Department of Neurology

Neurology concerns itself with the diseases of the brain, spinal cord, peripheral nerves and muscles. An introduction to the anatomy and physiology of the nervous system is presented in the first-year neuroscience course by faculty from the Department of Neuroscience (http://neurosci.wustl.edu), with participation of faculty from the Department of Neurology (http://neuro.wustl.edu). A first-year selective titled Clinical Correlations in Neurosciences (FYSelect 5017) is available, which is an opportunity for interested students to shadow physicians in neuro-related fields and to attend basic science or clinical conferences. During the second year, the Department of Neurology presents the course Diseases of the Nervous System (Neur 632) in conjunction with the departments of Pathology & Immunology (http://pathology.wustl.edu), Neurosurgery (http://neurosurgery.wustl.edu) and Ophthalmology & Visual Sciences (http://ophthalmology.wustl.edu). The course emphasizes the pathophysiology, pathology, clinical manifestations and treatment of the major neurological and neurosurgical diseases. The department also participates in the Practice of Medicine course, providing lectures, demonstrations and teaching exercises with patients in neurological physical diagnosis.

For more information about the Department of Neurology and its 13 divisions, please visit the department website.

Website: https://neuro.wustl.edu/education

Degrees & Requirements

While the Department of Neurology does not offer its own degree, some of the department’s courses are open to students in the MD and MSTP (MD/PhD) programs. Further information about the MD and MSTP degrees can be found in the Degrees & Programs Offered (http://bulletin.wustl.edu/medicine/degrees) section of this Bulletin.

Research

M35 Neurol 900

During the fourth year, opportunities exist for many varieties of advanced clinical or research experience.

Beau Ances, MD
Taylor Avenue Building Extension, 2nd Floor
Phone: 314-747-8423

Neuroimaging of neurodegenerative disorders. Students can work in a neuroimaging laboratory that is focused on the translational discovery of neuroimaging biomarkers for neurodegenerative diseases. The laboratory focuses on the pathogenesis of Alzheimer’s disease and HIV-associated neurocognitive disorders. We are investigating the effects of neurodegenerative diseases on the brain network level using functional (blood oxygen level dependent imaging, arterial spin labeling), structural (volumetrics, diffusion tensor imaging), and metabolic (PET amyloid and tau) methods. Multiple projects that involve bioengineering, neuroimaging and infectious disease are available, depending on the interest of the student.

Randall Bateman, MD
Biotechnology Center, Room 304
Phone: 314-747-7066

Central nervous system protein metabolism in aging and dementia. This research elective will expose the student to translational research in the study of Alzheimer’s disease and other neurodegenerative diseases. The student will participate in multiple areas of the research, including participant recruitment, consent, enrollment and admission to a research hospital unit. Lumbar puncture for cerebrospinal fluid sample collection, blood collection and intravenous labeling methods will be demonstrated and taught. The student will participate in sample analysis, including processing for mass spectrometry quantitation, enzyme-linked immunosorbent assay and Western gel methods. Quantitation, analysis and modeling of the data will be taught in the context of data interpretation and study design.

Anne H. Cross, MD, and Laura Piccio, MD, PhD
McMillan, 3rd Floor
Phone: 314-747-4591 or 314-747-0405

Understanding interactions of the immune system with the central nervous system as it relates to multiple sclerosis and other neuroimmunological disorders. Our goal is to understand how immune cells cross the blood-brain barrier and initiate the cascade of events that leads to the lesions of multiple sclerosis. We are also funded to study the effects of diet and adipokines on neuroinflammation. Depending on the time commitment of the student and their individual interests and goals, they will either assist with ongoing projects or be given a laboratory project on which to work. Projects may involve animal models of multiple sclerosis, cell culture or studies of human samples (cerebrospinal fluid, blood or autopsied specimens). Interested students should contact Dr. Cross (crossa@neuro.wustl.edu) or Dr. Piccio (picciol@neuro.wustl.edu) several weeks in advance before signing up for this research to allow for sufficient planning.

Robert T. Naismith, MD
McMillan, Room 310B
Phone: 314-747-0432

Clinical imaging research in multiple sclerosis. The student will learn about neuroimaging, imaging analyses, data collection, data management and clinical study endpoints in multiple sclerosis. They will observe patient participants undergoing a detailed evaluation of disability measures, such as ambulation,
symptom scales, cognition, vision, upper extremity function, and so on. They will witness the entire process of image acquisition, processing, analysis and data extraction. They will have the opportunity to interact with many people who are vital to the research, including research coordinators, imaging technologists, imaging physicists/chemists and specialized research clinicians (i.e., neurocognitive and physical therapy research specialists). The student will assist with hands-on clinical investigative research. They will gain an excellent appreciation of multiple sclerosis, from its pathophysiology within the central nervous system to how it affects the neurological function of individuals. Through detailed and quantitative imaging analysis, the student will become very adept at analyzing brain MRI scans. They will mark and track lesions to determine their effects on clinical function and learn to identify normal-appearing white matter, cortex and gray-matter structures. They will become familiar with Amira Imaging Analysis Software, SPSS Statistical Analysis Software, SIENA Volume Analysis Software and Matlab Imaging Analysis Software.

Steven E. Petersen, PhD
East Building, Room 2108
Phone: 314-362-3319

This lab is interested in brain organization and function, particularly for language, attention and memory. Our main approach to these issues is through functional MRI and large-scale network analysis.

Joel S. Perlmutter, MD
East Building, 2nd Floor
Phone: 314-362-6026

Pathophysiology of movement disorders. The lab is primarily interested in the etiology, pathophysiology and treatment of basal ganglia disorders. We have several studies of Parkinson disease (PD). We investigate mechanisms of action of deep brain stimulation, which is a dramatic new treatment. These studies combine PET, cognitive testing and quantified measures of movement. We also test new drugs that might rescue injured nigrostriatal neurons (a model of PD). For these, we use PET to measure dopamine pathways and also to quantify motor behavior. We also have an active program developing and validating neuroimaging biomarkers for PD and for determining the integrity of the nigrostriatal pathway that includes studies in human and animal models of PD. We have an active program that combines a variety of approaches to developing biomarkers and investigating the pathophysiology of dementia associated with PD. We use PET to measure radionuclide binding and sensorimotor processing in dystonia. We developed a new animal model of dystonia to investigate pharmacologic and physiologic changes. We use PET to investigate drug-mediated pathways in the brain and to parse out the effects of selective dopaminergic agonists. We are also working to develop MR-based methods including diffusion tensor imaging and resting-state functional connectivity to investigate the brain mechanisms underlying PD and dystonia.

