew Guy McKhann from my days as a medical student at Stanford and really liked his approach to teaching about patients. I actually knew Dick Johnson during my internship year at Cleveland Metropolitan Hospital and was impressed by the quality of his research. Otherwise, Baltimore and Hopkins were totally new to me. As the Neurology department was brand new, we were the first group of residents and discovered that there were no experienced residents above us except for a few young research faculty spending their time in the labs. Mornings were spend on the small neurology inpatient ward and afternoons were spent seeing neurology consults throughout the hospital. Our attendings would spend 1 hour a day several days a week seeing our most interesting patients and teaching us the basics of their neurologic illness. This was the era of no internet and the medical library was in a separate building across the campus so reading the neurology literature was a challenge. One nice memory of Guy was that whenever I goofed up on the inpatient ward, Guy would call me to visit him in his office and we politely discussed what the problem was. It was a long time before I discovered how Guy rapidly knew about my screw-ups. It turned out that Guy met every morning with the head nurse and she told him. While Guy was excellent at examining especially children and asking challenging questions during rounds, Dick Johnson and Dan Drachman had an amazing fund of both basic science and practical knowledge on caring for the patient. Those attending rounds sent me to the library to read about my patient before the attending rounds. I was not afraid to show my lack of knowledge to the attending but my discomfort of demonstrating it to my fellow very bright residents. I had the privilege of attending Dick Johnson's research weekly meeting to learn what his lab was doing. However, Dick made it clear to me that he did not want me to start any research laboratory adventures until after I had completed my neurology residency. I did that and am grateful for his advice to become a strong clinical neurologist before starting a research lab. In the old days, NIH could fund 50-75% of a faculty salary so being a good clinician was not important. That day has long gone and I am glad I have always been a good clinician. In Dick's lab I had the opportunity to work with excellent researchers and learn the basics of cell cultures, doing good animal studies, and writing grant proposals. Dick was wonderful at "reviewing" my manuscripts and always nicely improving them. One lesson I learned was that major medical schools often had powerful fiefdoms. I had discovered an immunodeficient pediatric patient who had received the oral polio vaccine but sadly the vaccine back mutated to the wild virus and was causing chronic poliomyelitis. When the pediatric department discovered what I had found, the pediatric chair politely informed me that they did not want my services any further and they would control the patient. When the child died, The on-call pathologist was a friend of mine and quietly let me know that the autopsy would be at 7:30 am and I was welcome to collect any autopsy samples I wanted. This became the first documentation that the polio vaccine could back mutate in an immunodeficient individual. Years later, when the HIV epidemic came, many cases of clinical poliomyelitis started to appear from a back mutation of the vaccine leading to our now using only the killed polio vaccine. My final memory of Guy McKhann was when he invited me to remain on the junior faculty in his neurology department. He offered me $20K. I told him that I was already making $21K since I was moonlighting at a local clinic on the weekends. He responded by stating he would match it. Unfortunately homes in Baltimore were way out of my salary range, I had accumulated no money in a bank account, and now had a wife and two young children to support. Since I was studying how virus infect the inner ear as well as other illnesses that crossed into medicine, surgery, and pediatrics services, I knew I had to find a medical school that was young and had not developed fiefdoms. This is how I found my home in New Mexico at their brand new medical school in Albuquerque as they did not have fiefdoms.

Valina L. Dawson, Ph.D.
Director, Neuroregeneration and Stem Cell Programs, Institute for Cell Engineering
Professor of Neurology, Neuroscience and Physiology, Johns Hopkins University School of Medicine, Baltimore, MD

I was recruited into the department of Neurology by Dr. Richard Johnson in 1994 and was given additional appointments in the departments of Neuroscience and Physiology. In this rich academic environment, I have focused on understanding the cellular signaling events that underlie neuronal injury in stroke, Parkinson's disease and other neurodegenerative diseases with the goal of finding new clinical therapies. In collaboration with Dr. Ted M. Dawson, we discovered neurotoxic signaling pathways in familial and sporadic Parkinson's disease that are leading to drugs to halt the disease. We found the receptor responsible for the cell-to-cell transmission of pathologic alpha synuclein and that blocking this receptor is neuroprotective. We defined poly (ADP-ribose) signaling and Parthanatos as a key mediators of neuronal cell death. We discovered that genomic DNA cleavage in Parthanatos is mediated by macrophage migration inhibitory factor (MIF) nuclease and discovered MIF nuclease inhibitors that are neuroprotective. Recently we discovered how healthy A2 astrocytes are converted to reactive toxic A1 astrocytes and identified a drug that blocks this conversion. I became Professor in 2001 and in 2002 was asked to co-direct the Neuroregeneration and Repair Program and in 2009 the Stem Cell Program in the Institute for Cell Engineering.

Selected Publications:

Dawson, V.L., T.M. Dawson, E.D. London, D.S. Bredt and S.H. Snyder. "Nitric Oxide Mediates Glutamate Neurotoxicity in Primary Cortical Cultures." Proc. Natl. Acad. Sci., U.S.A. 88:6368-6371 (1991). PMID: 1648740.
Eliasson, M.J.L., K. Sampei, A.S. Mandir, P.D. Hurn, R.J. Traystman, J. Bao, A. Pieper, Z.-Q. Wang, T.M. Dawson, S.H. Snyder, and V.L. Dawson. "Poly(ADP-Ribose) Polymerase Gene Disruption Renders Mice Resistant to Cerebral Ischemia." Nature Med. 3: 1089-1095 (1997). PMID: 9334719.
Yu, S.-W., H.-M. Wang, M.F. Poitras, C. Coombs, W.J. Bowers, H.J. Federoff, Guy G. Poirer, T.M. Dawson, V.L. Dawson "Mediation of PARP-1 Mediated Cell Death by Apoptosis Inducing Factor." Science, 297: 259-263 (2002). PMID: 12114629.
Xu, J.C., J. Fan, X. Wang, S.M. Eacker, T-I Kam, L. Chen, X. Yin, J. Zhu, Z. Chi, H. Jiang, R. Chen, T.M. Dawson, and V.L. Dawson. "Cultured networks of excitatory projection neurons and inhibitory interneurons for studying human cortical neurotoxicity." Sci Transl Med. Apr 6;8(333):333ra48 (2016). PMID: 27053772.
Mao, X., T. Ou, S.S. Karuppagounder, T.-I. Kam, X. Yin, Y. Xiong, P. Ge, G.E. Umanah, S. Brahmachari, J.-H. Shin, H.C. Kang, J. Zhang, J. Xu, R. Chen, H. Park, S.A. Andrabi, S.U. Kang, R.A. Goncalves, Y. Liang, S. Zhang, C. Qi, S. Lam, J.A. Keiler, J. Tyson, D. Kim, N. Panicker, S.P. Yun, C.J. Workman, D.A.A. Vignali, V.L. Dawson, H.S. Ko, T.M. Dawson. "Pathological α-synuclein transmission initiated by binding lymphocyte-activation gene 3 receptor." Science 353, aah3374 (2016). DOI: 10.1126/science.aah3374, PMID:27708076 (2016).
Wang, Y., R. An, G.K. Umanah, H. Park, K. Nambiar, S.M. Eacker, B.W. Kim, L. Bao, M.M. Harraz, C. Chang, R. Chen, J.E. Wang, T.-I. Kam, J.S. Jeong, Z. Xie, S. Neifert, J. Qian, S.A. Andrabi, S. Blackshaw, H. Zhu, H. Song, G. Ming, V.L. Dawson, T.M. Dawson "A Nuclease that Mediates Cell Death induced by DNA Damage and Poly(ADP-ribose) Polymerase-1." Science, 354, aad6872 (2016). DOI: 10.1126/science.aad6872. (2016). PMID: 27846469.
Yun, S.P., T.-I. Kam, N. Panicker, S.M. Kim, Y. Oh, J.-S. Park, S.-H. Kwon, Y.J. Park, S.S. Karuppagounder, H. Park, S. Kim, N. Oh, N.A. Kim, S. Lee, S. Brahmachari, X. Mao, J.H. Lee, M. Kumar, D. An, S.-U. Kang, Y. Lee, K.C. Lee, D.H. Na, D. Kim, S.H. Lee, S.A. Liddelow, Z. Mari, B.A. Barres, V.L. Dawson, S. Lee, *T.M. Dawson and *H. Ko "Block of A1 astrocyte conversion is neuroprotective in models of Parkinson's disease." Nature Medicine, Jul;24(7):931-938 (2018) PMID: 29892066.

Honors/Awards:
Fellow of the American Heart Association (F.A.H.A.)
Fellow American Association for the Advancement of Science
Javits Neuroscience Investigator Award

Scott D.Z. Eggers, MD
Consultant, Department of Neurology
Associate Professor, College of Medicine & Science
Mayo Clinic, Rochester, MN

My clinical and research fellowship at Johns Hopkins (2001-2003), under the mentorship of Dr. David Zee, laid the groundwork for my career as an academic clinician in the field of ocular motor and vestibular disorders. Dr. Zee's infectious joy of learning, dedication to continuously advancing the field, and generosity with his time and knowledge provided an aspirational career model. At Mayo Clinic, I work within our Division of Education, spending considerable time teaching neurology residents in clinic as well as spending years chairing the neuroanatomy course and clinical competency committee. My clinical work focuses on patients with vestibular disorders, nystagmus, diplopia, and other ocular motor disorders as part of our multi-disciplinary integrated neurotology team. My research interests have included the diagnostic boundaries and management of vestibular migraine, ocular motor manifestations in degenerative and autoimmune conditions, and the pathophysiology of saccadic palsies. I am medical editor for AskMayoExpert, an internal online tool that supports practice standardization by providing concise, reliable, actionable answers to clinical questions at the point of care using Mayo-vetted consensus-driven, evidence-based best practices. In everything I do, my time at Hopkins and the great people I had the privilege of working with there, continue to influence me.

Selected Publications

Eggers SD, Staab JP, Neff BA, Goulson AM, Carlson ML, Shepard NT. Investigation of the coherence of definite and probable vestibular migraine as distinct clinical entities. Otol Neurotol. 2011 Sep; 32(7):1144-51.

Eggers SD, Neff BA, Shepard NT, Staab JP. Comorbidities in vestibular migraine. J Vestib Res. 2014; 24: (5-6)387-95.

Eggers SD, Moster ML, Cranmer K. Selective saccadic palsy after cardiac surgery. Neurology. 2008 Jan 22; 70(4):318-20.

Eggers SD, Horn AK, Roeber S, Hartig W, Nair G, Reich DS, Leigh RJ. Saccadic Palsy following Cardiac Surgery: Possible Role of Perineuronal Nets. PLoS One. 2015; 10: (7)e0132075.

Arena JE, Weigand SD, Whitwell JL, Hassan A, Eggers SD, Hoglinger GU, Litvan I, Josephs KA. Progressive supranuclear palsy: progression and survival. J Neurol. 2016 Feb; 263 (2):380-389 Epub 2015 Dec 24

Amos A. Fatokun, PhD
Senior Lecturer in Pharmacology, School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University, Liverpool, UK

I was a postdoctoral fellow in the laboratory of Drs. Ted Dawson and Valina Dawson at the Department of Neurology and the Institute for Cell Engineering (ICE) between October 2007 and August 2010. During that time I obtained an American Heart Association (AHA) Postdoctoral Fellowship (overall best application within the Mid-Atlantic Affiliate region, which was recognised with a special plaque at an award ceremony) to investigate small-molecule compounds that could elicit neuroprotection by inhibiting the translocation of apoptosis-inducing factor (AIF), which is one of the key molecular events that culminate in PARP-mediated cell/neuronal death (parthanatos). Two methoxyflavones, 4′-methoxyflavone and 3′,4′-dimethoxyflavone were found to inhibit the parthanatos cascade through their direct inhibition of the PARP-1 enzyme. This and further findings garnered through the detailed characterization of these compounds provoked my interest in investigating the potential of such-like natural compounds or their derivatives to target specific signalling mechanisms, rather than, or in addition to, merely acting as antioxidants (flavonoids are known to elicit anti-oxidant effects). This focus continues to represent a significant part of my research endeavour. My training at Hopkins gave me the opportunity to expand my research skills, including in academic drug discovery and molecular and cell biology.

Selected Publications:

Fatokun AA, Dawson VL, Liu JO, Dawson TM. Identification through high-throughput screening of 4'-methoxyflavone and 3',4'-dimethoxyflavone as novel neuroprotective inhibitors of parthanatos. Br. J. Pharmacol. 2013; 169: 1263-78. PubMed PMID: 23550801.

Fatokun AA, Dawson VL, Dawson TM. Parthanatos: Mitochondrial-linked mechanisms and therapeutic opportunities. Br. J. Pharmacol. 2014; 171: 2000-16. PubMed PMID: 24684389.

Honors/Awards:
EU FP7 Marie Curie International Incoming Fellowship, 2010
International Visiting Research Fellowship (IVRF), University of Sydney, Australia, 2010
(Highest-scoring) American Heart Association (AHA) Mid-Atlantic Affiliate Postdoctoral Fellowship, 2008

Eva L. Feldman MD, PhD
Russell N. DeJong Professor of Neurology
Director, Program for Neurology Research and Discovery
Director, ALS Center of Excellence at Michigan Medicine
University of Michigan, Ann Arbor

My time as a Neurology resident (1984-1987) at Hopkins established my scientific and clinical career path, my lifelong mentors and wonderful colleagues. I entered residency with the intent of becoming a stroke neurologist, until I met Jack Griffin. He informed me I was "misdirected" and "I must become a friend of the Schwann cell!" In parallel, Hopkins was a trial site for early plasma exchange in GBS, and as an eager resident, I followed the trial patients. Soon I was working in Jack's lab and the EMG lab. As chief resident, I also spent time with Guy, who taught me the art of the neurological examination with an added twist: how to interest your patients in the tripartite mission of neurology so they will partner with you to fund research and education. As I established my career as a neuromuscular clinician scientist at the University of Michigan, I had a "hotline" to Hopkins, speaking nearly weekly at first with Jack and Guy. Twenty years later, having spent my career at Michigan, I received a $100 million dollar donation from a patient to begin a research institute; the first person I called was Guy—who replied "Great work, kid!" I smiled.

Selected Publications:

Feldman EL, Boulis NM, Hur J, Johe K, Rutkove SB, Federici T, Polak M, Bordeau J, Sakowski SA, Glass JD. Intraspinal neural stem cell injections in ALS subjects: phase I trial outcomes. *Annals of Neurology*, 75, 363-373, 2014.

Feldman E, Hughes R, Willison H. Progress in inflammatory neuropathy-the legacy of Dr. Jack Griffin. *Nature Reviews Neurology*, 11, 646-650, 2015.

Callaghan BC, Price RS, Feldman EL. Distal symmetric polyneuropathy: a review. *JAMA*, 314, 2172-2181, 2015.

Su F-C, Goutman SA, Chernyak S, Mukherjee B, Callaghan BC, Batterman S, Feldman EL. Association of environmental toxins with Amyotrohic Lateral Sclerosis. *JAMA Neurology*, 73(7), 803-11, 2016.

Callaghan BC, Xia R, Reynolds E, Banerjee M, Rothberg AE, Burant CF, Villegas-Umana E, Pop-Busui R, Feldman EL. Association Between Metabolic Syndrome Components and Polyneuropathy in an Obese Population. JAMA Neurol. 2016 Dec 1;73(12):1468-1476

O'Brien PD, Hinder LM, Callaghan BC, Feldman EL, Neurological consequences of obesity. *Lancet Neurol,* 16(6):465-577. 2017

Feldman EL, Nave KA, Jensen TS, Bennett DL. New Horizons in Diabetic Neuropathy: Mechanisms, Bioenergetics, and Pain. *Neuron,* 93(6); 1296-1313, 2017

Honors/Awards:
Member, Johns Hopkins Society for Scholars;
Member, National Academy of Medicine;
Past President, American Neurological Association

Robert S. Fisher, MD, PhD
Maslah Saul Professor of Neurology, Stanford University Medical Center
When I interviewed for Johns Hopkins Neurology residency, I had already made up my mind to go elsewhere. But a snowstorm prevented my return to California. As I was snowed in, Guy McKhann drove me back to his house and he and his wife gave me a drink in front of his fireplace, fed me dinner, and late that night drove me to the airport. He was chair and I was one of dozens of nameless applicants. So I spent the next 12 years at Hopkins. I opened my first lab at Hopkins studying hippocampal slices and epilepsy in 1983. Hopkins Neuroscience was so dominated by the pioneering extracellular sensory physiology studies of Vernon Mountcastle that my tiny lab was one of the only intracellular labs at the Medical Center. Over time, I moved away from studying epilepsy drugs and towards epilepsy devices. Together with the late surgeon, Sumio Uematsu, we performed the first controlled trial of deep brain stimulation for epilepsy. Decades later, this has contributed to neurostimulation becoming available as a new therapy (in several flavors) for refractory epilepsy. On the clinical side, I watched my advisor, John Freeman resurrect both the ketogenic diet and with Ben Carson, Eileen (Patty) Vining and a group of very courageous parents, hemispherectomy. We performed the first receptor PET scans on patients with epilepsy. With Al Krumholz, we set out guidelines for driving and epilepsy. We tied for first report of high-frequency EEG at start of a seizure. I participated with Ron Lesser and Greg Bergey in opening one of the early epilepsy monitoring units in the US. Initially, the unit ran continuous paper EEGs, which we clipped each morning to retain the segments with seizures. One day, the custodial staff had me called before the hospital administrator for abuse. Apparently, the trash can in the epilepsy monitoring unit weighed 70 pounds each morning. We solved that problem, first with multiple trash cans and then with digital EEGs. Watching all those videos of seizures induced an interest in distinguishing epileptic from nonepileptic seizures. That interest later led to a role in defining and classifying epilepsy. Together, we trained fellows who are now epilepsy leaders, including Brian Litt, Greg Krauss, Nathan Crone. The late, great electroencephalographer, Ernst Niedermeyer, trained me, but at the start of my fellowship, Ernst immediately took a 6-month sabbatical to Dusseldorf, leaving me to muddle through the EEGs. I commented that I was not yet trained to read them, and he replied, “It’s mostly on the job training anyway.” Somehow, Patty Vining and I kept the ship afloat until he returned. A few years ago, I returned to Hopkins to give Neurology Grand Rounds. During my talk, I did what I always do – calling on residents in the audience for their opinions. However, the interaction was not working. Only later did I realize that those residents were now all professors and vice-chairs, not used to being called on until at least three other people had opined. Time passes.

Selected Publications:

Bare, M. A., Lesser, R. P., Fisher, R. S., Vining, E. P. G., Epilepsy monitoring unit - review of the 1st 80 patients. Epilepsia 1988;29:669-670.

Krumholz A, Fisher RS, Lesser RP, Hauser WA, Driving and epilepsy. A review and reappraisal. JAMA. 1991;265:622-6.

Fisher RS, Webber WR, Lesser RP, Arroyo S, Uematsu S. High frequency EEG activity at the start of seizures. Journal of Clinical Neurophysiology, 1992; 9: 441-448.

Stein AG, Eder HG, Jones D, Drachev A, Blum DE, Fisher RS An automated drug delivery system for focal epilepsy. Epilepsy Res, 2000; 39:103-14.

Fisher RS, Salanova V, Witt T, et al. Electrical stimulation of the anterior nucleus of thalamus for treatment of refractory epilepsy. Epilepsia,2010; 51:899-908.

Fisher RS, Acevedo C, Arzimanoglou A, et al. ILAE official report: a practical clinical definition of epilepsy. Epilepsia 2014; 55: 475-82.

Fisher RS, Cross JH, French JA, et al. Operational classification of seizure types by the International League Against Epilepsy: Position Paper of the ILAE Commission for Classification and Terminology. Epilepsia 2017;58:522-530.

Honors

Past President, American Epilepsy Society
Annual Clinical Research Award, American Epilepsy Society
TEDx speaker, San Francisco, 2018

Kevin M. Flanigan, MD
Director, Center for Gene Therapy, and Robert F. & Edgar T. Wolfe Foundation Endowed Chair in Neuromuscular Research, Nationwide Children's Hospital, Columbus, Ohio
Professor of Pediatrics and Neurology, Ohio State University, Columbus, Ohio.

My years as a neurology resident and neuromuscular fellow at Hopkins profoundly influenced my entire career. It was at Hopkins that I was exposed to role models who were both excellent clinicians and profoundly productive researchers who have had lasting impacts on their fields. Although an adult neurology resident, I spent significant time with Harvey Singer and Tom Crawford – quite fortunately, as my primary appointment now is at a pediatric hospital. While a resident I gravitated to the dynamic personalities of the neuromuscular division, and as a fellow benefited from the great teaching of Dan Drachman, Jack Griffin, Ralph Kuncl, David Cornblath, and Vinay Chaudhry. Having learned to extract DNA and pipet during a couple of elective months, I went on to a fellowship in Human Molecular Biology and Disease at the University of Utah, pursuing mapping of genetic diseases. There we developed a method for the rapid sequence analysis of the *DMD* gene that led to a large collaborative project addressing genotype/phenotype correlations and identifying other genes that modify the Duchenne phenotype. My current efforts in AAV-based gene therapies for neuromuscular and neurodegenerative disorders are feasible because of curiosity, skills, and enthusiasms developed as a trainee at Hopkins.

Selected Publications:

Weiss RB, Vieland VJ, Dunn DM, Kaminoh Y, Flanigan KM; United Dystrophinopathy Project. Long-range genomic regulators of THBS1 and LTBP4 modify disease severity in Duchenne muscular dystrophy. Ann Neurol. 2018; 84(2):234-245. PubMed PMID: 30014611.
Vulin A, Wein N, Simmons TR, Rutherford AM, Findlay AR, Yurkoski JA, Kaminoh Y, Flanigan KM. The first exon duplication mouse model of Duchenne muscular dystrophy: A tool for therapeutic development. Neuromuscul Disord. 2015; 25(11):827-34. PubMed PMID: 26365037.
Wein N, Vulin A, Falzarano MS, et al., Translation from a DMD exon 5 IRES results in a functional dystrophin isoform that attenuates dystrophinopathy in humans and mice. Nat Med. 2014;20(9):992-1000. PubMed PMID: 25108525
Flanigan KM, Ceco E, Lamar KM, et al.; United Dystrophinopathy Project. LTBP4 genotype predicts age of ambulatory loss in Duchenne muscular dystrophy. Ann Neurol. 2013 Apr;73(4):481-8. PubMed PMID: 23440719.
Flanigan KM, Dunn DM, von Niederhausern A, etal.; United Dystrophinopathy Project Consortium, Weiss RB. Nonsense mutation-associated Becker muscular dystrophy: interplay between exon definition and splicing regulatory elements within the DMD gene. Hum Mutat. 2011;32(3):299-308. PubMed PMID: 21972111.
Flanigan KM, Dunn DM, von Niederhausern A, et al.; United Dystrophinopathy Project Consortium, Weiss RB. Mutational spectrum of DMD mutations in dystrophinopathy patients: application of modern diagnostic techniques to a large cohort. Hum Mutat. 2009 Dec;30(12):1657-66. PubMed PMID: 19937601.
Flanigan KM, von Niederhausern A, Dunn DM, Alder J, Mendell JR, Weiss RB. Rapid direct sequence analysis of the dystrophin gene. Am J Hum Genet. 2003;72(4):931-9. PubMed PMID: 12632325.

Adam S. Fleisher, M.D., M.A.S.
Chief Medical Officer, Avid Radiopharmaceuticals

The years I spent training at Hopkins during my Internship and adult Neurology residency (1998-2002) were unquestionably the foundation for my clinical and research career. Aside from the amazing clinical experience including Chairman Rounds with Jack Griffin, it is where I first learned to use Powerpoint to present at grand rounds and the newest medical tools, like the PalmPilot (AKA Personal Digital Assistant). I recall diagnosing an ALS patient who presented with frontal temporal dementia to Dr. Griffin, which solidified by path towards becoming a cognitive neurology researcher. I spend many hours at Kennedy Krieger Institute learning about volumetric imaging as a tool to understand brain neuromorphometry. Subsequently I spend the next several years at the University of California San Diego laying the groundworks for a career in clinical trials and biomarker development for Alzheimer's disease and other cognitive disorders. I completed a dementia research and clinical fellowship in 2002, and a masters degree in clinical trial research in 2007, publishing my first paper in functional MRI of AD risk in 2005. My subsequent career as a clinician scientist focused on working with cognitive neurodegenerative disease patients in the memory clinic at the Banner Alzheimer's Institute in Arizona. There I continued to work on clinical therapy trials for Alzheimer's disease while leading research programs to further develop diagnostic tools such as amyloid and tau PET imaging. We were proud to publish some of the first works on amyloid PET in pre-symptomatic autosomal dominant Alzheimer's disease patients, and do foundational work in both amyloid and tau PET imaging. With a passion for clinical research and a quest toward finding a cure for Alzheimer's disease I eventually took on a role at Eli Lilly to develop and lead international treatment trials in Alzheimer's disease, and now continue to work on treatment trials and diagnostic imaging development, staying close to my original passions that were rooted at John Hopkins.

Selected Publications:

Adam Fleisher; Abhinay Joshi; Karen Sundell, et al, "Use of White Matter Reference Regions for Detection of Change in Florbetapir PET from Completed Phase 3 Solanezumab Trials", Alzheimers Dement. 2017 Oct;13(10):1117-1124. doi: 10.1016/j.jalz.2017.02.009. Epub 2017 Mar 30.

Adam S. Fleisher, Kewei Chen, Yakeel T. Quiroz, et al, "Associations between biomarkers and age in the presenilin 1 E280A autosomal dominant Alzheimer's disease kindred: a cross-sectional study", *JAMA Neurology*, JAMA Neurol. 2015 Mar;72(3):316-24.

Adam S. Fleisher, M.D, Kewei Chen, Ph.D., Yakeel T. Quiroz, Ph.D., et al , "Florbetapir PET analysis of amyloid-beta deposition in the presenilin 1 E280A autosomal dominant Alzheimer's disease kindred: a cross-sectional study". Lancet Neurol 2012 Nov 6;11:1057-65.

Clark CM, Schneider JA, ….. Fleisher AS, et al, "Use of florbetapir-PET for imaging beta-amyloid pathology", JAMA, 2011, JAN 19: 305(3): 275-283. PMID: 21245183

Adam S. Fleisher, Diana Truran, Jacqueline T. Mai, et al; "Chronic Divalproex Sodium Use and Brain Atrophy in Alzheimer's Disease", Neurology. 2011 Sep 27;77(13):1263-1271.

AS Fleisher; K Chen; X Liu; A Roontiva, et al "Using Positron Emission Tomography and Florbetapir F 18 to Image Cortical Amyloid in Patients With Mild Cognitive Impairment or Dementia Due to Alzheimer Disease", Arch Neurol, 2011, 68:1404-1411. PMID:21747008

Adam S. Fleisher, Ayesha Sherzai, Curtis Taylor, et al, "Resting-state BOLD functional MRI networks distinguish Alzheimer's disease risk groups", NeuroImage, 2009, Oct 1;47(4):1678-90. PMCID: PMC2722694

Adam S. Fleisher, Shelly Sun, Curtis Taylor, et al, "Volumetric MRI versus Clinical Predictors of Alzheimer's Disease in Mild Cognitive Impairment", *Neurology*, 2008;70:191-199

Adam S. Fleisher, Wes S. Houston, Lisa T. Eyler, et al, "Alzheimer's Disease Risk and Functional MRI in Normal Aging", *Arch Neurol*, Dec, 2005; 62:1881-1888.

Carolyn Fredericks, M.D.
Clinical Assistant Professor of Neurology, Stanford University

My time at JHH as a neurology resident formed the foundation for my still-nascent career as a clinician-scientist in behavioral neurology. I often draw on the experiences I had as a resident on the wards, and many of the connections I made at Hopkins have become lifelong friendships. After my time at Hopkins, I went to the University of California, San Francisco, where I served as Chief Resident and then completed my fellowship in Behavioral Neurology at UCSF's Memory and Aging Center. In 2016, I accepted a position on the faculty at Stanford University, where I am currently preparing to submit a career award proposal. My research focuses on understanding the neural networks disrupted in preclinical and clinical Alzheimer's disease, including less common Alzheimer's variants. I also have a strong clinical interest in rapidly progressive dementia and autoimmune encephalitis, inspired by a patient I saw at JHH in 2011 with NMDAR encephalitis. I'm so grateful to remain in contact with many of my co-residents and colleagues from my Hopkins years: this community is a continual source of mentorship and inspiration.

Selected Publications:

Fredericks CA, Sturm VE, Brown JA, Hua AY, Bilgel M, Wong DF, Resnick SM, Seeley WW. Early affective changes and increased connectivity in preclinical Alzheimer's disease. *Alzheimer's & Dementia: Diagnosis, Assessment, and Disease Monitoring,* in press, 2018.

Fredericks CA and Lee S. "The cognitive neurology of corticobasal degeneration and progressive supranuclear palsy," in Miller & Boeve, eds. *The Behavioral Neurology of Dementia*, 2ed. Cambridge University Press, 2017.

Fredericks CA and Geschwind MD. "Autoimmune antibody-associated encephalopathy and dementia syndromes," in Miller & Boeve, eds. *The Behavioral Neurology of Dementia*, 2ed. Cambridge University Press, 2017.

Fredericks CA, Boxer A, Seeley WW, Miller B, Grinberg L. Primary chronic traumatic encephalopathy in an older patient with typical AD phenotype. *Neurol Clin Pract* 5(6):475-479, 2015.

Burish MJ*, Fredericks CA*, Engstrom JW, Tateo VL, Josephson SA. Predicting success: What medical student measures predict resident performance in neurology? *Clin Neurol Neurosur* 135:69-72*,* 2015*.* (*dual first-authorship).

Fredericks C, Kvam K, Bear J, Crabtree G, Josephson S. A case of progressive multifocal leukoencephalopathy in a lupus patient treated with belimumab. *Lupus* 2014 Feb 14 [Epub ahead of print].

Fredericks CA, Drabant EM, Edge MD, Tillie JM, Hallmayer J, Ramel W, Kuo JR, Mackey S, Gross JJ, Dhabhar FS. Healthy young women with serotonin transporter SS polymorphism show a pro-inflammatory bias under resting and stress conditions. *Brain Behav Immun* 24(3):350-7, 2010.

Honors/Awards:

- Precision Health and Integrated Diagnostics Center at Stanford (PHIND) Dream Team Award: Predicting Healthy vs Pathological Aging (Co-Investigator), 2017.
- Clinical Research Training Fellowship, American Academy of Neurology, 2015
- Alzheimer's Association Award for Excellence in Alzheimer's Science, Honorable Mention, 2015.

Amy (Fremion) Chappell, M.D.
Vice President (Neuroscience), Pharmaceutical Product Development (PPD)

In 1979 having suddenly found myself with a year between completing 2 years of a pediatrics residency at JHH and beginning a neurology residency at Indiana University Medical Center, John Freeman invited me to be his first ever pediatric epilepsy fellow. What initially seemed like a set-back in my career became one of its best years ever! In addition to teaching me about the care of pediatric seizure patients, John Freeman encouraged me to be courageous and to challenge the status quo. Patty Vining demonstrated for me humility, empathy and ways to find humor in even the most heart-breaking situations. Diana Pillas exemplified for me excellence in patient care and advocacy. Ernst Niedermeyer taught me how to read EEGs. I established a network of experts and friends in neurology that has been invaluable throughout my career. Since leaving Hopkins in 1980 I completed a neurology residency, became an assistant professor in Neurology (Child), and worked for Eli Lilly and Company for 25 years conducting clinical trials in all phases of drug development across a broad array of neurological indications. I have continued to practice clinical neurology throughout my career and continue to volunteer now at The Neighborhood Health Clinic in Naples, FL. In 2017 I passed the inaugural Lifestyle Medicine board examination and facilitate The Complete Health Improvement Program (CHIP) at the Greater Naples YMCA.

Selected Publications

1. AMPA/Kainate Antagonist LY293558 Reduces Capsaicin-evoked Hyperalgesia but not Pain in normal skin in humans. Sang, C.N., Hostetter, M.P., Gracely, RH., Chappell, A.S., Schoepp, D.D., Lee, G., Witcup, S., Caruso, R, Max, M.B. Anesthesiology, 89(5): 1060-67, November, 1998.
2. A crossover, add-on trial of talampanel in patients with refractory partial seizures. A. S. Chappell, J. W. Sander, M.J. Brodie, D. Chadwick, A. Lledo, D. Zhang, J. Bjerke, G. M. Kiesler, S. Arroyo. Neurology, 2002; 58:1680-1682
3. Efficacy and Safety of Talampanel in Patients with Amyotrophic Lateral Sclerosis. Amy S.Chappell, Robert Pascuzzi, John Bjerke, Jeff Rothstein. Amyotrophic Lateral Sclerosis Journal, December, 2009.
4. Multiple-dose plasma pharmacokinetic and safety study of LY450108 and LY451395 (AMPA receptor potentiators) and their concentrations in cerebrospinal fluid in healthy human subjects. SS Jhee, AS Chappell,V Zarotsky, SV Moran, M Rosenthal, E Kim, S Chalon,N Toublanc, J Brandt, DE Coutant, L Ereshefsky, J Clin Pharmacology 2006 46:424-432
5. Duloxetine 60 to 120 mg versus placebo in the treatment of patients with osteoarthritis knee pain. Chappell AS, Ossanna MJ, Liu-Seifert H, Collins H. Ann Rheum Dis 2008;67(Suppl II):390.
6. A 1-year safety and efficacy study of duloxetine in patients with fibromyalgia. Chappell AS. Littlejohn G. Kajdasz DK. Scheinberg M. D'Souza DN. Moldofsky H. Clinical Journal of Pain. 25(5):365-75, 2009 Jun.
7. Results from Clinical Trials of a Selective Ionotropic Glutamate Receptor 5 (iGluR5) Antagonist, LY5454694 Tosylate, in 2 Chronic Pain Conditions. Amy S Chappell, William Prucka, Smriti Iyengar, Evelyn Lobo. PAIN 155 (2014) 1140–1149

Honors/Awards Co-recipient of Alexander T. Ross Award for "excellence in scholarship, service and originality in clinical neurology and related subjects", 1977
Soroptomists International of Indianapolis "Woman of the Year", 1991 Keynote Speaker, YWCA Ft. Wayne, In, Tribute to Women of Achievement dinner, 1996 North Side High School Alumni Hall of Fame inductee, 2011

Elliot M Frohman, MD, PhD, FAAN, FANA
Professor of Neurology and Ophthalmology, Director, Multiple Sclerosis and Neuroimmunology Center
The Dell Medical School at The University of Texas at Austin

Residency, Chief Residency, and Fellowship at Johns Hopkins uniquely prepared me for fulfilling my goals of becoming a master clinician for patients with MS and complex neuroimmunological disorders, developing my skill sets as an educator, and as a scientist focused upon discovery by using the eye as a 'Window' into the brain for purposes of dissecting the pathobiological underpinnings of MS, and translating these into innovative neurotherapeutic interventions. Mentoring by David Zee, David Cornblath, Jack Griffin, and Dick Johnson convinced me that high precision characterization of eloquent tract systems (e.g. the MLF in INO and the optic nerve in optic neuritis) into their structural and functional pathophysiologic signatures would potentially provide innovative methods for translational discovery initiatives focused upon neuroprotection, myelin repair, and performance enhancement.

Selected Publications:

Meltzer E, Sguigna PV, Subei A, Beh S, Kildebeck E, Conger D, Conger A, Lucero M, Frohman BS, Frohman AN, Saidha S, Galetta S, Calabresi PA, Rennaker R, Frohman TC, Kardon RH, Balcer LJ, Frohman EM. Retinal Architecture and Melanopsin-Mediated Pupillary Response Characteristics: A Putative Pathophysiologic Signature for the Retino-Hypothalamic Tract in Multiple Sclerosis. JAMA Neurol. 2017 May 1;74(5):574-582.

Davis SL, Frohman TC, Crandall CG, Brown MJ, Mills DA, Kramer PD, Stuve O, and Frohman EM. Modeling Uhthoff's phenomenon in MS patients with internuclear ophthalmoparesis. *Neurology* 70: 1098-1106, 2008.

Frohman AR, Schnurman Z, Conger A, Conger D, Beh S, Greenberg B, Sutter E, Calabresi PA, Balcer LJ, Frohman TC, and Frohman EM. Multifocal visual evoked potentials are influenced by variable contrast stimulation in MS. *Neurology* 79: 797-801, 2012.

Frohman TC, Beh S, Saidha S, Schnurman Z, Conger D, Conger A, Ratchford JN, Lopez C, Galetta S, Calabresi PA, Balcer LJ, Green AJ, Frohman EM. The optic nerve head component response of the multifocal electroretinogram in MS. Neurology 2013;81:545-551. (accompanying editorial and PodCast).

Optical Coherence Tomography in Neurological Disease. Calabresi, PA, Balcer, LJ, Frohman, EM eds. Cambridge University Press (2015). *First book on the subject of OCT in neurological disease*

Zaveri MS, Conger A, Salter A, Frohman TC, Galetta SL, Markowitz CE, Jacobs DA, Cutter GR, Ying GS, Maguire MG, Calabresi PA, Balcer LJ, and Frohman EM. Retinal imaging by laser polarimetry and optical coherence tomography evidence of axonal degeneration in multiple sclerosis. *Archives of neurology* 65: 924-928, 2008.

Sakaie K, Takahashi M, Remington G, Wang X, Conger A, Conger D, Dimitrov I, Frohman A, Frohman T, Sagiyama K, Togao O, Fox RJ, Frohman EM. Correlating Function and Imaging Measures of the Medial Longitudinal Fasciculus. PLOS One 2016;11:

Honors/Awards:

2014 University of Texas Regents Outstanding Teacher Award System-Wide Teaching Award (ROTA) Prize: $25,000

2015 Recipient of the 2015 National MS Society Barancik Prize for Innovation in MS Research in conjunction with my two closest colleagues over the past 15 years; Dr. Peter Calabresi (Johns Hopkins School of Medicine and Dr. Laura Balcer (NYU School of Medicine). ($100,000).

