The multidisciplinary Neurological Institute (NI), one of 26 institutes at Cleveland Clinic, is internationally known for superior diagnosis and treatment of neurological disorders ranging from the common to the most complex.

More than 300 specialists combine clinical expertise, academic achievement and innovative research to accelerate transfer of investigational therapies unavailable elsewhere, for the benefit of adult and pediatric patients. The institute is committed to improving outcomes while treating patients with compassion and respect.
Welcome!

Dear Applicants,

Thank you for your interest in the Cleveland Clinic Adult Neurology Residency Program. We invite you to explore the reasons Cleveland Clinic is a world leader in health care. Patient care, research and education are our mission. Cleveland Clinic has become one of the most innovative health care systems in the country, consistently achieving remarkable medical breakthroughs. We routinely see fascinating, complex medical cases, and Cleveland Clinic is consistently ranked among America’s top hospitals by U.S. News & World Report.

The Department of Neurology is part of the Neurological Institute at Cleveland Clinic. At the Neurological Institute, we provide medical and surgical services to improve patient care and experience. Our model of patient care allows physicians to put the needs of the patients first, even as we conduct cutting-edge basic research and participate in clinical trials that measure and improve outcomes.

The Department of Neurology is able to offer you a broad-based education tailored to your individual needs. Our experienced faculty is dedicated to providing residents with exposure to all aspects of neurology. Whatever your specialty interest, I am confident Cleveland Clinic will provide you with the opportunity to pursue your clinical or academic aspirations.

We recruit top-caliber residents; this is demonstrated by their academic successes.

As a 1997 graduate of the Cleveland Clinic Neurology Residency Program, I have experienced firsthand all the opportunities and wonderful patient interactions that this program provides. Over the years, I have seen tremendous growth and medical innovation. The chairman of the neurology department, Kerry Levin, MD, and I strongly believe in resident education; we make it a top priority.

I hope during your interview that you will have the opportunity to see the great camaraderie among our residents, and I invite you to be a part of this experience!

MaryAnn Mays, MD
Director, Neurology Residency Program

Program Description

The Neurology Residency Program, which is ACGME-accredited, accepts candidates through the Electronic Residency Application Service (ERAS). There are eight positions offered per year in our four-year, PGY1-4 program, which includes a required first year in internal medicine at Cleveland Clinic.

First Year of Residency (PGY1)

The American Board of Psychiatry and Neurology (ABPN) requires that the PGY1 year be spent in an accredited medical training program. The Residency Review Committee for Neurology and the Accreditation Council for Graduate Medical Education (ACGME) specify that 12 months of general internal medicine training is ideal prior to entry into the three-year neurology residency. This year must include at least eight months of direct patient care in internal medicine, no more than two months in emergency medicine, and no more than two months in neurology.

First Year of Neurology Residency (PGY2)

The majority of this year is spent in direct patient care, most of which is in the inpatient setting. Residents spend most of the inpatient months on the two main adult neurology inpatient services: cerebrovascular disease and general neurology. Each inpatient team consists of a senior neurology resident, two junior neurology residents, two or more rotating junior residents from other departments, and two medical students. The on-call schedule during inpatient months averages every fourth, fifth or sixth night. Cleveland Clinic uses a module system, with 13 four-week module rotations making up the academic year. In total, a PGY2 resident has eight inpatient modules and five outpatient modules where he or she has weekends off and no call. Longitudinal outpatient clinic is scheduled one-half day per week with a staff preceptor who will work with the resident throughout the three years of training. One additional month per year is spent in the outpatient department, rotating among the subspecialty services. Over the course of the three-year residency, three months are spent on the neuroradiology service, learning neuroimaging techniques and reading MRI and CT scans with staff neuroradiologists. Additional imaging training includes a daily neuroradiology conference while on the inpatient services.

Second and Third Years of Neurology Residency (PGY3 and PGY4)

A senior resident spends one module per year managing the three inpatient services, as well as an additional module in the NICU and one on the epilepsy service. The remaining time is split between electives and three academic courses. A three-month EEG/epilepsy rotation features an in-depth course covering EEG, evoked potentials, sleep, and intraoperative monitoring. Residents read EEG records and attend staff reading sessions and epilepsy outpatient clinics. A one-month rotation in the EMG laboratory includes didactic sessions, as well as hands-on experience in the techniques of nerve conductions studies and needle electrode examinations. If the resident is interested in further EMG exposure, the rotation can be expanded to three months. Finally, there is a two-module neuropathology course where residents are able to work directly with our neuropathologists. Senior residents use a nightfloat call system, which includes a total of eight weeks on call (two weeks per six-month period of the two-year senior residency).
The Cleveland Clinic Neurology Residency Program offers an extensive schedule of didactic and continuing medical education lecture series and conferences for trainees and staff including:

### Rotation Descriptions

#### PGY2 Schedule

**Inpatient Rotations**
- Stroke Neurology: 3 modules*
- General Neurology: 3 modules
- Neuro ICU: 1 module
- Epilepsy: 1 module
- Pediatric Consults: 1 module

**Outpatient Rotations**
- Pediatric Clinic: 1 module
- Neuroradiology: 1 module
- Subspecialty Clinic: 1 module
- Elective: 1 module

#### PGY3 Schedule

**Inpatient Rotations**
- Stroke Neurology: 1 module
- General Neurology: 1 module
- Adult Consults: 1 module
- Neuro ICU: 1 module
- Epilepsy: 1 module
- Nightfloat: 0.5 modules x 2

**Outpatient Rotations**
- Subspecialty Clinic: 1 module
- EMG Course: 1-3 modules
- EEG Course: 2-3 modules
- Elective: up to 3 modules

#### PGY4 Schedule

**Inpatient Rotations**
- Stroke Neurology: 1 module
- General Neurology: 1 module
- Adult Consults: 1 module
- Pediatric Consults: 1 module
- Nightfloat: 0.5 modules x 2

**Outpatient Rotations**
- Neuropathology: 2 modules
- Subspecialty Clinic: 1 module
- Elective: 5 modules

* * is a four-week rotation

### Elective Options

- Autonomic Disorders
- Carotid Ultrasound/TCD
- Cognitive Disorders
- Deep Brain Stimulation
- EEG
- EMG/Neuromuscular Evoked Potentials
- Headache
- Movement Disorders
- Multiple Sclerosis
- Neuro-Ophthalmology
- Neuro Infectious Disease
- Neuroradiology
- Pain Management
- Palliative Medicine
- Psychiatry
- Regional Neurology
- Research
- Rheumatology
- Sleep Medicine

### Fellowship Programs

**ACGME Accredited**
- Sleep Medicine
- Neuro Endovascular/Interventional Neuroradiology
- Clinical Neurophysiology: EEG/Epilepsy Track
  - Adult EEG/Epilepsy Program
  - Pediatric EEG/Epilepsy Program
- Neuromuscular Medicine
- Vascular Neurology

**Non-ACGME Accredited**
- Neurocritical Care
- Neuroimmunology
- Headache Medicine
- Neuro-Oncology
- Cognitive Disorders
- Movement Disorders

### Conferences / Didactics

#### The Cleveland Clinic Neurology Residency Program offers an extensive schedule of didactic and continuing medical education lecture series and conferences for trainees and staff including:

#### Daily (M-F) Noon Conference Series
- Neuroscience and Neuroanatomy
- Disease Pathophysiology and Management
- Professional Development
- Research, Statistics, Epidemiology
- Bioethics

#### Daily Neuroradiology Rounds
- Interpret imaging studies with a staff neuroradiologist
- Apply neuroanatomy to clinical practice

#### Weekly Conferences
- Neurology Grand Rounds
- Cerebrovascular Conference
- Epilepsy Grand Rounds
- Epilepsy Patient Management Conference
- Live patient examination and teaching
- Pediatric Neurology Grand Rounds
- Pediatric Neurology Neuroimaging Conference

#### Other Conferences
- Adult & Child Neurology Journal Clubs
- Brain-Cutting/Pathology sessions
- Quarterly Resident Meeting with Dr. Toby Cosgrove, Cleveland Clinic CEO
- Quarterly Neurological Institute Core Conference Series
- Neurology Morbidity and Mortality rounds
- Monthly meeting with program director, department chairman and residents

“I loved my residency. I learned a lot, was able to do research, and learned how to handle complicated and bread-and-butter neurology patients. The staff was great. They all had an open-door policy and were always more than willing to sit down and teach or help with any questions you had. I am still in touch with a number of them. I thought I was very well prepared for fellowship and had acquired a good knowledge base. I will definitely remember my four years very fondly!”

Rani Sarkis, MD, MSc.
Recent Program Graduate
Research Opportunities

Neurological Institute Research Day (NIRD)
Annually, all trainees in the Neurological Institute are given the opportunity to present their research. The Neurological Institute Research Council has launched a research mentorship program with specific training in statistics and trial design to help residents get their research projects published.

Professional Meetings
Residents are provided the opportunity to attend (and encouraged to attend) national meetings to gain specific training in statistics and trial design to help residents get their research projects published.

Recent Residents’ Publications (residents’ names are in boldface type)

Newey C.R., Bermel, R. Fulminant cerebral demyelination in neuromyelitis optica (Catastrophic Hemiation in a Patient with Devic’s Disease). Neurology 2011; 77(2):193


“I am very satisfied with my training and proud to have been a part of the Cleveland Clinic Neurology Residency Program. I am happy to have worked with so many great staff attendings and fellow residents. I would definitely choose this program again if I had to. As I start my job search, I have come to realize how respected this institution is throughout the country!”