Brad A. Racette, MD
McMillan, 9th Floor
Phone: 314-362-5291

Our lab is primarily interested in environmental risk factors associated with Parkinson's disease. We use a variety of techniques to study these risk factors, including traditional field epidemiology, in which we evaluate workers exposed to metals in the United States and residents living near a smelter in South Africa; neuroimaging, in which we study the pathophysiology of toxin-mediated parkinsonism; geographic information systems research, in which we associate environmental toxin exposures with the incidence and prevalence of Parkinson's disease in the United States and Finland; and neuropathologic studies, in which we evaluate manganese-exposed workers from South Africa. There are numerous opportunities available for students to be involved with any of these projects. Students will receive some clinical exposure as well to familiarize them with pertinent clinical syndromes.

Marcus E. Raichle, MD
East Building, 2nd Floor
Phone: 314-362-6907

This lab investigates in vivo brain hemodynamic, metabolic and functional studies of human cognition and emotion using cyclotron-produced isotopes and PET as well as fMRI in humans. Refer also to the listing on this page for Steven E. Petersen, PhD.

Gregory Wu, MD, PhD
McMillan, 3rd Floor
Phone: 314-362-3293

Understanding how immune responses are generated that target the central nervous system. Specifically, this lab studies antigen-presenting cell contributions to autoimmune animal models of multiple sclerosis. Our goal is to understand what cellular interactions are critical to the development of immune-mediated demyelination.

Faculty

Department Chair

David Holtzman, MD

Visit our website for more information about our faculty (https://neuro.wustl.edu/Faculty) and their appointments.
A

Aninda Bhat Acharya, MD, MD1
Instructor in Clinical Neurology (primary appointment)
BS University of Kansas 1992
MD University of Kansas 1996
MD1 University of Kansas 1996
Muhammad Taher Al-Lozi, MD, MS
Professor of Neurology (primary appointment)
BA University of Panjab 1976
MD University of Panjab 1980
MS University of Jordan 1985
Isabel Alfradique-Dunham, MD
Assistant Professor of Neurology (Pending Executive Faculty Approval) (primary appointment)
MD Universidade Federal Fluminens 2008
Denis Ian Altman, MBBCH
Associate Professor of Clinical Neurology (primary appointment)
Assistant Professor of Clinical Pediatrics
MBBCH University of the Witwatersra 1975
Lizette Alvarez-Montero, MD
Instructor in Clinical Neurology (primary appointment)
BA Washington Univ in St. Louis 1987
MD School Not Listed 1991
Korina Anastasaki, PHD, MS
Instructor in Neurology (Pending Dean's Approval) (primary appointment)
BS University of York 2006
PHD Edinburgh University 2011
MS Edinburgh University 2007
Beau Mark Ances, MS, MD, PHD
Daniel J Brennan MD Professor of Neurology (primary appointment)
Professor of Biomedical Engineering
Professor of Radiology
MS London School of Economics 1994
BS University of Pennsylvania 1993
MD University of Pennsylvania 2001
PHD University of Pennsylvania 2000
Gabriel C Araujo, MS, BA1, PHD
Instructor in Clinical Neurology (primary appointment)
BA California State University 2004
MS Washington Univ in St. Louis 2007
BA1 California State University 2004
PHD Washington Univ in St. Louis 2011
Bhooma R. Aravamuthan, BS1, PHD, MD
Assistant Professor of Neurology (primary appointment)
Assistant Professor of Pediatrics
BS1 Michigan State University 2005
PHD Oxford University 2008
BS Michigan State University 2005

B

Baback Arshi, MA, MD
Assistant Professor of Neurology (primary appointment)
MA Georgetown University 2006
MD Saint Louis University 2010
BA University of Southern Calif 2004
Andrew J Aschenbrenner, MS, PHD
Instructor in Neurology (Pending Dean's Approval) (primary appointment)
MS Washington Univ in St. Louis 2013
PHD Washington Univ in St. Louis 2016
BS University of Kansas 2010
Sylvia Awadalla, MD
Professor of Neurology (primary appointment)
MD Ohio State University 1985

Baback Arshi, MA, MD
Assistant Professor of Neurology (primary appointment)
MA Georgetown University 2006
MD Saint Louis University 2010
BA University of Southern Calif 2004

Robert H Baloh, MD1, MD, PHD
Adjunct Assistant Professor of Neurology (primary appointment)
BS Brown University 1995
MD1 Washington Univ in St. Louis 2001
MD Washington Univ in St. Louis 2001
PHD Washington Univ in St. Louis 2005
Nicolas Regis Barthelemy, MS, PHD
Instructor in Neurology (Pending Dean's Approval) (primary appointment)
MS Paris Sud University 2007
PHD Strasbourg University 2011
BS Paris Sud University 2005
Randall John Bateman, BS1, MD
Professor of Neurology (primary appointment)
Charles F and Joanne Knight Distinguished Professor of Neurology
BS1 Washington Univ in St. Louis 1995
MD Case Western Reserve Univ 2000
BS Washington Univ in St. Louis 1995
Sarah Louise Bauer Huang, MD, PHD
Assistant Professor of Neurology (primary appointment)
Assistant Professor of Pediatrics
MD Stanford University 2012
PHD University of CA San Francisco 2006
BS Duke University 2000
Max Prely Benzaquen
Instructor in Clinical Neurology (primary appointment)
Mary Ellen Bertrand, MD  
Associate Professor of Neurology (primary appointment)  
Associate Professor of Pediatrics  
MD Southern Illinois University 1993  
BS McKendree College 1987  

Alan J Birtwistle  
Assistant Professor of Clinical Neurology (primary appointment)  

Lynn Bennett Blackburn, MA, PHD  
Assistant Professor of Clinical Neurology (primary appointment)  
MA Indiana University Bloomington 1970  
PHD Indiana University Bloomington 1972  
BS Univ of Wisconsin Madison 1968  

James Scott Bonner, MD  
Instructor in Clinical Neurology (primary appointment)  

Christopher C. Bosworth, PHD  
Assistant Professor of Clinical Neurology (primary appointment)  
BA Southern Illinois University 2002  
PHD University of Texas Southwest 2014  

Janice E Brunstrom-Hernandez, MD  
Adjunct Associate Professor of Neurology (primary appointment)  
MD University of Virginia 1987  

Robert Charles Bucelli, MD, PHD  
Associate Professor of Neurology (primary appointment)  
MD State Univ of NY Buffalo 2007  
PHD State Univ of NY Buffalo 2007  
BS Canisius College 2001  

Michelle A. Burack, MD, PHD  
Adjunct Instructor in Neurology (primary appointment)  
MD Washington Univ in St. Louis 2002  
BS Duke University 1990  
PHD University of Virginia 2000  