2017 'Election' to the Johns Hopkins Society of Scholars

Natan Gadoth M.D.
Chairman of Neurology , Maynei Hayeshua Med Ctr, Bnei Barak and Professor (Emeritus) of Neurology, Sackler Faculty of Medicine, Tel-Aviv University , Israel .

I had already a keen interest and some clinical experience with rare neurological disorders in specific ethnic groups in Israel, when I have started my residency in Pediatric Neurology with the late Dr. J. Freeman. While learning the secrets and perils of clinical neurology, even without the help of CT, MRI, DNA sequencing etc., I have obtained the clinical skills how to continue my main field of interest i.e. hereditary and genetic disorders. This was a period blessed with the privilege to be guided by “John” (Dr. Freeman) and learn from Dr. G. McKhann, Dr. Ian Butler and my fellow residents, some of them I am still in touch with. My time with the late Dr. McKusick , at the Moore clinical was indeed the determinant of my career and research after returning to Israel. In the years to come I was able not only to outline a few neuro-hereditary disorders among specific ethnic groups in Israel but also to build together with few colleagues the first steps of establishing Pediatric Neurology as an independent specialty in Israel .

SELECTED PUBLICATIONS:

Gadoth N, Costeff H, Harel S, Lavie P. Motor abnormalities during sleep in patients with childhood hereditary progressive dystonia. and their unaffected family members. Sleep 1989;12:233-8.

Sadeh M, Gadoth N, Hadar H, Ben-David E. Vacuolar myopathy sparing the quadriceps. Brain 1993; 116:217-32.

Costeff H, Elpeleg O, Apter N, Divery P, Gadoth N. 3-Methylglutaconic aciduria in "optic atrophy plus". Ann Neurol 1993; 33:103-4.

Streifler JY, Gornish M, Hadar H, Gadoth N. Neuroimaging of the brain in late onset GM2 gangliosidosis. Neurology 1993; 43:2055-8.

Goldberg-Stern H, Djaldetti R, Melamed E, Gadoth N. Machado-Joseph-Azorean disease in a Yemenite Jewish family in Israel. Neurology 1994 ;44:1298-301.

Gadoth N, Mass E, Gordon CR, Steiner JY. Taste and smell in Familial Dysautonomia. Dev Med Child Neurol, 1997; 39:393-7.

Gadoth N , A. Kesler , G. Vainstein, R. Peled , P. Lavie. Clinical and polysomnographic. Characteristics of 34 patients with Kleine–Levin syndrome.J Sleep Res 2001;10:337-41.

Arnulf I, Lin L, Gadoth N , File J, Lecendreux M, Franco P, Zeitzer J, Lo B, Faraco J, Mignot E Kleine Levine Syndrome: A systematic study of 108 patients . Ann Neurol 2008; 63: 482-92 .

Vainstein G, Korzets Z, Pomeranz A, Gadoth N. Nephroquiz: Deepening coma in an epileptic patient: the missing link to the urea cycle. Nephrol Dial Transplant 2002; 17: 1351-3.

Gadoth N, Oksenberg A. Sleep and sleep disorders in rare hereditary diseases: a reminder for the pediatrician, pediatric and adult neurologist, general practitioner, and sleep specialist. Front Neurol. 2014 ;5: article 133: 1-12.

HONORS:

The Israeli Society of Neurology honored my work on Machado-Joseph Disease in Yemenite Jews.

Donald L. Gilbert, MD MS FAAP FAAN
Professor of Pediatrics and Neurology
Cincinnati Children's Hospital Medical Center
University of Cincinnati College of Medicine

My time as a Child Neurology resident at Johns Hopkins (1993-1998) provided a clinical foundation for my subsequent work in pediatric movement disorders, motor physiology in pediatric neurobehavioral disorders, and graduate medical education. My clinical and academic mentors, Harvey Singer, John Freeman, Paul Fisher, and Justin McArthur, impressed upon me the importance of establishing a clinical niche as well as obtaining formal training in research methodology, which I ultimately obtained as part of my K23 award. My relationship with Harvey Singer resulted in opportunities for multi-center studies in genetics, epidemiology, clinical trials, and physiology in Tourette Syndrome as well as two editions of our book Movement Disorders in Childhood. After developing expertise in transcranial magnetic stimulation, my complementary interests with Martha Denckla and Stewart Mostofsky at the Kennedy Krieger have led to several highly productive NIH grants. Finally, as I enter my 10th year as child neurology residency program director at Cincinnati Children's, I appreciate the extent that child neurology has evolved clinically and scientifically since my residency. In the mold of my Johns Hopkins mentors who worked for change, I play an important role in advancing innovation in child neurology training to better prepare us to improve the health of children with neurological problems.

Selected Publications:

Abelson JF, Kwan KY, O'Roak BJ, Baek DY, Stillman AA, Morgan TM, Mathews CA, Pauls DL, Rašin MR, Gunel M, Davis NR, Ercan-Sencicek AG, Guez DH, Spertus JA, Leckman JF, Dure LS, Kurlan R, Singer HS, Gilbert DL, Farhi A, Louvi A, Lifton RP, Šestan N, State MW. Sequence Variants in SLITRK1 are associated with Tourette's Syndrome. Science 2005; 310:317-320

Gilbert DL, Horn PS, Kang PB, Mintz M, Joshi SM, Ruch-Ross H, Bale JF. Child Neurology Recruitment and Training: views of the residents and child neurologists from the 2015 AAP/CNS workforce survey. Pediatric Neurology, 2017. 66: 89-95.

Gilbert DL, Isaacs KM, Augusta M, MacNeil LK, Mostofsky SH. Motor Cortex Inhibition: a marker of ADHD Behavior and Motor Development in Children. Neurology 2011; 76:615-621.

Gilbert DL, Garvey M, Bansal AS, Huff T, Zhang J, Wassermann EM. Should Transcranial Magnetic Research in Children be Considered Minimal Risk? Clinical Neurophysiology 2004;18:1730-1739.

Gilbert DL, Sethuraman G, Kotagal U, Buncher CR. Meta-analysis of EEG test performance shows wide variation among studies. Neurology 2003;60:564-570.

Kirton A, Gilbert DL editors. Pediatric Brain Stimulation , 1st ed. Elsevier 2016.

Singer HS, Mink JW, Gilbert DL, Jankovic J. Movement Disorders in Childhood. 2nd edition. Amsterdam, Boston, Elsevier, 2016.

Dan Gold, DO
Assistant Professor, Departments of Neurology, Ophthalmology, Otolaryngology-Head & Neck Surgery, Neurosurgery, Emergency Medicine, Johns Hopkins Hospital, Baltimore, MD

If it were not for me being introduced to David Zee as a PGY-2 neurology resident at the University of Maryland, I would not be where I am today. After my first shadowing experience with Dr. Zee, I was completely hooked, and spent every available Friday that I could with him throughout the remainder of my residency. As a PGY-2, I was also introduced to Dr. David Newman-Toker's first paper describing the 'HINTS' exam to differentiate benign (peripheral) from dangerous (central) causes of the acute vestibular syndrome. By that point, I knew that I would focus my career on ocular motor and vestibular disorders. I came to Johns Hopkins in 2013 following a neuro-ophthalmology fellowship, and I have had the privilege to work with and be mentored by Drs. Zee and Newman-Toker ever since. I am passionate about clinical care and neurologic education, and have been particularly interested in the rapid diagnosis and treatment of acute neuro-ophthalmologic and vestibular disorders, and in minimizing diagnostic errors by educating frontline providers. In fact, Dr. Newman-Toker and I have created and implemented a 'Tele-Dizzy' consultation service in the Emergency Department using portable video-oculography technology to improve peripheral vestibular and stroke diagnosis. I am constantly stimulated by my excellent colleagues and trainees, and am grateful for the superb mentorship I have received at Johns Hopkins. I look forward to the future and feel honored to be a part of the Department of Neurology.

Selected publications:

Gold D, Morris L, Kheradmand A, Schubert M. Repositioning maneuvers in BPPV. Current Treatment Options in Neurology. 2014;16(8):307.

Gold DR, Zee DS. Neuro-Ophthalmology and Neuro-Otology Update. Journal of Neurology. 2015;262(12):2786-92.

Gold DR, Zee DS. Dizzy Pearls. Seminars in Neurology. 2016;36(5):433-441.

Kung NH, Van Stavern GP, Gold DR. HINTS in the Acute Vestibular Syndrome: Pearls and Pitfalls. J Neuroophthalmol. 2018 Jun;38(2):244-250.

Brune T, Gold DR. Acute Visual Disorders of Neurologic Importance. Seminars in Neurology. 2018 In Press.

Awards:

6/2015	The Frank A. Ford Recognition Award for outstanding teacher in neurology, Johns Hopkins Neurology Residency Program
3/2017	The Patti Vining Clinical Excellence Award, Johns Hopkins Department of Neurology
2/2018	2018 recipient of the North American Neuro-Ophthalmology Society (NANOS) Merit Award
7/2018	Johns Hopkins Hospital Best Consulting Physician Award 2018, Winner

Gary W. Goldstein, M.D.
President, Kennedy Krieger Foundation; Former President and CEO of the Kennedy Krieger Institute. Professor of Neurology and Pediatrics, Johns Hopkins University School of Medicine

My journey to Baltimore in 1969 to join the new Department of Neurology at Johns Hopkins was bittersweet. A year earlier Guy McKhann and John Freeman recruited me to Stanford for a fellowship in Child Neurology. The phone call from the two of them came in the spring of 1968 on the day of the last snow storm of the long winter in Minneapolis. I pictured Palm Drive leading to a hospital that looked like a resort. However, my first rotation was at the Palo Alto VA in Building D—the accurate inspiration for the book and movie *One Flew over the Cuckoo's Nest*. The best experience there was the experimental use of L-DOPA for our own version of Awakenings. Guy took that summer to sail to Tahiti and upon returning said to me, "Mate, you need to pack up. We are all moving to Baltimore." A city that was having riots and fires. My first assignment was to the newly created inpatient service on Nelson 2. Neurology was no longer a division of Medicine controlled by Osler marines and their most senior residents seemed unhappy about the change. Guy told me to not let them know that I (and he) were pediatricians. Every morning we had chief's rounds in Guy's office and my attendings were Dick Johnson, Bob Herndon and Dan Drachman. The experience was so intense that I still remember most of patients from that year and the battles with Osler residents who were determined to fill our beds with difficult-to-place patients to close off admissions and keep complex neurology patients on the medical service. We successfully resisted. After a year, I was drafted and spent two years as the child neurologist for the 5th Army in Denver, completed my training at UCSF and began my faculty career in San Francisco. The next stop was Ann Arbor for 10 years and then, ever-my-mentor Guy, as chair of the search committee, brought me back to Baltimore in 1988 to the Kennedy Krieger Institute and Johns Hopkins. As of 2019, my goal is to establish a Foundation to support the clinical, educational and academic goals of the Institute.

Selected Publications:

Wilson MA, Johnston MV, Goldstein GW, Blue ME. Neonatal lead exposure impairs development of rodent barrel field cortex. Proc Natl Acad Sci U S A. 2000, 97:5540-5.

Kim KA, Chakraborti T, Goldstein GW, Bressler JP. Immediate early gene expression in PC12 cells exposed to lead: requirement for protein kinase C. J Neurochem. 2000, 74:1140-6.

Bressler JP, Belloni-Olivi L, Forman S, Goldstein GW. Distinct mechanisms of neurotransmitter release from PC 12 cells exposed to lead. J Neurosci Res. 1996, 15;46:678-85.

Goldstein GW. Blood-brain barrier in toxic encephalopathies. Neurobiol Aging.1994;15:237-8.

Goldstein GW, Betz AL. The blood-brain barrier. Sci Am. 1986; 255: 74-83.

Barry Gordon, M.D., Ph.D.
Therapeutic Cognitive Neuroscience Professor; Professor of Neurology with a Joint Appointment in Cognitive Science, The Johns Hopkins University and Medical Institutions

My training, experience, and colleagues at Hopkins (1974—present) have been critical in helping me crystalize several goals and make progress in achieving those goals: to understand human cognition at the micro-architectural level, and how operations at this level relate to neural processes; to understand what goes wrong in developmental and acquired disorders from this perspective; and to devise solutions using any methods possible. Originally, my work focused on aphasia and memory disorders, including amnesia and the dementias. For the past 20-plus years, it has also encompassed autism and related developmental disorders. To these ends, I established the subdiscipline of Cognitive Neurology, within Behavioral Neurology, to emphasize the need to take cognitive operations *per se* into account. I founded the Cognitive Neurology/Neuropsychology Division and Memory Clinic of the Neurology Department at Hopkins (with Dr. Ola Selnes, Barbara J. Mroz, Deborah Hasenauer, and John Hart) to foster collaboration between clinical and research efforts. Most recently, I created an educational program for individuals with low-functioning autism with the indispensable assistance of educators such as Jessica O'Grady and Olivia Pullara. Among the many teachers and colleagues I most deeply appreciate for my training and experience at Hopkins are: Oscar S. M. Marin and Guy M. McKhann; Alfonso Caramazza and Rita Berndt; Ronald P. Lesser; Walter Stewart; and Dana Boatman. My patients and research subjects continue to be inspiring, motivating, and humbling as well.

Selected Publications:

Hart J, Jr., Crone NE, Lesser RP, Sieracki J, Miglioretti DL, Hall C, Sherman D, Gordon B: Temporal dynamics of verbal object comprehension. Proc Natl Acad Sci USA 1998; 95(11): 6498-503.

Gordon B: Subjective frequency and the lexical decision latency function: implications for mechanisms of lexical access. J Memory Lang 1985; 24: 631-45.

Hart J, Jr., Gordon B: Neural subsystems for object knowledge. Nature 1992; 359(6390): 60-4.

Gordon B, Boatman D, Crone N, Lesser R: Multi-perspective approaches to cortical mapping of speech perception and production: electrical cortical stimulation, electrical cortical recording, and acute cortical lesion. In: *Motor Aspects of Speech Production*. Hagoort P (Ed), Amsterdam, Elsevier, 1997, pp 259-68.

Gordon B: Models of naming. In: *Anomia: Neuroanatomical and Cognitive Correlates*. Goodglass H, Wingfield A (Eds), San Diego, Academic Press, 1997, pp 31-64.

Gordon B: *Memory: Remembering and Forgetting in Everyday Life*. New York: Mastermedia Ltd/Dana Alliance for Brain Initiatives, 1995.

Gordon B and Berger L: *Intelligent Memory*. New York: Viking Press, 2003.

Honors/Awards:

Inaugural Appointee, Therapeutic Cognitive Neuroscience Professorship (Johns Hopkins)

Inaugural Designee, The Benjamin and Adith Miller Family Endowment on Aging, Alzheimer's and Autism Research (Johns Hopkins)

Rebecca F. Gottesman, MD PhD
Professor of Neurology and Epidemiology, Johns Hopkins University

As a medical student at Columbia University in New York, I was initially discouraged from spending a month on a visiting rotation at Hopkins, being told that most visiting subinterns usually "end up offending someone". Undeterred by this advice, I spent a month during my last year of medical school as a visiting medical student sub-I in late 1999, and worked with Louise McCullough (as my chief resident), Bob Wityk (as my attending) and Vinay Chaudhry (as my attending, who I managed to impress with my memorization of the brachial plexus anatomy). Needless to say, this team, and the other residents and faculty I met during my visiting rotation, convinced me that Hopkins was where I wanted to be, and fortunately I convinced the group that I would be a valuable member of a residency class. During residency I received extraordinary mentorship from Dr. Argye Hillis, who in many ways is the reason I chose a career in stroke, and Dr. Guy McKhann. We were extremely supported during residency with Justin McArthur as my then-residency director (and Rafael Llinas as associate program director), and by Dr. Jack Griffin as our chair. After residency, I completed a stroke fellowship while pursuing a PhD in the Graduate Training Program in Clinical Investigation, and branched out to study not only cognition after stroke, stroke and cognition after cardiac surgery, but the epidemiology of stroke and vascular cognitive impairment. My initial exposures to a true "research team" studying neurologic complications of cardiac surgery with Guy and Ola Selnes, Maura Grega, Bill Baumgartner, and Scott Zeger, among others, solidified my understanding of what science should look like, how it should be conducted, and how the sum (several investigators working together) was better than the parts. My work remains extraordinarily collaborative: now I work primarily with colleagues at the Bloomberg School of Public Health, in Epidemiology, to conduct research on the vascular contribution to cognitive impairment and dementia, mostly as part of the Atherosclerosis Risk in Communities (ARIC) cohort study. My favorite part of my job is my mentorship: I mentor a number of trainees, ranging from undergraduates to medical students, residents, fellows, and junior faculty, and my NIH K24 award supports this time as a mentor. I was asked recently if I entered residency expecting to play a major role in mentorship as a faculty member. I answered no, and cannot identify any one point when I decided that I wanted to take on a more major role as a mentor: rather, I blame this evolution of my career entirely on the mentorship I received at Hopkins. My experience at Hopkins has been, without question, career-defining, and I hope to assist future trainees and residents in having the same career progression and positive opinion of their time in training and on faculty.

Selected Publications

Selnes OA, Gottesman RF, Grega MA, Baumgartner WA, Zeger SL, McKhann GM. Current Concepts: Cognitive and neurological outcomes after coronary artery surgery. *New England Journal of Medicine*, 2012; 366(30): 250-7.

Gottesman RF, Schneider ALC, Albert M, Alonso A, Bandeen-Roche K, Coker L, Coresh J, Knopman D, Power MC, Rawlings A, Sharrett AR, Wruck LM, Mosley TH. Midlife hypertension and 20-year cognitive change: The Atherosclerosis Risk in Communities (ARIC) Neurocognitive Study. JAMA Neurology, 2014: 71(10): 1218-1227.

Gottesman RF, Schneider ALC, Zhou Y, Coresh J, Green E, Gupta N, Knopman DS, Mintz A, Rahmim A, Sharrett AR, Wagenknecht LE, Wong DF, Mosley TH. Association between midlife vascular risk factors and estimated brain amyloid deposition. JAMA; 2017: 317(14): 1443-1450.

Gottesman RF, Albert M, Alonso A, Coker LH, Coresh J, Davis SM, Deal JA, McKhann GM, Mosley TH, Sharrett AR, Schneider ALC, Windham BG, Wruck LM, Knopman DS. Associations between midlife vascular risk factors and 25-year incident dementia in the Atherosclerosis Risk in Communities (ARIC) cohort. JAMA Neurology; 2017: 74(10): 1246-1254.

Honors

2012 Inaugural recipient, McKhann Scholar Award
2019 Awardee, Outstanding Stroke Research Mentor Award (International Stroke Conference)

Benjamin M. Greenberg, MD, MHS
Cain Denius Scholar, Distinguished Teaching Professor, Department of Neurology, University of Texas Southwestern, Dallas, Texas

I began my Neurology residency at Hopkins in 2002 when Justin McArthur was Program Director and Jack Griffin was Chairman. The environment was exceptional, blending teaching, mentorship and camaraderie. The culture blended a commitment to clinical excellence and academic curiosity that integrated our tripartite mission: clinical care, research and education. We were surrounded by incredible examples of 'triple threats' and challenged to contribute. It's hard to imagine a more comprehensive training program or better faculty. I transitioned onto the faculty and into a research fellowship with Diane Griffin in 2005. With Dick Johnson, Doug Kerr and Peter Calabresi as mentors I began to forge a career in neuroimmunology translational research. With a focus of transverse myelitis and neuromyelitis I began work in biomarkers research and clinical trials. I was recruited to the University of Texas Southwestern in 2009 to lead programs in Transverse Myelitis, Neuromyelitis Optica and Pediatric Demyelinating Diseases. My work in these conditions has led to identification of various biomarkers of demyelinating disease and has led to the first FDA IND for a stem cell trial in transverse myelitis. The trial is slated to begin by 2019 and will bring together many of the lessons learned from my time at Hopkins. We are all familiar with the outstanding, historic, international reputation of Johns Hopkins Medicine, but my time there and my time away made me understand why it deserved such a reputation – the people.

Selected Publications:

Greenberg B, Thomas K, Krishnan C, Kaplin A, Calabresi P, Kerr D, Idiopathic Transverse Myelitis: Corticosteroids, Plasma Exchange, or Cyclophosphamide. Neurology, 2007; 68; 1614-1617.

Greenberg, BM., Graves, D., Remington, G., Hardeman, P., Mann, M., Karandikar, N., Stuve, O., Monson, N., Frohman, E., "Rituximab Dosing and Monitoring Strategies in Neuromyelitis Optica Patients: Creating Strategies for Therapeutic Success", Multiple Sclerosis. 2012; 18(7):1022-6.

Harder, L., Spurgin, A., Frohman, E., Graves, D., Greenberg, B., "Cognitive Functioning in Pediatric Transverse Myelitis", Multiple Sclerosis, 2013 Jun;19(7):947-52.

Ligocki, A., Rounds, W., Cameron, E., Harp, C., Frohman, E., Courtney, A., Vernino, S., Cowell, L., Greenberg, BM., Monson, N., "Expansion of CD27high plasmablasts in Transverse Myelitis patients that utilize VH4 and JH6 genes and undergo extensive somatic hypermutation", Genes and Immunity, 2013 Jul-Aug;14(5):291-301

Estradal K., Whelan C, Zhao F, BronsonP, Handsaker R, Sun C, Carulli J, Harris T, Ransohoff R, McCarroll S, Day-Williams A, Greenberg BM & MacArthur D., "A whole genome sequence study identifies genetic risk factors for neuromyelitis optica" *Nature Communications*; 2018, 9:19-29.

Honors/Awards:
University of Texas Southwestern Academy of Teachers 2016; University of Texas Board of Regents Teaching Award 2015; Fred Baskin Young Investigator Research Award 2011; Cain Denius Scholar 2009; Johns Hopkins Frank Ford Department of Neurology Teaching Award 2008; Johns Hopkins Guy McKhann Resident Teaching Award 2005

Diane E. Griffin, MD PhD
University Distinguished Service Professor, Molecular Microbiology and Immunology, Medicine and Neurology; Johns Hopkins University Schools of Medicine and Public Health, Baltimore, MD. Vice-President U.S. National Academy of Sciences.

Jack and I were medical students and then internal medicine residents at Stanford in 1970 when Guy McKhann recruited Jack to join the first group of neurology trainees in the new Neurology department at Johns Hopkins. I had completed a PhD in immunology at Stanford and was interested in research on immune responses to virus diseases. Amongst the new JH neurology faculty was Dick Johnson, who had a research focus on virus infections of the nervous system and was looking for postdocs. Dick's philosophy for pathogenesis research involved assembly of people with multiple types of expertise. I became the immunologist. Others in the initial Traylor Building research group included faculty Les Weiner (neurology, virus-induced demyelination) and Bob Herndon (neuropathologist) and postdocs Henry McFarland (neurology, immunology), Opendra (Bill) Narayan (veterinarian, virology) and Howard Lipton (neurology). I began working on encephalomyelitis in mice caused by Sindbis virus, a mosquito-borne virus that Dick had studied while he was in Australia. This has continued to be a fruitful model for dissecting the interactions between virus-infected neurons and the immune response. Dick enjoyed travel and during a visiting professorship in Lima, Peru noted many patients who had developed encephalomyelitis as a complication of measles. Thus began our studies on the pathogenesis of measles and its complications that I have continued in Zambia and in experimentally infected macaques. I joined the Johns Hopkins faculty in the Infectious Diseases Division with a joint appointment in Neurology in 1973. From 1994 through 2014 I was chair of the Department of Molecular Microbiology and Immunology in the School of Public Health.

Selected publications

Levine, B., Hardwick, J.M., Trapp, B.D., Crawford, T.O., Bollinger, R.C. and Griffin, D.E. Antibody-mediated clearance of alphavirus infection from neurons. *Science* 254:856-860, 1991.

Karp, C.L., Wysocka, M., Wahl, L.M., Ahearn, J.M., Cuomo, P.J., Sherry, B., Trinchieri, G.G. and Griffin, D.E. Mechanism of suppression of cell-mediated immunity by measles virus. *Science* 273:228-231, 1996.

Polack, F.P., Auwaerter, P.G., Lee, S-H, Nousari, H.C., Valsamakis, A., Leiferman, K.G., Diwan, A., Adams, R.J., and Griffin, D.E. Production of atypical measles in rhesus macaques: evidence for disease mediated by immune complex formation and eosinophils in the presence of fusion-inhibiting antibody. *Nat. Med.* 5:629-634, 1999.

Binder, G.K. and Griffin, D.E. Interferon-γ mediated site-specific clearance of alphavirus from CNS neurons. *Science* 293:303-306, 2001.

Greene, I.P., Lee, E-Y, Prow, N., Ngwang, B. and Griffin, D.E. Protection from fatal viral encephalomyelitis: AMPA receptor antagonists have a direct effect on the inflammatory response to infection. *Proc. Natl. Acad. Sci. USA* 105:3575-3580, 2008.

Lin, W-H.W., Kouyos, R.D., Adams, R.J., Grenfell, B and Griffin D.E. Prolonged persistence of measles virus RNA is characteristic of primary infection dynamics. *Proc. Natl. Acad. Sci. USA* 109:14989-14994, 2012.

Abraham, R., Hauer, D., McPherson, R.L., Utt, A. Kirby, I., Cohen, M.S., Merits, A. Leung, A.K.L. and Griffin, D.E. ADP-ribosyl-binding and hydrolase activities of the alphavirus nsP3 macrodomain are critical for initiation of virus replication. *Proc. Natl. Acad. Sci. USA* 115:e10457, 2018.

Honors/Awards

National Academy of Medicine – 2004
National Academy of Sciences – 2004
FASEB Excellence in Science Award – 2015

Adam L. Hartman, MD
Program Director, Division of Clinical Research, NINDS/NIH
Adjunct Associate Professor of Neurology & Pediatrics, Johns Hopkins School of Medicine

I had the privilege of training in Child Neurology (2002-2005), Clinical Neurophysiology/Pediatric Epilepsy (2005-2007), and serving as faculty (2007-2016). My mentor, Dr. Eileen P.G. Vining, was critical in facilitating my career. “Patti” introduced me to JH Neurology Residency alumnus Dr. Michael Rogawski at NIH, who helped me identify a new animal model to study mechanisms of the ketogenic diet. When I joined the faculty, I was mentored by JHBSPH Bodian Professor Dr. J. Marie Hardwick. Data from our lab (generated with Child Neurology trainees and Neurology Diversity program students) showed that the acute antiseizure effects of the ketogenic diet are distinct from intermittent fasting (the ketogenic diet was initially designed to mimic the effects of fasting, so this was a surprising result). Intermittent fasting is now being studied in a variety of neurological disorders. In related work, we identified the atypical amino acid D-leucine as a potential antiseizure agent. In clinical research, ketogenic diet observations led to studies published with Drs. Eric Kossoff and Mackenzie Cervenka. Dr. Vining also introduced me to hemispherectomy outcomes research. Results of a multicenter collaboration showed that hydrocephalus can occur years after hemispherectomy, which has changed the long-term management of these children. Our Center for Pediatric Rasmussen Syndrome was established in collaboration with Dr. Carlos Pardo and Neuroradiology. I also was as a founding co-director of the Neurosciences Intensive Care Nursery, a collaborative effort with Neonatology and the Kennedy Krieger Institute. Johns Hopkins provided a wealth of opportunities and brilliant colleagues.

Selected Publications

Hartman AL, Lyle M, Rogawski MA Gasior M. Efficacy of the Ketogenic Diet in the 6-Hz Seizure Test. Epilepsia 2008;49:334-339.

Hartman AL, Zheng X, Bergbower E, Kennedy M, Hardwick JM. Seizure tests distinguish intermittent fasting from the ketogenic diet. Epilepsia 2010;51:1395-1402

Lew SM, Matthews AE, Hartman AL, Haranhalli N. Post-hemispherectomy hydrocephalus: results of a comprehensive, multi-institutional review. Epilepsia 2013;54:383-389

Hartman AL, Rubenstein J, Kossoff EH. Intermittent Fasting: A "New" Historical Strategy for Controlling Seizures? Epilepsy Res 2013;104:275-279

Meoded A, Faria AV, Hartman AL, Jallo GI, Mori S, Johnston MV, Huisman TA, Poretti A. Cerebral Reorganization after Hemispherectomy: A DTI Study. AJNR Am J Neuroradiol 2016; 37:924-931.

Holden K, Hartman, AL. D-leucine: evaluation in an epilepsy model. Epil Behav 2018;78:202-209.

Dolce A, Santos P, Chen W, Hoke A, Hartman AL. Different ketogenesis strategies lead to disparate seizure outcomes. Epilepsy Res 2018;143:90-97.

Honors/Awards

Merritt-Putnam Award, Epilepsy Foundation, 2006
Passano Physician Scientist Award, 2011
Sheila S. and Lawrence C. Pakula Fellow in Neonatal Research, 2011

Argye E. Hillis, MD, MA

Professor and Deputy Director, Department of Neurology, Johns Hopkins University School of Medicine

I decided to become a neurologist while collaborating with Guy McKhann, Ron Lesser, Barry Gordon, and others in the Mind-Brain Institute when I was an Associate Research Scientist in Cognitive Science at JHU and a speech-language pathologist. Guy continued to mentor me throughout medical school and residency in neurology at Hopkins (1995-99), and as a faculty member (1999-present). As I completed residency, with wonderful colleagues who have remained lifelong friends, including Lauren Moo (now at Harvard), Louise McCullough (now Chair at University of Texas), and Carlos Pardo (Hopkins), the field of stroke changed dramatically. New imaging in stroke, including diffusion and perfusion MRI demonstrated that there was an opportunity to intervene to reduce the damage and improve function in acute stroke, and trials showed the efficacy of IV tPA as one mechanism to restore blood flow. Robert Wityk was recruited to start a cerebrovascular division at Hopkins to treat acute stroke. Bob mentored me in clinical stroke treatment and my early research using diffusion and perfusion MRI in acute stroke to reveal regions of the brain critical for important cognitive functions, before reorganization or recovery. Together we built the stroke program, and I now direct the division of 14 faculty members, 2 clinical fellows, and numerous research post-docs. I am also excited to have the opportunity to develop innovative methods to improve stroke recovery, as the Director of the Center for Excellence in Stroke Detection and Treatment, with an endowment from the Sheikh Khalifa foundation. Throughout my career at Hopkins, I have had rewarding clinical work, exceptional trainees to help educate, and outstanding collaborators in research. My greatest joy has been in mentoring students, residents (including as residency program director for nearly a decade), post-doctoral fellows, and junior faculty.

Selected Publications:

Caramazza, A. & Hillis, A.E. (1990). Spatial representation of words in the brain implied by studies of a unilateral neglect patient. *Nature*, 346, 267-269.

Hillis, A. E., Wityk, R. J., Barker, P. B., Beauchamp, N. J., Gailloud, P., Murphy, K., ... & Metter, E. J. (2002). Subcortical aphasia and neglect in acute stroke: the role of cortical hypoperfusion. *Brain*, 125(5), 1094-1104.

Hillis, A.E., Wityk, R., Barker, P.B., Caramazza, A. (2003). Neural regions essential for writing verbs*. Nature Neuroscience*, 6, 19-20.

Hillis, A.E., Kleinman, K.T., Newhart, M., Heidler-Gary, J., Gottesman, R., Barker, P.B., Aldrich, E, Llinas, R., Wityk, R., Chaudhry, P. (2006). Restoring cerebral blood flow reveals neural regions critical for naming. *Journal of Neuroscience*, 26, 8069-8073.

DeLeon, J., Gottesman, R.F., Kleinman, J.T., Newhart, M., Davis, C., Heidler-Gary, J., Lee, A., Hillis, A.E. (2007) Neural regions essential for distinct cognitive processes underlying picture naming. *Brain*, 130, 1408-22.

Cloutman, L., Gingis, L., Newhart, M., Davis, C., Heidler-Gary, J., Crinion, J., Hillis, A.E. (2009). A neural network critical for spelling. *Annals of Neurology*. 66, 249-53.

Hillis, A. E. (2014). Inability to empathize: brain lesions that disrupt sharing and understanding another's emotions. *Brain*, 137(4), 981-997.

Honors:

Derek Denny-Brown Neurological Scholar Award (from the ANA), 2003
Norman Geschwind Award in Behavioral Neurology (from the AAN), 2004
Vice Dean's Award for the Advancement of Women Faculty, 2017

Ahmet Höke MD, PhD
Professor of Neurology and Neuroscience, Johns Hopkins School of Medicine
Director of Daniel B. Drachman Neuromuscular Division, Department of Neurology, Johns Hopkins School of Medicine

Apart from 2 years away as a neuromuscular fellow, I've been at Johns Hopkins since 1994 when I came as a junior resident of neurology. I can't think of a better place to train and grow as a clinician-scientist neurologist. Dick Johnson was my attending on my first month and inoculated me with his infectious curiosity in tackling challenging cases, but my true mentor has been Jack Griffin. Although I was trained as a scientist ready to tackle CNS regeneration, Jack persuaded me to see peripheral nerve diseases and regeneration as a more fun way to spend a career. After I completed my fellowship in Canada, he recruited me back to Hopkins and gave me opportunities to grow as a scientist and neurologist. Quickly, I was able to establish a program on mechanistic studies using models of peripheral neuropathies, initially focusing on HIV-associated sensory neuropathy and later on diabetic and chemotherapy induced neuropathies. I've also been working on peripheral nerve regeneration with special emphasis on chronic denervation changes in Schwann cells and role of Schwann cell heterogeneity in dictating specificity of nerve regeneration.

Selected publications:

Keswani SC, Polley M, Pardo CA, Griffin JW, McArthur JC, et al. Schwann cell chemokine receptors mediate HIV-1 gp120 toxicity to sensory neurons. Ann Neurol. 2003 Sep;54(3):287-96. PubMed PMID: 12953261.

Keswani SC, Buldanlioglu U, Fischer A, Reed N, Polley M, et al. A novel endogenous erythropoietin mediated pathway prevents axonal degeneration. Ann Neurol. 2004 Dec;56(6):815-26. PubMed PMID: 15470751.

Melli G, Keswani SC, Fischer A, Chen W, Höke A. Spatially distinct and functionally independent mechanisms of axonal degeneration in a model of HIV-associated sensory neuropathy. Brain. 2006 May;129(Pt 5):1330-8. PubMed PMID: 16537566.

Mi R, Chen W, Höke A. Pleiotrophin is a neurotrophic factor for spinal motor neurons. Proc Natl Acad Sci U S A. 2007 Mar 13;104(11):4664-9. PubMed PMID: 17360581; PubMed Central PMCID: PMC1838658.

Lehmann HC, Chen W, Borzan J, Mankowski JL, Höke A. Mitochondrial dysfunction in distal axons contributes to human immunodeficiency virus sensory neuropathy. Ann Neurol. 2011 Jan;69(1):100-10. PubMed PMID: 21280080; PubMed Central PMCID: PMC3051401.

Zhu J, Chen W, Mi R, Zhou C, Reed N, et al. Ethoxyquin prevents chemotherapy-induced neurotoxicity via Hsp90 modulation. Ann Neurol. 2013 Dec;74(6):893-904. PubMed PMID: 23955554.

Wright MC, Mi R, Connor E, Reed N, Vyas A, et al. Novel roles for osteopontin and clusterin in peripheral motor and sensory axon regeneration. J Neurosci. 2014 Jan 29;34(5):1689-700. PubMed PMID: 24478351; PubMed Central PMCID: PMC3905142.

Honors/Awards:

Derek Denny Brown Young Neurological Scholar Award (2005) American Neurological Association
Myung Memorial Lecture (2017) Korean Neurological Association
Wolfe Prize in Peripheral Neuropathy Research (2018) American Neurological Association

Neil R. Holland, BSc, MBBS, MBA

Neurology Chair, Neuroscience Institute, Geisinger, Danville, PA
Professor of Clinical Medicine, Geisinger Commonwealth School of Medicine, Scranton, PA

Abstract
My first experience of Hopkins was in 1991 as a student, when I was lucky enough to meet Justin McArthur. We wrote a paper together on CMV encephalitis. Justin encouraged me to come back to Hopkins as a neurology resident in 1993. I stayed on as an EMG fellow working with Vinay Chaudhry and David Cornblath. We wrote 2 papers on small fiber neuropathy. I became involved in intraoperative neuromonitoring and we wrote some papers. I left Hopkins in 1998 for an internship at York Hospital, followed by a faculty appointment in Neurology at Oklahoma University and the Oklahoma City VA Medical Center. We reported some patients with heretofore unknown neurologic complications caused by copper deficiency. From 2001-2014 I was in private practice in Monmouth County NJ, where I started the Neuroscience Institute at Monmouth Medical Center, developed an out-patient TIA clinic, and worked on my MBA from UMass. While at Monmouth, I held an academic appointment and did some educational research at Drexel. I moved to Geisinger in 2014, where I have been responsible for growing the department, increasing access to neurology care for members of the Healthplan, and educating students and residents.

Selected Publications:
Holland NR, Power C, Matthews VP, Glass JD, Forman M, McArthur JC. Cytomegalovirus encephalitis in acquired immunodeficiency syndrome (AIDS). Neurology 1994; 44: 507-514.

Holland NR, Crawford TO, Hauer P, Cornblath DR, Griffin JW, McArthur JC. Small-fiber sensory neuropathies: Clinical course and neuropathology of idiopathic cases. Ann Neurol 1998; 44: 47-59.

Holland NR. Intraoperative electromyography. J Clin Neurophysiol 2002; 19: 444-453.

Prodan CI, Bottomley SS, Holland NR, Lind SE. Relapsing hypocupraemic myelopathy requiring high dose oral copper replacement. J Neurol Neurosurg Psychiatry 2006; 77: 1092-1093.

Holland NR, Ginsberg I, Tabby D. A standardized online clinical education and assessment tool for neurology clerkship students assigned to multiple sites. Perspect Med Educ 2014; 3: 41-45.

