Introduction:

Welcome to the Clinical Neurophysiology and Epilepsy fellowship programs. The goals of the training programs are to master the skills necessary to successfully perform and analyze clinical neurophysiologic tests, including electroencephalography (EEG), evoked potentials (EP), electromyography (EMG), and nerve conduction tests (NCT), as well as to gain experience in specialized applications such as sleep studies, intraoperative monitoring, intracranial monitoring and long-term monitoring. Additionally, the epilepsy fellowship emphasizes experience in the clinical care of patients with epilepsy in both the inpatient and outpatient setting. The following outline is a list of the expectations, requirements and benefits for this program.

Skills: At the end of the training period, participants will be expected to demonstrate a mastery of the following:

Neurophysiology Fellowship

- Technical aspects of EEG recording
- Cellular physiology underlying neurophysiological testing
- EEG analysis and the parameters of normal and abnormal findings
- Clinical implications of abnormal EEG findings
- Basic evoked potentials
- Basic sleep study evaluation
- Intraoperative monitoring with evoked potentials and EEG
- Methods and interpretation of intracranial monitoring
- Technical and interpretational aspects of EMG and NCT
- Independent research/scholarly activity with a mentor

Epilepsy Fellowship

- EEG analysis and the parameters of normal and abnormal findings
- Clinical implications of abnormal EEG findings
- Evaluation of patients with epilepsy or suspected epilepsy in the outpatient setting
- Indications for admission to the epilepsy monitoring unit
- Management of patients in the epilepsy monitoring unit
- Indications for intracranial EEG evaluation

This is a one-year (12 month) ACGME accredited fellowship, with training at Baylor College of Medicine and affiliated hospitals:

Baylor College of Medicine, Baylor Clinic - McNair Campus (BCM)

CHI Baylor St. Luke's Medical Center (BSLMC)

Michael E. DeBakey Veteran's Administration Medical Center (MEDVAMC)

Texas Children's Hospital (TCH)

**Harris Health - Ben Taub General Hospital (HHS)*

**CHI Baylor St Luke's Medical Center – The Woodlands (SLWH)*

**Neurophysiology services will be provided - remotely*

Rotations:

EEG rotations

Fellows will be scheduled for rotations to participate in reading EEGs at Texas Children's Hospital (TCH), CHI Baylor St Luke's Medical Center (BSLMC), Michael E. DeBakey Veterans Affairs Medical Center (MEDVAMC**),** ***Harris Health - *Ben Taub General Hospital (HHS) & ***CHI Baylor St Luke's Medical Center – The Woodlands *(SLWH)* - * Neurophysiology services will be provided - remotely

The schedule is in half days (morning and afternoon). Depending on clinic and research times, fellows may be scheduled for half days at different locations. Fellows are under the supervision of the individual attending scheduled at each institution and any concerns can be discussed directly with the scheduled attending. If further action is needed, then the matter should be referred to the program director. The goals at each institution are listed below:

BSLMC/MEDVAMC EEG: Studies at these hospitals are from a primarily adult (including geriatric) patient population. Fellows will read the EEG studies (routine inpatient, routine outpatient, STAT, continuous bedside monitoring EEG, Evoked Potentials, IOM) as they are downloaded to the server. Studies will be reviewed with the scheduled attending. Fellows will prepare a draft report for the attending to review. *(refer to template)*

The goal of the rotation is to master an understanding of adult normal and abnormal EEG variations (including diffuse and focal abnormalities, coma patterns, and epileptiform abnormalities) and understand age-related changes in the EEG. At the end of the training period, fellows should be able to provide a succinct, cogent interpretation of the studies for referring clinicians.

TCH EEG: Studies at TCH are primarily from a pediatric population. Fellows will read the EEG studies (routine inpatient, routine outpatient, STAT, continuous bedside monitoring EEG) as they are downloaded to the server. Studies will be reviewed with the scheduled attending responsible for the report.

The goal of the TCH rotation is to master an understanding of normal developmental changes and EEG milestones in neonatal and childhood EEG and recognize and interpret abnormal EEG variations (including diffuse and focal abnormalities, coma patterns, and epileptiform abnormalities). At the end of the training period, fellows should be able to provide a succinct, cogent interpretation of the studies for referring clinicians *(refer to template below)*

BSLMC/TCH Intraoperative Monitoring. While rotating at BSLMC and TCH, fellows will monitor cases online with the supervision of the attending physician in the EMU/Neurophysiology laboratory. These studies include EEG monitoring of carotid endarterectomy, EEG monitoring for isoelectric hypothermia bypass procedures, motor and sensory evoked potentials and brainstem auditory evoked potentials. Although most cases will be monitored remotely in the Neurophysiology laboratory, fellows will also have a dedicated IOM rotation where they will have experiences in the OR at TCH and BSLMC to observe the recording procedures directly and to learn the instrumentation involved under supervision of the IOM technologist.

The goal of this exposure is to understand the principles of intraoperative monitoring, recognize the modalities utilized in various surgical procedures and recognize acute changes in recorded electrophysiologic parameters that reflect neurologic compromise during surgical procedures to assist the surgical team.

During the COVID19 pandemic, EEG review rotations were performed remotely. Effective July 2021, fellows are expected to complete site-rotations in person. BCM GME will provide formal guidance on required return to in-person training. Faculty may still conduct supervision virtually and will be determined on a faculty by faculty basis. Regardless, fellows are expected to check in with attending in AM and use teleconferencing (zoom, FaceTime) to review EEGs with faculty for those who are supervising remotely. This allows fellows to share their computer screen with the faculty for real-time feedback on EEG interpretation/EEG report writing. Recommended review frequency of at least twice daily.

Please refer to the attached block and rotation schedules.

***BSLMC / MEDVAMC/ TCH Epilepsy Monitoring Units (EMU)*:** All fellows will spend some time rotating in the EMU (more EMU for epilepsy fellows). While at BSLMC and MEDVAMC, following completion of the epilepsy monitoring unit rounds and EEG review, the remaining time will be spent at a half day seizure clinic at the VA and outpatient epilepsy clinics at McNair, epilepsy consults, and research time. While on the EMU rotation, fellows responsibilities include: supervising the admission and workup of the EMU patients by the neurology resident; daily patient rounds with the attendings; providing supervised antiepileptic medication adjustments as indicated; daily review of the monitoring study recordings; making a draft report; participation in the various associated tests for epilepsy surgical work-up (Wada test, SPECT scan, MRI, fMRI, MEG, PET scan, image coregistration for phase II implantations); and presentation of patients at the weekly epilepsy surgery conference. Fellows will also participate in intra-operative EEG monitoring during epilepsy surgery. (ECOG, Intracranial EEG, implants awake craniotomy)

The goal of this rotation is to master specialized skills necessary for evaluation of patients with epilepsy, including continuous digital EEG monitoring, pre-surgical evaluation of patients with intractable epilepsy, intracranial and intra-operative EEG monitoring.

In the EMU, the fellow and resident are involved in direct patient care. The fellow and resident round in person on each EMU patient with the attending. At attending's discretion, fellow can review remotely (if resident will be present throughout day). Resident should be available during standard business hours (8a-5p) to address any EMU patient issues. If no resident (eg. in clinic), then the resident should sign out to the fellow who should be physically available. Sign out after 5pm and on weekends should be performed to the on-call neurology resident (for patient care-related matters) and the on-call neurophysiology/epilepsy fellow (for EEG-related matters).

EMG

Neurophysiology fellows will have exposure to EMG (clinic/labs) at BSLMC, TCH, MEDVAMC & BSLMC – McNair. At a minimum this will be a 2-week dedicated EMG/NCT block with dedicated time at TCH, MEDVAMC, BSLMC and BSLMC-McNair. Fellows in the dual track EEG-EMG CNP fellowship will have more dedicated EMG/NCT time outlined in your schedule.