Garrett C Burris, MD  
Associate Professor of Clinical Neurology (primary appointment)  
Associate Professor of Clinical Pediatrics  
MD Saint Louis University 1968  
BS School Not Listed 1964  

C  

David J Callahan, MD  
Professor of Neurology (primary appointment)  
BS University of Notre Dame 1982  
MD Washington Univ in St. Louis 1986  

Alejandra Camacho-Soto, MD  
Assistant Professor of Neurology (primary appointment)  
BA Georgetown University 2005  
MD University of Pittsburgh 2011  

Meghan Clark Campbell, PHD  
Associate Professor of Neurology (primary appointment)  

Associate Professor of Radiology  
BS University of Illinois 1999  
PHD Indiana State University 2004  

Russell C. Cantrell, MD  
Instructor in Clinical Neurology (primary appointment)  
BS School Not Listed 1985  
MD University of Tennessee 1989  

David A Carpenter, MD  
Professor of Neurology (primary appointment)  
MD Washington Univ in St. Louis 1983  
BS Amherst College 1979  

Alexandre Carter, PHD, MD  
Associate Professor of Neurology (primary appointment)  
Associate Professor of Occupational Therapy  
BS Brandeis University 1991  
PHD Harvard University 2003  
MD Harvard University 2003  

Salim Chahin, MD, MS  
Assistant Professor of Neurology (primary appointment)  
MD Damascus University 2004  
MS University of Pennsylvania 2013  

Yasheng Chen, MA, PHD  
Assistant Professor of Neurology (primary appointment)  
MA Washington Univ in St. Louis 2002  
PHD Washington Univ in St. Louis 2002  
BA Tianjin University 1993  

Luqi Chi, MA, MD  
Associate Professor of Neurology (primary appointment)  
MA University of Pennsylvania 2009  
MD Huabei Medical College for Coa 1984  

John R. Cirrito, PHD  
Associate Professor of Neurology (primary appointment)  
BA Boston College 1998  
PHD Washington Univ in St. Louis 2004  

David B Clifford, MD  
Melba and Forest Seay Professor of Clinical Neuropharmacology in Neurology (primary appointment)  
Professor of Medicine  
BA Southwestern University 1971  
MD Washington Univ in St. Louis 1975  

Maurizio Corbetta, MD  
Norman J. Stupp Professor of Neurology (primary appointment)  
Associate Professor of Psychological & Brain Sciences  
Professor of Neuroscience  
Professor of Radiology  
MD University of Pavia 1985  

Susan R Criswell, MD  
Associate Professor of Neurology (primary appointment)  
BS University of Nebraska 1997
MD University of Nebraska 2001

**Dorothy Anne Cross, MD**  
Professor of Neurology (primary appointment)  
BS University of South Alabama 1976  
MD University of Alabama 1980

**Nicole Cruz**  
Instructor in Clinical Neurology (primary appointment)

**Rachel S Darken, MD, PHD**  
Associate Professor of Neurology (primary appointment)  
BA University of Texas Austin 1996  
MD Cornell University 2004  
PHD Cornell University 2003

**Albert Augustus Davis, MD, PHD**  
Assistant Professor of Neurology (primary appointment)  
BS Emory University 2002  
MD Vanderbilt University 2011  
PHD Emory University 2009

**Brian Keith Day, PHD, MD**  
Assistant Professor of Neurology (primary appointment)  
BS Harvard University 1997  
PHD University of Kentucky 2005  
MD University of Kentucky 2007

**Gregory Scott Day, MD, MS**  
Assistant Professor of Neurology (primary appointment)  
BS Queen's University 2003  
MD Queen's University 2009  
MS Queen's University 2006

**Gabriela De Bruin, MD**  
Associate Professor of Neurology (primary appointment)  
MD Federal University of Ceara 2005

**Andrea Denny, JD, MSSW**  
Instructor in Neurology (primary appointment)  
BA University of Virginia 1990  
JD University of Texas Austin 1998  
MSSW University of Texas Austin 1993

**Amar Dhand, PHD, MD**  
Adjunct Assistant Professor of Neurology (primary appointment)  
PHD Oxford University 2006  
BS Dartmouth College 2001  
MD Harvard University 2008

**Rajat Dhar, MD**  
Associate Professor of Neurology (primary appointment)  
MD McMaster University 2000

**Marc I Diamond, MD**  
Adjunct Professor of Neurology (primary appointment)  
BS Princeton University 1987  
MD University of San Francisco 1993

**Kalen R Dionne**  
Instructor in Neurology (Pending Dean's Approval) (primary appointment)

**Michael N Diringer, MD, MA**  
Professor of Neurology (primary appointment)  
Professor of Anesthesiology  
Professor of Neurological Surgery  
Professor of Occupational Therapy  
BA State Univ of NY Stonybrook 1974  
MD University of Kentucky 1982  
MA University of Louisville 1978

**Jonathan Noel Dodd**  
Instructor in Clinical Neurology (primary appointment)

**Joseph M Dooley Jr, MD**  
Associate Professor of Clinical Neurology (primary appointment)  
BS Saint Louis University 1954  
MD Saint Louis University 1958

**Nico U. Dosenbach, MD, PHD**  
Assistant Professor of Neurology (primary appointment)  
Assistant Professor of Occupational Therapy  
Assistant Professor of Pediatrics  
Assistant Professor of Radiology  
MD Washington Univ in St. Louis 2008  
BA Columbia University 2000  
PHD Washington Univ in St. Louis 2008

**Alexander W Dromerick, MD**  
Adjunct Associate Professor of Neurology (primary appointment)  
Adjunct Associate Professor of Occupational Therapy  
Adjunct Associate Professor of Physical Therapy  
MD University of Maryland 1986  
BA University of Virginia 1980

**Casey Raymond Dunn, MD**  
Assistant Professor of Neurology (primary appointment)  
BS University of Notre Dame 2005  
MD Tulane University 2009

**Lawrence N Eisenman, PHD, MD**  
Professor of Neurology (primary appointment)  
BS Johns Hopkins University 1988  
PHD Northwestern University 1997  
MD Northwestern University 1997

**Juan Escandon, MD**  
Assistant Professor of Clinical Neurology (primary appointment)  
BS School Not Listed 1985  
MD School Not Listed 1989

**Eugene Evra, MD**  
Instructor in Clinical Neurology (primary appointment)  
MD Smolensk State Medical Academy 1996
Andrew Ross Findlay, MD  
Instructor in Neurology (Pending Dean's Approval) (primary appointment)  
BS University of CA Santa Barbara 2007  
MD University of CA Irvine 2013  

Julaine Marie Florence, DPT, MS  
Professor of Neurology (primary appointment)  
Professor of Physical Therapy  
BS Washington Univ in St. Louis 1975  
DPT Washington Univ in St. Louis 2002  
MS Washington Univ in St. Louis 1983  

