CHULALONGKORN CENTER OF EXCELLENCE

FOR PARKINSON'S DISEASE AND RELATED DISORDERS,

FACULTY OF MEDICINE,

CHULALONGKORN UNIVERSITY

CHULALONGKORN

SCHOOL OF MOVEMENT DISORDERS

FELLOWSHIP PROGRAM IN PARKINSON'S DISEASE

AND MOVEMENT DISORDERS

FELLOWSHIP PROGRAM DIRECTOR:

PROF. ROONGROJ BHIDAYASIRI, MD. FRCP. FRCPI

*THIS DOCUMENT IS BASED ON THE AMERICAN ACADEMY OF NEUROLOGY GUIDELINES

FOR FELLOWSHIP TRAINING IN MOVEMENT DISORDERS

OVERVIEW OF THE CENTER

Chulalongkorn Center of Excellence for Parkinson's disease and Related Disorders (CUPD) was established in 2006. A part of the Faculty of Medicine, Chulalongkorn University and the King Chulalongkorn Memorial Hospital, Thai Red Cross Society, it is situated in the heart of Bangkok. It was the first center in Thailand dedicated to the care of Parkinson's disease and other movement disorders patients. It works and collaborates with specialized multidisciplinary team of neurosurgeons, neuro-physiatrists, psychiatrists, nurses, biomedical engineers, and therapists.

The Center is committed to patient care, movement disorders education and research. There are more than a thousand patients visiting the center each year. The Center also hosts a large and active Parkinson's Support Group which is an integral part of the center.

Our education commitment includes comprehensive fellowship program, movement disorders education for physicians, residents, medical and PhD students, and other healthcare providers and educational and outreach programs for patients, caregivers and the general public. It holds at least a few seminars and educational camps each year.

Our research includes government and industry funded projects to better understand, diagnose, and effectively manage patients with movement disorders. Areas of active clinical research include epidemiology of Parkinson's disease as a part of the ongoing National PD Registry, gait analysis, and electrophysiological recording of tremor, and other movement disorders. In addition to these core research projects, we have regular

Postgraduate and PhD students from Chulalongkorn University and other universities conducting research. Our research projects are usually multidisciplinary and translational and include multi-site clinical and basic science researchers. The Center has been regarded as an exemplary research and innovation center. Many of the Center's innovation include laser-guided walking stick, tremor's glove, tremor and nocturnal monitoring devices. Medical and non-medical professionals from around the country visit the center to learn from its experiences.

FELLOWSHIP PROGRAMS

Chulalongkorn Center of Excellence for Parkinson's Disease and Related Disorders (CUPD) offers a variety of fellowship programs to suit the needs of various neurologists, institutions and countries. They comprise of:

1. *2 years fellowship program:* Fellows will get in-depth clinical training in the care of Parkinson's disease and other movement disorders patients at both out-patient clinic and in-patient consultation. Apart from that, fellows will get an opportunity to learn to do clinical research right from its inception to writing a research proposal, seeking grants, conducting the research and finally writing the manuscript.

2. *1 year fellowship program:* Fellows will get in-depth clinical training in the care of Parkinson's disease and other movement disorders patients at both out-patient clinic and in-patient consultation. Fellows will be encouraged to do a brief research

and write a manuscript by the end of the training.

3. *A 6-month visiting fellowship program:* Fellows will get clinical training in the care of Parkinson's disease and other movement disorders patients at both out-patient clinic and in-patient care, or a specialized program as per the individual request of the applicant for those who have had some training in movement disorders. Fellows will be encouraged to write a manuscript by the end of the training.

4. *A 2-year distant learning program:* The distant learning program will involve tele-education between CUPD and the fellow/learning site. The fellow will attend the tele-learning sessions with at least a month of rotation at CUPD (for further details please contact our department).