Epilepsy Fellows have elective time available and have the opportunity to participate in EMG studies if they so choose.

Sleep Rotation

Pediatric Clinical Neurophysiology Fellows will complete a total of 2 weeks at TCH. NO vacation leave may be taken during this rotation. This will occur in the 2nd half of the year. Drs. Elaine Seto and Anne Anderson will work on arranging the schedule and coordinating with Drs. Amee Patel and Daniel Glaze.

Please email Dr. Patel at axpatel1@texaschildrens.org a week prior to starting the rotation.

All fellows from February through May must attend the following conferences:
- Case conferences - held on the first and third Tuesdays in the WT 21st floor sleep conference room. (first Tuesday of the month is at 1pm, third Tuesday of the month is at 1:30pm)
- Journal club – first Monday of the month at noon – WT 21st conference room

Adult Clinical Neurophysiology Fellows will have a 2-week block of sleep with focused experience at the VA. Please email Dr. Singh at Supriya.Singh2@bcm.edu a week before starting the rotation to get the rotation schedule.

Clinics:

Fellows rotating at the MEDVAMC will have several clinic experiences. Adult epilepsy fellows will be expected to attend a continuity clinic at the MEDVAMC on Thursday afternoons. Excused weeks off of continuity clinic will be when a fellow is on vacation or when they are on rotations at TCH. There is also a half day of seizure clinic at MEDVAMC under the direction of Drs. Van Ness & Haneef that is staffed by fellows each week. This clinic is primarily covered by the clinical neurophysiology fellow on the MEDVAMC rotation (exceptions include when there are rotating psychiatry and internal medicine fellows staffing this clinic). While on the TCH ambulatory rotation, fellows will attend various pediatric epilepsy clinics which vary depending on being a CNP or epilepsy fellow. Epilepsy fellows on the BSLMC EMU and MEDVAMC will spend available afternoons seeing patients in the epilepsy clinics of the adult faculty at BSLMC-McNair.

The goal of the clinics is to provide fellows with direct outpatient care experience in treating individuals with epilepsy and epilepsy-related disorders. This includes clinical evaluation, laboratory work up and treatment of such patients.

Electives:

Fellows during the CNP fellowship will have a 2-week dedicated block of sleep, 2 weeks of EMG/NCT and 1 week of intraoperative monitoring. Epilepsy fellows have flexible weeklong experiences that can be in MEG (Magnetoencephalography), outpatient clinic, continuous EEG monitoring, neuropsychology, intraoperative monitoring, scholarly activity, EMG/NCT or sleep.

Rotations

TCH Outpatient (CNP fellow)

<table>
<tr><td>2021-2022</td><td>TCH Outpatient CNP FELLOW TEMPLATE</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>MONDAY</td><td>TUESDAY</td><td>WEDNESDAY</td><td>THURSDAY</td><td>FRIDAY</td></tr>
<tr><td>07:00 AM</td><td></td><td>Pediatric Epilepsy Patient Management Conference - TCH Bluebird Clinic</td><td></td><td></td><td></td></tr>
<tr><td>08:00 AM</td><td rowspan="4">if on TCH EMU prior week, EMU coverage. Otherwise EMG (Woodbury, WT21). If not EMGs scheduled, EEG (Seto/Diaz-medina, WT21)</td><td>Adult Epilepsy Patient Management Conference</td><td rowspan="2">Scholarly Activity</td><td rowspan="2">EEG (Katyayan/Takacs, WT21)</td><td rowspan="2">EEG (Coorg/Masters, WT21)</td></tr>
<tr><td>09:00 AM</td><td rowspan="3">EEG (Anderson, WT21)</td></tr>
<tr><td>10:00 AM</td><td></td><td></td><td></td></tr>
<tr><td>11:00 AM</td><td></td><td></td><td></td><td></td></tr>
<tr><td>12:00 PM</td><td>Neurology Grand Rounds - Mc Nair</td><td></td><td>Pedi Neurology Grand Rounds</td><td>Neurophysiology Lecture Series</td><td>Neurophysiology Lecture Series</td></tr>
<tr><td>01:00 PM</td><td rowspan="6">EEG (Ali/Houck/Trandafir, WT21)</td><td rowspan="6">Scholarly activity</td><td rowspan="6">Epilepsy clinic (Ali/Coorg/Handoko/ Houck/Katyayan/Sully /Takacs/Trandafir, MW9)</td><td rowspan="6">EEG (Mizrahi, WT21)</td><td rowspan="6">EEG (Davila/Rotation, WT21)</td></tr>
<tr><td>02:00 PM</td></tr>
<tr><td>03:00 PM</td></tr>
<tr><td>04:00 PM</td></tr>
<tr><td>05:00 PM</td></tr>
<tr><td>06:00 PM</td></tr>
</table>

WT = West Tower

TCH Outpatient (Epilepsy Fellow)

2021-2022	TCH Outpatient Epilepsy FELLOW TEMPLATE				
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
07:00 AM		Pediatric Epilepsy Patient Management Conference - TCH Bluebird Clinic			
08:00 AM	If on TCH EMU prior week, EMU coverage. Otherwise Epilepsy clinic (Ali/Coorg/Handoko/Sen/Sully/Takacs, MW9)	Adult Epilepsy Patient Management Conference	MEG/Dipole Analysis (Dr. Quach, MW4)	If 1st wk of month Dravet clinic (Nayak/Sully, MW9), otherwise RNS/Epilepsy Clinic (Ali/Houck/Trandafir, MW9)	Scholarly activity
09:00 AM					
10:00 AM		EEG (Anderson, WT21)			
11:00 AM					
12:00 PM	Neurology Grand Rounds - Mc Nair		Pedi Neurology Grand Rounds	Neurophysiology Lecture Series	Neurophysiology Lecture Series
01:00 PM	Epilepsy clinic (Riviello, MW9). If Riviello not in clinic, Epilepsy clinic (Davila-Williams/Diaz-Medina/Handoko/Takacs, MW9)	MEG acquisition/TMS (Xavier/Jeremy/Paul, PFW5South)	(Epilepsy fellows clinic - to be developed) Epilepsy clinic (TSC & spasms & autoimmune clinic) (Coorg/Katyayan/Trandafir, MW9)	EEG (Mizrahi, WT21)	Keto clinic (Katyayan, MW9) or Laser Ablation (Ali/Curry, LT8 OR1). Otherwise EEG (Davila/Rotator, WT21)
02:00 PM					
03:00 PM					
04:00 PM					
05:00 PM					
06:00 PM					

MW: Mark Wallace Tower
PFW: Pavilion for Women

TCH EMU

2021-2022	TCH EMU FELLOW TEMPLATE						
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
07:00 AM		Pediatric Epilepsy	Lecuture	Lecture			
08:00 AM		Adult Epilepsy					
09:00 AM							
10:00 AM	TCH EMU Coverage - Admitting						
11:00 AM		TCH EMU	TCH EMU	TCH EMU	TCH EMU	TCH EMU rounds	
12:00 PM	Neurology Grand Rounds		Pedi Neurology Grand Rounds	Neurophysiology Lecture Series	Neurophysiology Lecture Series		
01:00 PM							
02:00 PM							
03:00 PM							
04:00 PM							
05:00 PM							
06:00 PM	TCH EMU	TCH EMU	TCH EMU	TCH EMU	TCH EMU		
TCH EMU fellow week carries over into following Monday AM (as long as staying at TCH)							