Ryan Armour, DO
Recent Program Graduate

Faculty: In the Spotlight

Alexander Rae-Grant, MD, FRCP has an active practice for patients with multiple sclerosis; he also administers the Center for Brain Health site at Cleveland Clinic’s main campus (dementia and memory disorder evaluations). He oversees resident electives of two to four weeks’ duration, either at the Center for Brain Health or Cleveland Clinic’s Mellen Center for Multiple Sclerosis Treatment and Research. Dr. Rae-Grant teaches a monthly course on critical evaluation of the neurological literature with a focus on understanding therapeutic, diagnostic, screening, prognostic and economic studies in neurology. He is also interested in the evolution of the brain as it relates to neurological function as a tool for understanding how the brain works and is constructed.

Hubert H. Fernandez, MD, is section head, movement disorders in the Center for Neurological Restoration at Cleveland Clinic. He is an internationally recognized clinical trialist and expert in movement disorders. After completing his medical training, he joined the faculty of Brown University and served as associate director of the Movement Disorders Unit and neurological director of its Functional Neurosurgical Program. In 2003, he relocated to the University of Florida, where he became director of the Neurology Clinical Research Unit; vice chair of academic affairs; director, Neurology Residency and Movement Disorders Fellowship Training Program; and a professor of neurology prior to joining Cleveland Clinic. An active and productive researcher, he has initiated or participated in more than 50 clinical trials and has published his findings in 300+ articles and abstracts. He has three dozen published books and book chapters to his credit, and he has served on the editorial boards of numerous journals. He is currently the medical editor of the Movement Disorders Society website. He has mentored numerous undergraduate, graduate and medical students, residents and fellows from around the world.

Stewart J. Tepper, MD is a professor of medicine (neurology) at the Cleveland Clinic Lerner College of Medicine, director of research at the Center for Headache and Pain of the Cleveland Clinic Neurological Institute, and director of residency research for the neurology residency program. Dr. Tepper is an associate editor for the journal Headache and has published more than 220 peer-reviewed manuscripts, editorials and books, including the recent Cleveland Clinic Manual of Headache Therapy (Springer). He is co-director of the Scottsdale Headache Symposium course of the American Headache Society and was director of the Headache Therapy course for the American Academy of Neurology from 2009 to 2011. His passions are teaching and clinical patient care, as well as finding novel concepts for clinical research, especially as it pertains to patient treatment. He maintains an open-door policy and is available, in person or by phone, for residents at all times.

Recent Program Graduate
Our Residents
What Did Our Residents Do After Their Residency?

Class of 2010
Craig Brooker
Cleveland Clinic, Sleep Medicine Fellowship
Manuel Buitrago Blanco
Johns Hopkins University, NICU Fellowship
Lama Chahine
University of Pennsylvania, Movement Disorders Fellowship
Esteban Cheng-Ching
Cleveland Clinic, Staff
Sara Khan
University of Toledo, Staff
Krishe Menezes
Cleveland Clinic, Neuromuscular Fellowship
Daniel Ontaneda
Cleveland Clinic, Neuroimmunology Fellowship

Class of 2011
Rachel Allen
Cleveland Clinic, Neuromuscular Medicine Fellowship
Ryan Armour
Cleveland Clinic, Neuromuscular Medicine Fellowship
Stephen Goutman
Cleveland Clinic, Neuromuscular Medicine Fellowship
Anna Irwin
Cleveland Clinic, Sleep Medicine Fellowship
Johanna Morton
Cleveland Clinic, Vascular Neurology Fellowship
Anna Irwin
Cleveland Clinic, Neuro-Oncology Fellowship
Rani Sarkis
Brigham and Women’s Hospital, Neuroimmunology Fellowship

Class of 2012
Shazia Alam
Montefiore Medical Center, Vascular Neurology Fellowship
Ebru Altay
Returned to her home country, Turkey, to establish an epilepsy center at a university hospital; working as a physician-scientist
Mita Deoras
Sleep Medicine Fellowship, University Hospitals Case Medical Center
Nicholas Milano
University of Florida, Cognitive Behavioral Neurology Fellowship
Christopher Newey
Cleveland Clinic, Epilepsy Fellowship
Meko Porter
University of Southern California, Epilepsy Fellowship
Dolora Wisco
Brigham and Women’s Hospital, Staff

Compensation and Benefits

Moonlighting | Senior residents are permitted to moonlight (with permission) on the Neurology, Epilepsy and NICU services.