Wing Man Fong, MA, PHD  
Instructor in Neurology (primary appointment)  
MA University of Hong Kong 2009  
PHD Illinois Institute of Technol 2015  
BS University of Nottingham 2005  

Andria L Ford, MD  
Associate Professor of Radiology  
MD University of Oklahoma 2002  
BS Duke University 1998  

Thomas Foutz  
Instructor in Neurology (Pending Dean's Approval) (primary appointment)  

Bennett David Frank, MD, PHD  
Instructor in Clinical Neurology (primary appointment)  
BA Washington Univ in St. Louis 1982  
MD Beaufort Technical College 1988  
PHD Beaufort Technical College 1987  

Robert P. Fucetola, MA, PHD  
Professor of Neurology (primary appointment)  
Adjunct Professor of Psychological & Brain Sciences  
MA Washington Univ in St. Louis 1993  
BA Washington Univ in St. Louis 1991  
PHD Washington Univ in St. Louis 1997  

Rafael Galindo, PHD, MD  
Assistant Professor of Neurology (primary appointment)  
BS University of New Mexico 1996  
PHD University of New Mexico 2005  
MD University of New Mexico 2007  

Gilbert Gallardo, MS, PHD, MS, PHD  
Assistant Professor of Neurology (primary appointment)  
BS University of Texas El Paso 1999  
MS Univ of Texas San Antonio 2002  
PHD University of Texas Southwest 2008  
BS University of Texas El Paso 1999  
MS Univ of Texas San Antonio 2002  

Stefanie Geisler, MD  
Assistant Professor of Neurology (primary appointment)  
MD Humboldt University 2001  

Nupur Ghoshal, PHD, MD  
Associate Professor of Neurology (primary appointment)  
Associate Professor of Psychiatry  
PHD Northwestern University Med 2001  
BA Iowa State University 1995  
MD Northwestern University Med 2003  

James Anthony Giles  
Instructor in Neurology (Pending Dean's Approval) (primary appointment)  

James M Goldring, PHD, MD  
Instructor in Clinical Neurology (primary appointment)  
PHD Washington Univ in St. Louis 1977  
BA Washington Univ in St. Louis 1971  
MD Washington Univ in St. Louis 1986  

Jennifer L. Griffith, PHD, MD  
Assistant Professor of Neurology (primary appointment)  
Assistant Professor of Pediatrics  
BS Indiana University Bloomington 2004  
PHD Washington Univ in St. Louis 2012  
MD Washington Univ in St. Louis 2012  
BA Indiana University Bloomington 2004  

Prateek Grover  
Assistant Professor of Neurology (Pending Executive Faculty Approval) (primary appointment)  

Royal Gene Grueneich, PHD  
Assistant Professor of Clinical Neurology (primary appointment)  
PHD University of Minnesota 1979  
BA School Not Listed 1973  

Rejean Michael Guerriero, MD  
Assistant Professor of Neurology (primary appointment)  
MD University of New England 2009  
BS Bates College 2001  

Kristin Guilliams, MD  
Assistant Professor of Neurology (primary appointment)  
Assistant Professor of Pediatrics  
MD University of Virginia 2006  
BS Furman University 2002  

Christina A. Gurnett, PHD, MD  
Professor of Neurology (primary appointment)  
Professor of Orthopaedic Surgery  
Professor of Pediatrics  
PHD University of Iowa 1998  
BS University of Notre Dame 1991  
MD University of Iowa 1998  

David H Gutmann, MS, MD, PHD
Donald O. Schnuck Family Professor of Neurology (primary appointment)
Professor of Genetics
Professor of Neurological Surgery
Professor of Pediatrics
MS Davenport University 1980
MD Davenport University 1986
BS Davenport University 1979
PHD Davenport University 1984

Joseph Hanaway, MD
Assistant Professor of Clinical Neurology (primary appointment)
BA McGill University 1956
MD McGill University 1960

Lisa Adel Harker
Instructor in Clinical Neurology (primary appointment)

Jason J Hassenstab, MS PSYC, B MUS, PHD
Associate Professor of Neurology (primary appointment)
Associate Professor of Psychological & Brain Sciences
MS PSYC Fordham University 2005
B MUS New York University 2002
PHD Fordham University 2009

J Michael Hatlelid, MD
Associate Professor of Clinical Neurology (primary appointment)
BA St Johns University 1970
MD Washington Univ in St. Louis 1977

Robert Edward Hogan III, MD
Professor of Neurology (primary appointment)
BA Augustana College 1985
MD University of MO Columbia 1989

Derek Lance Holder, MD, MS
Assistant Professor of Neurology (primary appointment)
MD CHICAGO MEDICAL SCHOOL 2012
BS Washington Univ in St. Louis 2007
MS Rosalind Franklin University 2008

David Michael Holtzman, MD
Andrew B. and Gretchen P. Jones Professor of Neurology (primary appointment)
Head of the Department of Neurology
Professor of Developmental Biology
BS Northwestern University 1983
MD Northwestern University 1985

Terri L Hosto, MSW, BSW
Assistant Professor of Neurology (primary appointment)
MSW University of Michigan 1986
BSW University of Illinois 1981

Chung Hsu, MD, PHD
Adjunct Professor of Neurology (primary appointment)
MD National Taiwan University 1970

PHD University of Virginia 1975
Thy N Huskey, MD
Professor of Neurology (primary appointment)
MD Northwestern University Med 1996
BS Northwestern University 1993

Krzysztof L Hyrc, MS, PHD
Associate Professor of Neurology (primary appointment)
MS Jagiellonian University 1981
PHD Jagiellonian University 1987

Jill Christine Isenberg, MS PSYC, PHD
Instructor in Clinical Neurology (primary appointment)

Sindhu Saji Jacob, MD
Assistant Professor of Neurology (primary appointment)
MD Kottayam Medical College 1994

Mark F Jacquin, PHD
Professor of Neurology (primary appointment)
PHD City University of New York 1980
BS Brandeis University 1975

Siddharth Vinod Jain, MD
Assistant Professor of Neurology (primary appointment)
Assistant Professor of Pediatrics
MD D.Y. Patil Medical College 2003

Laura Ann Jansen, PHD, MD
Associate Professor of Neurology (primary appointment)
Associate Professor of Pediatrics
MD D.Y. Patil Medical College 2003

Yo-El S Ju, MD
Associate Professor of Neurology (primary appointment)
BS Harvard University 2001
MD Columbia University 2005

Neringa Juknis, MD
Associate Professor of Neurology (primary appointment)
BA School Not Listed 1985
MD Kaunas Medical Institute 1989