TCH CEEG

2021-2022	Continuous EEG FELLOW TEMPLATE						
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
07:00 AM		Pediatric Epilepsy Patient Management Conference - TCH Bluebird Clinic					
08:00 AM		Adult Epilepsy Patient Management Conference					
09:00 AM	ICU EEG or EMU coverage (if on TCH EMU prior week)					If on Call, cEEG call 5pm Friday to 5pm Saturday	
10:00 AM							
11:00 AM		ICU EEG	ICU EEG	ICU EEG	ICU EEG		
12:00 PM	Neurology Grand Rounds - Mc Nair		Pedi Neurology Grand Rounds	Neurophysiology Lecture Series	Neurophysiology Lecture Series		
01:00 PM							
02:00 PM							
03:00 PM			Scholarly Activity, Epilepsy surgery conference 2pm Blue Bird Clinic				
04:00 PM							
05:00 PM							
06:00 PM	ICU EEG	ICU EEG		ICU EEG	ICU EEG		
06:00 PM							
ICU EEG room in Legacy Tower 9th floor							

BSLMC EMU Epilepsy Fellow

2021-2022	BSLMC Epilepsy (one or two fellows)						
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
07:00 AM		Pediatric Epilepsy Patient					
08:00 AM	EMU record review, attending rounds, resident supervision - BSLMC	Adult Epilepsy Patient	EMU record review, attending rounds, resident supervision - BSLMC	EMU record review, attending rounds, resident supervision - BSLMC	EMU record review, attending rounds - BSLMC	If on call: EMU, LTM review	If on call: EMU, LTM review
09:00 AM							
10:00 AM		EMU record review, attending rounds - BSLMC					
11:00 AM							
12:00 PM	Grand Rounds - Adult		Grand Round - Pedi	Neurophysiology Lecture Series	Neurophysiology Lecture Series		
01:00 PM	Epilepsy Clinic - McNair If no clinic, then EEG Lab-BSLMC	Epilepsy Clinic - McNair If no clinic, then EEG Lab-BSLMC	Epilepsy Clinic - McNair If no clinic, then EEG Lab-BSLMC	Continuity Clinic at VA	Scholarly Activity		
02:00 PM							
03:00 PM							
04:00 PM							
05:00 PM							
06:00 PM							

BSLMC One Fellow CNP EEG track

2021-2022	BSLMC CNP EEG emphasis ONE FELLOW						
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
07:00 AM		Pediatric Epilepsy Patient					
08:00 AM	EMU record review, attending rounds, resident supervision - BSLMC	Adult Epilepsy Patient	EMU record review, attending rounds - BSLMC	EMU record review, attending rounds - BSLMC	EMU record review, attending rounds - BSLMC	If on call: EMU, LTM review	If on call: EMU, LTM review
09:00 AM							
10:00 AM		EMU record review, attending rounds - BSLMC					
11:00 AM							
12:00 PM	Grand Rounds		Pediatric Grand Rounds	Neurophysiology Lecture Series	Neurophysiology Lecture Series		
01:00 PM	EEG, IOM, EP, till finished	EEG, IOM, EP, till finished	Scholarly activity (CNP fellow)	EEG, IOM, EP till finished	EEG, IOM, EP till finished		
02:00 PM							
03:00 PM							
04:00 PM							
05:00 PM							
06:00 PM							

BSLMC Neurophys lab (EEG track) with 2 Fellows

2021-2022	BSLMC Neurophysiology TEMPLATE 2 fellow model						
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
07:00 AM		Pediatric Epilepsy					
08:00 AM		Adult Epilepsy					
09:00 AM							
10:00 AM	EEG, ICU-LTM, IOM, EP -	EEG, ICU-LTM, IOM,	EEG, ICU-LTM, IOM,	EEG, ICU-LTM, IOM,	EEG, ICU-LTM, IOM,	If on call: EMU, LTM	
11:00 AM	BSLMC	EP - BSLMC	EP - BSLMC	EP - BSLMC	EP - BSLMC	review	If on call: EMU, LTM review
12:00 PM	Neurology Grand Rounds - Mc Nair		Pedi Grand Rounds	Neurophysiology Lecture Series	Neurophysiology Lecture Series		
01:00 PM							
02:00 PM							
03:00 PM		EEG, ICU-LTM, IOM,		EEG, ICU-LTM, IOM,	EEG, ICU-LTM, IOM,		
04:00 PM	EEG, ICU-LTM, IOM, EP at	EP at BSLMC		EP at BSLMC	EP at BSLMC		
05:00 PM	BSLMC	EEG, ICU-LTM at	Scholarly Activity	EEG, ICU-LTM at	EEG, ICU-LTM at		
06:00 PM	EEG, ICU-LTM at BTGH	BTGH	(CNP EEG fellow)	BTGH	BTGH		

BSLMC Dual Track Fellow Lab Coverage

2021-2022	BSLMC CNP DUAL TRACK FELLOW Lab Coverage						
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
07:00 AM		Pediatric Epilepsy Patient Management Conference - TCH Bluebird Clinic					
08:00 AM	EMGs with Colin Anderson at Mcnair	Adult Epilepsy Patient Management Conference	EMGs with Colin Anderson at McNair	EEG, ICU-LTM, IOM till noon - St Luke's	EMGs with Milvia Pleitez at McNair		
09:00 AM							
10:00 AM		EEG, ICU-LTM, IOM - St. Lukes				If on call: EMU, LTM review	If on call: EMU, LTM review
11:00 AM							
12:00 PM	Neurology Grand Rounds - Mc Nair		Pedi Grand Rounds	Neurophysiology Lecture Series	Neurophysiology Lecture Series		
01:00 PM							
02:00 PM							
03:00 PM							
04:00 PM		1. EMG with Dr.					
05:00 PM	EEG Lab	Killian at McNair	EEG lab	EMG at McNair with Dr. Kung	Scholarly Activity		
06:00 PM							

BSLMC Dual Track Fellow EMU Coverage

2021-2022	BSLMC CNP DUAL TRACK FELLOW EMU Coverage						
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
07:00 AM		Pediatric Epilepsy Patient Management Conference - TCH Bluebird Clinic					
08:00 AM		Adult Epilepsy Patient Management Conference					
09:00 AM							
10:00 AM	EMU					If on call: EMU, LTM review	If on call: EMU, LTM review
11:00 AM		EMU	EMU	EMU	EMU		
12:00 PM	Neurology Grand Rounds - Mc Nair		Pedi Grand Rounds	Neurophysiology Lecture Series	Neurophysiology Lecture Series		
01:00 PM							
02:00 PM							
03:00 PM							
04:00 PM	EMGs with Colin	1. EMG with Dr.					
05:00 PM	Anderson	Killian at McNair		EMG at McNair with Dr. Kung	Scholarly Activity		
06:00 PM			EEG lab				

MEDVAMC with One Fellow

2021-22	VA FELLOW - 1 fellow				
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
07:00 AM		Pediatric Epilepsy Patient Management Conference -			
08:00 AM	EEGs	Adult Epilepsy Patient Management Conference	EMU rounds	Fellow seizure clinic (for CNP fellow if no rotating fellow covering)	EMU Discharge Rounds
09:00 AM		EMU Rounds	Epilepsy Inpatient Consults		
10:00 AM	EMU pre-rounds				EEGs*
11:00 AM			1130-12 EEG Teaching		
12:00 PM	Neurology Grand Rounds - Mc Nair		Pediatric Neurology Grand Rounds	Neurophysiology Lecture Series (Zoom)	Neurophysiology Lecture Series
01:00 PM				EMU Rounds	
02:00 PM					
03:00 PM	EMU Intake Rounds	EEGs	EEGs	EEGs	Scholarly Activity
04:00 PM	EEGs	Epilepsy Inpatient Consults	Epilepsy Inpatient Consults	Epilepsy Inpatient Consults * Adult Epilepsy Fellow has Continuity Clinic	
05:00 PM					
06:00 PM					