Holland NR, Chan ME, Armor MM, Nachimuthu N, Boyu OS, Puma A, Sheta MA, Armour F, Hwang MY, Hwang SS. Developing a new care pathway for transient ischemic attack at a community medical center using research and collaboration. Physician Leadership Journal November 2016

Orest Hurko, MD
Senior Clinical Consultant, Vertex Pharmaceuticals; Associate Professor, Sackler School of Graduate Biomedical Sciences, Tufts University; Professor (Hon.) of Medicine, Nursing and Dentistry, University of Dundee

By the time that I came to Johns Hopkins as resident /faculty (1978 – 1998) I had already realized that success demanded choices. However, I hadn't yet framed them correctly. Dan Drachman, Mahlon Delong, John Leigh, Hugo Moser, Victor McKusick, Harvey Singer, Guy McKhann, David Zee, Neil Miller, Tony Murphy, David Valle, Marshall and Susan Folstein taught me that there needn't be a conflict between clinical and scientific excellence, neuroscience and genetics, self-advancement and compassion. Rather, it was finding that unique niche into which these all fit. With Guy's unflinching support I devoted my time both to the Neurology and Genetics Clinics, as well as neurogenetics rounds with Richard Kelly and SakkuBai Naidu at the Kennedy-Krieger. My next major revelation occurred two decades after my arrival in Baltimore. Translating understanding of pathophysiology of neurogenetic diseases into effective therapies required greater resources than I was able to marshal as an academic. Following the example of Dennis Choi, I swallowed my pride and joined the satanic mills of industry, where I have contributed to the registration of two novel medicines and am now designing gene therapy trials for neurodegenerative disorders of infants. I no longer have my own patients but do teach.

Selected Publications

McKusick VA, Antonarakis SE, Francomano CA, Hurko O, Scott AF, Smith M, Valle D. (1998) *Mendelian Inheritance in Man: A catalog of human genes and genetic disorders*, Twelfth Edition. Baltimore: The Johns Hopkins University Press

Slavney PR, Hurko O (2001) *The Primary Care Physician's Guide to Common Psychiatric and Neurologic Problems.* Baltimore: The Johns Hopkins University Press

Hurko, O., Hoffman, E., McKee, L.M., Johns, D.R., Kunkel, L. (1989). Dystrophin analysis in clonal myoblasts derived from a Duchenne muscular dystrophy carrier. *American Journal of Human Genetics* 44: 820-826

Rosen, S.A., Wang, H., Uematsu, S., Cornblath, D.R., Hurko, O. (1989) Compression syndromes due to hypertrophied nerve roots in hereditary motor sensory neuropathy type I. *Neurology* 39: 1173-1177

Eleff S.M., Barker P.B., Blackband S.J., Chatham, J.C., Lutz N.W., Johns, D.R., Bryan, R.N., Hurko O. (1990) Phosphorus magnetic resonance spectroscopy of patients with mitochondrial cytopathies demonstrates decreased levels of brain phosphocreatine. *Annals of Neurology* 27: 626-630

Yoneda M, Chomyn A, Martinuzzi A, Hurko O, Attardi G. (1992) Marked replicative advantage of human mtDNA carrying a point mutation that causes the MELAS encephalomyopathy. *Proc. Natl. Acad. Sci. (USA)* 89: 11164-11168

Hurko O, Black SE , Doody R, Doraiswamy PM, Gamst A, Kaye J, Obisesan T, Rusinek H, Scharre D, Sperling R, Weiner MW, Green RC for the ADNI Data and Publication Committee (2012) The ADNI Publication Policy: Commensurate recognition of critical contributors who are not authors. *Neuroimage,* 59: 4196-4200

Honors/Awards

Johns Hopkins University Neurology Resident's Teaching Award
Honorary Life Member, Little People of America
Europe Foundation: Best Inward Investment Award, La Baule, France
William O. Mosely, Jr., Travelling Fellow of Harvard University

David N. Irani, M.D.
Professor of Neurology, University of Michigan Medical School, Ann Arbor, MI

As a research fellow (1988-1990), house officer (1990-1993), and junior faculty member (1993-2007) at Hopkins, I developed a passion to better understand the pathogenesis of inflammatory disorders of the CNS. Research (Diane Griffin, Dick Johnson) and clinical mentors (Jack Griffin, Dick Johnson, Justin McArthur) taught me how to exploit animal models for this purpose, but also never let me forget the importance of learning directly from my patients themselves. Along with fellow junior faculty members (Carlos Pardo, Doug Kerr), I helped established the world's first Transverse Myelitis Center at Hopkins in 1997 that still exists today. Our interactions with many patients having a wide range of neuroinflammatory disorders naturally led us to establish a large repository of clinical samples, including a sizable bank of cerebrospinal fluid (CSF) specimens (>600) from people with well-characterized clinical and radiographic disease. This sample repository has yielded numerous studies that have shed light on the pathogenesis of multiple sclerosis, acute transverse myelitis, and HIV dementia (below). It also stimulated the idea that an updated book on human CSF would be a welcome addition to our field. Although *Cerebrospinal Fluid in Clinical Practice* (2009) was finalized after I moved from Hopkins to the University of Michigan, the ideas and all of the chapter content have deep ties to the Johns Hopkins Neurology Department.

Selected Publications:

Irani DN. Cerebrospinal Fluid in Clinical Practice, Saunders Elsevier, 2009

Conant K, McArthur JC, Griffin DE, Sjulson L, Wahl LM, Irani DN. Cerebrospinal fluid levels of MMP-2, 7 and 9 are elevated in association with human immunodeficiency virus dementia. Ann Neurol 1999;46:391-398. PMID: 10482270.

Irani DN, Kerr DA. 14-3-3 protein in the cerebrospinal fluid of patients with acute transverse myelitis. Lancet 2000;355:901. PMID: 10752712.

Helke KL, Queen SE, Tarwater PM, Turchan-Cholewo J, Nath A, Zink MC, Irani DN, Mankowski JL. 14-3-3 protein in CSF: an early predictor of SIV CNS disease. J Neuropathol Exp Neurol 2005;64:202-208. PMID: 15804051.

Irani DN, Anderson C, Gundry R, Cotter R, Moore S, Kerr DA, McArthur JC, Sacktor N, Pardo CA, Jones M, Calabresi PA, Nath A. Cleavage of cystatin C in the cerebrospinal fluid of patients with multiple sclerosis. Ann Neurol 2006;59:237-247. PMID: 16437581.

Huber AK, Wang L, Han P, Zhang X, Ekholm S, Srinivasan A, Irani DN, Segal BM. Dysregulation of the IL-17/IL-23 axis and myeloid factors in secondary-progressive MS. Neurology 2014;83:1500-1507. PMID: 25253754.

Irani DN. Cerebrospinal fluid protein carbonylation identifies oxidative damage in autoimmune demyelination. Ann Clin Transl Neurol 2016;4:145-150. PMID: 28168214.

Honors/Awards:

Thomas J. Preziosi Award for Clinical Excellence, 1993
Frank R. Ford Faculty Teaching Award, 1999
Standing Member, Cellular and Molecular Biology of Glia Study Section, 2011-2017

David L. Jackson, MD, PhD
Adjunct Professor of Medicine, Division of Geriatric Medicine and Gerontology
Johns Hopkins University School of Medicine, Baltimore, MD

My life in the Neurosciences at Hopkins started before Dr. McKhann arrived from Stanford in 1969. As a Year I Medical Student in the second year of that new 5 year program in 1960, I worked in the laboratory of Dr. Phillip Bard, Chairman of the Dept. of Physiology. In 1961, he offered me the opportunity to be his last PhD student. My thesis was identifying the nucleus in the hypothalamus that was the "fever center". I had the opportunity to work in the lab of Dr. W. Barry Wood, Chairman of Microbiology, and to engage Dr. Ivan Bennet, Chairman of Pathology in discussions about fever and pyrogen production. After completing my dissertation, I was granted a PhD with Distinction in 1966 and returned to complete medical school in 1966. During my Osler Internship in 1968-69, I encountered Dr. McKhann shortly after his arrival. He was on the Neurology Consult service. He participated in a discussion about the management of a patient with a possible brain tumor. I remember vividly listening to the neurology resident and Guy presenting their perspective, recommending against surgical intervention. The Chief Resident in Neurosurgery recommended immediate surgery. After these two approaches were proposed, Dick Winterbauer, the Osler Chief Resident turned to the Osler Intern (Kevin Hennessey, who was later also in my year of Neurology residents at Hopkins starting in 1971) and said, "What do you want to do?" Kevin stated, without hesitation, that he believed we should operate on the patient. I think Guy was startled that an intern would have such responsibility in decision making (the patient underwent surgery), given his previous experience with the predominantly private patient model at Stanford. After the Navy in 1969-71, I returned for a second year in Medicine and then joined Neurology residency program 1971, with Larry Davis as Chief Resident. The *spirit* in the Department during those years was infectious and exuded positive energy. With Dave Zee and Jack Griffin leading the program in the second year, the pace of learning and team sprit continued unabated. As I entered the third year, Guy was very receptive to my interest in applying for a White House Fellowship in DC. When I was selected, he was amazingly supportive, changing the rotation of Chief Resident to accommodate my taking a year off suddenly at the beginning of Year 3. When I returned, I was permitted to be Chief Resident for the initial part of the academic year 1974-75 and then permitted to leave early to accept a position at Case Western Reserve, joining Dr. Charles (Chuck) Carpenter and a small group of Hopkins physicians who had migrated to Cleveland when Chuck left Hopkins to become Chairman of Medicine at Case. At Case, I became Director of a new Division of Critical Care Medicine and in 1982 was made a full Professor. I had an NIH-supported lab exploring ways to treat brain damage after cardiac arrest and founded an Ethics Center for adult patient-related issues supported by the Cleveland Foundation. After 8+ great years at Case, Chuck and the Dean suggested me to the new Governor of Ohio, Richard Celeste, as a candidate to be Director of the Ohio Department of Health in 1983. The Governor surprised me and the public health community by appointing me to this position two weeks later. I had two weeks to transition the lab and the ethics center to colleagues and went on a sabbatical that was designed to last 2 years. I was Director for 3 years, then ran for the US Congress (luckily losing) in 1986. Over the past 33 years, my career has been quite different than I had imagined during the years at Hopkins in the 1960's and 70's. I have started two medical companies (one of which was successful and one went bankrupt during the market crash of 2000), served on the White House Task Force on Health Care reform in 1993, returned to Hopkins in the Division of Geriatrics in 1994 as an Adjunct Professor. In the past 30+ years, I founded and have been President of a consulting firm focused on quality improvement in the care of vulnerable patients. I have served for 15 years on the Admissions Committee and remain fully active in consulting and health policy work. In all of these disparate activities, my "true north" has been the examples of my mentors at Hopkins. Dr. Bard, Guy, Dick Johnson and Dan Drachmann demonstrated by their lives that hard work and integrity are the "Coin of the Realm". Commitment to our patients leads to a rewarding career, especially if you are married, as I have been for 53 years, to a nurse who managed our multiple career transitions with amazing flexibility and grace and always helped me maintain the balance between family and work so much more effectively than I could have hoped to do without her (bringing our infant daughter into the ICU for every night, we always had our evening meal together).

Selected Publications:

Jackson DL: A Hypothalamic Region Responsive to Localized Injection of Pyrogens. J Neurophysiol 1967; 30: 586-602.
Jackson DL, Tauber, J, Rawlins JSP: Evaluation of NSRDL Heater Pump Performance Characteristics and Reliability. Naval Medical Research Institute Report No. 1, August 1969.
Jackson DL, Dominick D, Samuels S: Working paper on regulatory options, Appendix 9, in Decision Making for Regulating Chemicals in the Environment. Washington, D.C., National Research Council, National Academy of Sciences, 1975.
Spivak JL, Jackson DL: Pellagra: Analysis of 18 Patients & Review of the Literature. Johns Hopkins Med J 1977; 140: 295-309.
Jackson DL, Dole WP: Total Cerebral Ischemia: A New Model System. Stroke 1979; 10: 38-43.
Jackson DL, Youngner S: Patient Autonomy and Death with Dignity: Some Clinical Caveats. N Eng J Med 1979; 301: 404-408.

Honors: Teacher of the Year, CWRU Department of Medicine,1977.
Centennial Award for Contribution to Public Health in Ohio, 1986. One of 12 awardees (e.g.,Dr. Albert Sabin & Dr. Henry Heimlich).
Member, White House Task Force on Health Care Reform, 1993.
Fellow in Bioethics: National Endowment for the Humanities, Kennedy Institute, Georgetown University.
Annual Public Service Award , Ohio Association of Retarded Citizens – 1986.

Michael V. Johnston, M.D.
Professor, Departments of Neurology, Pediatrics and Physical Medicine and Rehabilitation, Johns Hopkins Medicine; and Blum Moser Endowed Chair for Pediatric Neurology, and Director, Neuroscience Laboratory, Hugo Moser Research Institute, Kennedy Krieger Institute.

I was a resident in pediatrics at Johns Hopkins from 1971-1974, and during that time I met Guy McKhann during one of his mesmerizing teaching sessions in pediatric neurology. He made a strong impression on me, and influenced me to go into pediatric neurology. After spending two years in research in the US Army in Washington, DC, I returned to Hopkins to begin my residency in Pediatric Neurology under the direction of John Freeman and Guy. I was impressed by the focus on research in adult neurology at Hopkins and I decided I wanted to prepare for an academic career combining pediatric neurology with neuroscience research. In addition to Guy and John, I discussed my interests with Hugo Moser at the Kennedy Institute, Paul Lietman in Clinical Pharmacology, and Joe Coyle in Psychiatry and Pharmacology all at Hopkins. Guy worked out a plan in which I could combine training in adult and pediatric neurology with research in basic and clinical neuropharmacology over 4 years. This experience was very successful and at the end of my training, Gary Goldstein recruited me to join him in his new pediatric neurology program at the University of Michigan in Ann Arbor and start my own lab. After 7 years at Michigan, I was promoted to the rank of Professor at Michigan, and the following year Gary was recruited to become the President of the Kennedy Krieger Institute. I joined him in the move to Baltimore as the Chief Medical Officer and Executive Vice President of Kennedy Krieger, a position I held for 30 years. The research and mentorship experience in pediatric neurology and neuroscience I have received from faculty in Neurology and other departments at Hopkins have had an indelible effect on my career.

Selected Publications:

McDonald, JW, Silverstein, FS, Johnston, MV, MK-801 protects the neonatal brain from hypoxic-ischemic damage. European J Pharmacology 140:359-361, 1987.

McDonald, JW, Johnston, MV. Physiological and pathophysiological roles of excitatory amino acids during central nervous system development. Brain Research Reviews 15:41-70, 1990.

McDonald JW, Silverstein, FS, Johnston, MV, Neurotoxicity of NMDA is markedly enhanced in the developing rat central nervous system. Brain Research 459, 200-203, 1988.

Nakajima, W, Ishida, A, Lange, MS, Lange, KL, Gabrielson, KL, Wilson, MA, Martin LJ, Apoptosis has a prolonged role in the neurodegeneration after hypoxic ischemia in the newborn rat, Journal of Neuroscience 20:7994-8004, 2001.

McDonald, JW, Silverstein, FS, Johnston, MV, Magnesium reduces NMDA mediated brain injury in perinatal rats, Neuroscience Letters 109:234-238, 1990.

Johnston, MV, Fatemi, A, Wilson MA, Northington, F, Treatment advances in neonatal neuroprotection and neurointensive care, Lancet Neurology 10:372-382.

Redmond, JM, Gillinov, AM, Zehr, KJ, Blue, ME, Troncoso, JC, Reitz, Cameron DE, Johnston, MV, Baumgartner, WA, Glutamae excitotoxicity: a mechanism of neurologic injury associated with hypothermic circulatory arrest. J Thoracic and Cardiovascular Surgery, 107:776-787, 1994.

Honors:

Javits Neuroscience Investigator Award (1989-1996) Excitotoxicity and Neuroprotection in the Developing Brain, and (2000-2007) Co-Investigator with William Baumgartner, MD

Frank Ford Lecture from International Child Neurology Association (2002)

Bernard Sachs Research Award from the Child Neurology Society (2008)

Lori Jordan, MD, PhD
Associate Professor of Pediatrics & Neurology (with tenure), Director, Pediatric Stroke Program, Vanderbilt University Medical Center, Nashville, Tennessee

After spending a month as a sub-intern at Johns Hopkins and working with Harvey Singer and Tom Crawford in clinic and Becky Ichord on the wards, with Eric Kossoff and Carlos Pardo as senior child and adult neurology residents, I was sure that I wanted to train at Hopkins. I was a resident in Pediatrics and Child Neurology (1999-2004), stroke fellow (2004-2005), PhD student in the Graduate Training Program in Clinical Investigation at the Bloomberg School of Public Health (2005-2008) and then faculty (2008-2011). I made lifelong friendships, particularly with my co-residents (Gottesman, Berman, Mammen, Brewer, Rumbaugh and Lieberman) and the residents a year ahead and a year behind our class. My interest in pediatric stroke developed during my PGY-4 year when I realized that there was not much literature to guide the care of these children. As I had no background in research when I entered residency, my interest in research was fostered by the spirit of intellectual curiosity and inquiry at Hopkins. Mentored by Argye Hillis, my early research focused on outcomes after non-traumatic intracerebral hemorrhage in children. My interest in sickle cell disease and stroke led to local and national collaborations. At Vanderbilt, my research has focused on MRI measures of cerebral hemodynamics in sickle cell disease to assess stroke risk in collaboration with an imaging physicist who did his training in the Van Zijl lab at Hopkins, primary and secondary prevention trials in children with sickle cell disease in Nigeria (studies in process), and outcomes after stroke in children. I also highly value time I have spent as a research mentor, career mentor and as Program Director of the Child Neurology Residency at Vanderbilt. I try to “pay it forward” and emulate the training and mentoring I received at Hopkins.

Selected Publications:

1. Beslow LA, Abend NS, Gindville MC, Bastian RA, Licht DJ, Smith SE, Hillis AE, Ichord RN, Jordan LC. Pediatric Intracerebral Hemorrhage: Acute Symptomatic Seizures and Epilepsy. JAMA Neurol 2013;70(4):448-454.
2. Jordan LC, Ichord RN, Reinhartz O, Humpl T, Pruthi S, Tjossem C, Rosenthal DN. Neurological Complications and Outcomes in the Berlin Heart EXCOR® Pediatric IDE Trial. J Am Heart Assoc 2015;4(1):e001429.
3. Jordan LC, Gindville MC, Scott AO, Juttukonda MR, Strother MK, Kassim AA, Chen SC, Lu H, Pruthi S, Shyr Y, Donahue MJ. Non-invasive imaging of oxygen extraction fraction in adults with sickle cell anemia. Brain 2016;139(pt 3):738-50.
4. Kassim AA, Pruthi S, Day M, Rodeghier M, Gindville MC, Brodsky MA, DeBaun MR, Jordan LC. Silent cerebral infarcts and cerebral aneurysms are prevalent in adults with sickle cell anemia. Blood 2016;127(16):2038-2040.
5. Porcari GS, Beslow LA, Ichord RN, Licht DJ, Kleinman JT, Jordan LC. Neurologic Outcome Predictors in Pediatric Intracerebral Hemorrhage: A Prospective Study; Stroke 2018; 49(7):1755-1758
6. Jordan, LC, Kassim, AA, Donahue MJ, Juttukonda MR, Pruthi S, Davis LT, Rodeghier M, Lee C, Patel NJ, DeBaun MR, Silent infarct is a risk factor for infarct recurrence in adults with sickle cell anemia. Neurology 2018; 91(8):e781-e784.
7. Jordan LC, Hills NK, Fox CK, Ichord RN, Pergami P, deVeber GA, Fullerton HJ, Lo W, for the VIPS Study Group. Socioeconomic determinants of outcome after childhood arterial ischemic stroke. Neurology 2018; 91(6):e509-e516.

Awards: Thomas J. Preziosi Award for Clinical Excellence, 2004
Chancellor’s Faculty Fellow, Vanderbilt University, 2019-2021

Atul Kalanuria, MD FACP
Assistant Professor of Neurology, Neurosurgery, Anesthesia and Critical Care
Director, Penn Neurocritical Care Fellowship Program
Director, Penn Neurocritical Care Clerkship
The Hospital of The University of Pennsylvania
Perelman School of Medicine

I spent two years (2011-2013) as a fellow in neurocritical care at The Johns Hopkins Hospital and those year were the turning point of my career. I was part of the opening of the new hospital building and remember being in the old unit one day and new one the next. I worked along side some amazing colleagues and forged valuable friendships. One of the best things that I learnt during my time at Hopkins was the teamwork between all the care providers. My training at Hopkins prepared me extremely well for the real world setting both clinically and from a research standpoint. Some of my best work so far was published during my days at Hopkins. I can also never forget the immense help and advice I received from the faculty, especially Dr. Justin McArthur. It's an honor to have graduated from a program that has produced some of the best neurointensivists there are. I will always be proud that I am part of the Hopkins legacy.

Selected publications:

Kalanuria AA, Ziai W, Mirski M. Ventilator-associated pneumonia in the ICU. Crit Care. 2014 Mar 18;18(2):208.

Kalanuria AA, Geocadin RG, Püttgen HA. Brain code and coma recovery: aggressive management of cerebral herniation. Semin Neurol. 2013 Apr;33(2):133-41.

Kalanuria AA, Geocadin RG. Early prognostication in acute brain damage: where is the evidence? Curr Opin Crit Care. 2013 Apr;19(2):113-22.

Marshall SA, Kalanuria A, Markandaya M, Nyquist PA. Management of intracerebral pressure in the neurosciences critical care unit. Neurosurg Clin N Am. 2013 Jul;24(3):361-73.

Kalanuria A, Nyquist PA, Armonda RA, Razumovsky A. Use of Transcranial Doppler (TCD) ultrasound in the Neurocritical Care Unit. Neurosurg Clin N Am. 2013 Jul;24(3):441-56.

Kalanuria AA, Fellerman D, Nyquist P, Geocadin R, Kowalski RG, Nussenblatt V, Rajarathinam M, Ziai W. Variability in Diagnosis and Treatment of Ventilator-Associated Pneumonia in Neurocritical Care Patients. Neurocrit Care. 2015 Aug;23(1):44-53.

Raymond S. Kandt, MD
Hospital Neurologist, Howard County General Hospital
Johns Hopkins Medical Institutions
Columbia, MD.

My neurology residency at Hopkins (John Freeman, child neurology; Guy McKhann, chair of neurology) included an additional three months as chief resident on adult neurology and occurred concurrently with a fellowship in developmental pediatrics at the Kennnedy-Krieger Center (Hugo Moser, director). John Freeman and Hugo Moser helped me craft a program as the first jointly trained neurodevelopmentalist at Hopkins. One of my mentors, Gihan Tennekoon, triggered my interest in neurocutaneous diseases. I then joined Michael Johnston and Gary Goldstein as a child neurologist at the University of Michigan in Ann Arbor. Recruitment to Duke Med Center by Bernie D'Souza, who had been a faculty mentor at Hopkins, allowed me to explore neurogenetics with Allen Roses. This led to genetic discoveries in tuberous sclerosis complex. My next phase was chief of child neurology at Wake Forest Medical Center in Winston-Salem, NC. A 14-year interlude of private-practice adult and child neurology in central North Carolina preceded my return to Wake Forest neurology faculty. Prior to my first grandson, I returned to Baltimore and my position as an adult neurohospitalist at Howard County General Hospital. The rigorous clinical training, enthusiastic joy of discovery, and flexibility at Hopkins formed the underpinning for my career.

Selected Publications:

Kandt RS, Emerson RG, Singer HS, Valle D, Moser HW. Cataplexy in variant forms of Niemann-Pick disease. Ann Neurol 1982;12:284-288.

Kandt RS, Shinnar S, D'Souza BJ, Singer HS, Wharam MD, Gupta PK. Cerebrospinal metastases in malignant childhood astrocytomas. Journal of Neuro-Oncology 1984;2:123-128.

Kandt RS, Gebarski SS, Goetting MG. Tuberous sclerosis with cardiogenic cerebral embolism: magnetic resonance imaging. Neurology 1985;35:1223-1225.

Kandt RS, Haines JL, Smith M, Northrup H, Gardner RJM, Short MP, Dumars K, Roach ES, Steingold SS, Wall S, Blanton SH, Flodman P, Kwiatkowski DJ, Jewell A, Weber JL, Roses AD, Pericak-Vance MA. Linkage of an important gene locus for tuberous sclerosis to a chromosome-16 marker for polycystic kidney disease. Nature Genetics 1992;2:37-41.

Roach ES, DiMario FJ, Kandt RS, Northrup H. Tuberous Sclerosis Consensus Conference: Recommendations for diagnostic evaluation. J Child Neurol 1999; 14:401-407.

Kandt RS. Tuberous sclerosis complex and neurofibromatosis type 1: the two most common neurocutaneous diseases. Neurol Clin N Am 2003;20:983-1004

Honors/Awards:

1976-present Alpha Omega Alpha, Honor Medical Society, University of Virginia School of Medicine
1991-1992 Samuel L. Katz faculty teaching award presented by the Duke University Medical Center pediatric house staff
2013-2014 "The Golden Hammer Award" faculty teaching award presented by the neurology house staff, Department of Neurology, Wake Forest University Health Sciences

Colin R Kennedy, BA, MBBS, MD
Professor in Neurology and Paediatrics, Faculty of Medicine, University of Southampton.
Hon Consultant in Paediatric Neurology, University Hospital Southampton NHS Foundation Trust

My time as a Neurology fellow at Johns Hopkins (1985-1987) provided me with access to the generous guidance and disciplined example of John Freeman, Harvey Singer and many senior colleagues across the entire Department of Neurology. I also took on the role of interim joint lead of the Paediatric Neuro-Oncology service. These experiences set the direction for my subsequent research efforts, which followed a path of enquiry through clinical trials and cohort studies. On my return to the UK, I was appointed to be the founding provider of a NHS paediatric neurology service for the 3.5 million population of central southern England. Over the subsequent 30 years, a progressively increasing proportion of my working life has been devoted to organization of the specialty at a UK national and European level and research. Over the last ten years, I have also put energy into the reduction of disparities in the standard of care of children with neurological problems between Eastern and Western parts of the WHO European region.

Selected publications:

Kennedy CR, McCann D, Campbell MJ, Law C, Mullee M, Petrou S, Watkin P, Worsfold S, Yuen HM, Stevenson J. Early life detection of permanent hearing loss and subsequent language. *New England Journal of Medicine*, 2006, 354: 2131-41.

The International PHVD Drug Trial Group (*Kennedy CR*, Campbell M, Elbourne D, Hope P. Johnson A). International Randomised Controlled Trial of Acetazolamide and Frusemide in Post-Haemorrhagic Ventricular Dilatation in Infancy. *The Lancet,* 1998, 352:433-40.PMID 9708751

Lux AL, Edwards SW, Hancock E, Johnson AL, Kennedy CR, Newton RW, O'Callaghan FJK, Verity CM, Osborne JP. The United Kingdom infantile spasms study comparing vigabatrin with prednisolone or tetracosactide in a randomised trial: control at 14 days. *The Lancet*, 2004*,* 364: 1773-78

Bull KS, Spoudeas H, Yadegarfar G, *Kennedy CR*. Reduction of health status seven years after addition of chemotherapy to cranio-spinal irradiation for medulloblastoma: follow-up study of SIOP PNET 3 trial survivors on behalf of the CCLG (formerly UKCCSG). *The Journal of Clinical Oncology,* 2007, 25: 4239-4245. DOI: 10.1200/JCO.2006.08.7684

Mattthews YY, Dean F, Lim MJ, Mclachlan K, Rigby AS, Solanki GA, White CP, Whitehouse WP, Kennedy CR. Pseudotumor cerebri syndrome in childhood: incidence, clinical profile and risk factors in a national prospective population-based cohort study. *Arch Dis Child* 2017, 102: 715-721

Principles and Practice of Child Neurology in Infancy. (Kennedy C, Ed) London: Mac Keith Press, 2012.

Kennedy C, Chakraborty A, Walker D. Tumours of the central nervous system and other space-occupying lesions In: *Aicardi's diseases of the nervous system*, *Fourth Edition* (Arzimanoglou et al. Ed). London: Mac Keith Press 2018, Ch 14: 727-800

International Honors:

Hon membership of the European Paediatric Neurology Society for outstanding contribution to the field.

Amir Kheradmand, M.D.
Assistant Professor, Departments of Neurology and Otolaryngology-Head & Neck Surgery, Johns Hopkins, Baltimore, MD

I started at Hopkins as a joint research and clinical fellow under mentorship of David Zee. During this time, my work focused on understanding the neural mechanisms of spatial orientation with an emphasis on the role of cerebral cortex in processing vestibular inputs. I subsequently joined the Neurology faculty at Hopkins in 2014 as a clinician/educator/researcher. In my lab, we have developed psychophysical paradigms to study neural mechanisms of sensory integration for spatial orientation, and how their dysfunctions can lead to vexing symptoms such as those in patients with vestibular migraine. We have pioneered the use of transcranial magnetic stimulation (TMS) in probing cerebral cortical networks involved in spatial orientation. Our work has shown a functional role of the temporoparietal cortex in sensory processing for perception of spatial orientation. We have also developed a new clinical test of vestibular function based on a novel video-oculography method that can accurately measure torsional eye position. Overall, my academic goals are aimed at translational integration of our research findings into new diagnostic techniques and treatment strategies for the incapacitating symptoms of patients with dizziness and spatial disorientation. Through this path, I have benefited from the outstanding collegial environment at Hopkins, which has nurtured my growth as a clinician scientist.

Selected publication:

Kheradmand A, Lasker AG, Zee DS. Transcranial magnetic stimulation (TMS) of the Supramarginal Gyrus: A window to perception of upright. Cereb Cortex 2015; 25:765-71.

Otero-Millan J, Winnick A, Kheradmand A. Exploring the role of temporo-parietal cortex in upright perception and the link with torsional eye position. Front Neurol 2018; 9:192.

Otero-Millan J, Roberts DC, Lasker AG, Zee DS, Kheradmand A. Knowing what the brain is seeing in three dimensions: a novel, noninvasive, sensitive, accurate, and low noise technique for measuring ocular torsion, J Vision 2015; 15(14):11.

Otero-Millan J, Treviño C, Winnick A, Zee DS, Carey JP, Kheradmand A. The video ocular counter-roll (vOCR): a clinical test to detect loss of otolith-ocular function. Acta Otolaryngol 2017. doi: 10.1080/00016489. 2016.1269364.

Winnick A, Otero-Millan J, Sadeghpour S, Chang, Tzu-Pu, Kheradmand A. Errors of upright perception in patients with vestibular migraine. Front. Neurol. 9:892. doi: 10.3389/fneur.2018.00892

Allan Krumholz, MD
Professor Emeritus, Department of Neurology
University of Maryland School of Medicine

In 1970 I came for an internship at the former Baltimore City, and one of my rotations was neurology at Hopkins. This was a positive experience, which led to my entering the Hopkins neurology residency. I shared wonderful experiences with co-residents including David Zee, Jack Griffin, and Alan Pestronk. Caring faculty such as John Freeman and Ernst Niedermeyer cultivated my career in epilepsy care and electroencephalographic studies. Later with Guy McKhann's support and counseling, we established a new Hopkins affiliated neurology program and residency at the Sinai Hospital of Baltimore. We were fortunate to recruit two great neurology faculty just starting their academic careers, Howard Weiss and Barney. Together we built a special Hopkins affiliated community academic neurology program and had great fun. In 1989 Greg Bergey recruited me to the University of Maryland's Epilepsy Center, and later I became the Director of their Epilepsy Program when Greg returned to Hopkins. Still, I continued to enjoy valuable collaborations with current and former Hopkins' colleagues such as Bob Fisher and Greg Krauss. I enjoy fond memories of my productive times at Hopkins and continued positive associations.

Selected publications:

Krumholz A, Niedermeyer E. Psychogenic seizures: a clinical follow-up study. Neurology 1983;33:498-502.

Stern BJ, Krumholz A, Johns C, Scott P, Nissim J. Neurologic manifestations in sarcoidosis. Archives of Neurology 1985; 42:909-917.

Krumholz A, Stern BJ, Weiss HD. Outcome from coma after cardiopulmonary resuscitation (CPR): relation to seizures and myoclonus. Neurology 1988;38:401-405.

Krumholz A, Fisher RS, Lesser RP, Hauser WA. Driving and epilepsy: a review and reappraisal. Journal of the American Medical Association 1991;265:622-626.

Krumholz A, Sung GY, Fisher RS, Barry E, Bergey GK, Grattan LM. Complex partial status epilepticus accompanied by serious morbidity and mortality. Neurology 1995; 45:1499-1504.

Krumholz A, Ness, PM, Hauser WA, Douglas DK, Gibble JW. Adverse reactions in blood donors with a history of seizures or epilepsy. Transfusion 1995;35:470-474.

Krauss GK, Krumholz A, Carter RC, Kaplan P. Risk factors for seizure-related motor vehicle crashes in patients with epilepsy. Neurology 1999;52:1324-1329

Honors/Awards:

Golden Hammer Award (1992) presented by the Neurology residents for excellence in teaching at University of Maryland

J. Kiffin Penry Award for Excellence in Epilepsy Care from the American Epilepsy Society 2009

Physician of the Year, State of Maryland, the Governor's Committee on Employment of the Handicapped, 1987

Ralph W. Kuncl PhD, MD

President, Professor of Biology, University of Redlands, California

Many of us heard Dan Drachman advise, "You have to have more than one string in your bow," using both an archery and musical metaphor about career breadth. *First string*: Hopkins Neurology began for me when Dan, Jack Griffin, and Alan Pestronk hired me as neuromuscular clinical and research fellow because of my interest in the pathology of drug-induced myopathy. *Second string*: Guy McKhann instinctively lit a fire under me as a new instructor, as he probably did for many of us (saying, "You'll do EMG with Dave Cornblath if you want to put food on the table"), inspiring a path in clinical-pathological correlation in neuromuscular disorders. *Third string*: ALS became a passion when it was clear in 1983 that those patients were among the neediest, yet physicians used placebos on them and offered little family support or cogent research – hence the then-new frontier of translational work in motor neuron pathology and mechanisms of degeneration/regeneration. *Fourth string*: This emerged with Dick Johnson's request that I become Director of the Clinical Neuromuscular Laboratory, as steward of the lab Dan had founded. After some 20 years of research, a philosophical dilemma was set up for me: Drachman ("One should never retire, as the chase of research is too intriguing") *vs* Griffin ("The beauty of an MD is that you can do almost anything with it"). I chose being Associate Editor of the *Annals of Neurology* with Dick Johnson and Dave Zee, and thus scholarly editing became a *5th string*. Because research often leads to posing ever more narrowly focused questions, a *6th string* was inevitable – making impact on an entire institution. So, in 2001, I began as the founding Hopkins Vice Provost for Undergraduate Education. Because of the Hopkins model, I was recruited to University of Rochester (designed as a mini-version of Johns Hopkins University) and there became Provost, Executive VP, and Chief Research Officer. One accomplishment was as founder of a three-way corporate-university-government alliance with IBM and NY State to create a $100-M high performance computer facility – the Health Sciences Center for Computational Innovation. In 2012, I was chosen as the 11th president of the University of Redlands. You couldn't graph my career on a PowerPoint, because as Alan Pestronk taught me, "Any chart with more than three arrows on it is never right." Well, it all makes perfect sense to me, if it's traced back to JHU Neurology.

Selected Publications (chronological):

Kuncl RW, Duncan G, Watson D, Alderson K, Rogawski M, and Peper, MJ: Colchicine myopathy and neuropathy. *N Engl J Med* 316:1562-1568, 1987. (Selected for review and editorial in *Lancet* and *British Medical Journal*).

Baltimore Choral Arts Society: Christmas with Choral Arts. Tom Hall, Christopher Czeh, Judith Schonbach, producers; published by WJHU Public Radio and Baltimore Choral Arts Society, 1993.

Rothstein JD, Martin LJ, Kuncl RW: Decreased glutamate transport by the brain and spinal cord in amyotrophic lateral sclerosis. *N Engl J Med* 326:1464-68, 1992

Rothstein JD, VanKammen M, Levey AI, Martin L, Kuncl RW: Selective loss of glial glutamate transporter GLT-1 in amyotrophic lateral sclerosis. *Ann Neurol* 38:73-84, 1995.

Kuncl RW: *Motor Neuron Disease*. Saunders (Major Problems in Neurology Series), London, 2002.

Freedman DM, Kuncl RW, Weinstein SJ, Malila N, Virtamo J, Albanes D: Vitamin E serum levels and controlled supplementation and risk of amyotrophic lateral sclerosis. *Amyotroph Lateral Scler Frontotemporal Degener* 14:246-51, 2013.

Gnolek SL, Falciano VT, Kuncl RW: Modeling Change and Variation in *U.S. News & World Report* College Rankings: What would it really take to be in the Top 20? *Research in Higher Education* 55:761-779, 2014.

Freedman DM, Kuncl RW, Cahoon E, Rivera DR, Pfeiffer RM: Relationship of statins and other cholesterol-lowering medications and risk of amyotrophic lateral sclerosis in the US elderly. In press, *Amyotroph Lateral Scler Frontotemporal Degener*, 2018; (DOI 10.1080/21678421.2018.1511731).

Honors/Awards:

First Prize, AEI Electron Micrograph Competition, Manchester, England, 1974 (prize, £35 cash! – I still have it); Distinguished Alumni Award, University of Chicago, 2002; Elected by National Academies of Sciences to the Government/University/Industry Research Roundtable, 2009-15

Helmar C. Lehmann, M.D.
Professor of Neurology, Department of Neurology, University Hospital of Cologne, Germany

I spent two periods at Johns Hopkins to complete a Research Fellowship in Neurology in 2004, and 2008-2009. During my fellowship I had the privilege to work in the Peripheral Nerve Group led by Dr. Jack Griffin under the tutelage of Dr. Kazim Sheikh and Dr. Ahmet Höke. This period was fundamental for my later career in academic Neurology. The research area I was interested was the Guillain-Barré Syndrome and during my stay at Johns Hopkins I was trained in various preclinical models aiming to elucidate pathomechanisms of immune-mediated injury to peripheral nerve fibers. Research projects in which I had the opportunity to participate focused on regeneration after axonal injury that eventually led to several publications. During my stays I was always deeply fascinated by the clinical and scientific diversity of the staff and the approach of the entire department to combine highest level research with best clinical care for neurological patients. I still remember very well Grand Rounds (with a piano in the lecture hall !) with utmost instructive case presentations as well as scientific lectures in which basic and clinical research was presented and discussed by highly influential neurologists from Johns Hopkins and from all over the world. This atmosphere was unique and taught me the true meaning of the term 'clinician-scientist'. After my return to Germany I finished my clinical education and established an own laboratory in which I try to pass over some of this inspiring spirit of academic Neurology to my residents and medical students. My clinical and my research interests are still in the field of neuromuscular disorders and neuroimmunology. As such my time at Johns Hopkins was very formative for my career.