Peter Kang, MD
Instructor in Neurology (primary appointment)
BS Geneseo College 2008
MD Univ of Pittsburgh Greensburg 2012

Richard T. Katz, MD, MA
Professor of Clinical Neurology (primary appointment)
MD Case Western Reserve Univ 1981
MA Cleveland Institute of Music 1979
BA University of Rochester 1977
Salah G. Keyrouz, MD
Associate Professor of Neurology (primary appointment)
Associate Professor of Neurological Surgery
MD Lebanese Univ Med Science 2000
Syed Ahmed Khader, MD
Instructor in Clinical Neurology (primary appointment)
MD University of Madras 1993
BS School Not Listed 1989
Paul Thomas Kotzbauer, PHD, MD
Professor of Neurology (primary appointment)
Professor of Developmental Biology
PHD Washington Univ in St. Louis 1997
MD Washington Univ in St. Louis 1997
BS Northwestern University 1989
Geraldine J. Kress, PHD
Assistant Professor of Neurology (primary appointment)
PHD Washington Univ in St. Louis 2009
Ashok Kumar, MD
Assistant Professor of Clinical Neurology (primary appointment)
MD Dow Medical College Karachi 1985
Terrance T. Kummer, PHD, MD
Assistant Professor of Neurology (primary appointment)
PHD Washington Univ in St. Louis 2006
MD Washington Univ in St. Louis 2006
BS University of Minnesota 1999

Eric Carl Landsness, BE, MD, PHD
Instructor in Neurology (Pending Dean's Approval) (primary appointment)
BE University of Washington 2003
MD University of Wisconsin-Madiso 2013
PHD University of Wisconsin-Madiso 2011
David Veloso Lardizabal, MD
Associate Professor in Neurology (primary appointment)
BS University of the Philippines 1987
MD CEBU Institute of Medicine 1991
Douglas P. Larsen, MD
Associate Professor of Neurology (primary appointment)
Associate Professor of Pediatrics
MD University of Utah 2003
BA Brigham Young University 1999
Jin-Moo Lee, PHD, MD
Norman J Stupp Professor of Neurology (primary appointment)
Professor of Radiology
BA Yale University 1989
PHD Cornell University 1992

MD Cornell University 1993
Walter Lemann III, MD
Associate Professor of Clinical Neurology (primary appointment)
MD Tulane University 1979
BS Yale University 1975
Alison M Leston, MD, PHD
Assistant Professor of Clinical Neurology (primary appointment)
BS University of Illinois 1990
MD Washington Univ in St. Louis 2001
PHD University of Chicago 2000
Mingjie Li, PHD, MD
Associate Professor of Neurology (primary appointment)
PHD Kochi Medical School 1989
MD Heilong jiang Coll of Trad Med 1983
Yan Li, PHD
Instructor in Neurology (primary appointment)
PHD University of Alabama 2017
BS Huazhong Agricultural U 2007
Amy K Licis, MD
Associate Professor of Neurology (primary appointment)
BS Rice University 2000
MD Washington Univ in St. Louis 2004
Matthew Chandler Lofotspring, MD, BAS, PHD
Assistant Professor of Neurology (primary appointment)
MD University of Cincinnati 2013
BAS DePauw University 2004
PHD University of Cincinnati 2011
Jane Loitman, MS, MD
Assistant Professor of Clinical Neurology (primary appointment)
Instructor in Clinical Medicine
BA Tufts University 1982
MS Georgetown University 1988
MD University of Minnesota 1992
Glenn Lopate, MD
Professor of Neurology (primary appointment)
MD Ohio State University 1987
BS Colorado St University 1983
Brendan Patrick Lucey, MD
Assistant Professor of Neurology (primary appointment)
MD John Hopkins University 2003
BA University of Vermont 1999
Cindy Ly, PHD, MD
Instructor in Neurology (Pending Dean's Approval) (primary appointment)
BS University of Texas Austin 2000
PHD Baylor College of Medicine 2008
MD Baylor College of Medicine 2010
Luigi Maccotta, PHD, MD
Associate Professor of Neurology (primary appointment)  
Associate Professor of Radiology  
PHD Washington Univ in St. Louis 2005  
MD Washington Univ in St. Louis 2005  
BS St Peters College 1994  

Baijayanta Maiti, MD, PHD  
Assistant Professor of Neurology (primary appointment)  
MD Calcutta University 2003  
PHD University of Utah 2010  

Raman Kant Malhotra, MD  
Associate Professor of Neurology (primary appointment)  
MD Harvard University 2001  

John F Mantovani, MD  
Associate Professor of Clinical Neurology (primary appointment)  
Assistant Professor of Clinical Pediatrics  
MD University of Missouri 1974  
BA University of Evansville 1971  

Soe S Mar, MD  
Professor of Neurology (primary appointment)  
Professor of Pediatrics  
MD Institute of Medicine 1987  

Robert P Margolis, MD  
Assistant Professor of Clinical Neurology (primary appointment)  
BA Kent St University 1971  
MD Saint Louis University 1975  

Kathryn Mary Marlow, MD  
Assistant Professor of Neurology (primary appointment)  
MD SUNY DOWNSTATE MED BROOKLYN 2013  
BS State Univ of NY at Albany 2009  

Pietro Mazzoni, MD, PHD  
Associate Professor of Neurology (primary appointment)  
MD Harvard University 1995  
BS University of CA San Diego 1988  
PHD Mass Inst of Technology (MIT) 1994  

Eric Martin McDade, DOST  
Associate Professor of Neurology (primary appointment)  
BA Canisius College 1998  
DOST Chicago Coll of OsteopathicMed 2004  

Timothy M Miller, PHD, MD  
Clayson Professor of Neurology (primary appointment)  
PHD Washington Univ in St. Louis 1998  
MD Washington Univ in St. Louis 1998  

John Carl Morris, MD  
Harvey A and Dorismae Hacker Friedman Distinguished  
Professor of Neurology (primary appointment)  
Professor of Occupational Therapy  
Professor of Pathology and Immunology  
Professor of Physical Therapy  
MD University of Rochester 1974  

BA Ohio Wesleyan University 1970  
Stephanie Morris, MD  
Assistant Professor of Neurology (primary appointment)  
Assistant Professor of Pediatrics  
BS University of Arizona 2007  
MD University of Phoenix 2011  

Michael Justin Morrissey, PHD  
Instructor in Clinical Neurology (primary appointment)  
PHD Saint Louis University 2005  

Krista L Moulder, PHD  
Associate Professor of Neurology (primary appointment)  
BA Northwestern University 1993  
PHD Washington Univ in St. Louis 2001  

