





Message from the Chairman

Dear fellowship candidate:

It is a pleasure to provide information about various fellowship programs in the Department of Neurology at Thomas Jefferson University and Jefferson Health.

Neurology at Jefferson has a long tradition of excellence in clinical training and care. Additionally, we are committed to providing an active and exciting research program in neurological diseases. Additionally, we are committed to providing an active and exciting research program, exemplified by the Vickie and Jack Farber Institute for Neuroscience, established in 2002.

The faculty in the Department are engaged in cutting edge research basic understanding of disease etiology and pathogenesis as well as translational research to apply the findings in the laboratory to the bedside. Clinical trials of new treatments for neurological diseases are ongoing in all divisions of the department. Consolidation and coordination of our Department and research base at the Jefferson Hospital for Neuroscience has further strengthened our capacity for excellence in patient care, education and research.

We provide clinical, research or combined fellowships in many areas of neurology and neurosciences. The fellowship program can be tailored to the fellows' specific requirements.

The entire Neurology faculty joins me in expressing appreciation for your interest in our programs. Feel free to contact us with any specific questions.

Sincerely,

A. M. Rostami, MD, PhD

Jefferson FACTS

Thomas Jefferson University and Jefferson Health comprise an academic medical center whose mission is to educate today's professional students and tomorrow's leaders in a variety of disciplines; discover new treatments and therapies that will define the future of clinical care and provide exceptional primary through complex quaternary care to patients in the communities we serve throughout the Delaware Valley. We have more than 34,500 staff, and are the second largest employer and fifth largest university in Philadelphia.

Jefferson was founded in 1824 as Jefferson Medical College (now known as Sidney Kimmel Medical College) and combined with Philadelphia University on July 1, 2017. Now a comprehensive university, Jefferson includes 10 colleges and 4 schools designed to deliver high-impact education and value for our students in medicine, architecture, business, design, engineering, fashion & textiles, health, science and social science. We enroll more than 8,200 full- and part-time students, have an alumni base of more than 69,500 and are an NCAA Division II college with 17 intercollegiate athletic teams.

Jefferson Health consists of 18 hospitals throughout Philadelphia, Bucks and Montgomery counties in Pennsylvania, as well as, in southern New Jersey. Many of our specialties are ranked among the nation's best by *U.S. News & World Report*, as well as high-performing in many specialty procedures.

Jefferson Health has more than 4,500 physicians and practitioners, 8,800 nurses and 3,828 licensed beds and has more than 50 urgent care and outpatient locations throughout Philadelphia and suburbs across Philadelphia, Montgomery and Bucks counties in Pennsylvania, and Camden and Gloucester counties in New Jersey.

Our health system has the largest faculty-based telehealth network in the region. This includes Jefferson Neuroscience Network, which has 37 regional network partners. Jefferson Health also includes the Sidney Kimmel Cancer Center, one of only 70 NCI-designated centers in the country, and the Vickie and Jack Farber Institute for Neuroscience, which includes the Jefferson Hospital for Neuroscience – the only hospital in the region dedicated entirely to neurology and neurosurgery. The Institute brings together the expertise of all our physicians, clinicians and researchers specializing in the diagnosis, treatment and research for stroke and cerebrovascular diseases, brain tumors, epilepsy, Parkinson's disease and other movement disorders, neuromuscular diseases, headaches, Alzheimer's disease and spine and spinal cord injuries.

FELLOWSHIP Opportunities



Fellowships	Cerebrovascular	Neurocritical Care	Clinical Neurophysiology	Epilepsy	EMG and Neuromuscular	Movement Disorders	Headache	Multiple Sclerosis	Multiple Sclerosis Basic Research	Neuro-Ophthalmology	Sleep
Duration	1 year	2 years	1 year	1 years	1 year	1-2 years	1-2 years	2 years	2-3 years	1 year	1 year
Number of Positions Available	2	4	3		1	1	4	1-2	1-2	1	2
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Fellowship Coordinator	Bruce Allen 215-955-4967 bruce.allen@jefferson.edu	Michelle Hoffman 215-503-4758 michelle.hoffman@jefferson.edu	Bruce Allen 215-955-4967 bruce.allen@jefferson.edu		Bruce Allen 215-955-4967 bruce.allen@jefferson.edu	Bruce Allen 215-955-4967 bruce.allen@jefferson.edu	Kristin Stuart 215-955-6049 kristin.stuart@jefferson.edu	Bruce Allen 215-955-4967 bruce.allen@jefferson.edu	Bruce Allen 215-955-4967 bruce.allen@jefferson.edu		Christina Oh 215-955-4847 christina.oh@jefferson.edu



FELLOWSHIP Programs

Cerebrovascular Disease

The Vascular Neurology fellowship at Thomas Jefferson University is a one-year, ACGME-accredited training program. The fellowship offers rigorous clinical training in the diagnosis and treatment of stroke, along with ample research opportunities as well as a formalized, comprehensive educational curriculum in cerebrovascular disease.