Selected Publications:

Lehmann HC, Hartung HP, Kieseier BC, Hughes RA. Guillain-Barré syndrome after exposure to influenza virus. Lancet Infect Dis. 2010 Sep;10(9):643-51

Lehmann HC, Zhang J, Mori S, Sheikh KA. Diffusion tensor imaging to assess axonal regeneration in peripheral nerves. Exp Neurol. 2010 May;223(1):238-44.

Lehmann HC, Lopez PH, Zhang G, Ngyuen T, Zhang J, Kieseier BC, Mori S, Sheikh KA. Passive immunization with anti-ganglioside antibodies directly inhibits axon regeneration in an animal model. J Neurosci. 2007 Jan 3;27(1):27-34.

Lehmann HC, Hughes RA, Kieseier BC, Hartung HP. Recent developments and future directions in Guillain-Barré syndrome. J Peripher Nerv Syst. 2012 Dec;17 Suppl 3:57-70.

Honors/Awards:

2014	Expertise in Leadership Selection, B. Braun Foundation, Germany
2012	Felix-Jerusalem Prize, German Society for Muscle Disease
2010	Else Kröner Memorial-Fellowship, Germany

Richard Leigh, M.D.
Assistant Clinical Investigator, Stroke Branch, Intramural Research Program, NINDS, NIH, Bethesda MD

My foundations in science began when I was an undergraduate at Johns Hopkins University studying biomedical engineering. I later returned to Hopkins for a post-doctoral fellowship mentored by Peter Barker, during which time I developed a method for imaging the blood-brain barrier (BBB). I subsequently joined the Hopkins cerebrovascular division, working as a stroke-service attending for four years. My early work used MRI to measure changes in BBB integrity during acute ischemia, leading to improved understanding of the role of BBB derangements in hemorrhagic complications of acute stroke treatments. I also worked with Peter van Zijl on developing an MRI method for measuring pH in the brain. When I transitioned to the NIH intramural program, I applied my techniques to a large imaging database collected by the Stroke Branch. We identified fluctuations in BBB permeability early after stroke in humans, and distinguished BBB dysfunction from BBB rupture. Our work identified remote effects of cerebral ischemia on the eye supporting the notion that there is a systemic response to focal cerebral ischemia. We also discovered BBB alterations associated with subacute and chronic cerebrovascular disease, leading to new hypotheses for the pathogenesis of vascular dementia. Thus, throughout my career, I have benefitted greatly from Johns Hopkins and its outstanding mentors.

Selected Publications:

Hitomi E, Simpkins AN, Luby M, Latour LL, Leigh RJ, Leigh R. Blood-Ocular Barrier Disruption in Acute Stroke Patients. *Neurology*. 2018 Mar 13;90(11)

Leigh R, Knutsson L, Zhou J, van Zijl PCM. Imaging the Physiological Evolution of the Ischemic Penumbra in Acute Ischemic Stroke. J Cereb Blood Flow Metab. 2017 Jan.

Simpkins AN, Dias CC, Leigh R. Identification of Reversible Disruption of the Human Blood-Brain Barrier following Acute Ischemia. *Stroke*. 2016 Jul 26.

Arba F, Leigh R, Inzitari D, Warach SJ, Luby M, Lees KR on behalf of the STIR/VISTA Imaging Collaboration. Blood Brain Barrier Leakage Increases with Small Vessel Disease in Acute Ischemic Stroke. *Neurology*. 2017 Oct 25.

Leigh R, Christensen S, Campbell BCV, Marks MP, Albers GW, Lansberg MG for the DEFUSE 2 Investigators. Pretreatment Blood-Brain Barrier Disruption and Post-Endovascular Intracranial Hemorrhage. *Neurology*. 2016 Jul 19;87(3):263-9.

Leigh R, Jen SS, Hillis AE, Krakauer JW, Barker PB. Pretreatment Blood-Brain Barrier Damage and Post-Treatment Intracranial Hemorrhage in Patients Receiving Intravenous Tissue-Type Plasminogen Activator. *Stroke*. 2014 Jul;45(7):2030-5.

Leigh R, Jen SS, Varma DD, Hillis AE, Barker PB. Arrival Time Correction for Dynamic Susceptibility Contrast MR Permeability Imaging in Stroke Patients. *PLoS One*. 2012;7(12):e52656.

Honors/Awards:
NIH Special Act Award for service to Emergency Stroke Program and high impact publications, 2017
Authored manuscript awarded Stroke Progress and Innovation Award from the American Heart Association, 2016
Johns Hopkins Neurology Clerkship Teaching Award, 2011

R. John Leigh, M.D.
Blair-Daroff Emeritus Professor of Neurology, Case Western Reserve University, Cleveland, OH
Adjunct Professor of Neurology, Johns Hopkins University, Baltimore, Maryland, MD

My time as a Neurology Fellow/Faculty at Hopkins (1977-1983) was the formative period of my scientific career – under the tutelage of mathematician-biologist David Robinson and clinician scientist David Zee. I established the foundations of my field of research – which overlaps neurology, ophthalmology, and computation neuroscience – and had my first successful research projects, developing models for periodic alternating nystagmus (providing insights for treatment), eye movements in Huntington's disease (with Susan and Marshall Folstein), and eye movements in unconscious patients (with Daniel Hanley). My subsequent career as a clinician scientist at Case Western Reserve University built upon these interests, focusing on how the rotational and translational vestibulo-ocular reflexes serve vision during natural activities, and malfunction in neurological disease; evaluating treatments for pathological forms of nystagmus; and applying the advantages offered by eye movements to better understand diseases ranging from myasthenia gravis to multiple sclerosis to parkinsonian disorders. This interest in translational research, shared with my Hopkins mentor, David Zee, led to the publication of five editions of our book, The Neurology of Eye Movements. Thus, my time at Hopkins not only prepared me for my career but also led to lasting, productive friendships.

Selected Publications:

Leigh RJ and Zee DS: The Neurology of Eye Movements, ed. 5, Oxford University Press, 2015.

Leigh RJ, Robinson DA, Zee DS. A hypothetical explanation for periodic alternating nystagmus: instability in the optokinetic-vestibular system. Ann N Y Acad Sci. 1981; 374: 619-35. PubMed PMID: 6978650.

Averbuch-Heller L, Tusa RJ, Fuhry L, Rottach KG, Ganser GL, Heide W, Büttner U, Leigh RJ. A double-blind controlled study of gabapentin and baclofen as treatment for acquired nystagmus. Ann Neurol. 1997, 41:818-25. PubMed PMID: 9189045.

Liao K, Walker MF, Joshi A, Reschke M, Leigh RJ. Vestibulo-ocular responses to vertical translation in normal human subjects. Exp Brain Res. 2008; 185: 553-62. PubMed PMID: 17989972

Otero-Millan J, Serra A, Leigh RJ, Troncoso XG, Macknik SL, Martinez-Conde S. Distinctive features of saccadic intrusions and microsaccades in progressive supranuclear palsy. J Neurosci. 2011;3:4379-87. PubMed PMID: 21430139.

Zee DS, Jareonsettasin P, Leigh RJ. Ocular stability and set-point adaptation. Philos Trans R Soc Lond B Biol Sci. 2017;372: 20160199. PubMed PMID:28242733

Hitomi E, Simpkins AN, Luby M, Latour LL, Leigh RJ, Leigh R. Blood-ocular barrier disruption in patients with acute stroke. Neurology. 2018; 90:e915-e923. PubMed PMID: 29438039

Honors/Awards:

Member, Johns Hopkins Society for Scholars, 2004
Festschrift: Basic & Clinical Ocular Motor & Vestibular Research. Buenos Aires, Argentina, 2011
Gordon Holmes Lecturer, Association of British Neurologists, Brighton, UK, May 2012

Allan I. Levey, M.D., Ph.D.
Goizueta Foundation Endowed Chair for Alzheimer Research
Betty Gage Holland Chair Chair, Department of Neurology Emory University, Atlanta GA

My experiences as a resident and junior faculty member at Johns Hopkins launched my career and fueled my passion for academic neurology. I was initially attracted to Hopkins for neurology training by the pioneering work of Don Price, Mahlon DeLong and Joe Coyle, identifying a role for the cholinergic system in Alzheimer's disease, as my own research as an MD/PhD student was the mapping of central cholinergic pathways in brain. As a resident, my passion for cognitive and behavioral neurology evolved as natural link to my research interests, and I was fortunate to have Ola Selnes and Barry Gordon teach me an enormous amount of neuropsychology and cognitive neuroscience. Following residency, I integrated additional clinical training with them as a cognitive neurologist and concurrently retooled as a bench researcher. With the support of a K08 award, I learned molecular biology at the NIH with daily commutes from Baltimore to Bethesda, and then returned full time to Hopkins Neurology and Neuropathology, becoming part of the Alzheimer's Disease Research Center. In this group led by Don Price the foundation for my career as an Alzheimer's disease researcher was established, learning deeply about neurodegenerative disease while also forming deep friendships and collaborations with so many great colleagues. I also obtained my first R01 studying Alzheimer's disease. I relocated to Emory in 1991, along with many other Hopkins neurology colleagues, when Mahlon DeLong assumed the role of Chair at Emory (aka, Hopkins South!). My activities have continued to span basic to clinical aspects of Alzheimer's disease and related disorders, and I have also attempted to help create a Hopkins-like culture as Chair of the Emory Neurology Department.

Selected Publications:

Mesulam M-M, Mufson EJ, Wainer BH and Levey AI. Central cholinergic pathways in the rat: an overview based on an alternative. nomenclature (Ch1-Ch6). Neurosci. 10: 1185-1201, 1983.

Levey AI, Kitt CA, Simonds WF, Price DL and Brann MR. Identification and localization of muscarinic acetylcholine receptor proteins in brain with subtype-specific antibodies. J. Neurosci. 11: 3218-3226, 1991.

Levey, A.I. Muscarinic acetylcholine receptor expression in memory circuits: implications for treatment of Alzheimer Disease, Proc. Nat. Acad. Sci. (USA) 93:13541-13546, 1996.

Davis AA, Fritz JJ, Wess J, Lah JJ, and Levey AI. Deletion of M1 muscarinic acetylcholine receptors increases amyloid pathology in vitro and in vivo. J Neurosci 30(12):4190–4196, 2010.

Scherzer CR, Offe K, Gearing M, Rees HD, Fang G, Heilman CJ, Schaller C, Bujo H, Levey AI, and Lah JJ. Loss of ApoE receptor LR11 in Alzheimer Disease. Arch Neurol 61:1200-5, 2004.

Bai B, Hales CM, Chen P-C, Gozal YM, Dammer EB, Fritz JJ, Wang X, Xia Q, Duong DM, Street RC, Cantero G, Cheng D, Jones DR, Wu Z, Li Y, Diner I, Heilman CJ, Rees HD, Wu H, Lin L, Szulwach KE, Gearing M, Mufson EJ, Bennett DA, Montine TJ, Seyfried NT, Wingo TS, Sun YE, Jin P, Hanfelt J, Wilcock DM, Levey AI, Lah JJ & Peng J. U1 Small Nuclear Ribonucleoprotein Complex and RNA Splicing Alterations in Alzheimer's Disease. Proc Natl Acad Sci 110(41):16562-16567, 2013,

Seyfried NT, Dammer EB, Swarup V, Nandakumar D, Duong DM, Yin L, Deng Q, Nguyen T, Hales CM, Wingo T, Glass J, Gearing M, Thambisetty M, Troncoso JC, Geschwind DH, Lah JJ, Levey AI. A Multi-network Approach Identifies Protein-Specific Co-expression in Asymptomatic and Symptomatic Alzheimer's Disease. Cell Syst 4(1):60-72, 2017.

Honors/Awards:

Derek Denny-Brown Neurological Scholar Award, American Neurological Association, 1993
Member, Johns Hopkins Society for Scholars, 2010; National Academy of Medicine, 2017

Richard F. Lewis, M.D.
Associate Professor, Otolaryngology and Neurology, Harvard Medical School; Director of the Jenks Vestibular Diagnostic and Vestibular Physiology Laboratories, Massachusetts Eye and Ear, Boston MA 02114

I spent 12 years in the Neurology Department at Johns Hopkins (resident 1987-1990, fellow 1990-1994, and faculty 1994-1999) before moving to Harvard where I've spent the remainder of my current to date. I feel strongly that both my clinical and scientific careers were defined by my time at Hopkins. Regarding my residency, I found that the incredible amount of clinical responsibility placed on our shoulders drove me to learn neurology in a hurry and to develop my clinical judgement. I was inspired by my amazing trio of chief residents (Allen Levey, Jon Glass, and Jeff Rothstein) whose knowledge was only surpassed by their enthusiasm. During fellowship with David Zee, I was taken by his ability to make clinical problems so interesting, an attribute that I have tried to emulate in my career with varying success. On the research side, I was given enormous latitude which lead to many short-term failures as I tried to figure things out, but ultimately drove my development as a vestibular clinician-scientist. Again, I was always amazed by David's ability to find scientific meaning in clinical problems, which I have also tried to emulate as my research focus has gradually shifted from basic science to more translational topics. He was always so generous with his time even though he was incredibly busy and I appreciate him now more than ever. I was also lucky to find the vestibular field since my background in physics didn't serve me well in many medically specialties but was a perfect fit with this one. I consider my time at Hopkins as the crucible that formed my career, with medical school and college mere distractions. For this I am very thankful.

Selected Publications

Lewis RF and Zee DS. Abnormal spatial localization with trigeminal-oculomotor synkinesis: evidence for a proprioceptive effect. Brain, 116;1105-1118:1993.

Lewis RF, Gaymard BM, and Tamargo RJ. Efference copy provides the eye position information required for visually-guided reaching. Journal of Neurophysiology, 80;1605-1608:1998.

Lewis RF, Lederman HM, and Crawford TO. Ocular motor abnormalities in ataxia-telangiectasia. Annals of Neurology, 46;287-295:1999.

Lewis RF, Carey JP. Eye movement abnormalities associated with unilateral loss of vestibular function. The New England Journal of Medicine 355:24, e26,2006

Lewis RF, Haburcakova C, Gong W, Merfeld DM. Vestibulo-ocular reflex adaptation studied with chronic motion-modulated electrical stimulation of semicircular canal afferents. Journal of Neurophysiology, 103;1066-1079:2010.

Lewis RF, Priesol AJ, Nicoucar K, Lim K, Merfeld DM. Abnormal motion perception in vestibular migraine. Laryngoscope, 121;1124-1125:2011.

Lewis RF, Haburcakova C, Gong G, Lee D, Merfeld DM. Electrical stimulation of semicircular canal afferents affects the perception of head orientation. Journal of Neuroscience 33;9530-9535:2013.

Priesol AJ, Cao M, Brodley CE, Lewis RF. Clinical vestibular testing assessed with machine learning algorithms. JAMA Otolaryngology 141;364-372:2015

Lewis RF. Advances in the diagnosis and treatment of vestibular disorder: psychophysics and prosthetics. Journal of Neuroscience, 35;5089-5096:2015.

Honors:

Spotlight award (with Bernard Cohen) for the ebook"Vestibular contributions to health and disease." Frontiers, 2018

Innovation award 2018, The Association of Migraine Disorders, 2018

William J. Logan, M.D.
Professor Emeritus, University of Toronto, Toronto, Canada

During my service time at NIH I decided to be a Pediatric Neurologist. Guy McKhann was starting a new Pediatric Neurology training program at Stanford with John Freeman that sounded appealing. I was accepted and spent the first two years of Pediatric Neurology training in Palo Alto. I then moved with Guy and John to Johns Hopkins where Guy was forming the first Department of Neurology there. I finished my clinical training in 1970 and with Guy's help was accepted as a research fellow with Sol Snyder. This was a productive time and along with the excellent clinical training received in Guy's programs, I was well prepared for my academic career. My first faculty position was at The University of Virginia where I established a Neurochemical laboratory and became Head of the Pediatric Neurology service and training program. Six years later I was recruited to Toronto as Head of Neurology at The Hospital for Sick Children and Professor of Paediatrics and Medicine at the University of Toronto. The final phase of my career arose from my sabbatical year at Massachusetts General Hospital where I learned fMRI basics and applied these to language localization in children. More recently I developed clinical fMRI techniques for assessment of cerebrovascular reactivity in children with cerebral vascular disease which work is continuing at The Hospital for Sick Children.
I was very fortunate to have been able to train with Guy and to be at the start of an exciting new development at Hopkins. I have very positive memories of my experiences there, of my fellow trainees, of the staff that Guy assembled and of his leadership and mentorship. Guy continued to be very supportive after I graduated and for this I remain very appreciative and thankful. Congratulations to Guy on his great achievements especially at Johns Hopkins.

Selected Publications:

Logan WJ, Snyder SH: Unique High Affinity Uptake Systems for Glycine and Glutamic and Aspartic Acids In Central Nervous Tissue of the Rat. Nature 1971: 234: pp 297-299.

Logan WJ, Swanson JM: Erythrosin B Inhibition of Neurotransmitter Accumulation by Rat Brain Homogenate. Science 1979: 106: pp 363-364.

Logan WJ, Harik SI: Specific Uptake of Norepinephrine and Dopamine by Homogenates of Rat Cerebral Cortex after Locus Ceruleus Lesion. Journal of Neurosciences 1982: 2: 394-398.

Benson RR, Logan WJ, Cosgrove GR, Cole AJ, Jiang H, LeSueur LL, Buchbinder BR, Rosen BR, Caviness VS: Functional MRI Localization of Language in a 9-Year Old Child. Canadian Journal of Neurological Sciences 1996: 23: pp 213-219.

Benson RR, FitzGerald DB, LeSueur LL, Kennedy DN, Kwong KK, Buchbinder BR, Davis TL, Weisskoff RM, Talavage TM, Logan WJ, Cosgrove GR, Belliveau JW, Rosen BR: Language Dominance Determined by Whole Brain Functional MRI in Patients with Brain Lesions. Neurology 1999: 52: pp 798-809.

Han JS, Mikulis DJ, Mardimae A, Kassner A, Poublanc J, Crawley AP, deVeber GA, Fisher JA, Logan WJ: Measurement of Cerebrovascular Reactivity in Pediatric Patients with Cerebral Vasculopathy using Blood Oxygen Level-Dependent MRI. Stroke 2011;42:1261-1269.

Dlamini N; Priyanka Shah-Basak P; Leung J; Kirkham F; Shroff M; Kassner A; Robertson A; Dirks P; Westmacott R; deVeber G; Logan W: Breath-hold Blood-Oxygen Level Dependent MRI: a tool for the assessment of cerebrovascular reserve in children with Moyamoya. American Journal of Neuroradiology 39(9):1717-1723, 2018.

Honors:

Dr. John K. Barlow Memorial Lecture, Massachusetts General Hospital, 2000

Child Neurology Society Lifetime Achievement Award, 2018

Randall R. Long, MD, PhD
Dartmouth Hitchcock Neurology
Keene, New Hampshire

My ten years at the Hopkins (1970-1980; MD, PhD, Neurology residency) provided a liberal education in the biomedical sciences and an excellent foundation in clinical Neurology. I have subsequently been at times a teacher, at too many times an administrator, often a clinical neurophysiologist, but always a general neurologist. I enjoyed 28 years on the University of Massachusetts medical faculty, the final six years as interim chair. It was my pleasure to span the David Drachman and Robert Brown eras at that institution. For the past decade, I have been a country neurologist, living and working in the Monadnock region of southwestern New Hampshire. I will retire the end of this calendar year. I have loved every minute of neurology practice.

Selected Publications:

Long RR, Sargent JC, Hammer K. Paralytic Shellfish Poisoning: a Case Report and Serial Electrophysiologic Observations. Neurology 1990; 40:1310-1312.

Long RR, Sargent JC, Pappas AM, Hammer K. Pitcher's Arm: An Electrodiagnostic Enigma. Muscle & Nerve 1996; 19:1276-1281.

Nicholas J. Maragakis, M.D.
Professor
Johns Hopkins University
Department of Neurology

My decision to come to Johns Hopkins for my neurology training was greatly influenced by my impressions of the senior neurology residents and the comradery they shared with one another. During my neurology residency training (1995-1998) I had the privilege of training with outstanding residents with whom I continue to share friendships, scientific interests, and clinical interests. At the suggestion of Dr. John Griffin, I spent my post residency scientific training with Jeff Rothstein, a mentor and collaborator to this day. I was fortunate to begin my research career at the time human stem cells were just being discovered and had the opportunity to investigate the potential for using glial progenitor cell transplantation into models of Amyotrophic Lateral Sclerosis as a potential strategy for modulating motor neuron cell death. This work has continued to evolve to include the derivation of induced pluripotent stem cells (iPSC) from the ALS patients in our clinic. Our hope is to use these iPSC to understand cell-specific contributions to ALS and to identify potential therapeutic targets. I am, perhaps, most proud of being part of a larger Hopkins vision to try to translate discoveries in our laboratories to meaningful therapies for the ALS patients seen in our clinic.

Selected Publications

Lepore AC, Rauck B, Dejea C, Pardo AC, Rao MS, Rothstein JD, Maragakis NJ. Focal transplantation-based astrocyte replacement is neuroprotective in a model of motor neuron disease. Nat Neurosci. 2008 Nov;11(11):1294-301. PubMed PMID: 18931666;

Papadeas ST, Kraig SE, O'Banion C, Lepore AC, Maragakis NJ. Astrocytes carrying the superoxide dismutase 1 (SOD1G93A) mutation induce wild-type motor neuron degeneration in vivo. Proc Natl Acad Sci U S A. 2011 Oct 25;108(43):17803-8. PubMed PMID: 21969586

Haidet-Phillips AM, Roybon L, Gross SK, Tuteja A, Donnelly CJ, Richard JP, Ko M, Sherman A, Eggan K, Henderson CE, Maragakis NJ. Gene profiling of human induced pluripotent stem cell-derived astrocyte progenitors following spinal cord engraftment. Stem Cells Transl Med. 2014 May;3(5):575-85. PubMed PMID: 24604284

Almad AA, Doreswamy A, Gross SK, Richard JP, Huo Y, Haughey N, Maragakis NJ. Connexin 43 in astrocytes contributes to motor neuron toxicity in amyotrophic lateral sclerosis. Glia. 2016 Jul;64(7):1154-69. PubMed PMID: 27083773

Honors/Awards

Josh Thompson Award for ALS Research
Diamond Award for scientific leadership dedicated to the eradication of ALS, Muscular Dystrophy Association
Osler Attending Preceptor in Neurology—Recognizing Excellence in Teaching

Bernard L. Maria, M.D., M.B.A.
Division Chief of Child Neurology and Developmental Medicine, Atlantic Health System
Professor of Pediatrics and Neurology, Sidney Kimmel Medical College - Thomas Jefferson University

I joined the Hopkins pediatric neurology residency program in 1983 after completing my pediatrics training at McGill University. I had rotated as a medical student with opportunities to learn from John Freeman, Harvey Singer, Guy McKhann and many others. The best way to describe the impact of my training at Hopkins is to say "it is the only place I never left." I learned to appreciate the art of the exam and to formulate working clinical hypothesis. I came to appreciate the importance of reaching out to other experts no matter where they are in the world. I learned to move the field forward. One of the most influential faculty was Bernie DeSouza who was a gifted teacher and an encyclopedic neurologist. Bernie introduced me to neuro-oncology before leaving for Duke University; that was my foundation of a 30-year career in pediatric neurooncology. In 2004, I had the privilege of introducing my primary mentor, John Freeman, for the Hower Award, the Child Neurology Society's highest Honor. I would like to think that I lived up to John's and Hopkins' expectations as the 2018 Hower Awardee. I am deeply grateful to Drs. McKhann and Freeman for taking me on as their first Canadian trainee, and I continue to enjoy the benefit of Oslerian values bestowed by a tradition of Hopkins Neurology excellence.

Selected Publications:

Maria, B.L., and D'Souza, B.: Brain Stem Glioma. Contemporary Neurosurgery 6: 18; 1-6, 1984. This was my first paper and it was published when I was a second year resident.

Maria, B.L., Cummings, R., Suhku, L.: Crown of microfilaments in the extending cytoplasmic processes of medulloblastoma glial progenitors. Canadian Journal of Neurological Sciences 19: 23-33, 1992. This was my first paper as a faculty member (University of Toronto).

Maria, B.L., Drane, W.E., Quisling, R.J., Hoang, K.B.: Significance of gadolinium-DTPA contrast enhancement and thallium 201 chloride uptake in pediatric brain stem glioma. Journal of Child Neurology 12(5):341-348, 1997.

Maria, B.L., Hoang, K.B.N., Tusa, R.J., Mancuso, A.A., Hamed, L.M., Quisling, R.G., Hove, M.T., Fennel, E.B., Booth-Jones, M., Ringdahl, D.M., Yachnis, A.T., Creel, G., Frerking, B.: "Joubert syndrome" revisited: Key ocular motor signs with MRI correlation. Journal of Child Neurology 12(6):423-430, 1997.

Quisling, R.G., Barkovich, J., Maria, B.L.: Magnetic resonance imaging features and classification of CNS malformations in Joubert syndrome. Journal of Child Neurology 14:628-635, 1999.

Gilg, A.G., Tye, S.L. Tolliver, L.B., Wheeler, W.G., Visconti, R.P., Duncan, J.D., Kostova, F.V., Bolds, L.N., Toole, B.P., and Maria, B.L.: Targeting Hyaluronan Interactions in Malignant Gliomas and their Drug-Resistant Multipotent Progenitors Clinical Cancer Research 15;14(6):1804-13, March 15, 2008. [Paper is featured on the Journal's cover in March 2008]

Germain, B., Maria, B.L. Epileptic encephalopathies: Clinical aspects, molecular features and pathogenesis, therapeutic targets and translational opportunities, and future research directions. J Child Neurol. 2018 Jan 33(1):7-40. doi: 10.1177/0883073817697846. [Epub 2017 Mar 28].

Honors/Awards:

Elected to The Society for Pediatric Research (1994) and the American Pediatric Society (2001); Appointed to two endowed Chairs: Jeffrey Edwin Gilliam Chair (2003-09) at the Medical University of South Carolina and the Ellington Charles Hawes Chair at the Medical College of Georgia (2009-14); Awarded the Child Neurology Society John B. Hower Award (2018).

Peter B Marschik, Mphil Dphil DMsc PhD

Associate Professor at Medical University of Graz, Austria and University Medical Center Goettingen, Germany; adjunct to the Karolinska Institutet, Stockholm, Sweden.

My time as a PostDoc Fellow at Hopkins (2011-2012) was a formative period of my scientific career. Based at JHU and the Kennedy Krieger Institute I established the foundations of my field of research – interdisciplinary Developmental Neuroscience. Our interdisciplinary research focuses on neurodevelopmental disorders, rare genetic disorders, neurophysiology, development of neural functions, neuroethology, neurocognitive research / cognitive brain research, neurolinguistics / psycholinguistics, development of laterality, general movement assessment, genetic disorders, communication disorders, speech and language development. During my time in Baltimore I had my first successful research projects, developed models and achieved new insights for the study of rare genetic disorders, specifically Rett syndrome and fragile X syndrome. I am very grateful for the fruitful cooperations and guidance of Dr's Michael V. Johnston, Walter E. Kaufmann, and Rebecca Landa during my stay. My stay at Hopkins boosted my subsequent career as researcher and translational scientist. My time at this special place not only prepared me for my scientific endeavors but also led to lasting, productive friendships, in the US but also worldwide. Overall a brain-gain-brain-drain experience, extremely valuable and eye opening.

Selected Publications:

Jonsson, U; Alaie, I; Löfgren Wilteus, A; Zander, E; Marschik, PB; Coghill, D; Bölte, S, 2017. Annual Research Review: Quality of life and childhood mental and behavioural disorders - a critical review of the research. J Child Psychol Psychiatry. 2017; 58(4): 439-469.

Marschik, PB; Pokorny, FB; Peharz, R; Zhang, D; O'Muircheartaigh, J; Roeyers, H; Bölte, S; Spittle, AJ; Urlesberger, B; Schuller, B; Poustka, L; Ozonoff, S; Pernkopf, F; Pock, T; Tammimies, K; Enzinger, C; Krieber, M; Tomantschger, I; Bartl-Pokorny, KD; Sigafoos, J; Roche, L; Esposito, G; Gugatschka, M; Nielsen-Saines, K; Einspieler, C; Kaufmann, WE; BEE-PRI Study Group, 2017. A Novel Way to Measure and Predict Development: A Heuristic Approach to Facilitate the Early Detection of Neurodevelopmental Disorders. Curr Neurol Neurosci Rep. 2017; 17(5):43-43

Brasil, P; Pereira, JP; Moreira, ME; Ribeiro Nogueira, RM; Damasceno, L; Wakimoto, M; Rabello, RS; Valderramos, SG; Halai, UA; Salles, TS; Zin, AA; Horovitz, D; Daltro, P; Boechat, M; Raja Gabaglia, C; Carvalho de Sequeira, P; Pilotto, JH; Medialdea-Carrera, R; Cotrim da Cunha, D; Abreu de Carvalho, LM; Pone, M; Machado Siqueira, A; Calvet, GA; Rodrigues Baião, AE; Neves, ES; Nassar de Carvalho, PR; Hasue, RH; Marschik, PB; Einspieler, C; Janzen, C; Cherry, JD; Bispo de Filippis, AM; Nielsen-Saines, K, 2016. Zika Virus Infection in Pregnant Women in Rio de Janeiro. N Engl J Med. 2016; 375(24):2321-2334

Marschik, PB; Kaufmann, WE; Bolte, S; Sigafoos, J; Einspieler, C, 2014. En route to disentangle the impact and neurobiological substrates of early vocalizations: Learning from Rett syndrome. Behav Brain Sci. 2014; 37(6)

Marschik, PB; Kaufmann, WE; Sigafoos, J; Wolin, T; Zhang, D; Bartl-Pokorny, KD; Pini, G; Zappella, M; Tager-Flusberg, H; Einspieler, C; Johnston, MV, 2013. Changing the perspective on early development of Rett syndrome. Res Dev Disabil. 2013; 4(4):1236-1239

Elisabeth Breese Marsh, MD
Associate Professor of Neurology, Johns Hopkins School of Medicine
Director, Johns Hopkins Bayview Comprehensive Stroke Program
Associate Program Director, Neurology Residency
Vice Chair of Clinical Operations, Johns Hopkins Bayview Neurology

My training as a resident/fellow, and faculty member at Johns Hopkins has resulted in a passion for the use of evidence-based medicine to better the quality of care for patients and improve both short- and long-term outcomes. Under the mentorship of Argye Hillis and Rebecca Gottesman, I was awarded an R25 Research Training Award through the NIH to investigate factors associated with increased risk of hemorrhagic transformation of acute stroke. This resulted in creation of the Hemorrhage Risk Stratification (HeRS) score which quantifies risk of hemorrhagic transformation for hospitalized patients needing anticoagulation. My current role as the director of the Comprehensive Stroke Program has allowed me to design and implement studies that have significantly change our evaluation and management of stroke in both the inpatient and outpatient setting. Through our multidisciplinary stroke follow-up clinic, we follow stroke survivors over the first year of recovery. I have focused on the population with small strokes and "good outcomes," who continue to have high rates of depression, fatigue, and cognitive dysfunction. With Rafael Llinas, my lab uses magnetoencephalography (MEG) to explore the underlying pathophysiology of their symptoms, and runs clinical treatment trials to hasten recovery and improve post-stroke morbidity and quality of life.

<u>Selected Publications:</u>

Marsh EB, Gottesman RF, Hillis AE, Urrutia VC, Llinas RH. Serum creatinine may indicate risk of symptomatic intracranial hemorrhage after iv tpa. Medicine, 2013;92:317-323.

Marsh EB, Gottesman RF, Hillis AE, Maygers J, Lawrence E, Llinas RH. Predicting symptomatic intracerebral hemorrhage versus lacunar disease in patients with longstanding hypertension. Stroke, 2014;45:1679-1683.

Marsh EB, Llinas RH. "Stuttering lacunes": an acute role for clopidogrel? Journal of Neurology and Translational Neuroscience, 2014;2(1):1035-1038.

Marsh EB, Llinas RH, Schneider ALC, Hillis AE, Lawrence E, Dziedzic P, Gottesman RF. Predicting hemorrhagic transformation of acute ischemic stroke: prospective validation of the HeRS score. Medicine, 2016;25:e2430.

Sharma R, Llinas R, Urrutia V, Marsh EB. Collaterals predict outcome regardless of time last known normal. Journal of Stroke and Cerebrovascular Diseases, 2018;27(4):971-977.

Marsh EB, Lawrence E, Hillis AE, Chen K, Gottesman RF, Llinas RH. Pre-stroke employment results in better patient-reported outcomes after minor stroke. Clinical Neurology and Neurosurgery, 2018;165:38-42.

Chang A, Llinas E, Chen K, Llinas RH, Marsh EB. Shorter ICU stays? The majority of post-iv tpa symptomatic hemorrhages occur within 12 hours of treatment. Stroke, 2018;49(6):1521-1524.

Dr. Justin C. McArthur
John W. Griffin Professor, Director, Department of Neurology,
Johns Hopkins University School of Medicine

I initially came to Hopkins to do internal medicine and then cardiology but fell in love with Neurology after rotations as a medical intern with chief residents Dan Hanley and Bob Fisher, and attendings Dick Johnson and Guy McKhann. After completing the neurology residency at Johns Hopkins in 1985, I had no real idea of what I wanted to do but Guy and Dick encouraged me to dive into NeuroAIDS. Hopkins had just begun clinical and research programs for this brand new disease that was ravaging Baltimore and other cities. After fumbling unsuccessfully in the lab for a few months, I then enrolled in an MPH and this gave me the training to submit grants to study the neurological complications of AIDS ~ dementia, neuropathy, and opportunistic infections. The first decade was an incredible time. We were seeing the full-on impact of the epidemic without any treatments until after 1987, but effective combination therapies were not introduced until 1996. Initially everyone died, usually within a few months, and it was an ugly, painful death. Gradually, the treatments improved to the point that we were regularly seeing the 'Lazarus' effect where a cachectic person riddled with various infections started antiretrovirals and then regained their health. HIV became a chronic manageable disease, and people with HIV starting living a close-to-normal livespan. Dick Johnson had completely shifted the focus of his laboratory from measles to studying HIV, and he helped establish a NeuroAIDS Center and the Center for AIDS Research. He engaged several of us in this effort, and a number of us are still working collaboratively to understand the mechanisms of NeuroAIDS and to develop new therapies. Long-time collaborators in this include Janice Clements, Ned Sacktor, Glenn Treisman, Marty Pomper, Norm Haughey, Amanda Brown, many from Infectious Diseases, and more recently, the JHU Drug Discovery unit led by Barb Slusher. I have led an NIMH Center for drug discovery since 2006, and we are now engaged in a trial of intranasal insulin for HIV-associated neurocognitive disorder, as well as using an ecoHIV murine model of neuropathogenesis. During this time, I learned the importance of collaboration, both at JHU and outside. HIV is a great example of the necessity of interdisciplinary interactions to achieve results. My greatest contribution has been to define the neurological complications of HIV/AIDS, based on my own clinical observations, and to define the critical role of sustained and damaging inflammation in NeuroAIDS. I believe that I could never have had this opportunity anywhere else. The encouragement that I received from Neurology and ID mentors was enabling and empowering, and the milieu for combining discovery and excellent care was unsurpassed. Another unexpected contribution, stimulated by Jack Griffin, was the development here of the technique of punch skin biopsy as a method to evaluate epidermal innervation in a variety of sensory neuropathies. This technique has now been used in many clinical trials for both HIV+ and diabetic neuropathies and has entered clinical practice as a useful tool to assess neuropathies. I was the founding director of the JHU Cutaneous Nerve laboratory, which became the first in the USA to obtain CLIA certification for punch skin biopsies.

Selected publications:

Antinori A, Arendt G, Becker JT, Brew BJ, Byrd DA, Clifford DB, Cinque P, Epstein LG, Goodkin K, Gisslen M, Grant I, Heaton RK, Joseph J, Marder K, Marra C, McArthur JC, et al. An updated nosology for HIV-associated neurocognitive disorders. Neurology, 69(18) 1789-99, 2007.

Tyor WR, Glass JD, Griffin JW, Becker PS, McArthur JC, Bezman L, Griffin DE. Cytokine expression in the brain during the acquired immunodeficiency syndrome. Ann Neurol 31:349-360, 1992.

Glass JD, Fedor H, Wesselingh SL, McArthur JC. Immunocytochemical quantitation of human immunodeficiency virus in the brain: Correlations with dementia. Ann Neurol 38:755-762, 1995.

McArthur JC, Hoover DR, Bacellar H, Miller EN, Cohen BA, Becker JT, Graham NMH, McArthur JH, Selnes OA, Jacobson LP, et al. Dementia in AIDS patients: incidence and risk factors. Neurology 43:2245-2253, 1993.

McArthur JC: Neurologic manifestations of AIDS. Medicine. 1987; 66:407-437.

McArthur JC, Becker PS, Parisi JE, Trapp B, Selnes OA, Cornblath DR, Balakrishnan J, Griffin JW, Price D: Neuropathological changes in early HIV-1 dementia. Ann Neurol 26:681-684, 1989.

McArthur JC, Stocks A, Hauer P, Cornblath DR, Griffin JW. Epidermal nerve fiber density: normative reference range and diagnostic efficiency. Arch Neurol 55:1513-1520, 1998.