**Master of Science and PhD degrees are available for interested candidates.*

**Nurse training and visiting programs are available for those who are interested in opening a Movement Disorders program at their institution.*

The clinical experience will be based primarily at Chulalongkorn Center of Excellence for Parkinson's Disease and Related Disorders which will provide guidance for diagnosis and management of both common and rare movement disorders, especially for Parkinson's disease. *Strengths of our center include:*

1. It is the largest movement disorders center in Thailand.

2. We have had more than 10 years of experience in fellowship training.
3. In addition to movement disorders specialists, it has sub-specialists in advanced treatments, neurophysiology and sleep disorders of movement disorders.
4. It has a multidisciplinary team and collaborate with other faculties and institutions to advance its research.
5. In addition to Parkinson's and other movement disorders clinic, it has specialized advanced treatment clinic, gait clinic, neurophysiology clinic, home adaptation clinic and neuropsychiatry clinic.
6. It continuously publishes research articles in peer-reviewed journals.

CORE CONTENT OF MOVEMENT DISORDERS FELLOWSHIP

GOALS AND OBJECTIVES

1. The primary goals of the fellowship program in Parkinson's disease and Movement Disorders are developing a specialized teaching program in the areas of:

- Patient care
- Clinical and/or basic science research
- Teaching
- Education in Movement Disorder

2. The primary objectives of the fellowship program in Parkinson's disease and Movement Disorders are delineated training that will develop expertise in:

- Recognition
- Diagnosis

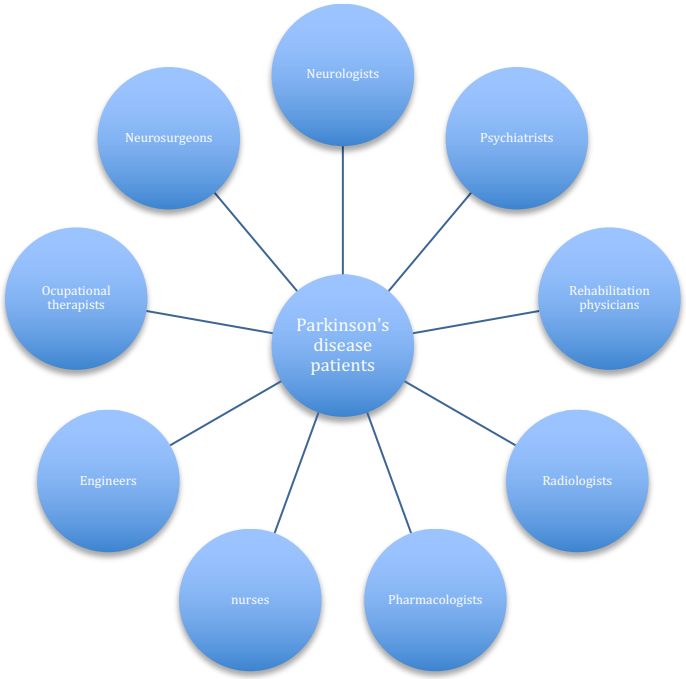
- Treatment
- Multidisciplinary care with patient-centered outcome

TEACHING METHODS

The center applies the following teaching methods/avenues to fulfill the goals of movement disorders fellowship training:

1. Outpatient clinic at the center
2. In-patient consultations
3. Attending pre-, intra- and post-"operative" assessments and treatments of advanced care patients – DBS, subcutaneous Apomorphine and Levodopa/Carbidopa Intestinal Gel (LCIG) therapies
4. Lectures
5. VDO conferences
6. Journal clubs
7. Topic reviews by fellows
8. Clinical and radiological signs presentations by fellows
9. Attending local and international seminars
10. Lecturing to residents and neurologists at movement disorders seminars organized by the center.
11. A maximum of 3 months elective at other institution, whether locally or internationally is optional.

Our goal is to integrate multidisciplinary team approach and produce outstanding movement disorders neurologists who will be in a position to become leaders and make significant contributions to the academic field of movement disorders.



PREREQUISITES FOR TRAINING

Those applying for fellowship, the applicant should have completed neurology training from an accredited institution.

APPLICANT SELECTION

The program director and faculties will conduct independent interviews with the applicants.