Jefferson has the largest facility in the Delaware Valley dedicated to treating acute stroke. The 22-bed Acute Stroke Unit is housed in the Jefferson Hospital for Neurosciences, a separate hospital on campus that is dedicated to treating patients with neurologic disease. In addition, there are three neurocritical care units. Fellows spend several months on the inpatient stroke service and also rotate on the stroke consultation service. In addition, fellows have regular outpatient stroke clinic, gain exposure to transcranial doppler imaging and rotate on various electives, such as stroke rehabilitation, cardiology, hematology/anticoagulation service and neuroradiology. Fellows also have the opportunity to master skills in telestroke consultation throughout the year. Another unique offering of the program involves an exciting rotation on the Mobile Stroke Unit, one of few in the country.

Fellows have the opportunity to become involved in clinical research, both in NIH-funded StrokeNet trials and industry sponsored trials. Original research and publications are also strongly encouraged, with the support of faculty mentorship. There is also ample opportunity for teaching by fellows, as Jefferson has a large medical school as well as a robust neurology residency program. The fellowship curriculum involves formal didactic

lectures and discussions, with weekly meetings for topic lectures, journal clubs, multidisciplinary case presentations and PFO/Stroke management conferences.

Stroke fellows work in close collaboration with the vascular neurosurgery team. The Jefferson Neurosurgery and Endovascular Neuroradiology programs rate among the highest volume of patients with aneurysms, brain AVMs, extracranial and intracranial vascular disease in the nation. In this environment, stroke fellows learn to become leaders in the field of cerebrovascular disease. Fellowship can be tailored to meet each fellow's goals and interests.

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Neurocritical Care

Jefferson has been offering a comprehensive, UCNS accredited, two-year fellowship in Neurocritical Care since 2008 and has graduated more than 22 fellows.

With 40 dedicated Neuro-ICU beds divided between two main hospitals located in Center City, Philadelphia, our fellows are able to learn while treating a vast number of neurological conditions. The fellowship has nine full-time faculty members whose specialties vary from Neurology, Internal Medicine/Critical Care Medicine and Anesthesia. Our fellows are able to learn different perspectives on treatment.

Our fellows train across a broad field of subspecialties, including Cerebrovascular, Endovascular, Neuro-anesthesia, Neurotrauma,

Critical Care Epilepsy and general Critical Care Medicine. During their two years, the fellows gain experience in teaching medical students and residents, lead rounds with a multidisciplinary team, and use Tele-ICU for patient care. They develop procedural competence in point of care ultrasound, endotracheal intubation and advanced airway management, bronchoscopy, transcranial doppler ultrasound, central venous and arterial catheter placement.

Fellows have protected research and didactic time weekly. With the assistance of an NCC faculty mentor, our fellows are able to initiate their own research projects, from the inception to the completion of the final paper. Many projects have been recognized nationally with the Neurocritical Care Society, International Stroke Conference, and the Society for Critical Care Medicine.

Our faculty pride themselves in their efforts to provide strong, individualized mentoring. From the start of their fellowship, faculty focus on career development, tailoring it to the fellows' interests.

Jefferson welcomes applicants with variable goals, including those who want to pursue academic versus private practice and various research interests, including clinical or quality improvement. Our graduating fellows leave with strong clinical expertise, a robust foundation in research, and effective education abilities.

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Clinical Neurophysiology

This is an ACGME approved one year fellowship designed to provide well-rounded training for individuals interested either in clinical practice or an academic career. Training is provided in EEG, EMG, evoked potentials, video-EEG monitoring, and sleep, along with an outpatient neurology experience. Clinical experience is supplemented by a didactic lecture series. Fellows have an opportunity to participate in clinical research.