Recent Honors:

2016 6th Annual Hopkins School of Medicine Neurology Clinical Faculty Brain Award for Excellence in Teaching
2016 Diversity Recognition Award, Johns Hopkins Diversity Leadership Council, Diversity, Inclusion, Excellence
2017 A.B. Baker Teaching Recognition Award, American Academy of Neurology

William C. Mobley, M.D., Ph.D.
Florence Riford Chair for Alzheimer Disease Research,
Distinguished Professor of Neurosciences, UC San Diego; San Diego, CA

The Hopkins Neurology residency showed me what an extraordinarily rich environment can accomplish for teaching how to care for neurology patients and the importance of linking basic and translational research advances to care. Critical to the Hopkins experience were devoted faculty mentors including Guy McKhann, Dick Johnson, Dan Drachman, Jack Griffin, Don Price, Mike Johnston and John Freemen. The lessons taught, and the support provided, continue to guide me. Indeed, the direction for my research was influenced by discoveries made during residency. Two were critical: first, Mike Johnston and Joe Coyle showed that the nucleus basalis neurons were responsible for cholinergic innervation of the cortex; second, Peter Whitehouse and Don Price showed that these neurons degenerated in Alzheimer disease (AD). Studies suggesting that nerve growth factor (NGF), a protein that I studied as an M.D., Ph.D. student at Stanford under Eric Shooter, could be a trophic factor for these neurons inspired me to explore this topic. Now many years later the answers to the many questions raised at that time have been answered in part as my lab and many others continue to explore a role for failed neurotrophic factor support in the pathogenesis of AD, including AD in Down syndrome.

Selected Publications:

Jean-Dominique Delcroix, Janice S. Valletta, Chengbiao Wu, Stephen G. Hunt, Anthony S. Kowal, William Mobley (2003). NGF Signaling in Sensory Neurons: Evidence that Early Endosomes Carry NGF Retrograde Signals. Neuron 39 (1):69-84.

Howe, C.L., Valletta, J.S., Rusnak, A.S., & Mobley, W.C. (2003). NGF signaling from clathrin-coated vesicles: evidence that signaling endosomes serve as a platform for the Ras-MAPK pathway. Neuron, 32: 801-814.

Mobley WC, Rutkowski JL, Tennekoon GI, Buchanan K, Johnston MV (1985). Choline acetyltransferase activity in striatum of neonatal rats increased by nerve growth factor. Science 229(4710):284-7. PubMed PMID: 2861660.

Salehi A, Delcroix JD, Belichenko PV, Zhan K, Wu C, Valletta JS, Takimoto-Kimura R, Kleschevnikov AM, Sambamurti K, Chung PP, Xia W, Villar A, Campbell WA, Kulnane LS, Nixon RA, Lamb BT, Epstein CJ, Stokin GB, Goldstein LS, Mobley WC. (2006). Increased App Expression in a Mouse Model of Down's syndrome Disrupts NGF Transport and Causes Cholinergic Neuron Degeneration. Neuron 51(1):29-42.

Salehi A, Faizi M, Colas D, Valletta J, Laguna J, Takimoto-Kimura R, Kleschevnikov A, Wagner SL, Aisen P, Shamloo M, Mobley WC. (2009). Restoration of norepinephrine-modulated contextual memory in a mouse model of Down syndrome. Sci Transl Med 1(7):7ra17.

Xu W, Weissmiller AM, White JA 2nd, Fang F, Wang X, Wu Y, Pearn ML, Zhao X, Sawa M, Chen S, Gunawardena S, Ding J, Mobley WC, Wu C. (2016). Amyloid precursor protein-mediated endocytic pathway disruption induces axonal dysfunction and neurodegeneration. J Clin Invest. 126(5):1815-33.

Belichenko NP, Belichenko PV, Kleschevnikov AM, Salehi A, Reeves RH, Mobley WC. (2009). The "Down syndrome critical region" is sufficient in the mouse model to confer behavioral, neurophysiological, and synaptic phenotypes characteristic of Down syndrome. J Neurosci. 29(18):5938-48.

Zhao X, Chen XQ, Han E, Hu Y, Paik P, Ding Z, Overman J, Lau AL, Shahmoradian SH, Chiu W, Thompson LM, Wu C, Mobley WC. TRiC subunits enhance BDNF axonal transport and rescue striatal atrophy in Huntington's disease. Proc Natl Acad Sci U S A. 2016 Sep.

Honors/Awards:

Member, Institute of Medicine, National Academy of Sciences (now, National Academy of Medicine) 2004
International Sisley-Jérôme Lejeune Prize for Studies on Intellectual Disability 2011
Member, Johns Hopkins Society for Scholars, 2014

Lauren R. Moo, MD
Site Director, VA New England Geriatric Research Education and Clinical Center (NEGRECC), Bedford MA
Staff Neurologist, Cognitive Behavioral Neurology division Massachusetts General Hospital, Boston MA
Assistant Professor of Neurology, Harvard Medical School, Boston MA

My years as a resident, fellow, and junior faculty at Johns Hopkins were formative for me in terms of both my formal training in neurology and my interests in cognition and behavior. I entered residency without a clear focus within the field, and I can point to an experience watching John Hart examine a teenage patient with an unusual aphasia due to a left hemisphere abscess as a turning point for me. My fellowship in Cognitive Neurology and Neuropsychology allowed me to work not only with John Hart but also Ola Selnes and cemented my interest in studying brain-behavior relationships. Upon moving to Massachusetts General Hospital and Harvard Medical School, and more recently joining the Bedford division of the NE GRECC, I came to appreciate the close knit nature of the JHH residency program. My current research and clinical innovation projects center primarily around dementia and I still look back on my time at Johns Hopkins as important in laying the foundation for my neurology career and as the source of many of the friendships I still cherish.

Selected Publications:

Moo LR, Slotnick SD, Tesoro MA, Zee DS, Hart J. Interlocking finger test: a bedside screen for parietal lobe dysfunction. J Neurol Neurosurg Psychiatry. 2003 Apr;74(4):530-532.

Slotnick SD, Moo LR. Prefrontal cortex hemispheric specialization for categorical and coordinate visual spatial memory. Neuropsychologia. 2006;44(9):1560-1568.

Shapiro KA, Moo LR, Caramazza A. Cortical signatures of noun and verb production. Proc Natl Acad Sci U S A. 2006 Jan 31;103(5):1644-1649.

Moo LR, Emerton BC, Slotnick SD. Functional MT + lesion impairs contralateral motion processing. Cogn Neuropsychol. 2008 Jul;25(5):677-689.

Moo LR, Jafri Z, Morin PJ. Home-based video telehealth for veterans with dementia. Fed Pract. 2014 Dec;31(12):36-38.

Honors and Awards:
AAN Women Leading in Neurology 2018-19

Hamilton Moses, III MD
Founder and Chairman
The Alerion Institute, Charlottesville, Virginia

Adjunct Professor of Neurology
Johns Hopkins University School of Medicine

Johns Hopkins, in his 1873 bequest, set clear hopes for the institutions' clinical and academic programs. Because we will always be surrounded by human suffering, they must afford the best care. Because new knowledge will be necessary, they must find it. Those expectations have underpinned neurology for the past half-century. My contribution has been to help sustain and strengthen the ability to do so. By the early 1980s, it had become evident to Guy McKhann, Donlin Long, and Robert Heyssel that the primary challenges for medicine would come from the outside: whims of insurers, growing dependence on the NIH, limitless demand for care, and challenging economics. They reasoned that internal organizational limitations, paradoxically strong at the very best hospitals, would hinder their ability to realize the promise of burgeoning scientific opportunities. My career has been built on those observations, as chief physician of the JHH (1988-1994), as an early architect of the Massachusetts General-Brigham-Partners system in Boston (1995-1998, alongside JH alumni Eugene Braunwald, Samuel Thier, Anne Young), and latterly as head of the science and technology practice of The Boston Consulting Group, a large international strategy firm. The JH neurology tradition of, "act first, ask permission later" has served well.

Selected Publications

Moses H, Matheson DHM, Dorsey ER, George BP, Sadoff D, Yoshimura S. The Anatomy of Health Care in the United States. *JAMA: The Journal of the American Medical Association*. 2013;310(18):1947-1963.

Moses H, Matheson DHM, Cairns-Smith S, George BP, Palisch C, Dorsey ER. The Anatomy of Medical Research: US and International Comparisons. *JAMA: The Journal of the American Medical Association*. 2015;313(2):174-189.

Moses H, Braunwald E, Martin JB, Thier SO. Collaborating With Industry--Choices For the Academic Medical Center. *The New England Journal of Medicine*. 2002;347(17):1371-1375.

Moses H, Martin JB. What Should Be Done to Improve the Productivity of Neurological Research? *Ann Neurology.* 2006;60(6):647-651.

Moses H, Thier SO, Matheson DHM. Why Have Academic Medical Centers Survived? *JAMA: The Journal of the American Medical Association*. 2005;293(12):1495-1500.

[References 1. and 2. have been among the top-100 citations annually since their appearance.]

Awards

Honorary Colonel, The US National Park Service (for conservation of land)
Honorary Trustee, The McLean Hospital (Harvard)

David E. Newman-Toker, MD PhD
Professor, Department of Neurology, Johns Hopkins Hospital, Baltimore MD 21287

After having completed my neurology residency and first fellowship in neuro-ophthalmology in Boston, I came to Johns Hopkins in 2000 as a fellow in vestibular neurology under David Zee's mentorship. During my two-year clinical vestibular fellowship, I also began my graduate work in clinical research methods at the Johns Hopkins Bloomberg School of Public Health. I received my K23 grant award and joined the neurology department faculty in 2002. After this, I completed my doctoral dissertation on new approaches to diagnosing acute dizziness and vertigo in the ED, receiving my PhD from the Graduate Training Program in Clinical Investigation in 2007. Preventing diagnostic errors, particularly related to acute neurological illnesses, has been my ultimate career goal. I have had the great good fortune of having mentors and advocates willing to indulge my unique career path linked to improving clinical diagnosis in frontline care settings. In my role as Director of the Armstrong Institute Center for Diagnostic Excellence and as President of the Society to Improve Diagnosis in Medicine, I am privileged to work with countless junior trainees who have expressed a long-term career interest in better diagnosis.

Selected Publications:

Newman-Toker DE, Cannon LM, Stofferahn ME, Rothman RE, Hsieh YH, Zee DS. Imprecision in patient reports of dizziness symptom quality: a cross-sectional study conducted in an acute care setting. Mayo Clin Proc. 2007;82(11):1329-40.

Kattah JC, Talkad AV, Wang DZ, Hsieh YH, Newman-Toker DE. HINTS to diagnose stroke in the acute vestibular syndrome: three-step bedside oculomotor exam more sensitive than early MRI diffusion-weighted imaging. Stroke 2009 Nov;40(11):3504-3510.

Newman-Toker DE, Saber Tehrani AS, Mantokoudis G, Pula JH, Guede CI, Kerber KA, Blitz A, Ying SH, Hsieh YH, Rothman RE, Hanley DF, Zee DS, Kattah JC. Quantitative video-oculography to help diagnose stroke in acute vertigo and dizziness: towards an "ECG" for the eyes. Stroke 2013;44(4):1158-61.

Newman-Toker DE, Moy E, Valente E, Coffey R, Hines A. Missed diagnosis of stroke in the ED: a cross-sectional analysis of a large population-based sample. Diagnosis 2014 Apr;1(2):155-166.

Newman-Toker DE, Pronovost PJ. Diagnostic errors: the next frontier for patient safety. JAMA 2009 Mar; 301(10):1060-62.

Newman-Toker DE. A unified conceptual model for diagnostic errors: underdiagnosis, overdiagnosis, and misdiagnosis. Diagnosis 2014 1(1): 43–48.

Liberman AS, Newman-Toker DE. Symptom-Disease Pair Analysis for Diagnostic Error (SPADE): A conceptual framework and methodological approach for unearthing misdiagnosis-related harms using big data. BMJ Quality and Safety 2018.

Honors:

2007	Member of Delta Omega Honorary Society in Public Health, JH BSPH (5/07)
2011	Mayo Clinic Visiting Professor of Neurologic Education (Rochester, MN 5/12)
2012	Society to Improve Diagnosis in Medicine's Medal of Service Award in Baltimore, MD (11/12)
2016	Named Inaugural Director of the Armstrong Institute Center for Diagnostic Excellence (7/16)
2018	One of 125 "Hopkins Heroes" who personify the Johns Hopkins Medicine mission (4/18)
2018	President, Society to Improve Diagnosis in Medicine (11/18)

Jorge Otero-Millan, Ph.D.
Postdoctoral fellow,
Johns Hopkins University,
Baltimore, Maryland MD,

My time as postdoctoral fellow in the Department of Neurology at Hopkins (2013-present) has been a period of tremendous growth. Within our group at the Neuro-Vestibular and Visual Disorders divisions I have been fortunate to work under the mentorship of a diverse group of faculty members such as David Zee, Amir Kheradmand and David Newman-Toker. I arrived at Hopkins after a PhD working at the Barrow Neurological Institute with Dr. Susana Martinez-Conde. My work focused on the small eye movements, called fixational eye movements that we make when we try to keep our gaze still looking at a small target. During this period, I had the opportunity to collaborate with John Leigh, who was in Cleveland at the time, comparing the characteristics of those eye movements in healthy subjects and neurological patients. This collaboration was my first chance to experience clinical neurology and how eye movements can be useful to study and diagnose diseases. Later, when looking for a postdoctoral fellowship I decided to follow on this path and joined David Zee, long time collaborator of John Leigh at Johns Hopkins. At Hopkins I got to work on studying how our brain maintains an accurate perception of upright despite the continuing motion of our body and eyes. Collaborating with Amir Kheradmand I developed a method to measure torsional eye movements (rotations of the eye around the line of sight). Lack of a method to measure torsion up to that point had been a roadblock on this line of research. We put this method to good use in multiple studies ranging from brain stimulation and perception of upright, patients with vestibular loss, and eye movements induced by magnetic fields. Working in this group has also allowed me to collaborate with David Newman-Toker applying new technologies and data analysis techniques to enable eye-movement based diagnosis of patient with dizziness. In the future, my experience at Hopkins will be key to succeed as an independent investigator.

Selected articles:

Otero-Millan J, Roberts DC, Lasker A, Zee DS, and Kheradmand A, “Knowing what the brain is seeing in three dimensions: A novel, noninvasive, sensitive, accurate, and low-noise technique for measuring ocular torsion,” Journal of vision, vol. 15, iss. 14, p. 11, 2015.

Otero-Millan J and A. Kheradmand, “Upright Perception and Ocular Torsion Change Independently during Head Tilt,” Frontiers in human neuroscience, vol. 10, 2016.

Otero-Millan J, Zee DS, Schubert MC, Roberts DC, and Ward BK, “Three-dimensional eye movement recordings during magnetic vestibular stimulation,” Journal of neurology, p. 1–6, 2017.

Otero-Millan J, Treviño C, Winnick A, Zee DS, Carey JP, and Kheradmand A, “The video ocular counter-roll (vOCR): a clinical test to detect loss ofotolith-ocular function,” Acta oto-laryngologica, p. 1–8, 2017.

Otero-Millan J, Winnick A, and Kheradmand A, “Exploring the Role of Temporoparietal Cortex in Upright Perception and the Link With Torsional Eye Position,” Frontiers in neurology, vol. 9, 2018.

Awards:

2017: NIH K99/R00: Perceptual stability during torsional eye movements, 2017

2012: Recipient, 2011 Tobii EyeTrack Award for the study: Otero-Millan J, Serra A, Leigh RJ, Troncoso XG, Macknik SL, Martinez-Conde S (2011). Distinctive Features of Saccadic Intrusions and Microsaccades in Progressive Supranuclear Palsy. Journal of Neuroscience; 31(12): 4379-4387.

2000: 2nd Place, XXXVI Galician Mathematical Olympiad. Qualifying for Spanish Mathematical Olympiad.

Robert Ouvrier, AC, MD, FRACP
Emeritus Professor, The Children's Hospital at Westmead, Parramatta, Australia.
I was born in Perth, Western Australia, but have lived in Sydney for most of my life. After High School, I entered the Faculty of Medicine at Sydney University where I obtained a Bachelor of Science Degree in Cardiac Physiology and graduated MB BS with Honours in 1964. I interned at the Royal Prince Alfred Hospital, which has had a long association with Johns Hopkins Hospital since the Second World War. Prior to leaving for the United States, I spent six months in Papua New Guinea working as a general paediatrician. My initial training in paediatric neurology commenced in Melbourne, under the tutorship of Dr Ian Hopkins who, himself, had been trained in The Johns Hopkins Hospital. I then trained in paediatric neurology with Professor David Clark in Lexington, Kentucky. He had been with Professor Frank Ford, the first Paediatric Neurologist at The Johns Hopkins Hospital. After 18 months working with Professor Clark, Michael McQuillen and Doug Jamieson, I was accepted in the new neurological unit at The Johns Hopkins Hospital in January 1970, working mainly with Professors Guy McKhann, John Freeman and Dan Drachman, and a group of very enthusiastic trainees in adult and paediatric neurology, most of whom have gone on to head up major units in North America. In both Lexington and Baltimore, my family and I received a warm and generous welcome, excellent support and supervised autonomy in learning the art and science of neurology with excellent training in the ancillary skills of the speciality, such as neuroradiology where we would ourselves perform angiography, PEGs, nerve conduction studies and EEG interpretation under experts in the fields. In addition to these essential skills in the practice of neurology, I was also given the opportunity to enter the laboratory of Paul Lietman, where I did some early work on assays of serum anticonvulsant levels, a laboratory activity, which was only starting at that time in the early 1970's. Another major opportunity was my attendance at Frank Walsh and David Knox's Saturday morning sessions on Neuro-ophthalmology in the Wilmer Institute. These excellent teaching sessions stimulated my interest in the field and led to several papers (see Addendum below). The Johns Hopkins Hospital has thus played a major part in my formation as a Paediatric Neurologist but it has also kindled an interest in basic research which I continued on my return to Sydney, at first in anticonvulsant assays but later with a switch to neuromuscular research, focusing particularly on peripheral neuropathies. I have written a text book on these conditions in childhood assisted by Professors James McLeod and John Pollard in Sydney, where I had returned in 1972 despite being offered further training at Johns Hopkins in neurone culture or in the Kennedy Institute, where I had commenced a cerebral palsy clinic. Due to the confidence that training in medicine at The Johns Hopkins Hospital creates, I was appointed to the first Chair of Paediatric Neurology in Australia. I have authored, or co-authored, over 150 scientific articles on paediatric neurology and have recently co-edited the late Jean Aicardi's Text book of Diseases of the Nervous System in Childhood in its fourth edition. I am a Past-President of the International Child Neurology Association and of the Asian Oceanian Child Neurology Association. I have been appointed a Companion of the Order of Australia for my clinical and research activities and have also been appointed Chevalier of the Legion of Honour and of the National Order of Merit of the French Republic for my research activities and my contribution to the neurological care of children from New Caledonia. There is no doubt in my mind that The Johns Hopkins Hospital has played a key part in my personal evolution and development. I will never forget my debt of gratitude!

Selected Publications:

Hoyt CS, Billson F, Ouvrier RA, Wise GA. "Ocular features of Aicardi's syndrome".Arch Ophthalmol 1978; 96:291-295.
Ouvrier RA, McLeod JG, Morgan GJ, Wise GA, Conchin TE. "Hereditary motor and sensory neuropathy of neuronal type with onset in early childhood". J Neurol Sci 1981; 51:181-197.
Ouvrier RA, McLeod JG, Conchin T. "Friedreich's ataxia: early detection and progression of peripheral nerve abnormalities". J Neurol Sci 1982; 55:137-145.
Ouvrier RA, Billson FA. "Optic nerve hypoplasia: a review". J Child Neurol 1986; 1:181-8.
Ouvrier RA, McLeod JG, Conchin T. "Morphometric studies of sural nerve in childhood". Muscle Nerve 1986; 10:47-53.
Ouvrier RA, McLeod JG, Conchin TE. "The hypertrophic forms of hereditary motor and sensory neuropathy. A study of hypertrophic Charcot-Marie-Tooth disease (HMSN type I) and Dejerine-Sottas disease (HMSN type III) in childhood". Brain 1987; 110:121-148.
Ouvrier RA, Billson F. "Benign paroxysmal tonic upgaze of childhood". J Child Neurol 1988; 3: 177-180.
Ouvrier R "Correlation between the histopathologic, genotypic, and phenotypic features of hereditary peripheral neuropathies in childhood" J Child Neurol 1996; 11: 133-146.
Ouvrier R, Hendy J, Bornholt L, Black F. SYSTEMS: School-Years Screening Test for the Evaluation of Mental Status. J Child Neurol 1999; 14: 772-780.
Ouvrier R A. A new classification for hereditary neurological disorders: A cure for the chaos! Revue Neurologique 2016 ; 172: 335-336.
Menezes M, Webster R, Antony J, Ouvrier R, O'Brien K, Hill M, Gardner-Berry K , Birman C. Auditory neuropathy in Brown–Vialetto–Van Laere syndrome due to riboflavin transporter RFVT2 deficiency. Devel Med Child Neurol 2016; 58.

Gavril W. Pasternak, MD PhD
Anne Burnett Tandy Chair of Neurology
Laboratory Chair, Molecular Pharmacology Program
Memorial Sloan Kettering Cancer Center, New York

Having received my undergraduate, MD and PhD degrees from Hopkins, I consider myself fully 'Hopkins Trained'. The training I took with me is heavily based upon both my scientific and clinical years. My tutelage under Dr. Solomon H. Snyder and the chemists in the Department of Pharmacology gave me the tools to study the chemical biology of opioids and their receptors for more than 40 years. Our work has established the importance in alternative gene splicing in G-protein coupled receptor function and uncovered new molecular target that is leading to safer, more effective analgesics. What has set my group apart has our focus on integrating our molecular observations with behavior and physiology. My training in neurology provided me with a general understanding of nervous system and an appreciation of the complexity and subtlety of sensation. I brought this to Memorial Sloan Kettering Cancer Center where I integrated my clinical work in neuro-oncology and pain with my laboratory work, providing a unique perspective that proved invaluable in establishing the direction of research. Life is like a jigsaw puzzle – each piece is needed to form a complete picture. Hopkins has provided many of the pieces of my life that comprise that picture.

Selected Publications:

Xu J, Lu Z, Narayan A, Le Rouzic VP, Xu M, Hunkele A, Brown TG, Foefer WF, Rossi GC, Rice R, Martinez-Rivera A, Rajadhyaksha AM, Catergni L, Bassoni DI, Pasternak GW, Pan YX: Alternatively spliced C-termini of mu opioid receptors impact morphine actions. J Clin Inv 127: 1551-1573, 2017. PMCID 5373896

Lu ZG, Xu J, Rossi GC, Majumdar S, Pasternak GW, Pan YX: Mediation of opioid analgesia by a truncated 6-transmembrane GPCR. J. Clin. Invest. 125:2626-2630, 2015. PMID: 26011641

Xu J, Faskowitz AJ, Rossi GC, Xu M, Lu Z, Pan Y-X, Pasternak GW: Stabilization of morphine tolerance with long-term dosing: Association with selective upregulation of mu opioid receptor splice variant mRNA's. Proc. Nat. Acad Sci. USA 112:279-284, 2015. PMID 25535370

Pasternak GW, Pan Y.X.: Mu opioids and their receptors. Pharmacol. Rev. 65: 1257-1317, 2013 PMID: 24076545

Majumdar S, Grinnell S, Le Rouzic V, Burgman M, Polikar L, Ansonoff M, Pintar J, Pan, Y-X, Pasternak GW: Truncated G-protein coupled mu opioid receptor MOR-1 splice variants are targets for highly potent opioid analgesics lacking side-effects. PNAS 108: 19778-83, 2011. PMID: 22106286

Pert CB, Pasternak GW And Snyder SH. Opiate agonists and antagonists discriminated by receptor binding in brain. Proc. Comm. Drug Dependence p. 376-382, 1974.

Pasternak GW and Snyder SH. Identification of novel high affinity opiate receptor binding in rat brain. Nature, 253: 563-565, 1975.

Honors/Awards:

2019 Frederick W. L. Kerr Basic Science Research Award of the American Pain Society
2012 Julius Axelrod Award in Pharmacology (American Society of Pharmacology Experimental Therapeutics)
2002 The Millennium Prize, by the Faculty of Medicine, Norwegian University of Science and Technology

Grace C.Y. Peng, Ph.D.
Director for Mathematical Modeling, Simulation and Analysis Programs at the National Institute of Biomedical Imaging and Bioengineering (NIBIB) at the National Institutes of Health (NIH)

I was a post-doctoral fellow in Hopkins Neurology from 1996 to1999 and then part-time faculty until 2007. I came to work with Dr. David Zee to apply biomedical engineering to clinical applications in the vestibular system. David provided encouragement to me during my PhD on cross-axis adaptation of the vertical vestibular ocular reflex and modeling the vestibular colic reflex for head and neck control; and he became a wonderful mentor to me at Hopkins. My fellowship experience exceeded all expectations. I was deeply engaged in clinical research through rich collaborations with stellar researchers from all over the world. I learned to conduct and communicate science with rigor, and gain extraordinary appreciation for the patients who allowed me to measure and study their eye movements. The environment truly reflected the positive spirit of the people around me. I had the honor of working with clinicians who embraced quantitative approaches in research and medicine – decades ahead of their time! My Hopkins experience inspired me to promote modeling as a culture change to the broader research community, once I became a program director at NIH in 2002. As a steward of the government (e.g. funding grants, coordinating working groups within and outside the government) I strive to promote rigorous discourse with diverse disciplines to adopt model-driven science. Slowly but surely the "Hopkins mentality" is taking hold in the multiple communities I serve.

Selected Publications:

Peng, G.C.Y. (Oct 2016) Moving Toward Model Reproducibility and Reusability. IEEE Trans Biomed Eng.;63(10):1997-1998. doi: 10.1109/TBME.2016.2603418. Epub 2016 Aug 26.

Peng, G.C.Y. (December 2011) Editorial: What Biomedical Engineers Can Do to Impact Multiscale Modeling (TBME Letters Special Issue on Multiscale Modeling and Analysis in Computational Biology and Medicine: Part-2), IEEE Transactions on Biomedical Engineering, 58(12): 3440 - 3442.

Morris, R.W., Bean, C.A., Farber, G.K., Gallahan, D., Jakobsson, E., Liu, Y., Lyster, P.M., Peng, G.C.Y., Roberts, F.S., Twery, M., Whitmarsh, J., and Skinner, K. (2005) Digital Biology: an emerging and promising discipline. Trends in Biotechnology 23(3): 113-117.

Peng, G.C.Y., Minor, L.B. and Zee, D.S. (2005) Gaze Position Corrective Eye Movements in Normal Subjects and in Patients with Vestibular Deficits. Ann. N.Y. Acad. Sci. 1039: 337–348.

Peng, G.C.Y., Zee, D.S. and Minor, L.B. (2004) Phase-plane analysis of gaze stabilization to high acceleration head thrusts – a continuum across normal subjects and patients with loss of vestibular function. J Neurophysiol 91: 1763-1781.

Peng, G.C.Y., Hain, T.C. and B.W. Peterson. (1996) A Dynamical Model for Reflex Activated Head Movements in the Horizontal Plane. Biological Cybernetics, 75:309-319.

Peng, G.C.Y., Baker, J.F. and B.W. Peterson. (1994) Dynamics of Directional Plasticity in the Human Vertical Vestibulo-Ocular Reflex. J Vestibular Res. 4(6):453-460.

Selected Awards:

NIH Director's Award 2016 – SPARC Working Group

NIH Director's Individual Award 2015 – Interagency Modeling and Analysis Group (IMAG) and the Multiscale Modeling (MSM) Consortium

NIH Director's Award 2014 – BRAIN Initiative

Alan K. Percy, MD
Professor, Pediatrics, Neurology, Neurobiology, Genetics, and Psychology; Associate Director, Civitan International Research Center, University of Alabama at Birmingham, Birmingham, AL

As one of the original resident group at Johns Hopkins in 1969, we were thin in the first year, but expanded dramatically the second year with a notable cadre including Jack Griffin, Dave Zee, and Gihan Tennekoon. As the service expanded, the new faculty and residents sought to provide optimal coverage. During these two years, I was fortunate to continue research on neurodegenerative disorders begun at Stanford, continued at NIH with Roscoe Brady, and expanded by close collaboration with Mike Kaback in Pediatrics. During the third year, Guy allowed me to commit >90% to research in Biochemistry under Bill Lennarz. There, I began a long, fruitful program with another post-doc, Skip Waechter, investigating the biosynthetic pathways of phospholipids in the CNS, among other systems. Thereafter, my faculty career began first in Los Angeles (UCLA) in 1972 and Baylor College of Medicine in 1979. An encounter with a young girl began the next thirty-five years of study of a rare neurodevelop-mental disorder, Rett syndrome. After moving to head child neurology at UAB, this expanded increasingly, occupying me to the present. Those early years at Hopkins enriched my subsequent experiences with enduring friendships and continued inquiry into the neurodegenerative and neurodevelopmental disorders.

Selected publications:

Percy, A.K. and Brady, R.O. Metachromatic leukodystrophy: Diagnosis with Venous Blood Samples. Science 161:594-595, 1968.
Percy, A.K. and Kaback, M.M. Confirmatory Studies in the Prenatal Diagnosis of Sphingolipidoses. Pediatr Res 7:812-817, 1973.
Percy, A.K., Moore, J.F. and Waechter C.J. Properties of Particulate and Detergent-Solubilized Phospholipid N-Methyltransferase Activity from Calf Brain. J Neurochem 38:1404-1412, 1982.
Zoghbi, H.Y., Percy, A.K., Glaze, D.G., Butler, I.J., Riccardi, V.M. Reduction of Biogenic Amines in Rett Syndrome. New Eng J Med 313:921-924, 1985.
Chapleau CA, Calfa GD, Lane MC, Larimore JL, Albertson AJ, Kudo S, Armstrong DL, Percy AK, Pozzo-Miller L. Dendritic Spine Pathologies in Hippocampal Pyramidal Neurons from Rett Syndrome Brain and after Expression of Rett-Associated *MECP2* Mutations. Neurobiol Dis 35:219-233,2009. [PMID: PMC2722110]
Cuddapah VA, Pillai RB, Shekar KV, Lane JB, Motil KJ, Skinner SA, Tarquinio DC, Glaze DG, McGwin G, Kaufmann WE, Percy AK, Neul JL, Olsen ML. *Methyl-CpG-binding protein 2* (*MECP2*) mutation type is associated with disease severity in Rett syndrome. J Med Genet 51:152-158, 2014. published Online First, as 10.1136/jmedgenet-2013-102113, 1/7/14. [PMID: PMC4403764]
Tarquinio DC, Hou W, Neul JL, Berkmen GK, Drummond J, Aronoff E, Lane JB, Kaufmann WE, Motil KJ, Glaze DG, Skinner SA, Percy AK. The course of awake breathing disturbances across the lifespan in Rett syndrome. Brain & Dev, 2018 doi.org/10.106/j.braindev.2018.03.010. [PMID: PMC6026556]

Honors/Awards:

Doctor Honoris Causa, Göteborg University, Göteborg, Sweden - 2002
Hower Award, Child Neurology Society – 2005
Bengt Hagberg Memorial Lecture, Swedish Child Neurology Meeting, Stockholm, Sweden – 2016

Stephen J. Peroutka, MD, PhD
Vice President and Global Therapeutic Head, Neuroscience
PPD, Inc.
Carmel, CA

My first visit to Hopkins was via the Emergency Room at the age of 5 days. I stayed a week, but never really left. In fact, I am still actively working on a new collaboration with Hopkins. In between those two events, I spent 8 of 9 years at the Johns Hopkins University School of Medicine, first as an MD-PhD student in Sol Snyder's lab and then as a neurology resident. Those years both shaped and guided the rest of my career and life: Assistant Professor of Neurology and Pharmacology at Stanford, Chief, Neurology Service at the Palo Alto VA Hospital, first Director of Genentech's Department of Neuroscience and Founder of Spectra Biomedical, a company focused on migraine genetics. For the past 20 years, my work has focused on clinical drug development as both CMO of small biotech companies and via clinical research organizations. All of this has resulted in more than 300 publications and 100 guest lectures at universities and institutes, a body of work that is due largely to the outstanding education and training that I was fortunate to receive at Johns Hopkins.

Selected Publications

Peroutka SJ, Snyder SH: Multiple serotonin receptors: Differential binding of ^{3}H-5-hydroxytryptamine, ^{3}H-lysergic acid diethylamide and ^{3}H-spiroperidol. Molecular Pharmacology 16: 687-699, 1979.

Peroutka SJ, Snyder SH: Long-term antidepressant treatment decreases spiroperidol-labeled serotonin receptor binding. Science 210: 88-90, 1980.

Peroutka SJ, Peroutka LA: Autosomal dominant transmission of the "Photic Sneeze Reflex". New England Journal of Medicine 310: 599-600, 1984.

Oksenberg D, Marsters SA, O'Dowd BF, Jin H, Havlik S, Peroutka SJ, Ashkenazi A: A single amino acid difference confers major pharmacological variation between human and rodent 5-hydroxytryptamine$_{1B}$ receptors. Nature 360: 161-163, 1992.

Petty BG, Cornblath DC, Adornato BC, Chaudhry V, Flexner C, Wachsman M, Sinocropi D, Burton LE, Peroutka SJ: The effect of systemically administered recombinant human nerve growth factor in healthy human subjects. Neurology 36: 244-246, 1994.

McCarthy LC et al. Single nucleotide polymorphism (SNP) alleles in the Insulin Receptor (INSR) gene are associated with typical migraine. Genomics 78:135-149, 2001.

Peroutka SJ: Calcitonin gene-related peptide targeted immunotherapy for migraine: progress and challenges in splitting the headache. BioDrugs, 28(3): 237-244, 2014.

Honors/Awards

Harold G. Wolff Award from the American Association for the Study of Headache for the best headache research paper of 1993

Max Hamilton Memorial Prize for significant contributions in Psychopharmacology from the Collegium Internationale Neuro-Pychopharmacologicum (1993)

Elected to the Board Of Directors of the American Headache Society and the Governing Body of the American Council for Headache Education (2000)

Alan Pestronk, MD
Professor - Departments of Neurology, and Pathology & Immunology, Director - Neuromuscular Clinical Laboratory, Washington University School of Medicine, Saint Louis, MO 63105

I was a medical student at Johns Hopkins in 1969 when Guy McKhann arrived to lead the Department of Neurology. At our neurology teaching conferences that year, Guy reaffirmed to me that neurology was an interesting and rewarding specialty. He eliminated unnecessary formality by removing our *de rigueur* striped ties to test optokinetic nystagmus in patients. I was a member of the second class of residents in Guy's neurology department at JHU. I trained with wonderful senior residents Dave Zee, Jack Griffin and Larry Davis, and co-residents Ron Haller, Ray Roos and Allan Krumholz. Guy recruited Dan Drachman, my mentor, to head our neuromuscular group. Over 15 years, as a trainee and then my colleague in the neuromuscular group, Dan taught me the importance of hard work and honesty, and the joy of scientific and clinical neuroscience, neuromuscular pathology, and teaching. Our neuromuscular teaching program at Washington University has: Trained over 100 fellows since I arrived in 1989, and; Developed the Neuromuscular Disease Center website, an online resource that is visited each day by over 1,000 medical professionals from 100 countries.

Publications:

Pestronk A. Neuromuscular Disease web site 2018: neuromuscular.wustl.edu

Pestronk, A, Drachman, DB. Motor nerve sprouting and acetylcholine receptors. Science 1978;199:1223-1225.

Pestronk, A, Cornblath DR, Ilyas AA, Baba H, Quarles RH, Griffin, JW, Alderson, K. A treatable multifocal motor neuropathy with antibodies to GM1 ganglioside. Ann Neurol 1988;24:73 78.

Pestronk A, Choksi R, Logigian E, Al-Lozi MT. Sensory Neuropathy with Monoclonal IgM Binding to a Trisulfated Heparin Disaccharide. Muscle Nerve 2003;27:188-95.

Pestronk A, Schmidt RE, Choksi R. Vascular pathology in dermatomyositis and anatomic relations to myopathology. Muscle Nerve 2010;42:53-61.

Pestronk A. Acquired immune and inflammatory myopathies: pathologic classification. Curr Opin Rheuml 2011;23:595-604.

Cai C, Alshehri A, Choksi R, Pestronk A. Regional Ischemic Immune Myopathy: A Paraneoplastic Dermatomyopathy. J Neuropathol Exp Neurol 2014;73:1126-1133.

Bucelli RC, Pestronk A. Immune Myopathies with Perimysial Pathology (IMPP): Clinical and Laboratory Features. Neurol Neuroimmunol Neuroinflamm 2018;5(2):e434.

Pestronk A, Sinhya N, Alhumayyd Z, Ly C, Schmidt RE, Bucelli R. Immune Myopathy with Large-Histiocyte-Related Myofiber Necrosis. Neurology 2019.

Honors:

Lawrence C. McHenry Award for Excellence in History of Neurology, AAN 1987

Society of Scholars, Johns Hopkins 2004

Distinguished Clinician Award, Washington University School of Medicine 2015

Dr. Jutta Peterburs
Research Scholar, Heinrich-Heine-University, Dusseldorf, Germany

During my research fellowship (2013-2014) in the Department of Neurology, Division of Cognitive Neuroscience, at Johns Hopkins School of Medicine, I had the pleasure of working with an amazing and inspiring group of neuroscientists interested in non-motor functions of the cerebellum (John E. Desmond, Cherie L. Marvel, Dominic T. Cheng). This topic has been one of my core research interests ever since my time as a PhD student at Ruhr-University Bochum in Germany, and my time at Hopkins has allowed me to substantially expand my methodological repertoire and my scientific horizons. My current research is focused on understanding how performance monitoring processes, e.g., error and feedback processing, are impacted by contextual and inter-individual factors, and how especially the cerebellum might contribute by carrying out overarching monitoring and predictive functions. I very much enjoyed the extremely productive, creative, and supportive atmosphere in John Desmond's Neuroimaging and Modulation Lab. While my career path led me back to Germany after completion of my fellowship, I have been maintaining and fostering my ties to Hopkins in my role as a Research Associate. To conclude, my time at Hopkins not only shaped and substantially advances my career but it also led to lasting, productive friendships and a deep love for Baltimore.