Health Insurance | The Cleveland Clinic Foundation will provide Cleveland Clinic Health Insurance Plan benefits, at no cost, to you and your eligible dependents. Other plans are also available. Free on-campus gym membership or Curves membership.

Disability Insurance | Paid for by the Cleveland Clinic for Residents/Fellows in Clinical Training Programs. Guaranteed issue, portability, HIV stance.

Maternity Care | Full coverage is provided through your health plan, within the plan’s guidelines.

Pharmaceuticals | Prescription drug benefits are determined by the health plan chosen. All health plans have a deductible, co-pay or both for prescription medication.

Dental Care Plan | The Cleveland Clinic offers a choice of three (3) plans provided at no cost to all Residents/Fellows and their eligible dependents after you have completed 12 months of training. Coverage during the first year of training may be purchased.

Vision Plan | Residents/Fellows of Cleveland Clinic may purchase the vision plan for you and your eligible dependents. This is a materials-only plan that provides savings on prescription eyewear. (Note: Routine eye exams are covered through your health plan).

Life Insurance | A $25,000 term group policy is provided.

Loans | A $1,200 interest-free loan is available to all house staff who receive a salary from the Cleveland Clinic.

Malpractice Insurance | Paid by The Cleveland Clinic Educational Foundation; includes tail coverage. Coverage is limited to activities within the training program.

Library | Our 30,000-sq.-ft. library offers the following services: reference assistance, Medline searches, electronic resources (which may also be available from outside the library) and a Learning Resource Center (audiovisual materials, computers, Interlibrary Loans and self-service photocopying).

On-Call Meals | Dinner and breakfast provided by The Cleveland Clinic Educational Foundation when you are on night call. Lunches are provided on weekend on-call.

Time Away | Professional Meetings: Residents are provided the opportunity to attend national meetings to present their research, with full financial support from the department.

Vacation | Three weeks (15 paid working days).

Maternity | Six weeks’ paid leave for natural childbirth or adoption; seven weeks for Cesarean section; 100 percent of your salary. Additional time off is possible (unpaid; maximum of 12 weeks under FMLA).

Paternity | Two weeks’ paid leave (10 working days). Additional time off is possible (unpaid; maximum of 12 weeks under FMLA).

The Family Medical Leave Act (FMLA) entitles all employees to as much as 12 weeks off, unpaid, after one year of employment. See Graduate Physicians Manual for further information.

Check your specialty Board’s requirements: You may need to make up part or all of your leave time prior to program completion.
Welcome to Cleveland
Located on the southern shore of Lake Erie, Cleveland and its many ethnic neighborhoods offer a wealth of cultural and recreational attractions.

Lakefront
Our harbor area features the Rock and Roll Hall of Fame and Museum, the Great Lakes Science Center and Cleveland OMNIMAX Theater. Marinas, beaches and other lakefront access stretch across the Greater Cleveland area.

Sports
Cleveland is home to Browns football, Indians baseball, Cavaliers basketball, Lake Erie Monsters hockey and Gladiators arena football. Many residents also participate in intramural/recreational sports leagues.

Culture
Cleveland Clinic is located near University Circle, the center of the city’s cultural and educational offerings. Around the Circle are Case Western Reserve University, Severance Hall (home of the world-renowned Cleveland Orchestra), the Cleveland Museum of Art, the Cleveland Museum of Natural History and the Cleveland Botanical Garden. Cleveland’s downtown theater district is one of the largest in the country; downtown and Cleveland’s neighborhoods are home to a variety of restaurants and entertainment venues.

Shopping
Shopping havens in the Cleveland area feature a number of moderate- and high-end retailers. Beachwood Place, Eton/Chagrin Boulevard and Legacy Village are located in Cleveland’s eastern suburbs; Crocker Park is in a western suburb. Many Cleveland neighborhoods feature unique shopping and art districts.

Parks and Recreation
The Cleveland Metroparks – the Emerald Necklace that surrounds the city – are perfect for golfing, hiking, bicycling, horseback riding, cross-country skiing and ice skating. They also are home to the Cleveland Metroparks Zoo, featuring a brand-new “African Elephant Crossing” exhibit. Not far from Cleveland are Cedar Point Amusement Park, Wildwater Kingdom Water Park and the Lake Erie Shores & Islands region, offering year-round fun and relaxation for the whole family.

Living in Cleveland
Whether you want to live downtown, in a historic urban neighborhood or in a suburb, Cleveland offers unique residential areas, many with convenient public transportation and affordable housing.

“By choosing to work here, I knew I would have a vast number of resources at my disposal to help shape my future, no matter what branch of neurology I chose to specialize in, be it common or esoteric. I felt during my first visit here that the residents were very competent and fun to work with, and it is true: We are like a small family here.”

Ather Taqui, MD
Current Resident