MEDVAMC Two Fellow CNP

2021-22	VA CNP FELLOW - 2 fellow				
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
07:00 AM		Pediatric Epilepsy Patient Management			
08:00 AM	EEGs/EMGs	Adult Epilepsy Patient Management	EEGs/EMGs	Fellow seizure clinic (if no rotating fellow covering)	EEGs
09:00 AM		EEGs/EMGs			
10:00 AM					
11:00 AM					
12:00 PM	Neurology Grand Rounds - Mc Nair		Pediatric Neurology Grand Rounds	Neurophysiology Lecture Series (Zoom)	Neurophysiology Lecture Series
01:00 PM	EEGs	EEGs	EEGs	EEGs	Scholarly Activity
02:00 PM					
03:00 PM					
04:00 PM					
05:00 PM					
06:00 PM					

MEDVAMC Two fellow Epilepsy Fellow

2021-22	VA Epilepsy FELLOW - 2 fellow				
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
07:00 AM		Pediatric Epilepsy Patient Management Conference -			
08:00 AM	EMU Pre-rounds	Adult Epilepsy Patient Management Conference	EMU rounds	EMU rounds	EMU Discharge Rounds
09:00 AM		EMU Rounds	Epilepsy Inpatient Consults		
10:00 AM					
11:00 AM			1130-12p EEG teaching		
12:00 PM	Neurology Grand Rounds - Mc Nair		Pediatric Neurology Grand Rounds	Neurophysiology Lecture Series (Zoom)	Neurophysiology Lecture Series
01:00 PM	EMU Intake Rounds	Epilepsy Inpatient Consults	Epilepsy Inpatient Consults	Continuity Clinic (for adult Epilepsy Fellow only), otherwise Epilepsy consults	Scholarly Activity
02:00 PM					
03:00 PM					
04:00 PM					
05:00 PM					
06:00 PM					

MEDVAMC Dual Track Lab coverage

2021-2022	VA CNP Fellow dual track Lab coverage				
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
07:00 AM		Pediatric Epilepsy Patient Management Conference - TCH Bluebird Clinic			
08:00 AM		Adult Epilepsy Patient Management Conference		EMGs with Dr. Cherian, Fellow seizure clinic (if no rotating fellow or CNP EEG fellow present)	
09:00 AM	1. EMG/NCS with Dr. Fabian at VA, 2. EMG at Mcnair				EMGs with Dr. Fabian or EMGs at Mcnair
10:00 AM		EMGs With Drs. Fabian or Cherian	EMGs with Dr. Lu		
11:00 AM					
12:00 PM	Neurology Grand Rounds - Mc Nair		Pedi Neurology Grand Rounds	Neurophysiology Lecture Series	Neurophysiology Lecture Series
01:00 PM					
02:00 PM					
03:00 PM					
04:00 PM					
05:00 PM				EEGs in Lab	
06:00 PM	EEGs in Lab	EEGs in Lab	EEGs in Lab	EMGs with Dr. Fabian	Scholarly Activity

MEDVAMC Dual Track EMU Coverage

2021-2022	VA CNP Fellow dual track covering EMU				
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
07:00 AM		Pediatric Epilepsy Patient Management Conference - TCH Bluebird Clinic			
08:00 AM		Adult Epilepsy Patient Management Conference		EMGs with Dr. Cherian, Fellow seizure clinic (if no rotating fellow or CNP EEG fellow present)	EMU Discharge Rounds
09:00 AM			EMU Rounds		
10:00 AM	1. EMG/NCS with Dr. Fabian at VA, 2. EMG at Mcnair	EMU rounds	1130-12p EEG teaching		
11:00 AM					
12:00 PM	Neurology Grand Rounds - Mc Nair		Pedi Neurology Grand Rounds	Neurophysiology Lecture Series	Neurophysiology Lecture Series
01:00 PM	EMU Intake Rounds				
02:00 PM					
03:00 PM					
04:00 PM					
05:00 PM				EMU rounding	
06:00 PM		EMGs/ EEGs in Lab	EMGs/EEGs in Lab		Scholarly Activity

EMG 2 week block

2021-2022	EMG 2 week rotation				
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
07:00 AM		Pediatric Epilepsy Patient Management Conference - TCH Bluebird Clinic			
08:00 AM	1. Dr. Woodbury at TCH WT 21 2. EMG/NCS with Dr. Anderson at McNair 3. EMG/NCS with Dr. Fabian at VA	Adult Epilepsy Patient Management Conference	1. EMG with Dr. Lu at VA 2. EMG with Dr. Anderson at McNair	1. EMG at VA with Dr. Cherian 2. EMG with Dr. Killian at McNair	1. ALS clinic (once monthly at McNair), 2. EMG/NCS at Mcnair with Dr. Pleitez 3. EMG/NCS at VA with Dr. Fabian
09:00 AM		1. EMG with Dr Fabian/Cherian at VA			
10:00 AM					
11:00 AM					
12:00 PM	Neurology Grand Rounds - Mc Nair		Pedi Neurology Grand Rounds	Neurophysiology Lecture Series	Neurophysiology Lecture Series
01:00 PM	1. EMG/NCS with Dr. Anderson at McNair 2. EMG/NCS with Dr. Fabian at VA	1. EMG/NCS at TCH (1,3,5th Tuesdays) 2. EMG with Dr. Killian at McNair	1. EMG/NCS with Dr. Anderson at BSLMC 2. EMG/NCS with Dr. Killian at McNair	1. EMG at McNair with Dr. Kung 2. EMG at VA with Dr. Fabian	Scholarly Activity
02:00 PM					
03:00 PM					
04:00 PM					
05:00 PM					
06:00 PM					

IOM

2021-2022	IOM rotation				
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
07:00 AM		Pediatric Epilepsy Patient Management Conference - TCH Bluebird Clinic			
08:00 AM	TCH OR	Adult Epilepsy Patient Management Conference	TCH OR	BSLMC OR	BSLMC reading room
09:00 AM		BSLMC reading room			
10:00 AM					
11:00 AM					
12:00 PM	Neurology Grand Rounds - Mc Nair		Pedi Neurology Grand Rounds	Neurophysiology Lecture Series	Neurophysiology Lecture Series
01:00 PM	TCH OR/TCH reading room	BSLMC OR	TCH OR/TCH reading room	BSLMC OR/BSLMC Reading room	Scholarly Activity
02:00 PM					
03:00 PM					
04:00 PM					
05:00 PM					
06:00 PM					

MEG week

2021-2022	MEG rotation				
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
07:00 AM		Pediatric Epilepsy Patient Management Conference - TCH Bluebird Clinic			
08:00 AM	MEG lab patient hookup	Adult Epilepsy Patient Management Conference	MEG lab Dr. Gavvala/Dr. Hegazy	MEG Dr. Quach	MEG study independent review
09:00 AM		MEG lab Dr. Quach			
10:00 AM					
11:00 AM					
12:00 PM	Neurology Grand Rounds - Mc Nair		Pedi Neurology Grand Rounds		Neurophysiology Lecture Series
01:00 PM	MEG lab review Techs	MEG lab Dr. Quach	MEG lab review techs	MEG lab review Dr. Quach	Scholarly activity
02:00 PM					
03:00 PM					
04:00 PM					
05:00 PM					
06:00 PM					