Selected Publications:

Peterburs, J.*, Hofmann, D.*, Becker, M.P.I.*, Nitsch, A.M., Miltner, W.H.R., Straube, T. (2018). The role of the cerebellum for feedback processing and behavioral switching in a reversal-learning task. *Brain & Cognition*, 125, 142-148. *equal contribution

Peterburs, J., Desmond, J.E. (2016). The role of the human cerebellum in performance monitoring. *Current Opinion in Neurobiology*, 40, 38-44.

Peterburs, J., Sandrock, C., Miltner, W.H.R., Straube, T. (2016). Look who's judging - Feedback source modulates brain activation to performance feedback in social anxiety. *Neuroimage*, 133, 430-437.

Peterburs, J., Cheng, D.T., Desmond, J.E. (2015). The association between eye movements and cerebellar activation in a verbal working memory task. *Cerebral Cortex*, 26, 3802-3813.

Peterburs, J., Thürling, M., Rustemeier, M., Goericke, S., Suchan, B., Timmann, D.*, Bellebaum, C.* (2015). A cerebellar role in performance monitoring - Evidence from EEG and voxel-based morphometry in patients with cerebellar degenerative disease. *Neuropsychologia*, 68, 139-147.

Peterburs, J., Gajda, K., Koch, B., Schwarz, M., Hoffmann, K.-P., Daum, I., Bellebaum, C. (2012). Cerebellar lesions alter performance monitoring on the antisaccade task - an event-related potentials study. *Neuropsychologia*, 50(3), 379-389.

Peterburs, J., Bellebaum, C., Koch, B., Schwarz, M., Daum, I. (2010). Working memory and verbal fluency deficits following cerebellar lesions: Relation to interindividual differences in patient variables. *The Cerebellum*, 9(3), 375-383.

Katherine B. Peters, MD, PhD, FAAN
Associate Professor of Neurology,
Duke University School of Medicine, Durham, NC

I am honored to be trained at Johns Hopkins Hospital for my residency in Neurology and fellowship from 2004-2008. During that time, I worked closely with many astute, amazing clinicians that were not only experts in their respective fields but also compassionate, caring providers. My research fellowship with Dr. Ned Sacktor in HIV/AIDS related neurological disorders provided me with the tools to develop meaningful clinical research projects. By Dr. Sacktor's example, I learned the importance of the mentor/ mentee relationship and how to be a mentor in academic neurology. I am an associate professor of neurology at the Preston Robert Tisch Brain Tumor Center at Duke. My primary areas of research are quality of life in patients with central nervous system tumors and cognitive dysfunction in cancer patients. I honed these interests in my fellowship at Johns Hopkins and my subsequent fellowship at Duke in neuro-oncology. Educating medical students, residents, fellows, and other medical providers was always paramount at Johns Hopkins and I have continued to hold this mission in high regard. One of my cherished accomplishments during my time at Johns Hopkins was being awarded the Guy McKhann Resident Teaching Award in 2007.

Selected Publications:

Peters, K.B., West, M.J., Hornsby, W.E., Waner, E., Coan, A.D., McSherry, F., Herndon, J.E. II, Friedman, H.S., Desjardins, A., and Jones, L.W.: Impact of health-related quality of life and fatigue on survival of recurrent high-grade glioma patients. J. Neurooncol. 120(3): 499-506, 2014.

Peters, K.B., Lou, E., Desjardins, A., Reardon, D.A., Lipp, E.S., Miller, E., Herndon, J,E. II, McSherry, F., Friedman, H.S., and Vredenburgh, J.J.: Phase II trial of upfront bevacizumab, irinotecan and temozolomide for unresectable glioblastoma. The Oncol. 20(7): 727-728, 2015.

Robertson, M.E., McSherry, F., Herndon, J.E., and Peters, K.B.: Insomnia and its association in patients with recurrent glial neoplasms. SpringerPlus. 5:823, 2016.

Randazzo, D.M., McSherry, F., Herndon, J.E. II, Affronti, M.L., Lipp, E.S., Flahiff, C., Miller, E., Woodring, S., Freeman, M., Healy, P., Minchew, J., Boulton, S., Desjardins, A., Vlahovic, G., Friedman, H.S., Keir, S., and Peters, K.B.: A cross sectional analysis from a single institution's experience of psychosocial distress and health-related quality of life in the primary brain tumor population. J. Neurooncol. 134:363-369, 2017.

Ghiaseddin, A., Reardon, D., Massey, et al. Phase II study of bevacizumab and vorinostat for patients with recurrent World Health Organization Grade 4 malignant glioma. Oncologist, 23:157-e21, 2018.

Peters, K.B., Lipp, E.S., Miller, E., Herndon, J.E. II, McSherry, F., Desjardins, A., Reardon, D.A., and Friedman, H.S.: Phase I/II trial of vorinostat, bevacizumab, and daily temozolomide for recurrent malignant gliomas. J. Neurooncol. 137:349-356, 2018.

Affronti, M.L., Jackman, J.G., McSherry, F. et al. Phase II study to evaluate the efficacy and safety of rilotumumab and bevacizumab in subjects with recurrent malignant glioma. Oncologist 23(8):889-e98, 2018.

Honors/Awards:

Fellow, American Academy of Neurology, 2018
Women Leading Neurology Program Delegate, American Academy of Neurology, 2018-2019
Eun-Kyu Lee Award for Excellence in Teaching of Clinical Neurology, Duke University School of Medicine, May 2013

Ronald J. Polinsky, M.D. (retired)
Vice President & Scientific Director, Global Clinical Neuroscience, AstraZeneca
Adjunct Professor of Neurology, Ohio State University College of Medicine, Columbus, OH
Chief, Clinical Neuropharmacology Section, Clin. Neuroscience Branch, NINDS, Bethesda, MD

My training in neurology at Johns Hopkins (1973-1977) provided me with a solid foundation for a successful career in clinical research at the NINDS and later within the pharmaceutical industry research environment. The attending physicians who most influenced my career interests in degenerative neurological disorders were Guy McKhann, Oscar Marin, and Tom Preziosi. While at the NIH I developed a world class neuropharmacology research program focused on neurotransmitter and neuropeptide function in autonomic disorders including multiple system atrophy. Using a variety of neurochemical and pharmacological strategies I demonstrated that it was possible to distinguish between central and peripheral forms of autonomic failure. My program on autonomic disorders also led to a collaboration with Sir Roger Bannister and together we published the first large, multinational experience in these relatively rare disorders. In addition, I became interested in the dominantly inherited form of Alzheimer's Disease and began a longitudinal study of clinical, biochemical and imaging markers in affected and at-risk members from the large pedigrees under investigation. Most importantly, I organized the first international collaboration that successfully linked a region on chromosome 21 with the disease in four very large pedigrees with the disorder. After assuming a leadership role in pharmaceutical research, I participated in the selection of research targets and guided the clinical development of therapeutic strategies for treating a variety of neurological disorders including Alzheimer's disease.

Selected Publications:

Polinsky RJ, Kopin IJ, Ebert MH, Weise V: Pharmacologic distinction of different orthostatic hypotension syndromes. Neurology 31:1-7, 1981.

St. George-Hyslop P, Tanzi RE, Polinsky RJ, Haines JL, Nee L, Watkins PC, Myers RH, Feldman RG, Pollen D, Drachman D, Growdon J, Bruni A, Foncin J-F, Salmon D, Frommelt P, Amaducci L, Sorbi S, Piacentini S, Stewart GD, Hobbs WJ, Conneally PM, Gusella JF: The genetic defect causing familial Alzheimer's disease maps on chromosome 21. Science 235:885-890, 1987.

Polinsky RJ: Clinical pharmacology of rivastigmine - a new generation acetylcholinesterase inhibitor for the treatment of Alzheimer's disease. Clinical Therapeutics 20:634-647, 1998.

Polinsky RJ, Kopin IJ, Ebert MH, Weise V: The adrenal medullary response to hypoglycemia in patients with orthostatic hypotension. J Clin Endocrinol Metab 51:1401-1406, 1980.

Bannister R, Mathias C, Polinsky R: Clinical features of autonomic failure - A comparison between UK and US experience. In: Bannister Sir R (Ed), Autonomic Failure, Oxford University Press, London, pp. 281-288, 1988.

Honors/Awards:

Honorary Corresponding Member, Clinical Autonomic Research Society, 1985
Multiple Visiting Professor of Neurology appointments
Associate, Co-Editor, and Editor for multiple journals

Michelle C. Potter, PhD.
Associate Director, Translational In Vivo Models, Sanofi, Framingham, Massachusetts

My two-year postdoctoral fellowship (2012-2014) in Dr. Barb Slusher's drug discovery lab at the Brain Science Institute (BSI) (now Johns Hopkins Drug Discovery), research manager at the Hopkins behavioral core with Dr. Mikhail Pletnikov and as a member of the Neurology Department was an invaluable stepping stone in my career as I transitioned from academia to the pharmaceutical/biotech industry. Working alongside industry veterans in Barb's team gave me incredible insights into the world of drug discovery and quickly realized that was the career path I wanted to follow. At Hopkins, I learned the value of cultivating a collaborative environment and have carried this mindset throughout my career path. After 2 years in Barbs' lab, and thanks in large part to the experience I gained at Hopkins, I secured a position as Senior Scientist in Merck Research Labs Neuroscience Department in Boston working on Neurodegeneration and Neuroimmunology programs for Alzheimer's disease. I recently joined Sanofi as Associate Director in the Translational In Vivo Models platform supporting programs in Neuroscience, Rare Disease and Hematology. I truly appreciate the training and development opportunities I received at Hopkins as well as the great colleagues, mentors and friends, I was lucky enough to work alongside.

Selected Publications

Baxter VK, Glowinski R, Braxton AM, **Potter MC**, Slusher BS, Griffin DE. (2017) Glutamine antagonist-mediated immune suppression decreases pathology but delays virus clearance in mice during nonfatal alphavirus encephalomyelitis.*Virology* 508:134-149.

Potter MC*, Baxter VK*, Mathey RW, Alt, J, Rojas C., Griffin DE, Slusher BS. (2015) Neurological sequelae induced by alphavirus infection of the CNS are attenuated by treatment with the glutamine antagonist 6-diazo-5-oxo-l-norleucine. *Journal of Neurovirology* 2:159-173 * Equal Contribution.

Bjornsson HT, Benjamin JS, Zhang L, Weissman J, Gerber EE, Chen YC, Vaurio RG, Potter MC, Hansen KD, Dietz HC. (2014) Histone Deacetylase Inhibition Rescues Structural and Functional Brain Deficits in a Mouse Model of Kabuki Syndrome. *Science Translational Medicine* 6:256.

Potter MC, Wozniak KM, Callizot N, and Slusher BS. (2014) Glutamate Carboxypeptidase II Inhibition Behaviorally and Physiologically Improves Pyridoxine-induced Neuropathy in Rats. *PLoS One*

Potter MC*, Figuera Losada M*, Rojas C and Slusher BS. (2013) Targeting the glutamatergic system for the treatment of HIV-associated neurocognitive disorder. *Journal of Neuroimmune Pharmacology*. 8:594-607 * Equal Contribution.

Vivar C* Potter MC*, Choi J, Lee J, Stringer TJ, Callaway EM, Gage FH, Suh H and van Praag H. (2012) Monosynaptic inputs to new neurons in the dentate gyrus. *Nature Communications*. 3:1107. * Equal Contribution.

Potter MC, Elmer GI, Bergeron R, Albuquerque EX, Guidetti P, Wu H-Q, Schwarcz R. (2010) Reduction of endogenous kynurenic acid formation enhances extracellular glutamate, hippocampal plasticity and cognitive behavior. *Neuropsychopharmacology.* 35:1734-42.

Honors/Awards

Recipient of 7 Merck awards of excellence for outstanding performance (2014-2017)

Recipient of NIH Fellows Award for Research Excellence (FARE) (2011)

Recipient of a Society for Neuroscience Chapters Graduate Student Travel Award (2006)

Michael S. Rafii, MD, PhD
Professor of Clinical Neurology, Medical Director, Alzheimers Therapeutic Research Institute, Keck School of Medicine, University of Southern California
The experiences from my residency training (2003-2006), provided me with first-hand exposure to the remarkable acumen of world-class clinicians who are likewise top-notch researchers and embody the academic excellence for which Hopkins is known. Rotations in neuro-ICU, stroke, and neuromuscular showed me the rich, bi-directional connection that can exist between clinical care and translational research. My own research focuses on the design and conduct of multi-center clinical trials for Alzheimer's disease, including a genetic form of AD which occurs in Down syndrome. I am Medical Director of the Alzheimer's Therapeutic Research Institute (ATRI) and the NIH-funded Alzheimer's Clinical Trials Consortium (ACTC) and have been involved in the coordination of AD clinical trials, spanning phase I-III, for over 10 years. Previously, I served as Medical Director of the Alzheimer's Disease Cooperative Study (ADCS), Director of the Memory Disorders Clinic, Founding Director of the Adult Down Syndrome Clinic and Director of the Neurology Residency Training program at UC San Diego. Through all of this, the Hopkins model for a clinician-scientist has served as an inspiration to me.

Selected Publications

Rafii MS, Wishnek H, Brewer JB, Donohue MC, Ness S, Mobley WC, Aisen PS, Rissman RA. The down syndrome biomarker initiative (DSBI) pilot: proof of concept for deep phenotyping of Alzheimer's disease biomarkers in down syndrome. Front Behav Neurosci. 2015 Sep 14;9:239. PMID: 26441570

Matthews DC, Lukic AS, Andrews RD, Marendic B, Brewer J, Rissman RA, Mosconi L, Strother SC, Wernick MN, Mobley WC, Ness S, Schmidt ME, Rafii MS. Dissociation of Down syndrome and Alzheimer's disease effects with imaging. Alzheimers Dement (N Y). 2016 Jun;2(2):69-81. PMID: 28642933

Rafii MS, Lukic AS, Andrews RD, Brewer J, Rissman RA, Strother SC, Wernick MN, Pennington C, Mobley WC, Ness S, Matthews DC; Down Syndrome Biomarker Initiative and the Alzheimer's Disease Neuroimaging Initiative. PET Imaging of Tau Pathology and Relationship to Amyloid, Longitudinal MRI, and Cognitive Change in Down Syndrome: Results from the Down Syndrome Biomarker Initiative (DSBI). J Alzheimers Dis. 2017;60(2):439-450. PMID: 28946567

Rafii MS, Skotko BG, McDonough ME, Pulsifer M, Evans C, Doran E, Muranevici G, Kesslak P, Abushakra S, Lott IT; ELND005-DS Study Group. A Randomized, Double-Blind, Placebo-Controlled, Phase II Study of Oral ELND005 (scyllo-Inositol) in Young Adults with Down Syndrome without Dementia. J Alzheimers Dis. 2017;58(2):401-411. PMID: 28453471

Rafii MS, Tuszynski MH, Thomas RG, Barba D, Brewer JB, Rissman RA, Siffert J, Aisen PS; AAV2-NGF Study Team. Adeno-Associated Viral Vector (Serotype 2)-Nerve Growth Factor for Patients With Alzheimer Disease: A Randomized Clinical Trial. JAMA Neurol. 2018 Jul 1;75(7):834-841. PMID: 29582053

Rafii MS, Baumann TL, Bakay RA, Ostrove JM, Siffert J, Fleisher AS, Herzog CD, Barba D, Pay M, Salmon DP, Chu Y, Kordower JH, Bishop K, Keator D, Potkin S, Bartus RT. A phase1 study of stereotactic gene delivery of AAV2-NGF for Alzheimer's disease. Alzheimers Dement. 2014 Sep;10(5):571-81. PMID: 24411134.

Salehi A, Rafii MS, Phillips C (Editors): Pathogenic Mechanisms between Down Syndrome and Alzheimer's Disease: Steps toward Therapy. Bentham Science Publishers, 2015.

Stefano Ramat, Ph.D.
Associate Professor of Bioengineering, University of Pavia, Pavia, Italy.

I arrived in Baltimore on June 2000 to start as post-doc fellow in neurology with David Zee, whom I had met in my home town in 1997. I had a background in biomedical engineering and was fascinated by the modeling of eye movements, which I had dealt with during my master thesis on vestibular nystagmus. The starting idea for my postdoc was that of attempting to develop a test of the otoliths, the utricle in particular, that would parallel the head thrust test for the semicircular canals. Together with Adrian Lasker we devised a “head sled” for delivering small, abrupt interaural head translations to our subjects while preventing the head from rotating on the neck. The translational VOR became an important topic for my scientific career and while at Hopkins we investigated both interaural and fore-aft responses, understanding how they were tightly coupled with saccades and could be regulated both by context and expectation. A patient of John Leigh presenting with saccadic oscillations in spite of a lesion involving the fastigial nuclei was then the occasion to start collaborating with Lance Optican (NIH) on the modeling of the saccadic system, while I had become a Research Associate with the Neurology Department after two years as a fellow. Overall, the three years spent at The Johns Hopkins University were undoubtedly the most formative in my career. Thanks to my mentor David Zee I learned how to do research, its ethics and the value of collaboration, while making friendships that have accompanied me ever since.

Selected publications:

S. Ramat, D.S. Zee Ocular motor responses to abrupt interaural head translation in normal humans, J Neurophysiol, 90(2):887-902, 2003

S. Ramat, R.J. Leigh, D.S. Zee, L.M. Optican Ocular oscillations generated by coupling of brainstem excitatory and inhibitory saccadic burst neurons. Exp Brain Res, 160: 89-106, 2005.

S. Ramat, R.J. Leigh, D.S. Zee, L.M. Optican. What clinical disorders tell us about the neural control of saccadic eye movements. Brain. 2007 Jan;130(Pt 1):10-35.

S. Ramat, D.S. Zee, L.B. Minor Translational vestibuloocular reflex evoked by a "Head heave" stimulus, Ann N Y Acad Sci; 942:95-113, 2001

S. Ramat, D.S. Zee Binocular coordination in fore/aft motion, Ann N Y Acad Sci; 1039: 36-53, 2005

S. Ramat, D. Straumann, D.S. Zee The interaural translational VOR: suppression, enhancement and cognitive control. J Neurophysiol.;94(4):2391-402, 2005

D.S. Zee, M.F. Walker, S. Ramat The cerebellar contribution to eye movements based upon lesions: binocular, three-axis control and the translational vestibulo-ocular reflex, Ann N Y Acad Sci; 956:178-189, 2002

Sindhu Ramchandren, MD, MS
Medical Director- Neurology, Medical Affairs
PRA Health Sciences
Raleigh, NC

I look back fondly at my time as a Clinical Neurophysiology-EMG Fellow at Hopkins (2004-2005). I recall feeling as if I had entered the educational equivalent of Hogwarts when I started at Hopkins- it was a magical place of learning and discovery. My amazing program director was Vinay Chaudhry, and he, along with my wonderful clinical preceptors- David Cornblath, Andrea Corse, Tom Crawford, John Griffin, Dan Drachman, Nick Maragakis, amongst others- were instrumental in developing my skills in rare neuromuscular disease. After my fellowship, I completed a Master of Science in Clinical Research Design and Biostatistics at the University of Michigan in Ann Abor, and then joined the faculty at Wayne State University in 2008. There, I pursued my research interests in developing patient-reported outcome measures for clinical trials with an NIH K23 grant and was the Associate Program Director of their Clinical Neurophysiology Fellowship, as well as Co-Director of the Neuromuscular Program and Muscular Dystrophy Clinic. I then joined the faculty at the University of Michigan in 2013, where I developed and became director of an externally-funded Muscular Dystrophy Care Center Program and the Charcot-Marie Tooth Disease (CMT) Center of Excellence clinic; our research portfolio was funded by grants from NIH, foundation and industry. In 2018, I joined PRA Health Sciences, with the goal of providing innovative solutions to move drug discovery forward and bring more therapies to the market for patients with rare neuromuscular disorders. I strongly believe every step of my career has been informed and enhanced by the professional and personal growth I experienced at Hopkins and will always be grateful for that.

Selected Publications:

Ramchandren S, Leonard M, Mody RJ, Donohue JE, Moyer J, Hutchinson R, Gurney JG: Peripheral neuropathy in survivors of childhood acute lymphoblastic leukemia J. Peripher. Nerv. Syst. 14(3): 184-189, 2009. PM19909482

Burns J, Ramchandren S, Ryan MM, Shy M, Ouvrier RA: Determinants of reduced health-related quality of life in pediatric inherited neuropathies Neurology 75(8): 726-731, 2010. PM20733147

Ramchandren S, Jaiswal M, Feldman E, Shy M: Effect of pain in pediatric inherited neuropathies. Neurology 82(9): 793-7, 2014. PM24477108

Ramchandren S, Shy M, Feldman E, Carlos R, Siskind C: Defining disability: development and validation of a mobility-Disability Severity Index (mDSI) in Charcot-Marie-tooth disease. Journal of neurology, neurosurgery, and psychiatry 86: 635-639, 2014. PM25157034

Bogue L, Peay H, Martin A, Lucas A, Ramchandren S: Knowledge of carrier status and barriers to testing among mothers of sons with Duchenne or Becker muscular dystrophy. Neuromuscul Disord 26(12): 860-864, 2016. PM27863875/PMC5154916

Ramchandren S. Charcot-Marie-Tooth Disease and Other Genetic Polyneuropathies. Continuum (Minneap Minn). 2017 Oct;23(5, Peripheral Nerve and Motor Neuron Disorders):1360-1377.

Daniel S. Reich, M.D., Ph.D.
Senior Investigator and Chief, Translational Neuroradiology Section, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD, USA
Adjunct Professor of Radiology, Neurology, and Biostatistics, Johns Hopkins University, Baltimore, Maryland, MD, USA

I was the second of two trainees in the short lifespan of the combined neurology, radiology, and neuroradiology ("2-2-2") residency program (2002-2009). This training was ideal preparation for a career as a clinician-scientist focused on neuroimaging. I met Peter Calabresi as a junior resident, and together we built a natural history cohort to study the relationship between functional system MRI findings and clinical outcomes in multiple sclerosis. That project, still ongoing 15 years later, spurred several dozen papers, and the cohort has been invaluable in the training of many clinical and research fellows (in neurology, radiology, biostatistics, etc.) who followed me. Peter's mentorship and trust lured me into his field, and in 2009 I was fortunate to be hired into a tenure-track investigator position in the Neuroimmunology Branch at NINDS, where I built my lab and passed on (I hope) many of the precepts of good medicine and science that I learned at Hopkins. I continue to maintain an adjunct appointment at Hopkins, facilitating collaborations and keeping me close to my intellectual roots. Although these days my clinical practice is in neuroradiology, the approach to patients and to the integration of science and medicine that I learned while a resident in neurology continue to guide me. Watching the ever-increasing success of my co-residents and professors — many now close friends — is deeply inspiring.

Selected Publications:

Gaitán MI, Shea CD, Evangelou IE, Stone RD, Fenton KM, Bielekova B, Massacesi L, Reich DS. Evolution of the blood-brain barrier in newly forming multiple sclerosis lesions. *Ann Neurol* 2011; 70:22-29. Epub 2011 Jun 27. PMID: 21710622. PMC3143223

Sati P, George IC, Shea CD, Gaitán MI, Reich DS. FLAIR*: A combined MR contrast technique for visualizing white matter lesions and parenchymal veins. *Radiology* 2012; 265:926-932. Epub 2012 Oct 16. PMID: 23074257. PMC3504317.

Maggi P, Cummings Macri SM, Gaitán MI, Leibovitch E, Wohler JE, Knight HL, Ellis M, Wu T, Silva AC, Massacesi L, Jacobson S, Westmoreland S, Reich DS. The formation of inflammatory demyelinated lesions in cerebral white matter. *Ann Neurol* 2014; 76:594-608. Epub 2014 Jul 31. PMID: 25088017. PMC4723108.

*Absinta M, *Vuolo L, Rao A, Nair G, Sati P, Cortese ICM, Ohayon J, Fenton K, Reyes-Mantilla MI, Maric D, Calabresi PA, Butman JA, Pardo CA, Reich DS. Gadolinium-based MRI characterization of leptomeningeal inflammation in multiple sclerosis. Neurology 2015; 85:18-28. Epub 2015 Apr 17. PMID: 25888557. PMC4501940.

Absinta M, Sati P, Schindler MK, Leibovitch E, Ohayon J, Wu T, Meani A, Filippi M, Jacobson S, Cortese ICM, Reich DS. Persistent 7-tesla phase rim predicts poor outcome in new MS patient lesions. J Clin Invest 2016; 126:2597-2609. Epub 2016 Jun 6. PMID: 27270171. PMC4922708.

*Absinta M, *Ha SK, Nair G, Sati P, Luciano NJ, Palisoc M, Louveau A, Zaghloul KA, Pittaluga S, Kipnis J, Reich DS. Human and nonhuman primate meninges harbor lymphatic vessels that can be visualized noninvasively by MRI. eLife 2017; 6:e29738. Epub 2017 Oct 3. PMID: 28971799. PMC5626482.

Reich DS, Lucchinetti C, Calabresi PA. Multiple sclerosis. *New Engl J Med* 2018; 378:169-180. Epub 2018 Jan 11. PMID: 29320652.

Honors/Awards:

American Neurological Association, Derek Denny-Brown Physician Scientist Award (2015)
Elected to American Society of Clinical Investigation (2016); National Multiple Sclerosis Society, Barancik Prize for Innovation in MS Research (2016); NIH, Graduate Partnership Programs Outstanding Mentor Award (2017)

Stephen G. Reich, M.D.
Professor of Neurology, The Frederick Henry Prince Distinguished Professor in Neurology, Department of Neurology, University of Maryland School of Medicine

I came to Johns Hopkins as a fellow in 1987 to work with Mahlon DeLong, having discovered in my residency that the basal ganglia were where I wanted to be. I started out in the lab doing single unit recording in MPTP monkeys. I also spent time in the clinic with Mahlon and others in the movement disorders group. It did not take long for me to appreciate that my first love was clinical neurology, especially movement disorders, and not the lab. It was with great trepidation and a sense of disappointment when I went to tell Mahlon that I did not want to continue in the lab. To my surprise and relief Mahlon was completely understanding and supportive and for that I remain grateful. I have subsequently had similar experiences with mentees and have used Mahlon's reaction to my change of plans as a guidepost. One of the highlights of my fellowship was initiating use of botulinum toxin for cervical dystonia; it is hard to appreciate now that this really was a miracle for these desperate patients. Toward the end of my fellowship, Hamilton Moses, who headed the Parkinson's Clinic, became VP for Medical Affairs leading to a great opportunity for me to take over. For the next 14 years, I was very busy clinically, teaching and doing clinical research. In 2002 I was recruited to the University of Maryland by the new chair William J. Weiner (1945-2012). At Maryland I have continued to focus on clinical care, clinical research and teaching with a particular interest in parkinsonian syndromes, including PSP. I am very grateful to Johns Hopkins for setting me on what has been, and continues to be a very rewarding career path and especially for a long list of valued Hopkins friends and colleagues.

Selected Publications:

Rajendran PR, Thompson RE, Reich SG. The use of alternative therapies by patients with Parkinson's disease. Neurology 57:790-794, 2001. (PR Rajendran received the G. Milton Shy medical student essay award from the American Academy of Neurology).

Schneider SA, Edwards MJ, Grill SE, Goldstein S, Kanchana S, Quinn NP, Bhatia KP, Hallett M, Reich SG. Adult-onset primary lower limb dystonia. Movement Disorders 2006;2:767-771

Boatman DF, Miglioretti DL, Eberwein C. Alidoost M. Reich SG. How accurate are bedside hearing tests? Neurology 2007;68:1311-1314

Gold DR, Reich SG. A 55-year-old woman with vertigo: A dizzying conundrum. Neurology 2012;79:e146-52. (Winner of the 2012 Resident and Fellow Writing Award from Neurology)

Low PA, Reich SG, Jankovic J, et al. Natural history of multiple system atrophy in North America: A prospective cohort study. The Lancet Neurology 2015;14:710-719

Reich SG (editor): *Movement Disorders: 100 Instructive Cases*. London: Informa, 2008.

Reich SG, Factor S (eds). *Therapy for Movement Disorders: A Case-Based Approach*. Springer 2018 (in press)

Honors/Awards:

The Frederick Henry Prince Distinguished Professor in Neurology, Department of Neurology, University of Maryland School of Medicine (2011)

Professor's Award for Excellence in Teaching, The Johns Hopkins University School of Medicine (1997)

Golden Hammer teaching award by Neurology residents, University of Maryland (2005)

Jeremy N. Rich, MD, MHS, MBA

Professor, Department of Medicine, Division of Regenerative Medicine, University of California, San Diego; Director, Neuro-oncology, Director, Brain Tumor Institute

During my Hopkins Neurology residency (1994-1997), I had the honor of learning to serve patients with the highest ethical standards and greatest intellectual depth. Not only was I exposed to world leaders in Neurology everyday through interactions with the faculty, but my fellow residents set daunting standards that drove me to learn and implement the best approaches for my patients. From Dick Johnson, I learned the power of stories and personal connections. He recognized something in me that I did not when he suggested that I consider basic science training after residency, despite my lab of graduate studies. I demurred that I would never be a "gene jockey", but 11 years later I became a Chairman of a basic science department. Jack Griffin would gently ask questions naïvely, only to show in the most humble way that he knew everything. John Freeman would throw money on the floor then diagnose children with amazing accuracy. While the world has lost these giants, they live on in my love for caring for patients, not diseases. Two decades later, few days pass without recalling my Hopkins experiences as influences on my life.

Selected Publications

Bao S, Wu Q, McLendon RE, Hao Y, Shi Q, Hjelmeland AB, Dewhirst MW, Bigner DD, Rich JN. Glioma stem cells promote radioresistance by preferential activation of the DNA damage response. Nature 2006;444:756-60.

Eyler CE, Wu Q, Yan K, Macswords JM, Chandler-Militello D, Misuraca KL, Lathia JD, Forrester MT, Lee J, Stamler JS, Goldman SA, Bredel M, McLendon RE, Sloan AE, Hjelmeland AB, Rich JN. Glioma stem cell proliferation and tumor growth are promoted by nitric oxide synthase-2. Cell. 2011 Jul 8;146(1):53-66.

Miller TE, Liau BB, Wallace LC, Morton AR, Xie Q, Dixit D, Factor DC, Kim L, Morrow JJ, Wu Q, Mack SC, Hubert CG, Gillespie SM, Flavahan WA, Hoffman T, Thummalapalli R, Hemann MT, Paddison PJ, Horbinski CM, Zuber J, Scacheri PC, Bernstein BE, Tesar PJ, Rich JN. Transcription elongation factors represent in vivo cancer dependencies in glioblastoma. Nature. 2017 Jul 20;547(7663):355-359.

Jin X, Kim LJY, Wu1 Q, Wallace LC, Prager BC, Sanvoranart T, Gimple RC, Wang X, Mack SC, Miller TE, Huang P, Valentim C, Zhou Q, Barnholtz-Sloan JS, Bao S, Sloan AE, Rich JN. Targeting Glioma Stem Cells through Combined BMI1 and EZH2 Inhibition. Nat Med. 2017 Nov;23(11):1352-1361.

Mack SC, Pajtler KW, Chavez L, Okonechnikov K, et al., Therapeutic targeting of ependymoma as informed by oncogenic enhancer profiling. Nature. 2018 Jan 4;553(7686):101-105.

Wang X, Prager BC, Wu Q, Kim LJY, Gimple RC, Shi Y, Yang K, Morton AR, Zhou W, Zhu Z, Obara EAA, Miller TE, Song A, Lai S, Hubert CG, Jin X, Huang Z, Fang X, Dixit D, Tao W, Zhai K, Chen C, Dong Z, Zhang G, Dombrowski SM, Hamerlik P, Mack SC, Bao S, Rich JN. Reciprocal Signaling between Glioblastoma Stem Cells and Differentiated Tumor Cells Promotes Malignant Progression. Cell Stem Cell. 2018 Apr 5;22(4):514-528.e5.

Xie Q, Wu TP, Gimple RC, Li Z, Prager BC, Wu Q, Yu Y, Wang P, Wang Y, Gorkin DU, Zhang C, Dowiak AV, Lin K, Zeng C, Sui Y, Kim LJY, Miller TE, Jiang L, Lee CH, Huang Z, Fang X, Zhai K, Mack SC, Sander M, Bao S, Kerstetter-Fogle AE, Sloan AE, Xiao AZ, Rich JN. N6-methyladenine DNA Modification in Glioblastoma. Cell, in press.

Honors/Awards

Member, Hopkins Society of Scholars, 2018;

Outstanding Investigator Award, National Cancer Institute, 2015;

Member, Association of American Physicians, 2012

Marianna Riello, PhD
Post doctoral research fellow, Action-Perception Laboratory at the Department of Neuroscience, Biomedicine and Movement Sciences, University of Verona, Italy. Clinical Neuropsychologist in Alzheimer's Disease Centers for Health Care Residences (S.P.E.S) Trento, Italy.

During my postdoctoral fellowship at Hopkins (2016-17), I had the pleasure of working amidst a cohort of inspirational colleagues, which laid the groundwork for my current career as an academic-clinician-scientist in the field of dementia. I have always sought to combine clinical and imaging data from patients and I had the chance to do so during my work experience at the Department of Neurology, Neurosurgery and Neurosciences of the Johns Hopkins Medicine under the supervision of Dr. Tsapkini. There I had the possibility to gain insight on primary progressiva aphasia (PPA) by observing patients coming from all over the United States to undergo advenced tools for the improvement of language functions within the National Institute of Health (NIH) reserach project. Particularly I had the chance to increase my awareness and expertise about volumetric brain analyses as predictors of worse cognitive outcomes in PPA. In doing this I have been supported by exemplary clinicians-researcher-educators that wisely supervised my work and shared with me their specialized knowledge. The opportunity to actively contribute to their own research programmes, while receiving advanced research training, was invaluable to me. This period was the most formative training of my scientific career. Our productive collaboration has led to a succesful publication on predictive model using behavioral and cerebral volumetric data of PPA patients (Riello et al. 2018). This postdoctoral experience abroad was highly valued and I am happy I had been part of such brilliant environment that I tried to shared with my country as soon as I came back.

Selected Publications:

Riello M., Faria, A., Ficek, B., Webster, K., Onyike, C.U., Desmond, J., Frangakis, C.E., Tsapkini, K. (2018). The role of language severity and education in explaining performance on object and action naming in primary progressive aphasia. *Frontiers in Aging Neuroscience (In Press).*

Stefani, A., Riello, M., Rossini, F., Mariotto, S., Fenzi, F., Gambina, G., Zanusso, G., Monaco, S. (2013). Neurosyphilis manifesting with atypical dementia: report of three cases. *Neurological Sciences.* DOI 10.1007/s10072-013-1531-5

Gesierich, B., Jovicich, J., Riello, M., Adriani, M., Monti, A., Brentari, V., Robinson,S., Wilson, S., Fairhall,S., Gorno-Tempini, M. (2011). Distinct neural substrates for semantic knowledge and naming in the temporo-parietal network. *Cerebral Cortex*, 22: 2217-2226. PMID:22047967

Michael A. Rogawski, M.D., Ph.D.
Professor of Neurology and Pharmacology, University of California, Davis, Sacramento, CA

After completing the neurology residency at Johns Hopkins in 1985, I moved back to NIH where I had been a post-doctoral fellow to begin a career as an NINDS intramural scientist. Beginning as a senior staff fellow (assistant professor equivalent) in the NINDS Medical Neurology Branch, I achieved tenure in 1990, becoming a senior investigator and chief of the Epilepsy Research Section. I remained at NIH until 2007 when I left to chair the Department of Neurology at the University of California, Davis School of Medicine. My research focuses on neuropharmacology and the mechanisms of action of drugs used to treat epilepsy. In recent years, an increasing amount of my time has been spent on academic drug discovery and development. In addition to the usual responsibilities of an academic neurologist, I teach courses in drug discovery at UC Davis and help companies to develop novel treatments for epilepsy, several of which are now FDA approved. With Barb Slusher, director of Johns Hopkins Drug Discovery, I teach a short course on neurotherapeutics discovery that has been funded by NINDS since 2012. Among those with a Hopkins Neurology connection who I had the honor of hosting in my lab at NIH were Nick Maragakis, while he was a student at the University of Utah, and Adam Hartman and Gholam Motamedi, when they were fellows. While rotating in child neurology, I naively asked John Freeman how the ketogenic diet works to treat epilepsy. I got the sense that he didn't seem to think it made a whole lot of difference as it clearly worked. He brushed me off with the challenge: "Why don't you find out." Years later, Adam Hartman came to my lab and made a go of it, but the mechanism of the diet is still largely a mystery. I lucked into a collaboration with Sol Snyder when Angel Parent, the wife of Gopal Thinakaran, joined my lab. Angel and Jean-Pierre Mothet, a postdoc with Sol, collected convincing evidence to support Sol's iconoclastic belief that D-serine (along with glycine) is an endogenous co-agonist of the NMDA receptor. The report, published in PNAS, is one of my most highly cited papers. Over the years I have been active in the American Epilepsy Society. Greg Bergey and I were among a group of four who created and for 11 years edited *Epilepsy Currents*, AES's journal.

Selected Publications:

Donevan SD, Rogawski MA. GYKI 52466, a 2,3-benzodiazepine, is a highly selective, noncompetitive antagonist of AMPA/kainate receptor responses. Neuron. 1993 Jan;10(1):51-9.

Kokate TG, Svensson BE, Rogawski MA. Anticonvulsant activity of neurosteroids: correlation with γ-aminobutyric acid-evoked chloride current potentiation. J Pharmacol Exp Ther. 1994 Sep;270(3):1223-9. PubMed PMID: 7932175.

Mothet JP, Parent AT, Wolosker H, Brady RO Jr, Linden DJ, Ferris CD, Rogawski MA, Snyder SH. D-serine is an endogenous ligand for the glycine site of the N-methyl-D-aspartate receptor. Proc Natl Acad Sci U S A. 2000 Apr 25;97(9):4926-31. PubMed PMID: 10781100

Rogawski MA, Löscher W. The neurobiology of antiepileptic drugs. Nat Rev Neurosci. 2004 Jul;5(7):553-64. PubMed PMID: 15208697.