Erik S Musiek, PHD PMCG, MD  
Associate Professor of Neurology (primary appointment)  
BS College of William and Mary 1999  
PHD PMCG Vanderbilt University 2005  
MD Vanderbilt University 2007  

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Robert T Naismith II, MD  
Professor of Neurology (primary appointment)  
MD Case Western Reserve Univ 1998  
BS Case Western Reserve Univ 1994  

Jeffrey J Neil, PHD, MD  
Professor of Neurology (primary appointment)  
Professor of Pediatrics  
PHD Washington Univ in St. Louis 1984  
MD Washington Univ in St. Louis 1984  

Susan Searles Nielsen, MA, PHD  
Assistant Professor of Neurology (primary appointment)  
BA Evergreen St College 1984  
PHD University of CA San Diego 1992  

Anne Fagan Niven, PHD  
Professor of Neurology (primary appointment)  
BA Wellesley College 1984  
PHD University of CA San Diego 1992  

Michael Justin Noetzel, MD  
Professor of Neurology (primary appointment)  
Professor of Pediatrics  
Vice Chair of Pediatric and Developmental Neurology  
MD University of Virginia 1977  
BA Yale University 1973  

Scott Norris, MD  
Assistant Professor of Neurology (primary appointment)  
Assistant Professor of Radiology  
MD University of MO Columbia 2008  
BA Washington Univ in St. Louis 2000
Sheel Jitendra Pathak, MD  
Assistant Professor of Neurology (primary appointment)  
Assistant Professor of Pediatrics  
MD University of Texas Galveston 2008  
BS University of Texas Austin 2004  
  
Robert Harris Paul, PHD, MS  
Adjunct Assistant Professor of Neurology (primary appointment)  
BS California State Long Beach 1993  
PHD Oklahoma St University 1998  
MS Oklahoma St University 1995  
  
Toni Shih Pearson, MD, B MUS  
Associate Professor of Neurology (primary appointment)  
MD University of Adelaide 1998  
B MUS University of Adelaide 2000  
  
David M Peeples, MD  
Instructor in Clinical Neurology (primary appointment)  
BA Vanderbilt University 1982  
MD University of Chicago 1986  
  
Lindsay M Peglar  
Assistant Professor of Neurology (primary appointment)  
Assistant Professor of Pediatrics  
  
Karen J Pentella, MD  
Assistant Professor of Clinical Neurology (primary appointment)  
BS Ohio State University 1975  
MD Ohio State University 1979  
  
Joel S Perlmutter, MD  
Professor of Neurology (primary appointment)  
Professor of Neurosciences  
Professor of Occupational Therapy  
Professor of Physical Therapy  
Professor of Radiology  
BA Princeton University 1975  
MD University of MO Columbia 1979  
  
Alan Pestronk, MD  
Professor of Neurology (primary appointment)  
Professor of Pathology and Immunology  
BA Princeton University 1966  
MD Johns Hopkns University Medic 1970  
  
Steven E Petersen, PHD  
James S McDonnell Professor of Cognitive Neuroscience in Neurology (primary appointment)  
Associate Professor of Neurological Surgery (Neuropsychology)  
Professor of Biomedical Engineering  
Professor of Neuroscience  
Professor of Psychological & Brain Sciences  
Professor of Radiology  
PHD California Institute Technolo 1982  
BA University of Montana Missoula 1974  
  
Daniel Phillips, MD, BE  
Assistant Professor of Clinical Neurology (primary appointment)  
MD Washington Univ in St. Louis 1980  
BE Northwestern University 1982  
BS Northwestern University 1976  
  
Chia Ling Phuah, MD, MS1, MS  
Assistant Professor of Neurology (primary appointment)  
MD Cambridge University 2006  
MS1 Cambridge University 2007  
BS Cambridge University 2003  
MS Harvard University 2016  
  
Laura Piccio, MD  
Associate Professor of Neurology (primary appointment)  
MD University of Milan 1997  
  
Stephanie K Powell, MS, PHD  
Instructor in Clinical Neurology (primary appointment)  
MS Univ of Wisconsin Milwaukee 2000  
BS University of Notre Dame 1994  
PHD Univ of Wisconsin Milwaukee 2004  
  
William John Powers, MD  
Adjunct Professor of Neurology (primary appointment)  
BA Dartmouth College 1971  
MD Cornell University 1975  
  
Brad Alan Racette, MD  
Robert Allan Finke Professor of Neurology (primary appointment)  
Executive Vice Chair of Clinical Affairs, Department of Neurology  
MD Northwestern University 1992  
BA Princeton University 1988  
  
David Martin Reisler, M PH, MD  
Assistant Professor of Clinical Neurology (primary appointment)  
M PH Johns Hopkns University Medic 1971  
BA Harvard University 1957  
MD Washington Univ in St. Louis 1961  
  
Dave A Rengachary, MD  
Instructor in Clinical Neurology (primary appointment)  
BA Northwestern University 1996  
MD Northwestern University 2000  
  
Terri L Riutcel, MD  
Associate Professor of Neurology (primary appointment)  
MD Vanderbilt University 1995  
BS University of MO Columbia 1991  
  
Catherine M Roe, PHD, MA  
Associate Professor of Neurology (primary appointment)  
BA Purdue University 1986  
PHD Southern Illinois University 1992  
MA Southern Illinois University 1990  
  
James R Rohrbaugh, MD  
Associate Professor of Clinical Neurology (primary appointment)  
Associate Professor of Clinical Pediatrics
MD Ohio State University 1974
BA Yale University 1971

Robert John Rudock, MD, MBA1
Assistant Professor of Neurology (primary appointment)
Assistant Professor of Pediatrics
MD University of Miami 2012
BS John Hopkins University 2006
MBA1 University of Miami 2011

Rimma Ruvinskaya, MD
Associate Professor of Neurology (primary appointment)
MD Leningrad Inst of Peds Med 1985
BA School Not Listed 1979

Robin C Ryther, PHD, MD
Assistant Professor of Neurology (primary appointment)
PHD Vanderbilt University 2004
BS University of MO Columbia 1998
MD Vanderbilt University 2006

Naresha Saligrama, B VET, MS, PHD
Assistant Professor of Neurology (Pending Executive Faculty Approval) (primary appointment)
B VET Karnatak University 2004
MS Indian Vet Research Institute 2006
PHD University of Vermont 2013

Chihiro Sato, MS, PHD
Instructor in Neurology (primary appointment)
BS University of Tokyo 2003
MS University of Tokyo 2005
PHD University of Tokyo 2008

Andrew David Sauerbeck, PHD
Instructor in Neurology (primary appointment)
PHD University of Kentucky 2011
BS University of Kentucky 2005