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Neuromuscular Medicine and Electromyography

The Neuromuscular/EMG fellowship at TJUH offers a one-year ACGME approved Neuromuscular Medicine fellowship with the emphasis on the diagnosis and treatment of a broad spectrum of neuromuscular disorders and acquiring the knowledge and skills to perform and interpret nerve conduction studies and electromyography (EMG). The Neuromuscular Division provides outpatient and inpatient clinical evaluations and management of diverse and challenging neuromuscular diseases such as ALS and myasthenia gravis, usually in conjunction with their electrophysiologic studies. Special emphasis is placed on developing expertise in electromyography and nerve conduction studies, and reviewing nerve and muscle biopsies with our neuropathology colleagues in select cases. The fellows become highly trained in the diagnosis and treatment of peripheral neuropathies,

myopathies, neuromuscular junction disorders, and motor neuron diseases. Clinical experience is supplemented with bi-weekly didactics and monthly journal club. The fellow is also expected to teach residents and medical students, as well as give neuromuscular case conferences as part of their educational experience.

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Epilepsy

This is an ACGME approved epilepsy fellowship program at an internationally renowned epilepsy center. Trainees in this fellowship complete one year of epilepsy training under the ACGME Epilepsy Fellowship Program and one year of clinical neurophysiology training under Jefferson's ACGME Clinical Neurophysiology Fellowship Program, for a combined total of two years fellowship training. There is also a separate pediatric epilepsy fellowship track.

The fellowship offers training in diagnosis, medical management, and surgical treatment of epilepsy, along with instruction in EEG, video-EEG monitoring, use of intracranial electrodes, intraoperative monitoring, brain mapping, and evoked potentials. There is a strong emphasis on clinical research and teaching from a multi-disciplinary faculty. This fellowship is designed for individuals who wish to pursue academic careers.

The Jefferson Epilepsy Center is a multidisciplinary quaternary care center for diagnosis and treatment of people with epilepsy. The center has a national referral base. Center faculty includes 8 neurologists, 3 neuropsychologists, 2 neurosurgeons, and

1 neuroradiologist. The center offers basic and advanced diagnostic testing and a full array of conventional and investigational medical and surgical treatments.

In addition to its outpatient facilities, the epilepsy center maintains an inpatient video-EEG monitoring unit consisting of eight beds, each in a specially outfitted private room, where approximately 400 patients are admitted yearly. Patients are evaluated for diagnostic reasons, pre-surgical assessments, intracranial EEG recording, and management of uncontrolled seizures. The surgical program is among the largest in the US, performing 80-90 operations yearly.

The A.I. duPont Hospital in Wilmington, DE, serves as the primary training base for pediatric epilepsy training under the leadership of Stephen Falchek, MD and Harry Chugani, MD. Training at the duPont site includes inpatient and outpatient epilepsy evaluation and treatment including an active epilepsy surgery program, video-EEG monitoring, and educational conferences. The A.I. duPont Hospital has 2 pediatric neurosurgeons and 4 epileptologists. There is also a PET center, with state-of-the-art PET/MR allowing the study of epilepsy using FDG and various ligands.

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Parkinson's Disease and Movement Disorders

The Comprehensive Parkinson's Disease and Movement Disorder Center offers a two-year clinical fellowship in Movement Disorders at one of the largest centers of its kind nationwide. The fellowship offers training in diagnosis, and management of Parkinson's disease and other movement disorders.

Clinical experiences include medical and surgical management for patients with Parkinson's disease, essential tremor, dystonia, Huntington's disease, ataxia and other movement disorders. The bulk of the fellow's clinical experience will occur in the outpatient neurology clinic. The Center has a mature deep brain stimulation (DBS) practice, including patients with Parkinson's disease, dystonia and tic disorders. Chemodenervation is provided for all movement-related indications during dedicated clinic sessions each week, providing the fellow with ample clinical experience.

Beyond clinical care, the fellowship's didactic curriculum includes bi-monthly Video & Journal Club Rounds with the faculty. Other video rounds sessions are also available.

Research opportunities are offered to fellows, who will have time and a stipend for academic travel. Attendance at the International Parkinson and Movement Disorder Society's course in Aspen is highly encouraged. All attendings are engaged in clinical research, most of which concerns the management of both movement and non-movement symptoms of Parkinson's disease. Opportunities are fostered for trainees to present research at national and international conferences, such as the AAN Annual Meeting or Annual Congress of the International Parkinson's and Movement Disorder Society (MDS).