TRAINING PROGRAM FACULTY

Program Director: Prof. Roongroj Bhidayasiri is a board-certified neurologist and Movement Disorders specialist with significant clinical, research, educational and administrative ability to direct our fellowship program. He is a recognized leader in the field of Movement Disorders both locally and globally. He is available on a regular basis to interact directly with and supervise fellows' progress.

Primary Faculties: There are 4 fulltime faculties and 2 part-time faculties.

Dr. Onanong Phokaewvarangkul has been trained in DBS surgery at the Toronto Western Hospital, Canada and has special interest in all aspects of advanced care.

Dr. Pattamon Panyakaew has been trained in neurophysiology of movement disorders at the NIH, USA and conducts monthly neurophysiology clinic.

Dr. Jirada Sringean has been trained in movement disorders-related sleep disorders in Austria and has done many research and innovated devices in this field.

Dr. Priya Jagota has a deep interest in neuropsychiatry aspects of movement disorders and runs monthly neuropsychiatry clinic. She oversees the Parkinson's support group.

Dr. Surat Singmaneesakulchai is a part-time faculty who has special interests in functional movement disorders and Botulinum toxin injection.

Dr. Karn Sakdisornchai is a part-time faculty with special interest in the epidemiology aspects of movement disorders.

Our faculties have experience in teaching movement disorders both locally and abroad. They spend the majority of their neurological commitment in the study and treatment of

movement disorders. They have sufficient protected time, administrative support and commitment to mentor fellows.

Support Faculty: Our center has the support of related departments, specialists in neurosurgery, neuroimaging, neurorehabilitation, psychology, occupational therapy, engineering and nursing.

SCHEDULE OF ACTIVITIES

	8.00-9.00	9.00-10.00	10.00-11.00	11.00-12.00		13.00-16.00
Monday	**Morning movement round (IPD)**	**Research Time/ Self-study**	**Research Time/ Self-study**	**Center Meeting**		**Botulinum toxin injection clinic/ Advanced care meeting (once/month)**
Tuesday	**Morning movement round (IPD)**	**Research Time/ Self-study**	**Research Time/ Self-study**	**Research Meeting**		**Parkinson Clinic**
Wednesday	**Teaching round (IPD)**	**Hyperkinetic Movements Clinic Genetic Clinic**				**Journal club/VDO Round/ lecture/ case conference**
Thursday	**Morning movement round (IPD)**	**Advanced Treatment Clinic (DBS, Apomorphine, LCIG) DBS surgery (week 4)**				**Research Time**
Friday	**Morning movement round (IPD)**	**Gait clinic (week 1) Neuropsychiatry clinic (week 2) Home adaptation clinic (week 3) Neurophysiology clinic (week 2,4)**				**Research Time/ Meeting with Mentor**

CURRICULUM

The specialty of Movement Disorders neurology focuses on a large number of neurological disorders that share the common clinical feature of involuntary movements of either hypo- or hyperkinetic character. Movement disorders are classified first phenomenologically and then etiologically. The involuntary movements generally occur

in the absence of weakness. In terms of phenomenology, hypokinetic movement disorders include Parkinson's disease, several other conditions with parkinsonian features, and rare disorders like stiff-person syndrome. The large number of hyperkinetic movement disorders is divided in several categories including tremors, chorea, dystonia, tics, stereotypies and myoclonus.

Movement disorders encompasses several aspects of basic science, including neuroepidemiology, molecular biology, neurochemistry and neuropharmacology as well as neurophysiology. In addition, because most movement disorders are chronic conditions, treatment expertise also incorporates elements of neurorehabilitation. With the increasing emphasis on neurosurgical interventions for the treatment of Parkinson's disease, dystonia and various forms of tremor, movement disorder specialists must be skilled in identifying candidates for surgery and regularly participate in pre- and post-operative neurological management. Because some movement disorders have typical magnetic resonance imaging patterns, especially various secondary movement disorders, neuroimaging expertise also closely integrates in the daily practice of movement disorders as a neurological specialty.