Pedi Epilepsy Clinic

2021-2022	Pediatric Epilepsy Clinic Options				
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
07:00 AM		Pediatric Epilepsy Patient Management Conference - TCH Bluebird Clinic			
08:00 AM	Ali, Coorg, Handoko, Katyayan, Nayak, Sen, Sully, Takacs	Adult Epilepsy Patient Management Conference	Ali, Diaz-Medina, Handoko (keto), Houck, Nayak, Sen, Takacs	Ali (RNS), Coorg, Davila-Williams, Diaz-Medina, Handoko, Houck (RNS), Nayak (1st Dravet), Sen, Sully (1st Dravet), Trandafir (RNS)	Nayak, Takacs (spasms)
09:00 AM		Coorg, Diaz-Medina (keto), Houck, Katyayan, Nayak			
10:00 AM					
11:00 AM					
12:00 PM	Neurology Grand Rounds - Mc Nair		Pedi Neurology Grand Rounds	Neurophysiology Lecture Series	Neurophysiology Lecture Series
01:00 PM	Davila-Williams, Diaz-Medina, Handoko, Katyayan, Riviello, Seto, Sully, Takacs	Trandafir	Ali, Coorg (3rd TSC), Handoko, Houck, Katyayan (spasms), Sully, Takacs, Trandafir (immune)	Diaz-Medina, Handoko, Trandafir	Katyayan (keto)
02:00 PM					
03:00 PM					
04:00 PM					
05:00 PM					
06:00 PM					

Adult Epilepsy Clinic

2021-2022	Adult Epilepsy Clinic				
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
07:00 AM		Pediatric Epilepsy Patient Management Conference - TCH Bluebird Clinic			
08:00 AM	Drs. Goldman, Hegazy, Lin	Adult Epilepsy Patient Management Conference	Dr. Van Ness	Drs. Hegazy, Lin	Drs. Van Ness, Gavvala
09:00 AM		Dr. Goldman, Neuropsych testing with Dr. Stinson			
10:00 AM					
11:00 AM					
12:00 PM	Neurology Grand Rounds - Mc Nair		Pedi Neurology Grand Rounds	Neurophysiology Lecture Series	Neurophysiology Lecture Series
01:00 PM	Drs. Goldman, Hegazy, Lin	Drs. Goldman, Gavvala, Hegazy, Neuropsych testing with Dr. Stinson	Drs. Van Ness, Krishnan	Drs. Hegazy, Lin	Drs. Van Ness, Gavvala
02:00 PM					
03:00 PM					
04:00 PM					
05:00 PM					
06:00 PM					

ADULT EEG TEMPLATE - *sample*
GE RIS REPORT

DATE OF TEST:
DATE OF REPORT:
ACC:
EEG:
Start time:
Stop time:
ICD-10:
CPT:

HISTORY:

MEDICATIONS:

TECHNICAL SUMMARY:
This is a digital video EEG recorded with 32 input channels reviewed with bipolar and referential montages using the modified combinatorial system nomenclature.

DESCRIPTION OF RECORD:
During the maximally alert state a 9 Hz posterior dominant rhythm was seen that was symmetric, reactive to eye opening and well regulated. More anteriorly, low voltage frontocentral beta predominated. Drowsiness was characterized by alpha attenuation and increased frontocentral theta, vertex sharp transients and POSTS. Stage 2 sleep was reached characterized by symmetric sleep spindles and K-complexes.

HV: Hyperventilation was not performed. Hyperventilation was performed for 3 minutes with good effort. No change was seen with HV.

PHOTIC STIMULATION: Flash stimulation was done from 1-30 Hz; no photic driving was seen; photoparoxysmal responses were absent.

IMPRESSION: Normal Awake and Asleep EEG
1. List abnormalities

CLINICAL CORRELATION: An EEG without epileptiform discharges does not exclude the possibility of epilepsy. If the clinical suspicion of epilepsy remains, consider additional EEG recordings.

xxxxxx
Neurophysiology Fellow

I have personally reviewed this entire EEG and the report and I agree with the above note.

XXXX
Clinical Neurophysiology/Epilepsy Attending

TCH EEG Template

The new EEG template can be found in TCH EPIC under the smart phrase .tcheeg

Texas Children's Hospital
Neurophysiology Department
EEG Report

Date of Examination: @TODAY@
EEG Number: @FLOW(1330080081::1)@

@NAME@
MRN: @MRN@
Patient's Age: @AGE@

Referring Provider: @FLOW(1330080083::1)@

EEG TECHNOLOGIST HISTORY:
Pertinent medical history: @FLOW(1330080094::1)@
Level of consciousness: @FLOW(1330080090::1)@
Reason for EEG: @FLOW(1330080091::1)@
Description of event: @FLOW(1330080093::1)@
Frequency of events: @FLOW(1330080095::1)@
Length of episode: @FLOW(1330080097::1)@
Preceding symptoms? @FLOW(1330080098::1)@
Behavior after event is over: @FLOW(1330080099::1)@
Date/Time of last event: @FLOW(1330080096::1)@
Pertinent Medications @FLOW(1330080100::1)@
Previous EEG? @FLOW(1330080084::1)@
@FLOW(1330080085::1)@

TECHNICAL SUMMARY: Electrodes were applied by an EEG technologist according to the 10-20 electrode placement system with at least 16 recording electrodes. Ocular leads and a single electrocardiogram channel were also recorded. The electroencephalogram was recorded simultaneously with video throughout the designated time period. Monitoring was maintained and continuously attended by the neurophysiology technical staff.

A description of the terms used to quantify spikes using a visual analog scale includes:
Rare: a spike-wave index of less than 1%.
Occasional: a spike-wave index of 1-10%.
Frequent: a spike-wave index of 10-50%.
Abundant: a spike-wave index of 50-90%.
Continuous: a spike-wave index of greater than 90%.

A description of the terms used to quantify voltage includes:
Low: <20 uV
Medium or Moderate: 20-70 uV
High: >70uV

EEG DESCRIPTION:
Awake Background:
The background is continuous and symmetric. The posterior dominant rhythm is a well formed, *** Hz, *** uV rhythm with reactivity noted to eye opening and closing. A well-formed *** Hz central rhythm is seen bilaterally, and a frequency amplitude gradient is present.
No focal slowing, attenuation or background asymmetry was identified.

Sleep:
With drowsiness, there is a slowing of the background frequencies bilaterally. With sleep, vertex waves, sleep spindles, and K complexes are present. Slow wave sleep was not seen. There are admixed sharply contoured waveforms at the vertex including F waves. Following awakening, there is a return of the previously described background frequencies.
Behavioral sleep was obtained but no sleep architecture was detected.
No sleep was obtained.

Epileptiform Abnormalities:
None

Seizures or patient events:
None
Activation Procedures:
Hyperventilation was not performed.
Hyperventilation for 3 minutes was performed with good effort and induced no abnormalities.

Photic stimulation induced no abnormalities.
Photic stimulation induced no abnormalities, and well-formed evoked responses are seen bilaterally.
Hyperventilation and photic stimulation were not performed.

ECG:
A prolonged lead one EKG is obtained with no obvious dysrhythmia.

IMPRESSION: This EEG, recorded in the waking and sleep states, is within normal limits.
This EEG, recorded in the waking and sleep states, is abnormal, due to:
1) *** (most severe thing first)
2) ***
3) ***

CLINICAL CORRELATION:
The diagnosis of a seizure remains a clinical one and a normal study does not exclude this diagnosis.
However, there are no epileptiform features in this recording to suggest an underlying epileptic disturbance.
No suspicious clinical events occurred during this recording.
If strongly suspected, an activation procedure, such as sleep deprivation, might be useful in inducing epileptiform features.
If episodes persist, a prolonged recording might the useful to obtain an electroclinical correlation of the events.