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Headache

The Jefferson Headache Center Fellowship program is a UCNS accredited fellowship at an internationally recognized headache center. It is dedicated to giving the trainees the highest quality preparation so that he or she can make contributions to patient care and advance the level of knowledge of headache medicine. The program will prepare the Fellows for a career in clinical headache practice or academic headache medicine. The Fellows will be exposed to outpatient and inpatient headache patient care, as well as clinical headache research involving epidemiology, neurophysiology and therapeutic studies. In addition, a pediatric headache rotation is part of the program. Headache medicine is a unique subspecialty of neurology that requires knowledge not previously taught to trainees during their respective residency programs. The Fellowship program consists of 12 months of training with an optional second year focusing on research. The trainees will spend most of their time in the outpatient and inpatient headache units, but will have ample time to participate in research projects of their choosing. Trainees have 20% of their time protected for scholarly pursuits (e.g., 4 days/week clinical, 1 day/week research).

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Multiple Sclerosis

The Comprehensive Multiple Sclerosis Center utilizes an integrated approach to diagnosis and treatment of Multiple Sclerosis and other neuroimmunological disorders. It serves as a tertiary referral and teaching center and is allied with a multispecialty team of practitioners. It has special programs for clinically isolated syndromes, transverse myelitis and spasticity management. Fellows have an opportunity to participate in ongoing clinical and ex vivo research into the immunology of neurological disorders, new treatment and diagnostic approaches, novel imaging modalities and outcome and genetic studies in MS.

The Laboratory of Neuroimmunology offers qualified candidates further opportunities in basic and translational research in Multiple Sclerosis.

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Matthew Aaron Berk, MD
Physician-Resident
Neurology
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Neuro-ophthalmology

Neuro-ophthalmologic care is provided by Wills Eye Hospital, one of the top three ophthalmology centers in the United States by *U.S. News & World Report* for the last 17 consecutive years. The Neuro-Ophthalmology Service provides a one-year fellowship for one fellow in one of the busiest neuro-ophthalmology practices in the country, working with approximately 5,000 patient visits annually. The surgical experience includes temporal artery biopsies, a variety of strabismus procedures and optic nerve sheath decompression. The fellow is expected to be involved in a series of research projects resulting in publication. Resident and Medical Student education is included in the fellowship duties.

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Sleep

This ACGME-accredited Fellowship program is based within the Jefferson Sleep Disorders Center, the first sleep medicine program to be established in Philadelphia. Our primary goal is to develop independent practitioners of sleep medicine. We provide a comprehensive curriculum that is suitable for physicians from all host disciplines. Core faculty members include Karl Doghramji, MD (Program Director), Dimitri Markov, MD, Ritu Grewal, MD and Zhanna Fast, MD. The program has 20 additional faculty members representing multiple disciplines including otolaryngology, pulmonary medicine, psychiatry, oral and maxillofacial surgery, neurology, psychology, pediatrics, cardiology, gastroenterology and nutritional health. The diversity in faculty reflects the multidisciplinary nature of the curriculum. Fellows experience patients and perform testing in a wide range of diagnostic entities, utilize and learn the gamut of therapeutic options in sleep medicine, and develop competency in the evaluation and management of inpatient and outpatient sleep disorders in all age ranges. Fellows are also actively involved in teaching and research. Those who have completed our program have obtained careers in both academic and clinical environments.

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Philly FACTS

Thomas Jefferson University and Thomas Jefferson University Hospitals are located in historic downtown Philadelphia, in proximity to numerous educational, cultural and recreational facilities, and a short walk from Philadelphia's exciting waterfront. Affordable housing appropriate to resident needs is found throughout the city and surrounding counties. There is easy access to metropolitan New York and Washington, DC, areas.

- Attractions include: Independence Hall, National Constitution Center, Philadelphia Museum of Art, Franklin Institute, Philadelphia Zoo, Penn's Landing, Rodin Museum, the Barnes Foundation museum, Valley Forge National Historic Park, theater district, Lincoln Financial Field, Citizen's Bank Park and the Wells Fargo Center.
- Shopping flourishes in Center City Philadelphia. Jefferson is within walking distance to the heart of the shopping district.
- Jefferson is located minutes from the Philadelphia International Airport, an hour from Atlantic City, NJ, 90 minutes from numerous skiing areas and within a two-hour drive to New York City.
- Sporting Events: Flyers hockey, Eagles football, Phillies baseball, 76ers basketball and Union soccer.