Towards the end of training, fellows should have in-depth knowledge and expertise in:

1. **Anatomy, neurochemistry and neurophysiology of the basal ganglia**
    - Basal ganglia connections
    - Intra-striatal structures
    - Additional brainstem-cortical loops

- Basal ganglia interactions with the cerebellum
- Neurotransmitter chemistry and pharmacology
- Neurophysiological patterns of basal ganglia function
- Anatomical, neurochemical and physiological hypotheses related to hypokinesia and hyperkinesia

2. **Clinical Evaluation of Movement Disorders**
    - Skills to recognize and document patterns of clinical findings in movement disorders.
    - Skills to perform a complete general neurological examination.
    - Skills to perform a focused examination for movement disorders including turning, rest, assuming a posture, doing a task.
    - Skills to recognize and document patterns of clinical findings in movement disorders when the patient maintains a posture.
    - Skills to recognize and document patterns of clinical findings in movement disorders when the patient executes a task.
    - Skills to evaluate tone.
    - Skills to evaluate walking.
    - Familiarity and ability to apply standardized rating scales for movement disorders.
    - Skills to recognize and document non-neurological findings typical of movement disorders.

3. **Expertise in the definition and recognition of the following neurological phenomena**

- Hypokinesia (akinesia and bradykinesia)
- Hyperkinesia
- Tremor
- Chorea
- Choreoathetosis
- Ballism
- Tics
- Stereotypies
- Akathisia
- Myoclonus
- Dystonia
- Parkinsonism

4. Diagnosis, treatment, and scientific understanding of neurological disorders that are considered within the specialty of Movement disorders neurology.

1. Epidemiology and risk factors
2. Clinical features
3. Diagnostic evaluation: neuroimaging, laboratory studies
4. Differential diagnosis
5. Treatment pharmacological, surgical, and rehabilitative
6. Prognosis and natural history

7. Current areas of research
8. Hypokinetic Movement Disorders:
    - Parkinson's disease
    - Atypical parkinsonian disorders
9. Hyperkinetic Movement Disorders include:
    - Huntington's disease
    - Other forms of chorea
    - Tardive dyskinesia
    - Primary and secondary dystonia
    - Gilles de la Tourette and other tic disorders
    - Stereotypies seen in primary psychiatric and neurological conditions
    - Painful legs/moving toes
    - Action and non-rest tremors
    - Essential or familial tremor
    - Physiological tremor
    - Drug-induced tremors
    - Tremors of metabolic and medical illnesses
    - Rubral tremor and tremors seen in cerebellar disorders
    - Wilson's disease
    - Hemifacial spasm
    - Myoclonus/Startle syndromes
    - Gait disorders
    - Spinal cerebellar ataxias and other forms of ataxias

- Paroxysmal dyskinesias
- Restless leg syndrome
- Akathisia
- Drug-induced movement disorders

5. Advanced treatment of Parkinson's disease patients – Deep Brain Stimulation, subcutaneous Apomorphine injection and LCIG treatment

1. Skills in identifying patients who would need advanced treatment
2. Inclusion/exclusion criteria of each treatment
3. Evaluate and able to choose the best treatment option
4. Able to perform DBS and adjust settings (for 2 years fellowship)
5. Able to start and titrate the dose for Apomorphine subcutaneous therapy and LCIG administration
6. Able to recognize and manage relevant side effects of each

6.Botulinum toxin injection

1. Skills in identifying patients who would need Botulinum toxin injection
2. Evaluate patients and perform injections
3. Able to recognize and manage relevant side effects of Botulinum toxin injection

7.Neurophysiology of movement disorders patients

Able to perform and evaluate simple neurophysiology of movement disorders patients (for 2 years fellowship)

8.Research

1. A research in the field of movement disorders is required for 2-year fellowship program
2. A brief research in the field of movement disorders is encouraged for 1-year fellowship program
3. A manuscript writing is encouraged for 6-month fellowship program

CONTACT DETAILS

Director: Prof. Roongroj Bhidayasiri, MD, FRCP, FRCPI.

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