No prior study is available for comparison.
Compared to the previous EEG (@FLOW(1330080085::1)@), this study

Start Time: @FLOW(1330080111::1)@
End Time: @FLOW(1330080112::1)@

ICD10 Code: R56.9 Unspecified convulsion
R40.4 Transient alteration of awareness
R41.82 Altered mental status, unspecified
R56.00 Febrile convulsion NOS
R25.9 Unspecified abnormal involuntary movement
R55 Syncope/Collapse
R51 Headache

Fellowship Timeline – Important Dates:

July-August 2021: ACNS CNP Boot Camp (virtual)

End of July 2021: Complete AES Fellowship EEG Modules

End of September 2021: Identify research mentor and research project

January 2022: Baylor in-service CNP and Epilepsy Exam

February/March 2022: ACNS in-service exam (CNP fellows)

March 2022: AES EpiFITE in-service exam (Epilepsy fellows)

June 2022: Fellow Grand Rounds

Clinical Neurophysiology - Overall Program Goals

1. To train fellows who are board-eligible in Neurology, Child Neurology or Psychiatry, in all aspects of clinical neurophysiology.
2. To train fellows to become competent clinical neurophysiologists.
3. To provide opportunities for academic activities including scholarly presentations, development and conduct of clinical research, and publication of results of such work.
4. To meet eligibility requirements of the American Board of Psychiatry and Neurology for added qualifications in Clinical Neurophysiology.
5. To achieve overall program goals, fellows will focus on the six domains of clinical competence; Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Professionalism, System Based Practice and Practice-Based Learning and Improvement.

Overall Program Objectives

At the end of the Clinical Neurophysiology Fellowship, the trainee is expected to:

1. Be competent in at least one of the following disciplines:
   a. Electroencephalography
   b. Polysomnography
   c. Electromyography and nerve conduction studies
2. Have an understanding of all of the following disciplines:
   a. Electroencephalography
   b. Polysomnography
   c. Electromyography and nerve conduction studies
   d. Sensory evoked potentials
   e. Intraoperative neurophysiological monitoring
   f. EEG/video monitoring
3. Have developed a working knowledge of the following:
   a. Technical aspects of neurophysiologic recordings
   b. Basic mechanisms of generation of neurophysiologic signals
   c. Statistical methods applicable to clinical neurophysiology
   d. Study design of clinical research as it relates to clinical neurophysiology
4. Understand the clinical indications and impact of all neurophysiological studies in the diagnosis and management of patients of all ages from neonate to the elderly.
5. Serve effectively as a consultant to physicians referring patients for neurophysiologic studies.
6. Have pursued a clinical research project, with completion of a report.

7. Learn how to write meaningful Neurophysiology reports.

Epilepsy - Overall Program Goals

1. To train fellows who are board-eligible in Neurology, Child Neurology or Psychiatry, in all aspects of Epilepsy.
2. To train fellows to become competent Epileptologists, with a specific emphasis upon one aspect of the discipline.
3. To provide opportunities for academic activities including scholarly presentations, development and conduct of clinical research, and publication of results of such work.
4. To meet eligibility requirements of the American Board of Psychiatry and Neurology for added qualifications in Epilepsy.
5. To achieve overall program goals, fellows will focus on the six domains of clinical competence; Patient Care, Medical Knowledge, Interpersonal and Communication Skills, Professionalism, System Based Practice and Practice-Based Learning and Improvement.

Overall Program Objectives

At the end of the Epilepsy Fellowship, the trainee is expected to:

1. Be competent in one of the following disciplines:
    a. Electroencephalography
    b. Clinical management of people with epilepsy; Inpatient, Outpatient
2. Have an understanding of all of the following disciplines:
    a. Electroencephalography
    b. Intraoperative neurophysiological monitoring
    c. EEG/video monitoring, Wada Test, Electrocorticography, Cortical mapping, Epilepsy surgery
    d. Anti-Seizure medication pharmacology
3. Have developed a working knowledge of the following:
    a. Technical aspects of neurophysiologic recordings
    b. Basic mechanisms of generation of neurophysiologic signals
    c. Statistical methods applicable to clinical neurophysiology
    d. Study design of clinical research as it relates to clinical neurophysiology and epilepsy
4. Understand the clinical indications and impact of all neurophysiological studies in the diagnosis and management of patients of all ages from neonate to the elderly.
5. Serve effectively as a consultant to physicians referring patients for neurophysiologic studies.
6. Have pursued a clinical research project, with completion of a report.
7. Learn how to write meaningful Neurophysiology reports.

Educational Goals of Patient Care Assignments:

All of the patient care assignments have the common feature of diagnosis and management of patients with epilepsy, thus providing a focused and comprehensive training experience in epileptology. The educational goals of this segment of training are:

1. Recognize the full range of expression of epilepsy and seizure disorders in adults and children;
2. Consider the differential diagnosis of seizures in all age groups;
3. Learn to appropriately apply clinical neurophysiology techniques to the diagnosis and management of these disorders;
4. Be able to formulate and implement rational therapeutic strategies;
5. Understand the rational use of anti-seizure drugs (ASDs);

6. Be able to devise rational evaluation and management strategies for patients with intractable epilepsy which may include novel AEDs, vagus nerve stimulation, ketogenic diet and epilepsy surgery;
7. Develop and implement a plan for the management of patients of any age in status epilepticus.

EEG Faculty			EMG Faculty	SLEEP Faculty
BSLMC	**TCH**	**MEDVAMC**		
Lu Lin	Irfan Ali		Suzanne Woodbury (TCH)	Aimee Patel (TCH)
Jay Gavvala	Anne Anderson	Zulfi Haneef	Veneetha Cherian (VA)	Supriya Singh (VA)
Alica Goldman	Rohini Coorg	Vitor Pacheco	Liang Lu (VA)	
Paul C. Van Ness	Gloria Diaz-Medina	Paul Van Ness		
Mohamed Hegazy	Kimberly Houck	Kareem Gadelmola	Roderic Fabian (VA)	
Vaishnav Krishnan	Akshat Katyayan		Colin Anderson (BSLMC)	
Atul Maheshwari	Laura Masters		James Killian (BSLMC)	
Eli M. Mizrahi	Eli Mizrahi		Milvia Pleitez (BSLMC)	
Gabriela Tantillo	Cristina Trandafir		Doris Kung (BSLMC)	
	Anu Nayak			
	Michael Quach			
	James Riviello			
	Sonali Sen			
	Elaine Seto			
	Krystal Sully			
	Henry Osso-Rivera			
	Dani Davila-Williams			
	Maureen Handoko			
	Danielle Takacs			

Facilities:
Neurophysiology laboratories are present at the Baylor-affiliated hospitals including: CHI Baylor St Luke's Medical Center, Texas Children's Hospital, Michael E DeBakey VA Medical Center and Baylor College of Medicine, McNair Campus. Through these facilities, laboratories and instrumentation are available for the conduct of the following studies: electroencephalography (EEG), sensory evoked potentials (EPs), EEG-video monitoring, polysomnography, intraoperative monitoring (EEG and EP), brain mapping, special studies for epilepsy surgery (Wada testing), electrocorticography, and electromyography and nerve conduction studies. There are fully equipped EEG and EP laboratories, EMG laboratories, Epilepsy Monitoring Unit, and Sleep Laboratories. In addition, there are study areas for trainees, library, conference room, and computer/phone access and work areas.

Participant's supervisory and patient care responsibilities:

Patient Care - Responsibilities

1. **Laboratory:**

a. **EEG –** Fellows review studies prior to the arrival of the attending and write a draft report. The attending then reviews all records with the fellows and signs the final report.
b. **EMG –** Fellows present all cases directly to the attending, who also gives a brief lecture in relation to cases seen during the day.
c. **EP/IOM –** Fellows will review any evoked potentials performed in the laboratory, generate a draft report and then review studies with the faculty, who will sign the report. While at St. Lukes and TCH, fellows will have the opportunity to review IOM cases concurrently with faculty and discuss findings and overall interpretation.

2. **Clinics – EMG/Epilepsy** – Fellows perform appropriate history and physical examinations on assigned patients. All patients worked up by the fellows are presented to the attending on a one on one basis.