Anneliese M Schaefer, BBA, PHD, JD
Professor of Neurology (primary appointment)
BBA Washington Univ in St. Louis 1985
PHD Washington Univ in St. Louis 2001
JD Washington Univ in St. Louis 1988

Suzanne E. Schindler, PHD, MD
Assistant Professor of Neurology (primary appointment)
BS Millsaps College 1999
PHD Washington Univ in St. Louis 2008
MD Washington Univ in St. Louis 2008

Bradley L Schlaggar, MD, PHD
Adjunct Professor of Neurology (primary appointment)
MD Washington Univ in St. Louis 1994
BS Brown University 1986
PHD Washington Univ in St. Louis 1994

Kathleen Marie Schoch, PHD
Instructor in Neurology (primary appointment)
PHD University of Kentucky 2013
BS Bradley University 2007

Earl R Schultz, MD
Professor of Clinical Neurology (primary appointment)
Associate Professor of Clinical Psychiatry
MD Washington Univ in St. Louis 1955
BS University of Missouri 1953
BA Southeast Missouri St Univers 1952

Christian T Sheline, PHD
Adjunct Research Associate Professor of Neurology (primary appointment)
BA Dartmouth College 1983
PHD University of California 1989

Gordon L Shulman, MS, PHD
Professor of Neurology (primary appointment)
Professor of Radiology
BA Yale University 1975
MS University of Oregon 1977
PHD University of Oregon 1979

Todd B Silverman
Instructor in Clinical Neurology (primary appointment)

Barry A. Singer
Associate Professor of Clinical Neurology (primary appointment)

Christopher D Smyser, MD
Associate Professor of Neurology (primary appointment)
Associate Professor of Pediatrics
Associate Professor of Radiology
BS University of Iowa 1998
MD University of Iowa 2004

Barbara Joy Snider, MD, PHD
Professor of Neurology (primary appointment)
MD University of Texas Southwest 1989
BA Northwestern University 1979
PHD University of Texas Southwest 1989

Michael Snyder, MD
Assistant Professor of Clinical Neurology (primary appointment)
MD University of Iowa 2002
BS Iowa State University 1997

Richard Brian Sommerville, MD
Associate Professor of Neurology (primary appointment)
MD Columbia University 2005
BS Harvard University 1999

Tara V. Spevack, MS, PHD
Instructor in Clinical Neurology (primary appointment)
MS University of Florida 1994
BS McGill University 1987
PHD University of Florida 1997

Katherine Caroline White Stenson, MD
Associate Professor of Clinical Neurology (primary appointment)
BA Washington Univ in St. Louis 1994
MD Northwestern University Med 2018

Jeremy Fuller Strain, PHD
Instructor in Neurology (Pending Dean's Approval) (primary appointment)
BS University of Texas Arlington 2009
PHD University of Texas Arlington 2015

Sandra L Tate, MD
Instructor in Clinical Neurology (primary appointment)
MD Southern Illinois University 1987

Mengesha A Teshome, MD
Instructor in Neurology (primary appointment)
MD Addis Ababa University 1989

Kwee L Thio, PHD, MD
Professor of Neurology (primary appointment)
Professor of Neuro science
Professor of Pediatrics
BS Brown University 1984
PHD Washington Univ in St. Louis 1992
MD Washington Univ in St. Louis 1992

Jeffrey B. Titus, MA, PHD
Assistant Professor of Clinical Neurology (primary appointment)
MA University of Northern Colorado 1999
BS Evangel College 1997
PHD Ball State University 2002

Stuart Ramm Tomko, MD
Assistant Professor of Neurology (primary appointment)
MD Baylor College of Medicine 2010
BS Davidson College 2005

Norman Edwin Trevathan III, MS, MD
Adjunct Professor of Neurology (primary appointment)
BS David Lipscomb University 1977
MS Emory University 1982
MD Emory University 1982

Angela M Tripp
Assistant Professor of Clinical Neurology (primary appointment)

Keisuke Ueda, MD
Assistant Professor of Neurology (primary appointment)
Assistant Professor of Pediatrics
MD Keio University 2006

Jason Daniel Ulrich, PHD
Assistant Professor of Neurology (primary appointment)
PHD University of Iowa 2011
BS Quincy College 2004

Mwiza Ushe, MD, MS
Assistant Professor of Neurology (primary appointment)
BS University of Pittsburgh 2000
MD Washington Univ in St. Louis 2007
MS Washington Univ in St. Louis 2007

Renee Bailey Van Stavern, MD
Professor of Neurology (primary appointment)
MD Univ Texas Health Science Ctr 1997
BA Texas A&M University 1991

Arun S. Varadhachary, MD, PHD
Associate Professor of Neurology (primary appointment)
MD Temple University 2004
PHD Temple University 2001

Amy Robichaux Viehovever, BE, PHD, MD
Assistant Professor of Neurology (primary appointment)
Assistant Professor of Pediatrics
BE Catholic University America 1998
PHD Vanderbilt University 2004
MD Vanderbilt University 2006

Oksana Volshteyn, MD
Professor of Neurology (primary appointment)
Professor of Medicine
MD Minsk State Medical Institute 1976

Andrew M. Wayne, MD
Instructor in Clinical Neurology (primary appointment)
MD University of Missouri 1993
BS University of CA Riverside 1989

Ling Wei, MD
Adjunct Research Assistant Professor of Neurology (primary appointment)
MD Beijing Medical University 1977

Conrad Christian Weihl, MD, PHD
Professor of Neurology (primary appointment)
MD University of Chicago 2001
PHD University of Chicago 1998
BS University of Illinois 1993

Judith L. Weisenberg, MD
Associate Professor of Neurology (primary appointment)
BS Barnard College 1998
MD University of Minnesota 2002

Howard I Weiss, MD
Assistant Professor of Clinical Neurology (primary appointment)
MD Tulane University 1972

Nicole Joy Werner, MS, PHD
Associate Professor of Neurology (primary appointment)
MS Saint Louis University 2000
BS Univ of Minnesota Twin Cities 1997
Clinical presentations.

The goal of this course is to provide an introduction to the diseases of the central and peripheral nervous systems, including their clinical manifestations, pathology, pathophysiology, and pharmacotherapy. The course includes reading assignments, lectures, laboratories, team activities, and clinical presentations.

**Courses**


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**M35 Neurol 632 Diseases of the Nervous System**

The goal of this course is to provide an introduction to the diseases of the central and peripheral nervous systems, including their clinical manifestations, pathology, pathophysiology, and pharmacotherapy. The course includes reading assignments, lectures, laboratories, team activities, and clinical presentations.