French JA, Krauss GL, Biton V, Squillacote D, Yang H, Laurenza A, Kumar D, Rogawski MA. Adjunctive perampanel for refractory partial-onset seizures: randomized phase III study 304. Neurology. 2012 Aug 7;79(6):589-96. PubMed PMID: 22843280

Fritsch B, Reis J, Gasior M, Kaminski RM, Rogawski MA. Role of GluK1 kainate receptors in seizures, epileptic discharges, and epileptogenesis. J Neurosci. 2014 Apr 23;34(17):5765-75. doi: 10.1523/JNEUROSCI.5307-13.2014. PubMed PMID: 24760837

Rogawski MA, Löscher W, Rho JM. Mechanisms of action of antiseizure drugs and the ketogenic diet. Cold Spring Harb Perspect Med. 2016 May 2;6(5). pii: a022780.

Honors/Awards:

Epilepsy Research Award, American Society for Pharmacology and Experimental Therapeutics, 1994; William G. Lennox Lecture, American Epilepsy Society, 2009; Neuroendocrine Research Award, American Academy of Neurology, 2015

Vernon D Rowe, MD
President and CEO, Rowe Neurology Institute, Lenexa, KS,
President and CEO Neurrow Pharamceuticals, Inc
Adjunct Professor of Neurology, University of Kansas School of Medicine

My time at Duke, Hopkins, and the NIH helped hone a vision for what a physician scientist can be. After completion of my Neurology residency at Hopkins in 1977 I joined the faculty of the University of Kansas School of Medicine, combining clinical practice with a basic research program using primary cultures of pineal cells and sympathetic neurons. After rising through the academic ranks, I founded the independent Rowe Neurology Institute, in Lenexa, KS. The Rowe Neurology Institute has three arms: clinical practice including sleep laboratory and neuroimaging, a non-profit research foundation which does basic and clinical research, and a drug development incubator. The clinical practice is a tertiary referral center specializing in Multiple Sclerosis, Headache, Sleep, and Hypermobility Syndrome, the latter arising from our observed links among migraine, sleep disorders and joint hypermobility. With my wife Elizabeth Rowe, Ph.D., MBA, I founded Verrow Pharmaceuticals, Inc, which recently sold to Ligand Pharmaceuticals, Inc, and its first product, a kidney safe iodinated contrast agent, is slated to enter the clinic in early 2019. Neurrow Pharmaceuticals, Inc is focused on neurodegenerative disease. We have two sons and five grandkids and our hobbies include flying, sailing, bluegrass music, cowboy mounted shooting, and writing.

Selected Publications*:*

Rowe, V.D., and Parr, J.: Developmental Changes in the Stimulation of Serotonin N-Acetyltransferase Activity and Melatonin Synthesis in the Rat Pineal in Monolayer Culture, Journal Pharmacol Exp Ther 218:(1):97-102, 1981.

Rowe, V.D. Sea Creatures and Other Poems, Whirlybird Press, 1995.

Rowe, V., Use of Regularly Scheduled High Dose Intravenous Methotrexate Therapy, with Interim Administration of Immunomodulatory Agents, to Treat Multiple Sclerosis and Other Diseases of the Central Nervous System. (US Patent 6,903,100 B2; 2005)

Rowe, V., Compositions Useful for Reducing Nephrotoxicity and Methods of Use Thereof. (US Patent No.: 7,658,913 B2, 2010) (also granted in Europe and other countries)

Rowe, V., Compositions Useful for Reducing Toxicity Associated with Gadolinium-based Contrast Agents. (Patent No.: US 20090155181 A1)

Rowe, V.D .The Ride, Whirlybird Press, 2011.

Rowe, E.S., Rowe, V.D., Biswas, S., Mosher, G., Insisienmay, L., Ozias, M.K., Gralinski, M.R., Hunter, J.H., Barnett, J.S.: Preclinical Studies of a Kidney Safe Iodinated Contrast Agent. Journal of Neuroimaging, 26:511-518, September 2016.

Saty Satya-Murti, M.D.

Formerly, Professor of Neurology, Albany Medical College, Albany, NY
Health Policy Consultant, Santa Maria, CA. Medicare Medical Director, panelist and Vice-Chair Medcac (Medicare Evidence & Coverage Advisory Committee.)

My medical school and residency training urged us to follow, not question, and learn from extraordinary and talented preceptors. Hopkins Neurology Department, barely two years old in 1971, chose its fellows carefully. The emphasis was on independent inquiry and creative autonomy. This environment, antipodal to my background, raised both hope and anxiety. My mentor, Dan Drachman, advised and encouraged, but left all details to me. This was a new culture, and I struggled. Dan was generous with his praise and mild with criticisms. He discouraged the effortless way out: declining to get me a digital averager, or a technician for processing histochemistry slides. He supervised my motor-point biopsies, key to our myasthenia gravis studies, without micromanagement. He let me develop our “rodent ICU” to keep our cobra-toxin-blockade rats alive for 12hrs. Little did I realize that he was watching me develop confidence for independent research, and in sprouting relevant clinical questions. This mindful guidance with a light touch was the key to develop and sustain my enthusiasm alive for the rest of my career to explore, learn fail, and succeed. It was a giddy time. All this learning to the accompaniment of Mozart’s A major clarinet concerto, exposure to colleagues’ research projects and Wednesday late neuromuscular rounds!

Selected Publications:

Fambroug.DM, Drachman DB, SatyamurtI, S. Neuromuscular Junction In Myasthenia-Gravis - Decreased Acetylcholine Receptors. Science 182: (4109) 293-295 1973

Satya-Murti S, Slone F, Drachman DB. Blockade Of Acetylcholine Receptors - Model Of Myasthenia-Gravis Science 187: (4180) 955-957 1975

Satya-Murti S, Howard L, Krohel G, et al. The Spectrum Of Neurologic Disorder From Vitamin-E-Deficiency Neurology 36: (7) 917-921 JUL 1986

Satya-Murti S, Cacace A, Hanson P. Auditory Dysfunction In Friedreich Ataxia – Result Of Spiral Ganglion Degeneration Neurology 30: (10) 1047-1053 1980

Satya-Murti S. Rectal fumigation. A core rewarming practice from the past.Pharos Alpha Omega Alpha Honor Med Soc. 2005 Winter;68(1):35-8.

Satya-Murti S, Lockhart JJ. Diagnosing Crime and Diagnosing Disease-II: VisualPattern Perception and Diagnostic Accuracy. J Forensic Sci. 2018 Jan 16. doi:10.1111/1556-4029.13735.

Lockhart JJ, Satya-Murti S. Blinding Or Information Control In Diagnosis: Could It Reduce Errors In Clinical Decision-Making? Diagnosis 5: (4), Dec 2018.

Logan D. Schneider, M.D.
Staff Neurologist, Stanford/VA Alzheimer's Center, Palo Alto, CA
Sierra Pacific VA MIRECC Research Fellow in Sleep and Neurocognition, Palo Alto, CA
Clinical Instructor, Stanford Center for Sleep Science and Medicine, Redwood City, CA

During residency training at Hopkins (2011-2014), I had the pleasure of working amidst a cohort of inspirational colleagues and teachers, which laid the groundwork for my current career as an academic clinician-scientist in the field of sleep neurology. My current projects uniting sleep and neurocognitive function would not have been possible without the foundations and mentorship provided throughout my neurology training. In building relationships with and being supported by such exemplary clinician-educators I sought to contribute back to the community through sharing with others the world-class training offered in Hopkins's hallowed halls. This endeavor began on two fronts during my residency training. The first was through an international collaboration on a neurology physical exam syllabus with Pf. Dr. Klaus Toyka. This project burgeoned into a free eBook (*Manual of the Neurological Examination for Neurologists in Training*) that is being translated into multiple languages for training neurologists on 3 different continents. The second began with my election as the AAN's Consortium of Neurology Residents and Fellows Chair. This endeavor to improve the standards of residency training across the country has grown into a leadership role within the AAN's Graduate Education Subcommittee and collaborative projects to uniformly integrate Sleep training into neurology residency training.

Selected Publications:

Toyka KV, Claβen J, Schneider LD, Saur D. *Manual of the Neurological Examination for Neurologists in Training*, ed 1. European Academy of Neurology, 2016.

Koch H*, Schneider LD*, Finn LA, Leary EB, Peppard PE, Hagen E, Sorensen HBD, Jennum P, Mignot E; Breathing disturbances without hypoxia are associated with objective sleepiness in sleep apnea, *Sleep*, 2017 Nov 1;40(11). PubMed PMID: 29029253

Mahajan A, Cahill C, Scharf E, Gupta S, Ahrens S, Joe E, Schneider L. Neurology residency training in 2017: a survey of preparation, perspectives and plans. *Neurology* (accepted 2 August 2018)

Schneider L, Mignot E. Diagnosis and Mangement of Narcolepsy. *Semin Neurol*. 2017 Aug;37(4):446-460. PubMed PMID: 28837992

Kalmbach DA, Schneider LD, Cheung J, Bertrand SJ, Kariharan T, Pack AI, Gehrman PR. Genetic Basis of Chronotype in Humans: Insights From Three Landmark GWAS. *Sleep*. 2017 Feb 1;40(2). PubMed PMID: 28364486

Schneider L, Houdayer E, Bai O, Hallett M. What we think before a voluntary movement. *J Cogn Neurosci.* 2013 Jun;25(6):822-9. PubMed PMID: 23363409; PubMed Central PMCID: PMC4747632.

Schneider LD. "Anatomy and Physiology of Normal Sleep." In *Sleep and Neurologic Disease*, ed 1. Ed. Miglis, M. Elsevier Academic Press, 2017.

Honors/Awards:

Palatucci Advocacy Leadership Forum, American Academy of Neurology, 2018

Trainee Merit Award, Sleep Research Society, 2017

Young Investigators Research Forum, American Academy of Sleep Medicine, 2016

Sonja W. Scholz, M.D. Ph.D.
Tenure Track Investigator, National Institutes of Health, Bethesda, MD
Adjunct Postdoctoral Research Fellow, Johns Hopkins University, Baltimore, MD

When facing difficult medical questions, an outstanding neurologist relies on five core principles: professionalism, empathy, humility, inquisitiveness, and, above all, persistence. During my neurology residency from 2012-2015, I found that each of these humanistic principles was alive and well. Indeed, my current research is built on the foundation that I saw practiced daily by my colleagues during my time at Johns Hopkins. Under the mentorship by Dr. Rothstein and Dr. Sumner, I demonstrated that there is a substantial genetic predisposition to Lewy body dementia. This work has given rise to a large-scale, international project to extend gene discovery efforts to this underserved disease. I was fortunate to maintain close ties with the neurology department following my residency. Attending movement disorders and cognitive neurology clinics has armed me with a comprehensive skillset to tackle these complex syndromes. I am grateful for the inspiring example that my colleagues have provided me with and believe that they have made me a better physician and a more determined scientist to help those suffering from neurodegenerative conditions. It may take decades to find a cure for these disabling diseases....until then, like Dr. Dan Drachman and Dr. Guy McKhann, I'll just keep turning up for work.

Selected publications:

Blauwendraat C, Faghri F, Pihlstrom Let al. NeuroChip, an updated version of the NeuroX genotyping platform to rapidly screen for variants associated with neurological diseases. Neurobiol Aging. 2017, 57:247.e9-247. PMID 28602509.

Sailer A, Scholz SW, Nalls MA, et al., EMSA and UK MSA study groups. A genome-wide association study in multiple system atrophy. Neurology. 2016,11;87(15):1591-1598. PMID: 27629089.

Geiger JT, Ding J, Crain B, et al. Next-generation sequencing reveals substantial genetic contribution to dementia with Lewy bodies. Neurobiol Dis. 2016,14;94:55-62. PMID 27312774.

Scholz SW, Mhyre T, Ressom H, Shah S, Federoff HJ. Genomics and bioinformatics of Parkinson's disease. Cold Spring Harb Perspect Med. 2012 Jul;2(7):a009449. PMID: 22762024.

Scholz SW, Houlden H, Schulte Cet al. SNCA variants are associated with increased risk for multiple system atrophy. Ann Neurol. 2009 May;65(5):610-4. PMID: 19475667.

Camargos S*, Scholz S*, Simón-Sánchez J, et al. DYT16, a novel young-onset dystonia-parkinsonism disorder: identification of a segregating mutation in the stress-response protein PRKRA. Lancet Neurol. 2008 Mar;7(3):207-15. PMID: 18243799.

Jakobsson M,* Scholz SW*, Scheet P, et al. Genotype, haplotype and copy-number variation in worldwide human populations. Nature. 2008 Feb 21;451(7181):998-1003. PMID: 18288195.

Honors/Awards:

Elected Member of the Alpha Omega Alpha Honor Medical Society, 2015
McFarland Transition to Independence Award, NINDS, National Institutes of Health, 2015
Lasker Clinical Research Scholar Award, NINDS, National Institutes of Health, 2018

Marjorie E. Seybold, MD, MPIA
Retired Adjunct Professor of Neurosciences, UCSD

I had the pleasure of working at Hopkins from July 1970 to December 1972. The first year, I was a fellow in neuro-ophthalmology at the Wilmer Institute, working under Drs. Frank Walsh and David Knox. Since my fellowship was unfunded, I had several moonlighting jobs, including the reading of EEGs under the supervision of Dr. Ernst Niedermeyer, one of the most learned and kindest of mentors. Through this job, I also got to know the neurology resident group, including David Zee, Ed Myer, Larry Davis, Jack Griffin, Gihan Tennekoon and Al Percy, all of who became life long friends. After completing my fellowship, I joined the faculty of Neurology and Ophthalmology, and had the good fortune to work with Dan Drachman in his neuromuscular clinic. I had had a previous interest in myasthenia gravis and Dan kindly shared his patients and expertise. Guy McKhann and Dick Johnson encouraged my use of EMG, a tactic that wasn't widely used at Hopkins at that time. I carried this acquired experience to my next job at the new University of California, San Diego Medical School, where I was able develop both neuro-ophthalmology and EMG services.

Selected Publications:

Seybold, ME, Howard, FM Jr, Duane, DD, Payne WS, Harrison EG Jr: Thymectomy in Juvenile Myasthenia Gravis. Arch Neurol 25:385-392, 1971.

Seybold, ME and Drachman DB: Gradually increasing doses of prednisone in myasthenia gravis. Reducing the hazards of treatment. N Engl J Med 290:81-84, 1974.

Lennon, VA, Lindstrom JM, and Seybold ME: Experimental autoimmune myasthenia: A model of myasthenia gravis in rats and guinea pigs. J Exp Med 141: 1365-1375, 1975.

Seybold, ME, Lambert EH, Lennon VA, and Lindstrom, JM: Experimental autoimmune myasthenia gravis: Clinical, neurophysiologic, and pharmacologic aspects. Ann NY Acad Sci 274: 275-282, 1976.

Lindstrom, JM, Seybold, ME, Lennon, VA, Whittingham, S, Duane, DD: Antibody to acetylcholine receptor in myasthenia gravis. Prevalence, clinical correlates and diagnostic value. Neurology 26:1054-1059, 1976.

Seybold, ME: Plasmapheresis in myasthenia gravis. Ann NY Acad Sci 505: 584-587, 1987.

Seybold, ME: Diagnosis of myasthenia gravis. In : AG Engel (Ed), Myasthenia Gravis and Myasthenic Disorders, Oxford University Press, 1999, 146-166.

Seybold, ME: Treatment of myasthenia gravis. In: AG Engel (Ed), Myasthenia gravis and Myasthenic Disorders, Oxford University Press, 1999, 167-201.

Honors:

Outstanding Resident in a Medical Subspecialty, Mayo Clinic 1970.
Paper #5 above selected as one of 15 landmark papers published in Neurology in the past 50 years, 1998.
A.B. Baker Award from the American Academy of Neurology for lifetime service to neurologic education, 2001.

Aasef G. Shaikh,MD,PhD,
Assistant Professor, Department of Neurology, Daroff-Dell'Osso Ocular Motility Laboratory, Cleveland VA Medical center, Functional Electrical Stimulation Center and Advanced Platform Technology Center, Case Western Reserve University, Cleveland Ohio.

Spending time as a research fellow in neurotology with Dr.David Zee (2005-2009) was critical for shaping my career as a physician-scientist. In these four years I accomplished many things, I cannot imagine what I would have been if I were elsewhere during this time. In these four years I learnt the "art" of science; such training, I believe is hard to find at most places. I came to Hopkins with an open mind, the options were becoming a clinician-scientist in otolaryngology, neurology, or to pursue a career science without clinical practice. I was quite influenced by my mentor, David Zee, and I ended up choosing a career in academic neurology. During my stay at Hopkins, I also met Hyder (Buz) Jinnah, who influenced my thinking and encouraged me to apply the ideas of neurotology and eye movements to study movement disorders. This approach to movement disorders was a "game changer" in my academic career. I started applying old concepts in eye movements and achieved very novel results (and publications) in movement disorders. Very importantly, while at Hopkins I got to collaborate with my mentor's colleagues – Dr.Lance Optican and Dr. John Leigh. Spending time with Dr.Optican allowed me to learn the math of science, the computational approach to study human disease. Finally, I chose to move to Cleveland for my residency, and working with our collaborator and Hopkins connection Dr.Leigh. After completing my residency, I again trained with another Hopkins connection, Dr.Mahlon DeLong, who heavily influenced my clinical and practical approach to movement disorders. In summary, my training as a physician and scientist was quite influenced by Hopkins, either in Baltimore, or being elsewhere working with someone who was at Hopkins.

Selected papers:

Rufa A and Shaikh AG. Ocular Motor and Vestibular Deficits in Neurometabolic, Neurogenetic, and Neurodegenerative Diseases. Frontiers In Neurology (special volume –ebook). 2018.

Sedov A, Popov V, Shabalov V, Raeva S, Jinnah HA, Shaikh AG. Physiology of midbrain head movement neurons in cervical dystonia. Mov Disord. 2017 Jun;32(6):904-912.

Shaikh AG, Zee DS, Crawford JD, Jinnah HA. Cervical dystonia: a neural integrator disorder. Brain. 2016 Oct;139(Pt 10):2590-2599. Epub 2016 Jun 20.

Shaikh AG. Motion perception without Nystagmus--a novel manifestation of cerebellar stroke. J Stroke Cerebrovasc Dis. 2014 May-Jun;23(5):1148-56.

Shaikh AG, Wong AL, Zee DS, Jinnah HA. Keeping your head on target. J Neurosci. 2013 Jul 3;33(27):11281-95.

Shaikh AG, Palla A, Marti S, Olasagasti I, Optican LM, Zee DS, Straumann D. Role of cerebellum in motion perception and vestibulo-ocular reflex-similarities and disparities. Cerebellum. 2013;12:97-107.

Shaikh AG, Hong S, Liao K, Tian J, Solomon D, Zee DS, Leigh RJ, Optican LM. Oculopalatal tremor explained by a model of inferior olivary hypertrophy and cerebellar plasticity. Brain. 2010 Mar;133(Pt 3):923-40.

Shaikh AG, Miura K, Optican LM, Ramat S, Leigh RJ, Zee DS. A new familial disease of saccadic oscillations and limb tremor provides clues to mechanisms of common tremor disorders. Brain. 2007 Nov;130(Pt 11):3020-31.

Select Awards:

George C. Cotzias Memorial Fellowship – American Parkinson's Disease Association, 2018
The American Academy of Neurology Career Award, 2018
The Grass Foundation – American Neurological Association – Award in Neuroscience, 2016.
The American Academy of Neurology Alliance Founders Award, 2015
Murrey Sachs Award – Johns Hopkins Center of Hearing and Balance, 2008.

Avinoam Shuper, MD
Professor Emeritus in Pediatrics, Tel – Aviv University, Israel.
Former Director, Pediatric Neurology, Schneider Children Medical Center of Israel.

When I came for training in Hopkins I was already a senior pediatrician at Beilinson Hospital, a major hospital in Israel. It was after 5 years of Israeli residency in pediatrics, including naturally frequent night shifts, and 7 more years through which night shifts were as well required. Being new comers to the States, a time period to acclimate was naturally required. A situation of residency at Hopkins with a busy night shift every third day, with full working day afterwards, and in adult wards, was quite hard. And getting used to the English slang and abbreviations...I must mention with love my very understanding and helpful Seniors: the late John Freeman, Dave Zee, Patty Vining. Later on, it was a great pleasure for me to meet the guys from Hopkins upon their visit to Beilinson: Oh, what a different situation! After my return to Israel I became the head of Neurology in the Schneider's children Medical center of Israel, the major children's hospital in the country. I used a lot all what I learned in Hopkins wards, Epilepsy Monitoring Unit and clinics. I retired upon 2014, that's the law in Israel, and continue now with medical work on a free-lance basis. I am a professor Emeritus of Tel – Aviv University.

Publications from my Hopkins period:

A. Shuper, E. Vining, J. Freeman:CNS vasculitis after chickenpox - cause or coincidence?Arch Dis Child 65:1245-1248, 1990.

A. Shuper, S. DeRosett, O. Hurko:Confusion as the presenting manifestation of vertebral osteomyelitis. Isr J Med Sci 28:864-868, 1993.

A. Shuper, E. Vining, J. Freeman:An “almost surgical” management of the Landau-Kleffner syndrome.American Epilepsy Society, San Diego, 1990.

A. Shuper, J.M. Freeman:Non-convulsive status epilepticus mimicking degenerative CNS disease - a pitfall of which to be cautious. Israel Society of Child Neurology, Jerusalem, 1991.

Isaac E. Silverman, MD

Vascular Neurologist; Associate Clinical Professor of Neurology, University of Connecticut School of Medicine; Chief, Neurohospitalist Division, The Ayer Neuroscience Institute, Hartford HealthCare Partner, Hartford Neurology, LLC.

I feel fortunate to have worked at Johns Hopkins as both an Osler Medical Service Intern at Hopkins Hospital (1995-96) and then a Neurology Resident (1996-99). It was a time of great enthusiasm for emergent treatment of acute ischemic stroke, with IV t-PA NINDS publication and an array of neuroprotective trials ongoing. My primary mentors at Hopkins were stroke clinicians, Bob Wityk (JHH) and Chris Earley (Hopkins Bayview). The greatest teachers I felt were my fellow residents, who had strong clinical and basic science backgrounds and tremendous academic aspirations. I also am indebted to the chairmen during my time at Hopkins, Richard Johnson and Jack Griffin, who were outstanding role models. In fellowship years at Yale-New Haven Hospital (1999-2001), I spent a year in Clinical Epidemiology in the Robert Wood Johnson Clinical Scholars program and then a second year there as a Vascular Neurology fellow with Pierre Fayad and Larry Brass as mentors. When I moved from the New Haven area north to Hartford, in central Connecticut, I began my early attending career as a clinician educator and stroke clinical trialist. In 2001, I was the founding co-Medical Director and lead vascular neurologist of the first Primary Stroke Center in New England, recognized in 2004 by the Joint Commission (JC), situated at Hartford Hospital (HH), the primary teaching institution for the University of Connecticut (U-Conn) School of Medicine's neurology residency. I took the first version of the ACGME vascular neurology boards in 2005 and have been recertified. We pioneered – by working closely with Interventional Neuroradiology – some of the early aspiration and mechanical thrombectomy devices for endovascular therapies for large-vessel acute ischemic stroke. I currently enjoy a hybrid existence: most of my clinical time (about 60%) is as a hospital-based Vascular neurologist at what later became the first JC Comprehensive Stroke Center in New England in 2013, here at HH. I stepped down as Medical Director of the Stroke Center in 2015. In the hospital, I regularly teach our U-Conn Neurology Residents and other visiting neurology residents and medical students on both the Inpatient Neurology/ Stroke Service and the Consult Services at HH. Every year, I sponsor between 2-4 neurology residents who choose fellowships in vascular neurology and related fields, in particular neurocritical care and interventional neuroradiology. As chief of a new Neurohospitalist Division since mid-2017, I direct two teaching conferences: a didactic Academic series on topics that combine hospital neurology with other medical fields (egs, psychiatry, cardiology, rheumatology, geriatrics) and a second NH Case Conference CPC at our Neurology Department's Grand Rounds, presented with Audience Participation Software. The other parts of my practice include a busy outpatient private practice clinic, where I follow-up recently-hospitalized stroke patients as well as see general neurology. Finally, I do clinical trials adjudication work for stroke and large cardiovascular clinical trials, and also participate in medicolegal case reviews on topics in Stroke medicine and Hospital neurology. Local recognitions include winning 2 Attending Teacher-of-the-Year awards from our U-Conn neurology residents (2015, 2017), and also receiving Top Neurologist accolades in annual Best Physician listings for Hartford Magazine (2007-14, inclusive) and Connecticut Magazine (2007-18, inclusive).

Selected Publications:

Silverman IE, Liu GT, Volpe NJ, Galetta SL. The crossed paralyses: the original brain-stem syndromes of Millard-Gubler, Foville, Weber, & Raymond-Cestan. *Arch Neurol* 1995;52:635-8.

Silverman IE, Wityk RJ. Transient migraine-like syndromes with internal carotid artery dissection. *Clin Neurol Neurosurgery* 1998;100:116-20.

Silverman IE, Restrepo L, Mathews G. Poststroke seizures. Arch Neurol 2002;59:195-202.

Silverman IE, Beland DK, Ohki SK, Abbott L, Spiegel GR. Expanding the range of therapies for acute ischemic stroke: The early experience of the Stroke Center at Hartford Hospital. Connecticut Medicine 2004;68:419-29.

Smith WS, Sung G, Starkman S, Saver JL, Kidwell CS, Gobin P, Lutsep HL, Nesbit GM, Grobelny T, Rymer MM, Silverman IE, Higashida RT, Budzik RF, Marks MP, for the MERCI Trial Investigators. Safety and efficacy of mechanical embolectomy in acute ischemic stroke: results of the MERCI Trial. Stroke 2005;36:1432-40.

Baker WL, Colby JA, Tongbram V, Silverman IE, Talati R, White CM, Kluger J, Coleman CI. Neurothrombectomy devices for the treatment of acute ischemic stroke: state of the evidence. Ann Int Med 2011; 154:243-52.

Honors/Awards:

Palatucci Advocacy Leadership Forum, American Academy of Neurology, 2009

Harvey S. Singer, M.D.
Professor of Neurology and Pediatrics, Johns Hopkins University, Baltimore, MD

After completing my military obligation, I came to the Johns Hopkins Hospital in 1972 as a pediatric neurology resident under the mentorship of Dr. John Freeman. Fully recognizing the enormous clinical and research benefits of this Institution, I am pleased to note that I never left. During my tenure, I have had the honor and privilege of advancing the field of child neurology serving in various roles including Director of Child Neurology at Johns Hopkins for 20 years, President and Secretary–Treasurer of the Professors of Child Neurology, Secretary-Treasurer for the United Council of Neurological Specialties, and within the Child Neurology Society; Chairmen of the Resident Match and Training Committees, and Secretary–Treasurer. My clinical research interests have included movement disorders, especially Tourette syndrome and stereotypies, as well as several proposed autoimmune disorders. Under my leadership, Johns Hopkins Hospital was selected as a Tourette Association of America Center of Excellence. In the laboratory, translational research-oriented activities have focused on the neurobiology of human movement disorders, the pathophysiology of repetitive movements in animal models, and autoimmune mechanisms in autism and PANDAS. With the support of multiple colleagues, residents, and technicians, NIH funding, and private philanthropy, I have authored numerous articles, chapters, and three books; the latest, a must-read text, entitled Movement Disorders in Childhood. Enjoyable activities include biking, travel, visiting my five grandchildren, and work.

Selected Publications:

Singer HS, Mink J, Gilbert D, Jankovic J. "Movement Disorders in Childhood". Second Edition, lsevier/Academic Press. New York, 2015.

Singer HS, Nankervis Ga, Schafer IA: Leukocyte beta-galactosidase activity in the diagnosis of generalized GM-1 gangliosidosis. Pediatrics 49:352-361, 1972.

Singer HS, Szymanski S, Giuliano JD, Yokoi F, Dogan AS, Brasic JR, Zhou Y, Grace AA, Wong D. Elevated intrasynaptic dopamine release in Tourette syndrome measured by PET. Am J Psychiatry, 159:1329-1336, 2002.

Singer HS, Morris CM, Gause CD, Gillin PK, Crawford S, Zimmerman AW. Antibodies against fetal brain in sera of mothers with autistic children. J Neuroimmunology, 194: 165-272, 2008.

Singer HS. Motor control, habits, motor stereotypies, and Tourette syndrome. Annals New York Academy of Science, 1304; 22-31, 2013.

Singer HS. A series of experiences: 2016 Hower Award lecture. Pediatric Neurol. 74:6-10, 2017.

Augustine F. Singer HS. Merging the Pathophysiology and Pharmacotherapy of Tics. Tremor and Other Hyperkinetic Movements. In press.

Honors/Awards:

Haller Professor of Pediatric Neurologic Disorders, 1997

Child Neurology Society's Blue Bird Clinic Program Director's Award, Oct 2013

Child Neurology Society's Hower Award, Oct 2016.

Plus, numerous national and international visiting professorships

Dominik Straumann, M.D.
Associate Professor of Neurology,
Department of Neurology,
University Hospital Zurich, University of Zurich

My time as a postdoctoral research fellow (1 year in 1994/95) and later as a visiting scientist (2-3 months each in 1998, 1999, 2001, 2003) at David Zee's laboratory (Ocular Motor-Vestibular Testing and Research Laboratory, Department of Neurology) decisively influenced my further work in clinic and research. Since this fruitful time at Hopkins, David Zee has always been a role model to me in how one can combine dedicated clinical neurology with excellent research that is inspired by observations at the bedside. So far, there are 27 publications (papers, chapters, proceedings) that have both David Zee's and my name on the authors' list. In all these contributions, normal or abnormal eye movements in humans are in the center of the research (see selected references below). Besides the intellectual aspects, one important reason to join David Zee's lab was the presence of an exceptional instrument for recording eye rotations in three dimensions (horizontal, vertical, and torsional). The three-dimensional search coil system - invented by David Robinson, constructed by Adrian Lasker and programmed by Dale Roberts - was an indispensable tool to study 3D ocular kinematics in healthy human subjects and in patients with eye movement disorders. David Robinson, the pioneer in applying control theory to better understand the neural control of eye movements, although already retired, gave an unforgettable private multi-session seminar on the mathematics of ocular motor physiology and pathophysiology in the fellows' room. The lab's two outstanding engineers, Adrian Lasker and Dale Roberts, were later immensely helpful in expanding my own lab back in Zurich. Graciously, they made us a copy of the three-dimensional search coil system, which we were using for many studies in the years to come. In 2009/10 Alexander Tarnutzer, a first-class neurologist and researcher in my lab, also spent a postdoc year at David Zee's lab and excelled thanks to the Hopkins collaborations. In conclusion, I can not think my further clinical and scientific career without the wonderful time at Hopkins and the continuous collaboration, support, and friendship with David Zee and many of his co-workers who I could not all list in this short abstract.

Selected Publications:

Solomon D, Zee DS, Straumann D (2003) Torsional and horizontal vestibular ocular reflex adaptation: three-dimensional eye movement analysis. Exp Brain Res 152:150–155.

Straumann D, Steffen H, Landau K, Bergamin O, Mudgil AV, Walker MF, Guyton DL, Zee DS (2003) Primary position and listing's law in acquired and congenital trochlear nerve palsy. Invest Ophthalmol Vis Sci 44:4282–4292.

Straumann D, Zee DS (1995) Three-dimensional aspects of eye movements. Curr Opin Neurol 8:69–71.

Straumann D, Zee DS, Solomon D (2000) Three-dimensional kinematics of ocular drift in humans with cerebellar atrophy. J Neurophysiol 83:1125–1140.

Straumann D, Zee DS, Solomon D, Kramer PD (1996) Validity of Listing's law during fixations, saccades, smooth pursuit eye movements, and blinks. Exp Brain Res 112:135–146.

Straumann D, Zee DS, Solomon D, Lasker AG, Roberts DC (1995) Transient torsion during and after saccades. Vision Res 35:3321–3334.

Jose I Suarez, MD, FNCS, FANA
Professor and Director, Division of Neurosciences Critical Care
Departments of Anesthesiology and Critical Care Medicine, Neurology, and Neurosurgery,
The Johns Hopkins University School of Medicine

I was a fellow in the Neurosciences Critical Care Division (1996-1998). Prior to joining the fellowship, I spent a month as a rotating resident and quickly learned that coming to Johns Hopkins would be a great opportunity for me. I thoroughly enjoyed the clinical and scientific training I was exposed to. I can say without a doubt that my fellowship training was the key to my future career in academic neurocritical care and laid the foundations for what I was to accomplish in the future. I worked under the tutelage of Daniel Hanley and John Ulatowski. My main areas of research interest were subarachnoid hemorrhage, cerebral edema, and neurocritical care outcomes. My subsequent career as a clinician-scientist at Case Western Reserve University and the Baylor College of Medicine built upon the solid foundations established during my time at Hopkins. I have participated in several NINDS-funded clinical trials and research initiatives: PI for the ALISAH Multicenter Pilot Study and the ALISAH II International Multicenter Phase II clinical trial; co-PI for the IMPACT and SPLASH clinical trials; member of the Executive Committee for ATACH and ATACH 2 clinical trials (PI is Adnan Qureshi who was my co-fellow); PI for the Neurocritical Care Research Conferences (5 total); co-Chair for the NINDS CDE project for Unruptured Cerebral Aneurysms and SAH and a member of the Stroke CDE Project. I am also the President of the Neurocritical Care Society and the Founding and Past Chair of the Neurocritical Care Research Network (NCRN), which encompasses 230 sites from 47 countries. I have been so grateful for what I learned at Hopkins that I returned in 2017 to become the Director of the Neurosciences Critical Division and continue with my research endeavors.

Selected Publications:

Suarez JI, Zaidat OO, Suri MF, Feen ES, Lynch G, Hickman J, Selman WR. Analysis of length of stay and in-hospital and long-term mortality in neurocritically-ill patients: impact of a specialized neurocritical care team. Crit Care Med 2004;32:2311-2317

Suarez JI, Tarr R, Selman WR. Subarachnoid hemorrhage. Current Concepts. N Engl J Med 2006;354:387-96

Suarez JI, Martin RH, Calvillo E, Dillon C, Bershad EM, MacDonald RL, Wong J, Harbaugh R, the ALISAH Investigators. The albumin in subarachnoid hemorrhage (ALISAH) multicenter pilot clinical trial: safety and neurologic outcomes. Stroke 2012;43:683-90 Epub 2012 Jan 19

Qureshi AI, Palesch YY, Barsan WG, Hanley DF, Hsu CY, Martin RL, Moy CS, Silbergleit R, Steiner T, Suarez JI, Toyoda K, Wang Y, Yamamoto H, Yoon BW; ATACH-2 Trial Investigators and the Neurological Emergency Treatment Trials Network. Intensive Blood-Pressure Lowering in Patients with Acute Cerebral Hemorrhage. N Engl J Med. 2016;375:1033-43

Suarez JI, Martin RH, Hohmann SF, Calvillo E, Bershad EM, Venkatasubba Rao CP, Georgiadis A, Flower O, Zygun D, Finfer S. Human Albumin Use in Adults in U.S. Academic Medical Centers. Crit Care Med. 2017;45: e16-e22

Honors/Awards:

Robert B Daroff Teaching Excellence Award, Case Western Reserve University 2004)
Maxeen Stone and John A Flower Chair in Neurology, Case Western Reserve University 2006
AAN Teaching Recognition Award 2007
Baylor College of Medicine Faculty Teaching Award 2010
Presidential Citation Award Neurocritical Care Society 2014
Outstanding Service Award Neurocritical Care Society 2015

Gene Sung, MD, MPH
Director, Division of Neurocritical Care and Stroke
University of Southern California

I was a fellow and then faculty member in the Neurosciences Critical Care Division (1994-1998). This was truly an inspirational time for me, as I learned, and then taught, the basics and intricacies of caring for critically ill patients with the severe neurological and neurosurgical diseases. This field was new and unique and multi-disciplinary with neurologists, neurosurgeons, anesthesiologists working closely together with nurses, respiratory therapists, dieticians, and rehabilitation specialists on a daily basis. As a clinical researcher, I also benefited from the ability to learn skills at the School of Public Health, just across the street from my office. My research was varied, but primarily dealt with cerebral reperfusion (I helped study and gain FDA approval for the first mechanical embolectomy device for acute ischemic stroke) and neuroprotection (particularly hypothermia). Dan Hanley as a mentor, always showed me the way in advancing both the science and the profession. Developing and organizing acute neurological care became a passion for me as I helped start and ran three different professional societies: the Western States Stroke Consortium, the Los Angeles Stroke Society and perhaps most importantly, the Neurocritical Care Society. The new field of Neurocritical Care needed a voice and 'home', which is what the Neurocritical Care Society has become. With its own journal, guidelines, educational programs and research, it is the only society solely for the field and now has members from over 40 different countries. My experience at Johns Hopkins set the spark and motivation for helping me to be a leader in my field.

Recent Publications:

Shavelle DM, Bosson N, Thomas JL, Kaji AH, Sung G, French WJ, Niemann JT. Outcomes of ST Elevation Myocardial Infarction Complicated by Out-of-Hospital Cardiac Arrest (from the Los Angeles County Regional System). Am J Cardiol. 2017; 120: 729-733.

Sung G, Bosson N, Kaji AH, Eckstein M, Shavelle D, French WJ, Thomas JL,Koenig W, Niemann JT. Therapeutic hypothermia after resuscitation from non-shockable rhythm improves outcomes in a regionalized system of cardiac arrest care. Neurocrit Care. 2016; 24: 90-6.

Thomas JL, Bosson N, Kaji AH, Ji Y, Sung G, Shavelle DM, French WJ, Koenig W, Niemann JT. Treatment and outcomes of ST segment elevation myocardial infarction and out-of-hospital cardiac arrest in a regionalized system of care based on presence or absence of initial shockable cardiac arrest rhythm. Am J Cardiol.2014; 114: 968-71.

Bosson N, Kaji AH, Niemann JT, Eckstein M, Rashi P, Tadeo R, Gorospe D, Sung G, French WJ, Shavelle D, Thomas JL, Koenig W. Survival and neurologic outcome after out-of-hospital cardiac arrest: results one year after regionalization of post-cardiac arrest care in a large metropolitan area. Prehosp Emerg Care. 2014; 18: 217-23.