3. **Epilepsy Monitoring Unit (EMU) –** Neurology residents assigned to the EMU perform history and physical exams on patients. The fellows then review these evaluations with the resident(s). Attending physicians scheduled to the EMU then review the patient workups with the fellows and residents. The attending conducts rounds on the patients each day with the fellows and residents in the EMU and reviews the EEG recordings and clinical findings with the fellows and residents. Fellows work with residents to write orders on patients and interact with the nursing staff, hospital personnel and family members. If patients go to the operating room for placement of intracranial electrodes or for epilepsy surgery, the fellow accompanies the attending to the operating room.

Lines of Supervision:

On all clinical services, a designated member of the faculty of the Section of Neurophysiology, Department of Neurology, will supervise the Clinical Neurophysiology or Epilepsy Fellow. The Fellow will, in turn, provide supervision to the Neurology Resident assigned to the Clinical Neurophysiology rotation within the framework of that resident's Neurology training program.

Supervising faculty will provide the following levels of supervision:

a. **Direct** – supervising physician is physically present with the fellow and patient.
b. **Indirect** – supervising physician is physically within the hospital or other site of patient, and is immediately available to provide Direct supervision.
c. **Oversight** – supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered.

Training will be provided in the following procedures:

1. Electroencephalography (EEG)
2. EEG-video monitoring
3. Evoked potentials
4. Polysomnography
5. Electrocorticography
6. Functional brain mapping
7. Wada testing
8. Electromyography and nerve conduction velocity studies
9. Intraoperative Monitoring
10. Neuromodulation techniques (VNS, DBS, RNS)

Evaluation:

Fellows are evaluated (through MedHub online system), 360˚, milestones (*reported every 6 months to ACGME*) and semi-annually/annual evaluations, completed by staff and faculty. The Program Director meets with each

fellow both semi-annually and annually to discuss their evaluations. All evaluations are confidential. Both positive and negative feedback is provided. Fellows are given an opportunity at these times to provide a written formal evaluation of the program, as well as discuss any concerns or critiques that they have with respect to the faculty and training program. The program director is available at any time to discuss immediate concerns or complaints.

ACGME Core Competencies

Patient Care

Adequate treatment of patients requires that the physician gather accurate information about patients and that this information is used to generate an appropriate differential diagnosis and management plans. The physician appropriately follow-ups on the patient's clinical status and is able to identify and adapt to changing clinical conditions.

Patient care competency is evaluated primarily in two settings at the various teaching institutions: 1) weekly outpatient clinics (seizure and neuromuscular) and 2) the epilepsy monitoring units. In each clinical setting, neurophysiology faculty, personally mentor fellows and constantly evaluates their growth and development. Fellows learn and demonstrate appropriate interview and history skills for patients with epilepsy or neuromuscular diseases. They also develop and carry out treatment and management plans for these patients and learn to educate and council patients and family members.

Medical Knowledge

Fellows must have the necessary knowledge to adequately interpret neurophysiology studies and to adequately care for their patients. Knowledge is gained in the following disciplines: electroencephalography, polysomnography, electromyography and nerve conduction studies, evoked potential studies, intraoperative neurophysiological monitoring, long term EEG/video monitoring, and autonomic testing. The fellow must understand the clinical indications and impact of all neurophysiological studies in the diagnosis and management of patients of all ages from infancy to the elderly and serve effectively as a consultant to physicians referring patients for neurophysiological evaluation. Medical knowledge for interpretation of neurophysiology studies is primarily obtained from one-on-one training with neurophysiology faculty members in the various neurophysiology laboratories. Additional knowledge is provided to the fellows in a series of basic science discussion sessions mentored by neurophysiology faculty and lectures in clinical neurophysiology. Fellows are also provided with a list of supplemental texts from which additional information on various topics can be obtained.

In the outpatient clinics and epilepsy monitoring units, the fellows must have the ability to recognize the full range of expression of seizure and neuromuscular disorders in adults and children and to learn to appropriately apply clinical neurophysiology techniques to the diagnosis and management of these disorders.

Interpersonal and Communication Skills

Fellows demonstrate interpersonal and communication skills that allow for effective exchange of information with patients, families, physicians and other health care professionals. Fellows are required on a daily basis to present to their peers and faculty the findings of various neurophysiological studies. They must also demonstrate that the results of a particular neurophysiological test can be adequately communicated to the referring physician through the electronic medical record. In the outpatient clinic and epilepsy monitoring units, the fellows interact and communicate with patients, families, other fellows, faculty, consultants and other members of the health care team. These skills include the ability to communicate effectively across a broad range of socio-economic and cultural backgrounds. Fellows must maintain comprehensive and timely medical records. All notes should list a pager or phone number below the electronic signature. They must work effectively as a member of a health care team and serve appropriately as a consultant to other physicians

and health professionals. Interpersonal and communication skills of the fellows are constantly assessed by the neurophysiology faculty in the laboratory, outpatient and epilepsy monitoring unit settings.

Professionalism

Fellows must adhere to ethical principles and be committed to carrying out professional responsibilities. Fellows must demonstrate a respect for patient privacy and demonstrate compassion, integrity and respect for others. They must demonstrate sensitivity and responsiveness to a broad patient population including diversity in age, gender, culture, race, religion, disability, and sexual orientation. Fellows must answer pages and messages in a timely fashion. They must dress in a neat, clean and professional manner with a visible ID badge. Strict infection conduct is mandatory (i.e., handwashing before & after seeing a patient)

System-Based Practice

Fellows demonstrate the ability to understand and work efficiently within the entire health care system. Rotations at the various institutions provide an understanding of the different forms of health care delivery to indigent versus veterans versus private patient populations. Fellows demonstrate the ability to provide high-quality care in a cost effective manner and incorporate consideration of cost-awareness and risk benefit analysis in patient care decisions. Fellows work effectively with other health care providers including consultants from other medical fields.

Practice-Based Learning and Improvement

Fellows develop the ability to improve practice patterns and neurophysiological interpretation skills through the appropriate use of the literature and interaction with the neurophysiology faculty. Fellows are able to critically evaluate their interpretation of neurophysiology studies and also evaluate their patient care in the outpatient clinics and in the epilepsy monitoring units. Fellows are receptive to constructive criticism regarding patient care and interpretation of neurophysiological studies.

Fellow Awards: At the end of the academic year, outstanding fellow efforts in the areas of clinical care, medical education and research will be recognized. The David K. H. Chen< MD Teaching Award will be awarded to the fellow annually to a fellow in epilepsy or clinical neurophysiology for outstanding contributions in medical education. Awardees will be recognized during graduation.

PROCEDURE LOG

All Clinical Neurophysiology & Epilepsy fellows are responsible for maintaining a personal log of their procedures and case types, as stipulated by the Program Director. The log is not recorded centrally, and protected patient information is stripped from the log. It is intended primarily as a count of the various case and procedure types, giving the fellow an accurate idea of how many procedures they have performed, which in turn will form part of the annual evaluation report that the Program Director prepares at the end of the program. Procedure log should include; date, CPT Code & ICD-10 codes. GME requires that all work activity will be documented by fellows in MedHub. Epilepsy fellows will maintain logs on the ACGME website - *requirement*

HOURS

Fellows regular hours are from 7:00 am through 6:00 pm – hours may run longer, Monday through Friday (Saturday and Sunday, if ON CALL), excluding official BCM Holidays. It is expected that when fellows are not rounding with attendings, interpreting neurophysiological studies or in EMG or Seizure clinic, the additional time will be used for personal study or research activities. It is expected that fellows will arrive at the designated assignments on time.

ON CALL RESPONSIBILITIES (for BCM – BSLMC - McNair, BSLMC, TCH & MEDVAMC)

There is no evening or weekend call for the EMG service. There is weekend on-call from home for urgent EEG and for rounding on patients on the epilepsy monitoring unit. Call begins at 5 PM on Fridayand ends at 8 AM on Monday for weekends and 5 PM to 8 AM for weeknights on the adult side. Fellows will rotate weekend call. Fellows will be listed on the Neurophysiology call schedule and will be the first point of contact for after hour calls. For pediatric call, pediatric fellows will take cEEG call beginning Friday 5pm lasting until Saturday 5pm. This will occur on average once per month. While on pediatric rotations, adult fellows will only take pediatric call and vice versa.