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**M35 Neurol 720 Neurology Clerkship**

During the four-week Neurology clerkship, students will gain proficiency in understanding diseases of the nervous system, the neurologic work-up, localization and differential diagnosis generation, and devising a treatment plan. A variety of settings are available, which could include adult or pediatric services, with both inpatient and outpatient experiences. Students will provide care for patients with neurologic problems under the supervision of residents, fellows, and attendings.

Credit 154 units.

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**M35 Neurol 828 Neurology Subinternship for Visiting Medical Students**

This four-week elective for fourth-year visiting students from a U.S. medical school provides the option (space permitting) of four weeks of Adult Inpatient Service (Stroke for two weeks, General Neurology for two weeks) or two weeks on an Adult Inpatient Service and two weeks on the Adult Consult Service. Students on the inpatient service will function as subinterns under the supervision of their junior resident, chief resident, and attending physician. Students will also attend weekly conferences and a weekly outpatient clinic experience. This elective is suitable for visiting fourth-year students interested in neurology who wish to improve their neurology knowledge and skills.

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**M35 Neurol 830 Neuro-Oncology**

This elective provides an outpatient-oriented pediatric and adult neuro-oncology experience for fourth-year medical students. Students will attend multidisciplinary adult and pediatric neuro-oncology clinics and case conferences (tumor boards), attend adult and pediatric radiation oncology clinics, attend neuropathology brain tumor review, participate in subspecialty brain tumor clinics, and attend monthly brain tumor research conferences.

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**M35 Neurol 851 Clinical Aspects of Aging and Dementia**

This elective provides the opportunity to learn about clinical research and clinical care in health brain aging and dementia. Students should contact the course directors to discuss this, as the elective is customized based on student interests. This can be a two-week or four-week elective. Students can gain proficiency in interviewing techniques and in the neurologic examination of the geriatric patient, and be introduced to neuropsychology, neuropsychiatry, biomarkers, neuroimaging, genetics, and other biomedical procedures important in the diagnostic evaluation of older adults. The Knight ADRC is an interdisciplinary group, so students have the opportunity to interact with physicians, nurse clinicians, psychologists and social workers, and to explore the neuropsychology, neuropsychiatry, biomarkers, neuroimaging, genetics, and other biomedical procedures used in the diagnosis of dementing disorders such as Alzheimer's disease, dementia with Lewy bodies, frontotemporal dementias, cerebrovascular disorders, and affective disorders.

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**M35 Neurol 859 Neonatal Neurology**

The Neonatal Neurology elective will consist of a combination of inpatient and outpatient experiences designed to provide medical students with comprehensive exposure to the field. Through the rotation, students will actively participate in all aspects of patient care, acquiring the knowledge and skill necessary to
effectively evaluate infants with neurological disorders, including encephalopathy, stroke, seizures, hypotonia, intraventricular hemorrhage, and periventricular leukomalacia, among others. Clinical activities will be tailored to fit the interests and goals of the individual student and include a combination of inpatient and outpatient exposures. Inpatient activities will occur in the St. Louis Children's Hospital Neonatal Intensive Unit as part of the Neonatal Neurology Consultation service. Outpatient activities will occur in the St. Louis Children's Hospital Outpatient Clinics. Students will also attend educational conferences specific to the field during the rotation, including the Neonatal Neurology Clinical Conference and the Neonatal Neuroradiology Conference.

M35 Neurol 860 Pediatric Neurology
The senior elective experience in child neurology is designed to adapt to the individual goals and objectives of students. The elective takes place in one or two 2-week blocks that occur among five possible venues as chosen by the student: 1. Outpatient clinics, 2. Inpatient ward service, 3. Inpatient general consult service, 4. NICU consult service, and 5. Video EEG (VEEG) monitoring service. The combination of services and experiences will be arranged directly between the student and the course director prior to beginning the rotation. In the outpatient clinics, students will rotate between a variety of subspecialty clinics and work with a variety of attendings in order to experience the breadth of outpatient pediatric neurology. Students rotating on the inpatient ward service will have a different role than the third-year student on pediatrics. The fourth-year student will focus solely on neurology patients and work closely with the pediatric neurology resident to develop neurology-specific care plans. No call or weekend duties will be expected on this rotation. On the general consult services, students will work with the consult attending and pediatric neurology residents on that team to see consults in the PICU, CICU, ER, and other hospital floors. The NICU consult team focuses on infants in the NICU. Student rotating on the VEEG monitoring service will focus on learning the indications and uses of VEEG and basic EEG reading skills.

M35 Neurol 861 Neurointensive Care Unit
The student will be integrated into the Critical Care Team that provides care in the Neurology/Neurosurgery ICU. Diseases frequently encountered include intracerebral hemorrhage, head trauma, subarachnoid hemorrhage, and stroke. The student will follow patients, participate in rounds and perform some procedures under supervision. Didactic sessions will be provided as conferences or lectures from the ICU attending and fellow.

M35 Neurol 865 Adult and Pediatric Epilepsy
Students will learn how epileptologists diagnose and manage epilepsy in adults and children. They will learn how to use the history and physical exam and laboratory studies such as EEG, MRI, PET, and SPECT to diagnose and manage patients with new onset epilepsy, established epilepsy, and medically intractable epilepsy. They will become familiar with the medical management of epilepsy as well as the treatment options for medically intractable epilepsy including surgery, the vagus nerve stimulator, and the ketogenic diet. They will also learn how to manage the co-morbid conditions that accompany epilepsy such as depression, behavioral problems, cognitive impairment, sleep disturbance, and non-epileptic events. Students will accomplish these goals by attending epilepsy clinics and rounding on the inpatient epilepsy service with the epilepsy team at Barnes-Jewish Hospital and St. Louis Children's Hospital. They will attend the Adult Epilepsy Conference, the Pediatric Epilepsy Conference, and Neurology Grand Rounds. Students will also have the opportunity to observe epilepsy surgery if they wish. They will have the option to present one 15-30 minute talk on a topic relevant to epilepsy.

M35 Neurol 872 MS Center/Outpatient — Missouri Baptist
Students will develop their skills in taking histories and performing neurological examinations on patients with multiple sclerosis under direct supervision of multiple sclerosis specialists. Localization of neurological findings and symptoms to the neuro-axis will be emphasized. A major goal for the students will be to increase the understanding of comprehensive patient management including disease treatment, symptom management, adjunctive therapy services, and psychosocial issues. The outpatient rotation will be four weeks at The MS Center for Innovations in Care at Missouri Baptist Medical Center with Dr. Barry Singer and Dr. Mark Tullman. An additional goal for students will be to understand process of clinical research and translation into approved therapies. The center has been a leader in clinical trial development of therapeutics that have been or will soon be FDA-approved as new medications for multiple sclerosis.

M35 Neurol 900 Research Elective — Neurology
Research opportunities may be available. If interested, please contact the Department of Neurology.