Lazaridis C, Maas AI, Souter MJ, Martin RH, Chesnut RM, DeSantis SM, Sung G, Leroux PD, Suarez JI; Second Neurocritical Care Research Conference Investigators. Alternative clinical trial design in neurocritical care. Neurocrit Care. 2015; 22: 378-84.

Gihan Tennekoon MBBS
Professor of Neurology and Pediatrics
University of Pennsylvania

My Neurology residency was from 1969 through 1972. During this time, I had fantastic fellow residents with whom I have a maintained a long friendship. Much of my learning of both adult and pediatric neurology was from my fellow residents. These included Mark Moliiver, Al Percy, Dave Zee and Jack Griffin to name a few. There were other such as Ed Myer who had a repertoire of wonderful stories. Having finished my residency my research career was directed by Drs. McKhann and Price. Dr McKhann not only directed my research, he supported my research through lean funding times. It was Dr. McKhann who suggested that I should be a pediatric neurologist. During my time at Hopkins I took a sabbatical in Dan Lane's laboratory, a wonderful experience. Despite being away for now 28 years, I have always felt that Hopkins Neurology was my second home. Thanks Dr. McKhann for all your advice and help and forming such a wonderful Department of Neurology full of great people.

Selected Publications:

Tennekoon, G, Cohen, S, Price, D and McKhann, G: Myelinogenesis in the optic nerve - morphological, autoradiographic & biochemical analysis. J Cell Biol. 72: 604-616. 1977

Tennekoon, G., McKhann, G: Further characterization of cerebroside sulfotransferase. J Neurochem. 31: 329. 1978

Tennekoon, G, Peden K, Rutkowski, J and McKhann, G: Transfection of neonatal rat Schwann cells with SV40 large T antigen gene under control of the metallothionein promoter. J Cell Biol. 105: 2315-2325. 1987.

Narayanan, V, Barbosa, E, Reed, R and Tennekoon, G: Characterization of a cloned cDNA encoding rabbit myelin P_2 protein. J Biol Chem. 263: 8332-8337. 1988.

Filbin, MT, Walsh, FS, Trapp, BD, Pizzey, JA andTennekoon, G: The role of myelin P_0 protein as a homophilic adhesion molecule. Nature. 344: 871-872. 1990.

Filbin, MT and Tennekoon, GI: The role of complex carbohydrates in adhesion of the myelin protein P_0. Neuron. 7: 845-855. 1991.

Peden, KWC, Charles, C, Sanders, L and Tennekoon, GI: Isolation of rat Schwann cell lines: Use of SV40 T antigen gene regulated by synthetic metallothionein promoters. Exp Cell Res. 185: 60-72. 1989.

Rutkowski, J.L, Kirk, C.J., Lerner, M.A. and Tennekoon, G.I: Purification and expansion of human Schwann cells *in vitro*. Nature Medicine. 1: 80-83. 1995

Marina AJ (de Koning-) Tijssen, MD, PhD
Professor and Head of Movement Disorder section of the Neurology Department,
University Medical Center Groningen (UMCG), University of Groningen, the Netherlands

In 1987 I worked as a medical student in David Zee's lab together with Chiara Straathof. I did a research project ''Optokinetic after-nystagmus in humans: normal values of amplitude, time constant, and asymmetry'' that was published as my first paper in 1989. We were named Dutch, and as Europeans we introduced the highly appreciated tea-time in the lab. Following my period at Hopkins I did my Neurology Residency at the University of Leiden and the Institute of Neurology and Neurosurgery, London, UK, and wrote my thesis on 'Hyperekplexia'. Subsequently, I established an internationally renowned movement disorders group in Amsterdam. My research has always been focussed on hyperkinetic movement disorders with a research line covering clinical and translational research in relation to jerky movements and dystonia. To facilitate clinical diagnostics using new genetic possibilities I published diagnostic algorithms for dystonia and myoclonus. In 2012, I started as professor in Groningen with dedicated time for movement disorders and the opportunity to build a new research group. As secretary of the EU section of the International Parkinson and Movement Disorder Society, the main society in my field, and chair of the Groningen European Movement Disorders Expertise Centre, I have created a unique platform to train young clinicians and researchers and explore the fascinating field of hyperkinetic movement disorders.

Selected Publications:

Dijk JM, Tijssen MA. Management of patients with myoclonus: available therapies and the need for an evidence-based approach. Lancet Neurol. 2010 Oct;9(10):1028-36.

Bakker MJ, van Dijk JG, van den Maagdenberg AM, Tijssen MA. Startle syndromes. Lancet Neurol. 2006 Jun;5(6):513-24.

Zutt R, van Egmond ME, Elting JW, van Laar PJ, Brouwer OF, Sival DA, Kremer HP, de Koning TJ, Tijssen MA. A novel diagnostic approach to patients with myoclonus. Nat Rev Neurol. 2015 Dec;11(12):687-97.

Zutt R, Elting JW, van Zijl JC, van der Hoeven JH, Roosendaal CM, Gelauff JM, Peall KJ, Tijssen MAJ. Electrophysiologic testing aids diagnosis and subtyping of myoclonus. Neurology. 2018 Feb 20;90(8):e647-e657.

van der Salm SM, van Rootselaar AF, Cath DC, de Haan RJ, Koelman JH, Tijssen MA. Clinical decision-making in functional and hyperkinetic movement disorders. Neurology. 2017 Jan 10;88(2):118-123.

Groen JL, Kallen MC, van de Warrenburg BP, Speelman JD, van Hilten JJ, Aramideh M, Boon AJ, Klein C, Koelman JH, Langeveld TP, Baas F, Tijssen MA. Phenotypes and genetic architecture of focal primary torsion dystonia. J Neurol Neurosurg Psychiatry. 2012 Oct;83(10):1006-11.

van Tricht MJ, Dreissen YE, Cath D, Dijk JM, Contarino MF, van der Salm SM, Foncke EM, Groen JL, Schmand B, Tijssen MA. Cognition and psychopathology in myoclonus-dystonia. J Neurol Neurosurg Psychiatry. 2012 Aug;83(8):814-20.

Honors/Awards:

2017-present: Secretary International Parkinson & Movement Disorders Society European Section.
2015: Best presentation 2015 - National Biemond course - Dutch Neurology Society. Lecture: Functional Movement Disorders, diagnosis and treatment.
2004: NWO-VIDI grant. "Myoclonus Dystonia: borderland between neurology and psychiatry".

Klaus V. Toyka, M.D., FRCP
Emeritus Professor and Chair of Neurology, University of Wurzburg, Germany,
Adjunct Professor of Neurology, Johns Hopkins University, Baltimore, Maryland, MD

My time as a neuromuscular fellow in the lab of Daniel B. Drachman (1974-1976) was instrumental in my career as a clinician-scientist. The experimental work in myasthenia gravis initiated a new translational research strategy identifying pathogenic autoantibodies in putative human autoimmune disorders. This became the focus of my clinical and experimental work after returning to Germany: in several neurological disorders autoantibodies could be defined as partly or entirely causative pathogenic agents. We also tested various treatment strategies in rodent models elucidating disease mechanism. This occasionally paved the way towards clinical applications including new modes of plasma exchange, new drugs, and target-specific antibodies. After mandatory retirement in 2010 the late John W. (Jack) Griffin and Justin McArthur invited me to return as part-time faculty for collaborative projects. In addition, the e-book on Neurological Examination was inspired by Logan Schneider at Hopkins Neurology and was published online in 2016 becoming a practical source in Europe and beyond. My connection with Hopkins for over 4 decades was instrumental in my professional life. My separate field of interest was playing and performing chamber music as an amateur violinist starting in 1974 with Daniel Drachman, an amateur clarinetist. This activity ultimately led to serving the Neurology Department with music performances at various occasions, lately together with Peabody pianist Arno Drucker.

Selected Publications (* at Hopkins Neurology)

* Toyka, K.V., D.B. Drachman, A. Pestronk et al. (1975) Myasthenia gravis: passive transfer from man to mouse. Science 190: 397-399

* Toyka, K.V., D.B. Drachman, D.E. Griffin et al. (1977). Myasthenia gravis: study of humoral immune mechanisms by passive transfer to mice. N. Engl. J. Med. 296: 125-131

- Besinger, U.A., K.V. Toyka, A.P. Anzil et al (1981) Myeloma neuropathy: passive transfer from man to mouse. Science 213: 1027-1030

- Hohlfeld, R., K.V. Toyka. K. Heininger et al (1984) Autoimmune human T lymphocytes specific for acetylcholine receptor. Nature 310: 244-246

- Buchwald, B., R. Ahangari, A. Weishaupt, K. V. Toyka (2002) Intravenous immunoglobulins neutralize blocking antibodies in the Guillain-Barré syndrome. Ann. Neurol. 51: 673 – 680

- Sommer, C, A. Weishaupt, J. Brinkhoff, L. Biko, C. Wessig, R. Gold, K.V. Toyka (2005). Paraneoplastic stiff-person syndrome: Passive transfer to the rat with IgG antibodies to amphiphysin. Lancet 365: 1406 – 1411

- Geis C, Ritter C, Ruschil C, Weishaupt A, Grünewald B, Stoll G, Holmoy T, Misu T, Fujihara K, Hemmer B, Stadelmann C, Bennett JL, Sommer C, Toyka KV (2015) The intrinsic pathogenic role of autoantibodies to aquaporin 4 mediating spinal cord disease in a rat passive-transfer model. Exp Neurol 265, 8-21

- Steinbeck J, Jaiswal M, Calder EL, Kishinevsky S, Weishaupt A, Toyka KV, Goldstein PJ, Studer L (2016) Functional connectivity under optogenetic control allows modeling of human neuromuscular disease. Cell Stem Cell 18(1):134-43

Selected Honors/Awards:

Member, Johns Hopkins Society for Scholars, 1998

Fellow Royal College of Physicians, London, UK, 2004

Honorary Membership, American Neurological Association, 2010

Ronald J. Tusa, M.D., Ph.D.
Emeritus Professor of Neurology, Emory University, Atlanta, GA

In 1959, noble prize winners David Hubel and Torsten Wiesel physiologically mapped the central portions of the visual field in area 17-19 in cat at Johns Hopkins Hospital. For my doctorate thesis at Univ of Penn, I examined the peripheral portions of visual field in those areas and ultimately found 13 separate representations of the visual field in cat cortex. For my Neurology residency, I wanted to come to Johns Hopkins University to work with David Zee, my mentor, on the cortical control of eye movements. It was one of the best decisions that I made. I stayed on through 1993 and had the opportunity to work with some of the greats in eye movements, vestibular function and control systems, including R. John Leigh and David Robinson. With Dr Zee's leadership at Johns Hopkins, we started seeing patients with vestibular defects and dizziness. This new focus was the start of a new future for me. With the help of Dr. Susan Herdman and Dr. Zee, a new area of vestibular rehabilitation became a fruitful area of research and a very practical form of treatment for the dizzy patient. We ultimately brought this interest with us to the University of Miami and then Emory University where we established research labs and dizziness programs. I will be forever grateful for the expertise, guidance and collaboration that I received at Johns Hopkins University.

Selected Publications:

Tusa RJ, LA Palmer and AC Rosenquist. Multiple cortical visual areas: visual field topography in the cat. In Cortical Sensory Organization, Ed. CN Woolsey, Humana Press, 1981.

Tusa RJ, DS Zee, SJ Herdman. Effect of unilateral cerebral cortical lesions on ocular motor behavior in monkeys: saccades and quick phases. J. Neurophysiology 1986;56:1590-1625.
1985

Tusa RJ, JL Demer, SJ Herdman. Cortical areas involved in OKN and VOR in cats: Cortical lesions. J. Neuroscience 1989;9:1163-1178.

Tusa RJ, DS Zee, TC Hain and HJ Simonsz. Voluntary control of congenital nystagmus. Clinical Vision Sciences 1992;7:195-210.

Tusa RJ, Mustari MJ, Burrows AF, Fuchs AF. Gaze-stabilizing deficits and latent nystagmus in monkeys with brief, early-onset visual deprivation. Eye movement recordings. J Neurophysiology 2001;86:651-61.

Herdman SJ, Schubert MC, Tusa RJ. Role of Central Preprogramming in Dynamic Visual Acuity with Vestibular Loss. Arch Otol Head Neck Surg 2001;127:1205-10.

Tusa RJ, Mustari MJ, Das VE, Boothe R. Animal Models for Visual Deprivation-Induced Strabismus and Nystagmus. Ann N Y Acad Sci. 2002 Apr;956:346-360.

Honors/Awards:

Sigma Xi Outstanding Dissertation Award, Alfred P.

Sloan Research Award

Johns Hopkins Teaching Award

William R. Tyor, MD
Professor, Department of Neurology, Emory University School of Medicine, Atlanta, GA
Neuroscience Academic Coordinator, Atlanta VA Medical Center, Decatur, GA

I was a post-doc and faculty member in the Department of Neurology at Hopkins from 1986 through 1992. My mentors were Drs. Richard Johnson and Diane Griffin, I had many friends and collaborators, and they contributed to this most exciting and inspiring period of my academic life. I have fond memories of me (singer), Walter Royal (saxophone) and Orest Hurko (piano) entertaining folks at the annual party in Dick Johnson's home. Although my work on mouse Sindbis virus (SV) encephalitis while at Hopkins is less cited than my work on HIV encephalitis, fundamental discoveries made, such as lifelong SV infection of neurons, remain underappreciated, particularly as the concept may relate to multiple sclerosis (1). Dick and Diane guided the neurovirology group to investigate HIV encephalitis pathogenesis and I was fortunate enough to be part of a seminal paper describing the brain inflammatory cytokine reaction of HIV encephalitis in humans (2). The lack of a small animal model for HIV encephalitis prompted me, Chris Power and Dick Markham to invent one (3). To this day I still have two active federal grants using an updated version of this model to investigate pathogenesis and novel treatments for HIV associated neurocognitive disorders (HAND).

Representative Publications

Tyor WR, Wesselingh S, Levine B, Griffin DE: Long-term intraparenchymal immunoglobulin secretion after acute viral encephalitis in mice. J Immunol. 1992;149:4016-4020.

Tyor WR, Glass J, Becker S, Griffin J, Bezman L, McArthur J, Griffin DE. Cytokine expression in the brain during AIDS. Ann Neurol 1992;31:349-360.

Tyor WR, Power C, Gendelman H, Markham R: A model of HIV encephalitis in SCID mice. Proc Natl Acad Sci USA 1993. 90:8658-8662.

Timothy Vollmer, M.D., Lyndon Key, M.D., Valerie Durkalski, Ph.D., William Tyor, M.D., John Corboy, M.D., Silva Markovic-Plese, M.D., Jana Preningerova, M.D., Marco Rizzo, M.D., Inderjit Singh, Ph.D. Oral simvastatin treatment in relapsing-remitting multiple sclerosis. Lancet. 2004. 363: 1607-1609.

Sas A, Bimonte-Nelson H, Smothers CT, Woodward J, Tyor W. Interferon Alpha Causes Neuronal Dysfunction in Encephalitis. 2009. J Neurosci. 29:3948-3955.

Haile WB, Gavegnano C, Tao S, Jiang Y, Schinazi RF, Tyor WR. The Janus kinase inhibitor ruxolitinib reduces HIV replication in human macrophages and ameliorates HIV encephalitis in a murine model. 2016. Neurobiology of Disease. 92: 137-143.

Koneru R, Bimonte-Nelson H, Ciavatta V, Haile W, Elmore K, Ward J, Maroun L, Tyor W. Reversing interferon-alpha neurotoxicity in a HIV associated neurocognitive disorders mouse model. 2018. AIDS. In press.

Arun Venkatesan, M.D., Ph.D.
Associate Professor, Neurology
Associate Program Director, Neurology Residency
Johns Hopkins University School of Medicine, Baltimore, MD

The entirety of my training in neurology and subsequent career have taken place at Johns Hopkins (2003-present). I came to Hopkins for residency, attracted by strengths in neuroinfectious diseases and by the promise of academic career development. With the support and mentorship of many in the Richard T. Johnson Division of Neuroimmunology and Neurologic Infections, and in particular Avindra Nath, I have been able to develop and sustain a research program centered on neurologic injury and protection in the setting of infection and neuroinflammation. The collaborative nature of our department led to the founding of the Johns Hopkins Encephalitis Center, which represents multiple disciplines including neuroimmunology, epilepsy, and neurocritical care devoted to patient care and research, and which I have the pleasure of heading. I have also been afforded ample opportunities to engage my deep interests in education – an example is my involvement in the residency program- and have truly enjoyed working closely with and learning from the residents as well as master clinician-educators such as Rafael Llinas.

Selected Publications:

Venkatesan A, Michael BD, Probasco JC, Geocadin RG, Solomon T. Acute encephalitis in immunocompetent adults. *The Lancet* 2018 (in press).

Kurapati S, Sadaoka T, Rajbhandari L, Jagdish B, Shukla P, Kim YJ, Lee G, Cohen JI, Venkatesan A. Role of JNK pathway in varicella-zoster virus lytic infection and reactivation. *Journal of Virology* 2017 91 pii:e00640-17

Probasco JC, Solnes L, Nalluri A, Cohen J, Jones K, Zan E, Javadi MS, Venkatesan A. Decreased Occipital Lobe Metabolism by FDG-PET/CT: An Anti-NMDA Receptor Encephalitis Biomarker. *Neurology Neuroimmunol Neuroinflamm* 2017 5:e413.

George BP, Schneider E, Venkatesan A. Encephalitis hospitalization rates and inpatient mortality in the United States, 2000-2010. *PLOS One* 2014 Sep 5;9(9):e104169.

Venkatesan A, Tunkel AR, Bloch KC, International Encephalitis Consortium. Case definitions, diagnostic algorithms, and priorities in encephalitis: consensus statement of the international encephalitis consortium. *Clinical Infectious Diseases* 2013 57:1114-28.

Thakur KT, Motta M, Asemota AO, Kirsch H, Benavides D, Schneider E, McArthur JC, Geocadin RG, Venkatesan A. Predictors of Outcome in Acute Encephalitis. *Neurology.* 2013;81:793-800.

Hosmane S, Tegenge M, Rajbhandari L, Uapinyoying P, Kumar N, Thakor N, Venkatesan A. Toll/Interleukin-1 Receptor Domain-Containing Adapter Inducing Interferon-B mediates microglial phagocytosis of degenerating axons. *Journal of Neuroscience* 2012;32:7745-7757.

Honors/Awards:

2014 Keynote Speaker, Encephalitis Society Annual Meeting
2017 Keynote Speaker, Univ. of Sydney Marie Basher Institute CNS Infections/Immunity/Inflammation Symposium
2017 Frank R. Ford Teaching Award, Johns Hopkins Neurology

Jerrold L. Vitek, M.D., Ph.D.
McKnight Professor and Chair of Neurology Department, University of Minnesota Medical School, Minneapolis, MN

My research involves close collaboration with other neurologists, neuroscientists, neurosurgeons, neuroimaging and biomedical engineers. The roots of my collaborative, multi-disciplinary approach to research originated at Hopkins, where I trained with Mahlon R DeLong doings systems neurophysiology in nonhuman primates. This work evolved into intraoperative mapping of deep brain structures with both Dr. DeLong and Dr. Fred Lenz in the neurosurgery department at JHH, which I have continued to this day. My work has provided new insight into the pathophysiology of movement disorders, the therapeutic mechanisms of DBS and contributed to the application of DBS to other neurological and psychiatric disorders. I am the Chair of the Neurology Department and the Director of the Neuromodulation Research Program at the University of Minnesota. I have held faculty positions at The Johns Hopkins University and Emory University, where I assisted in the development of the functional neurology/neurosurgery programs and conducted research on the pathophysiology of movement disorders and mechanism(s) underlying the beneficial effects of DBS. I also previously served as the Co-Director of the Center for Neurological Restoration and Center Director of the Neuromodulation Research Center Director at the Lerner Research Institute of the Cleveland Clinic Foundation developing functional surgery and deep brain stimulation (DBS) techniques for the treatment of neurological disease.

Selected Publications:

Vitek JL, Bakay RAE, Freeman A, Evatt ML, Green J, McDonald WM, Haber M, Barnhart H, Wahlay N, Triche S, Mewes K, Chockkan V, Zhang J, DeLong MR. Randomized trial of pallidotomy versus medical therapy for Parkinson's disease. Ann Neurol. 53:558-569, 2003.

Hashimoto, T., Elder, C. M., Okun, M. S., Patrick, S. K., & Vitek, J. L. (2003). Stimulation of the subthalamic nucleus changes the firing pattern of pallidal neurons. J Neuroscience, 23(5), 1916-1923.

McIntyre, C. C., Savasta, M., Kerkerian-Le Goff, L., & Vitek, J. L. (2004). Uncovering the mechanism (s) of action of deep brain stimulation: activation, inhibition, or both. Clinical Neurophysiology, 115(6), 1239-1248.

Vitek, J. L., Chockkan, V., Zhang, J. Y., Kaneoke, Y., Evatt, M., DeLong, M. R., ... & Bakay, R. A. (1999). Neuronal activity in the basal ganglia in patients with generalized dystonia and hemiballismus. Annals of Neurology, 46(1), 22-35.

Vitek, J. L. (2002). Mechanisms of deep brain stimulation: excitation or inhibition. Movement Disorders. 17(S3), S69-S72.

Wang J, Johnson LA, Jensen AL, Baker KB, Vitek JL. Network wide oscillations in the parkinsonian state: Alterations in neuronal activities occur in the premotor cortex in parkinsonian non-human primates. J Neurophysiol. 2017;:jn.00011.2017.

Xu W, Russo GS, Hashimoto T, Zhang J, Vitek JL. Subthalamic nucleus stimulation modulates thalamic neuronal activity. J Neurosci. 2008;28(46):11916-24

Honors/Awards:

Academy of Medical Device Innovators, Institute for Engineering in Medicine, 2016
Javits Neuroscience Investigator Award, National Institute of Neurological Disorders and Stroke, 2018

Angela Wabulya MB ChB
Assistant Professor of Neurology
University of North Carolina at Chapel Hill.

During residency training (2009-2012), and clinical neurophysiology/epilepsy fellowship (2012-2014) at Johns Hopkins, I had the pleasure of learning from/with and working amidst inspirational colleagues and faculty. Having had my initial medical degree in Africa, I dreamt of what medicine in the "first world" would be like. Johns Hopkins not only enabled me to realize this dream but inspired me to strive for excellent patient care, a key principle as a clinician. The standard that was set at Hopkins is a constant reminder to provide the very best patient care, embrace and implement medical changes with as well as set a corner stone for my career growth. The Clinical Investigation training at Hopkins (2011-2012), provided me the needed skill set and confidence to work with clinical researchers committed to the advancement of epilepsy management; and while modest at this time, I anticipate that my clinical and research career will continue to grow and hopefully truly reflect the excellence Hopkins represents. Finally, the time at Hopkins facilitated continued collaborations with far reaching effects here in the US and across the Atlantic- Johns Hopkins Neurology family- Thank you!

Selected Publications:

Fletcher A, Sims-Williams H, Wabulya A, Boling W. Stigma and quality of life at long-term Follow-up after surgery for epilepsy in Uganda. Epilepsy Behav. 2015 Nov; 52(Pt A):128-31.

Wabulya A, Lesser RP, Llinas R, and Kaplan PW. Electroencephalography and Brain MRI Patterns in Encephalopathy; in press: Clinical EEG and Neuroscience, 2015

Probasco JC, Benavides DR, Ciarallo A, Sanin BW, Wabulya A, Bergey GK1, Kaplan PW. Electroencephalographs and fluorodeoxyglucose-positron emission tomography correlates in anti- N-methyl-d- aspartate receptor autoimmune encephalitis. Epilepsy Behav Case Rep. 2014 Oct 10; 2:174-8

Wabulya A, Update on Perampanel: A Novel Antiepileptic Drug for Partial-Onset Seizures; The Neurology report- Winter, 2014

Boling W, Palade A, Wabulya A, Longoni N, Warf B, Nestor S, Alpitsis R, Bittar R, Howard C, Andermann F., Surgery for pharmacoresistant epilepsy in the developing world: A pilot study, Epilepsia. 2009May; 50(5):1256- 61. Epub 2009 Jan 19

Mark Walker, M.D.
Associate Professor of Neurology
Case Western Reserve University
Cleveland, OH

I was first introduced to the Department of Neurology at Johns Hopkins as a third-year medical student almost 30 years ago. An elective rotation with Dr. Justin McArthur confirmed my intent to pursue neurology as a career. After residency, I returned to JHU as a post-doctoral fellow and then junior faculty member in the laboratory of my clinical and scientific mentor, Dr. David Zee. I found the JHU Department of Neurology to be an ideal place to begin an academic career. Its strengths were mirrored in Dr. Zee's own laboratory – a place where intense scientific curiosity could be paired with compassionate care of patients with neurological disease; where both professionalism and excellence were highly valued; and where mentorship meant collaboration, advocacy, and real support of career development. David Zee taught me how to take interesting clinical observations into the laboratory and to apply rigorous experimental and modeling tools to elucidate underlying mechanisms and to improve diagnosis and treatment. At Hopkins, my research focused on the effects of cerebellar disease on eye movements and vestibular reflexes. This work laid the foundation for ongoing study of vestibular physiology and rehabilitation.

Representative Publications

Walker MF and Zee DS. The effect of hyperventilation on downbeat nystagmus in cerebellar disorders. *Neurology* 53 (7):1576-1579, 1999.

Walker MF and Zee DS. Cerebellar disease alters the axis of the high-acceleration vestibulo-ocular reflex. *J Neurophysiol* 94:3417-29, 2005.

Walker MF, Tian J, and Zee DS. Kinematics of the rotational vestibulo-ocular reflex: role of the cerebellum. *J Neurophysiol* 98:295-302, 2007.

Walker MF, Tian J, Shan X, Tamargo RJ, Ying H, and Zee DS. Lesions of the cerebellar nodulus and uvula impair downward pursuit. *J Neurophysiol* 100:1813-23, 2008.

Walker MF, Tian J, Shan X, Tamargo RJ, Ying H, Zee DS. The cerebellar nodulus/uvula integrates otolith signals for the translational vestibulo-ocular reflex. *PLoS ONE* 5(11): e13981. doi:10.1371/journal.pone.0013981, 2010.

Peter J. Whitehouse, MA (bioethics), MD-PhD
Professor of Neurology (and Psychiatry, Neuroscience, Cognitive Science, and Organizational Behavior), Case Western Reserve University, Cleveland Ohio; Professor of Medicine (Neurology) University of Toronto

After undergraduate work in the now Bloomberg School of Public health and obtaining my MD-PhD at Johns Hopkins with field work at Harvard and Boston University, I was fortunate to complete a Neurology Residency followed by a Fellowship in Neuroscience and Psychiatry and an initial faculty appointment at John Hopkins. My early work at Hopkins with a team led by Don Price and others involved studies of the basal forebrain and other subcortical nuclei in Alzheimers, Parkinsons and Huntingtons Disease followed by discoveries of associated neurotransmitter losses in the same conditions and others. I was then generously recruited to Case Western Reserve University to start what became the second best funded Alzheimer's program in the US with both NIMH and NIA Center designations. I directed the center for ten years and worked internationally to develop the first generation Alzheimer drugs. After further training in bioethics and organizational development, I became critical of overly reductionist biomedical conceptions of dementia. I assumed leadership positions in geriatrics, ethics, and then public health. In 2000 my wife (also a Hopkins graduate) I, and others founded the world's first public intergenerational schools serving inner city Cleveland children and elders, some with cognitive impairment. Currently I am focusing on prevention and health consequences of environmental deterioration, such as pollution and climate change, using for me a new set of tools from the arts and humanities, including narrative, history, photography, videography, music, dance, and performance art (my character Sylvanus is a metaphorical transdisciplinary Tree Doctor). I remain a scientist as well but a skeptic of scientism and a critic of neoliberalism.

Selected Articles (recent first)

Whitehouse PJ, Vella Burrows T, Stephenson D. Global perspectives on dementia and art: An international discussion about changing public health policy. Dementia (London). 2018;17(6):785-797.

Whitehouse PJ. InterWell: an integrated school-based primary care model. London J Prim Care (Abingdon). 2013;5(2):83-87.

Whitehouse PJ, Gaines AD, Lindstrom H, Graham JE. Anthropological contributions to the understanding of age-related cognitive impairment. Lancet Neurol. 2005;4(5):320-326.

Whitehouse PJ. The rebirth of bioethics: extending the original formulations of Van Rensselaer Potter. Am J Bioeth. 2003;3(4):W26-W31.

Whitehouse PJ, Martino AM, Wagster MV, et al. Reductions in [3H]nicotinic acetylcholine binding in Alzheimer's disease and Parkinson's disease: an autoradiographic study. Neurology. 1988;38(5):720-723.

Whitehouse PJ. The concept of subcortical and cortical dementia: another look. Ann Neurol. 1986;19(1):1-6.

Whitehouse PJ, Price DL, Clark AW, Coyle JT, DeLong MR. Alzheimer disease: evidence for selective loss of cholinergic neurons in the nucleus basalis. Ann Neurol. 1981;10(2):122-126.

Whitehouse PJ. Imagery and verbal encoding in left and right hemisphere damaged patients. Brain Lang. 1981;14(2):315-332.

Honors

Rachel Carson Sense of Wonder multimedia awards, 2009, 2013;
Eisner Prize for advocacy of intergenerational programs (shared with Catherine Whitehouse) 2014;
Monster in the Mind – starred and consulted in a documentary about Alzheimers which won several international film awards (I consulted and was a featured scientist) 2017

Jing Xu, Ph.D.
Assistant Research Scientist, The Malone Center for Engineering in Healthcare, Whiting School of Engineering, Johns Hopkins University, Baltimore, Maryland, MD

My work at the Johns Hopkins Neurology Department as a post-doc fellow has laid the foundation for my career in neurorehabilitation. I became the lead research fellow in 2011 for the Study of Motor Learning and Acute Recovery Time Course in Stroke (SMARTS), under the guidance of Dr. John W. Krakauer. We tracked over 50 patients at three centers (Johns Hopkins Hospital, Columbia University, and University Hospital of Zurich) for one-year period from acute to chronic stages, using motor kinnect/kinematics behavioral and neurological assessments, brain stimulation (TMS), and imaging techniques (fMRI, DTI, and ASL). The study was fruitful, with multiple research articles coming out. Our TMS results challenge the currently dominant theory of inter- hemispheric competition model for motor recovery. For the first time in humans, our kinematic and imaging results show two critical components of the hand function, strength and dexterous finger control, recover separately, and that dexterity is the most difficult to regain. Based on these findings, my colleague Kevin Olds and I have developed a new device, using highly sensitive force sensors to detect finger forces in 3D, in order to deliver portable efficient assessment and therapy for dexterity recovery to the most impaired patients at their bedside.

Selected Publications:

Xu, J., Branscheidt*, M., Schambra, HM., Kim, N., Steiner L., Kitago, T., Luft, A.R., Diedrichsen, J., Krakauer J.W., Celnik, P.A. (under review). Rethinking interhemispheric imbalance as a target for neurorehabilitation. *Annals of Neurology.*

Xu, J., Ejaz*, N., Hertler, B., Branscheidt, M., Widmer, M., Faria, A.F., Harran, M., Cortes, J.C., Kim, N., Celnik, P.A., Kitago, T., Luft, A.R., Krakauer J.W., Diedrichsen, J. (2017). Separable systems for recovery of finger strength and control after stroke. *Journal of Neurophysiology.*

Ejaz, N., Xu, J., Hertler, B., Branscheidt, M., Widmer, M., Kim, N., Harran, M., Cortes, J.C., Celnik, P.A., Kitago, T., Luft, A.R., Krakauer J.W., Diedrichsen, J. (2018). Evidence for subcortical origin of mirror movements: a longitudinal stroke study. *Brain*.

Cortes, J.C., Goldsmith J., Harran, M.D., Xu, J., Kim, N., Luft, A.R., Celnik, P., Krakauer, J.W., Kitago, T. (2017). A short and distinct time window for recovery of arm motor control early after stroke revealed with a global measure of trajectory kinematics. *Neurorehabilitation and Neural Repair*.

David S. Zee, MD
Professor, Department of Neurology, Johns Hopkins Hospital, Baltimore MD 21287

I was a resident in neurology in 1970-73 as a member of the first full complement of trainees in Guy's new department at Johns Hopkins. My training at Johns Hopkins laid the groundwork for my career as a physician-scientist and ultimately also as an educator, largely through my exposure to my clinician mentors (my co-residents in that first class and especially Jack Griffin and Larry Davis with whom I worked the most), my scientific mentor (David A Robinson at the Wilmer Eye Institute) and my academic mentors (Guy McKhann and the faculty he brought to Hopkins). Eye movements, vertigo and ataxia have been my clinical and scientific interests ever since. The guiding principles I learned as a resident included 1) ameliorating disease of our patients is always the ultimate focus of our research, 2) there is always something one can do to improve a patient's lot, and 3) unselfishly giving a boost to those early in their careers is one of the most rewarding services we can do as mentors. I will always be indebted to my chief residents, Gihan Tennekoon and Alan Percy who taught me so much about all aspects of life, personal and professional. I am also grateful for the opportunity to have worked with so many students, fellows, and colleagues who have come to our laboratory from many parts of the world. They are listed at this website: https://vorlab.jhu.edu/

Important Publications:

Zee, D.S., Friendlich, A. and Robinson, D.A., The mechanism of downbeat nystagmus. Arch. Neurol. 30:227-237, 1974.

Zee, D.S., Optican, L., Cook, J.D., Robinson, D.A. and Engel, W.K., Slow saccades in spinocerebellar degeneration. Arch. Neurol., 33:243-251, 1976

Zee, D.S., Yamazaki, A., Butler, P.H. and Gücer, G., Effects of ablation of the flocculus and paraflocculus on eye movements in primate. J. Neurophysiol., 46:878-899, 1981

Leigh, RJ, Zee, DS, The Neurology of Eye Movements, Fifth edition, Oxford University Press, New York, 2015.

Jareonsettasin, P, Otero-Millan, J, Ward, BK, Roberts, DA, Schubert, MC, Zee, DS, Sustained magnetic field stimulation of the labyrinth reveals multiple time constants of vestibular set-point (bias) adaptation, Curr Biology, 26:1359-65, 2016.

Zee, DS, Jareonsettasin, P, Leigh, RJ, Ocular stability and set-point adaptation, Phil. Trans. R. Soc. B, published online, 372:1718, 2017.

Zee, DS, A neurologist and ataxia: Using eye movements to learn about the cerebellum, Cerebellum and Ataxias, published online 2018

Honors:

Endowed Professorship in my name (2018)

Johns Hopkins (Abeloff) Lifetime Achievement Award in Medical and Biomedical Education, 2018.

Barany Gold Medal from the University of Uppsala for the most outstanding contribution to vestibular science in prior five years (2018)

Andrew W. Zimmerman, MD
Professor of Pediatrics and Neurology
UMass Memorial Medical School
Worcester, MA

Over the 40 years since neurology training at Johns Hopkins, my appreciation has increased for the faculty and the culture they developed for thoughtful patient care and scholarship. The spark and drive of our mentors inspired my own commitment to the field. This led me on a circular route to UConn, to practice in Tennessee, back to Kennedy Krieger and Hopkins, then MGH and finally, UMass. Along the way I have come to appreciate first-hand the value of having pediatric neurology training incorporated within the Department and closely associated with our adult colleagues, as at Hopkins, which emphasizes the fundamentals of neurology and neuroscience throughout the lifespan. In practice, I cared for adults as well as children, and became interested in autism (which was "discovered" at Hopkins by Leo Kanner, literally across the wall in child psychiatry, but I rarely saw it!). With colleagues I have investigated immunological and metabolic features of autism. This led to collaboration with Paul Talalay and colleagues at Hopkins on studies of sulforaphane in the treatment and search for biomarkers in autism. Today the neuroscience of autism is foremost in this lifelong disorder, which underscores the continuum between pediatric and adult neurology.

Selected Publications:

Singh K, Connors SL, Macklin EA, Smith KD, Fahey JW, Talalay P, Zimmerman AW. Sulforaphane treatment of autism spectrum disorder (ASD). Proc Natl Acad Sci USA. 2014 Oct 28;111(43):15550-5. PubMed PMID: 25313065.

Curran LK, Newschaffer CJ, Lee LC, Crawford SO, Johnston MV, Zimmerman AW.Behaviors associated with fever in children with autism spectrum disorders.Pediatrics. 2007 Dec;120(6):e1386-92. PubMed PMID: 18055656.

Singer HS, Morris CM, Gause CD, Gillin PK, Crawford S, Zimmerman AW. Antibodies against fetal brain in sera of mothers with autistic children. JNeuroimmunol. 2008 Feb;194(1-2):165-72. PubMed PMID: 18093664.

Lee LC, Zachary AA, Leffell MS, Newschaffer CJ, Matteson KJ, Tyler JD, Zimmerman AW. HLA-DR4 in families with autism. Pediatr Neurol. 2006 Nov;35(5):303-7. PubMed PMID: 17074598.

Vargas DL, Nascimbene C, Krishnan C, Zimmerman AW, Pardo CA. Neuroglial

activation and neuroinflammation in the brain of patients with autism. Ann Neurol. 2005 Jan;57(1):67-81. PubMed PMID: 15546155.

Comi AM, Zimmerman AW, Frye VH, Law PA, Peeden JN. Familial clustering of autoimmune disorders and evaluation of medical risk factors in autism. J Child Neurol. 1999 Jun;14(6):388-94. PubMed PMID: 10385847.

Zimmerman AW, Hambidge KM, Lepow ML, Greenberg RD, Stover ML, Casey CE.Acrodermatitis in breast-fed premature infants: evidence for a defect of mammary zinc secretion. Pediatrics. 1982 Feb;69(2):176-83. PubMed PMID: 7199132.

Honors/Awards:

Certificate of Excellence in Teaching, Johns Hopkins University School of Medicine, 1977
Distinguished Service Award, East Tennessee Chapter, Autism Society of America, 1990.
Distinguished Service Award, Baltimore City Medical Society, 2007.