Call Responsibilities:
Weekend Call expectations:

a. Fellows do not have to come into hospital and can work remotely with exception of important bedside assessments (eg, cortical stimulation).
b. If fellow on call was on EMU the past week, they will focus on the EMU patients and can help out with some LTMs (provided EMU service isn't too busy)
c. If fellow on call was on LTMs the past week, they will focus on LTM studies and can help out with EMU patient reports if time allows
d. If fellow was not on BSLMC service the prior week (rare), then their default will be to focus on LTM studies and can help out with EMU reports thereafter.
e. Division of duties between fellow and faculty will vary on a week by week basis based on workload and fellow/faculty preference. I would encourage this plan to be discussed on Thurs/Friday.
    i. One potential suggestion to divide work: Fellows can help "cross cover" if the LTM or EMU volume is less than 4. If especially busy, for example, If there are more than 4 LTM bedsides and 4 EMU patients, the fellow can help report on half of the excess studies (e.g. if there are 4 EMU and 6 LTMs, fellow will read 4 EMU + 1 LTM, EEG reader will read 5 LTMs themselves)
f. Completion of signout documents for both EMU and LTM services are necessary for this to work. This will primarily fall on fellows to complete but if there is no fellow coverage or fellow forgets, faculty needs to update document.

SUPERVISION

During the first month of fellowship, each fellow will have *Direct Supervision* and coaching, with the faculty physically present with the fellow and patient. As the fellow demonstrates an increasing level of competence with the various tasks, tests, and patient care, faculty supervision will transition to *Indirect Supervision*, with the faculty readily available (via pager/cell phone) or in person. Faculty are encouraged to review procedures/encounters with the fellow on a regular basis and provide feedback after care is delivered.

Each institution has specific requirements listing situations in which a trainee **must** contact the supervising physician immediately. Examples of these situations are: In outpatient neurology clinic, or the EEG/EMG lab:

- When patients are behaviorally disordered or threatening
- When there is need for a CODE team activation
- When on consults in the inpatient service
- Unexpected transfer to ICU or higher level of care
- Unanticipated intubation or ventilator support
- Change in CODE status
- Major neurologic change
- Major medical problem (e.g. cardiac arrest, a CODE, new or rapidly worsening respiratory distress, PE)
- Clinical intervention due to medication or treatment errors
- Development of any new clinical problem requiring an invasive procedure or operation for treatment

- Patient, family, or clinical staff request for attending notification.

LECTURES (*Attendance required*): Due to the COVID19 Pandemic, all lectures will occur remotely via Zoom (until further notice)

Monday 12:00 pm – 1:00 pm Neurology Grand Rounds – BCM, McNair Campus

Tuesday 7:00 am – 8:00 am Epilepsy Surgery Conference (Pediatric) - TCH

8:15 am – 9:15 am Epilepsy Surgery Conference (Adult) - BSLMC

Wednesday 12:00 pm – 1:00 pm Pediatric Neurology Grand Rounds – TCH

Thursday 12:00 pm – 1:00 pm Neurophysiology & Epilepsy lecture series (subject to change)

Friday 12:00 pm – 1:00 pm Neurophysiology & Epilepsy lecture series (subject to change)

Friday 1:00 pm – 2:00 pm Neurophysiology & Epilepsy lecture series (subject to change)

Thursday, Friday 12:00 pm – 1:00 pm, Friday 1:00 pm – 2:00 pm Journal Club/EEG review

Friday 1:00 pm – 2:00 pm Research Mentorship on average once every 3 months

Self Directed Fellow Lectures:

Each month, one of the Friday 1-2pm conferences will be designated as self-directed learning. One fellow will be assigned, with a faculty mentor, to present on a topic and teach the rest of the fellows. The topics are from the American Epilepsy Society Fellowship curriculum (https://www.aesnet.org/education/for-fellows/fellowship-curriculum). Each topic has an associated video/handout that the fellow is expected to review to help generate the lecture material. The topics are listed below. Faculty and fellow assignments will be distributed by Cynthia in July 2021

Febrile seizures

Women with epilepsy

SUDEP

Status Epilepticus

Self/Family Management

Psychiatric comorbidities

Mechanism of Action of AEDs

Evaluation of 1st seizure

Drug Discontinuation, Interactions, Monotherapy vs Polytherapy

Epilepsy in Elderly

Imaging in Epilepsy (Structural MRI and need for further imaging including presurgical)

Clinical Trials

Boot camp:

All incoming Epilepsy and Clinical Neurophysiology fellows will attend Boot Camp with several high yield epilepsy and neurophysiology lectures given over the first few days of the fellowship. A listing of the Boot camp lectures are as follows (subject to change):

EEG

Normal Early Childhood, Neonatal and Premature EEG, Maturation

Normal Late Childhood and Adult EEG, including normal variants

EEG interictal epileptiform discharges and epileptic seizure patterns

EEG and focal lesions Lecture

Early Severe Neonatal and Infantile Epileptic Encephalopathy

EEG and encephalopathy, coma and death, including periodic patterns

EEG instrumentation - electrodes, amplifiers, analog and digital recording, filters and display

Classification of Seizures and Epilepsies using latest ILAE and ICD-10 terminology

Status epilepticus, particularly in the critically-ill patients

Interictal-Ictal Continuum

Practice of EEG (EEG review)

EMG/NCS

NCS, normal and abnormal and EMG/NCS Anatomy and Techniques, effects of temperature

EMG, Normal and Abnormal

Evoked Potentials

Evoked Potentials - VEP, BAEP, SEP basics

Sleep Medicine

Polysomnography History and Technique

ACNS Boot Camp:

All incoming fellows will have access to the ACNS CNP Boot Camp:

https://www.acns.org/education/cnp-bootcamp

Lectures will be broadcast live and fellows are encouraged to attend if possible. If unable to attend, lectures will be saved for review and it is expected fellows review the lecture material afterwards. CNP fellows are expected to review all bootcamp modules (6) whereas epilepsy fellows are expected to review the first 5.

AES Fellowship Curriculum:

As part of your bootcamp, fellows are expected to review three of the AES Fellowship Curriculum modules:

Background: General

Background Electroclinical syndromes

EEG

Modules are available at the following site and are free to review. Note you must create an AES login. It is expected modules will be completed within the first month of fellowship.

https://www.aesnet.org/education/for-fellows/fellowship-curriculum

LABS & OTHER ACTIVITIES (location)

St. Luke's Neurophysiology Lab	BSLMC 23rd Floor
St. Luke's EMU	BSLMC 22nd Floor
TCH Neurophysiology Lab	TCH West Tower 21st Floor
TCH EMU	TCH West Tower 10th Floor
TCH CEEG reading room	TCH Legacy Tower 9th Floor
VA Neurophysiology Lab & EMU	2nd Floor on Nursing Unit 2A
Adult EMG Lab	BSLMC – McNair Campus 9th Floor
Private Adult Epilepsy Clinic	BSLMC – McNair Campus 9th Floor
VA Seizure Clinic	1st Floor near police station
Pediatric Epilepsy Clinic	TCH Clinical Care Center 9th Floor conference room
Adult Epilepsy Surgical Conference	BSLMC – Kellaway Library P522
Pediatric Epilepsy Surgical Conference	TCH Clinical Care Center 9th Floor conference room
Neurology Grand Rounds	BSLMC – McNair Campus 1st Floor conference rooms A/B
Pediatric Grand Rounds	TCH Auditorium basement level
Neurophysiology & Epilepsy lecture series	Virtual Zoom session BSLMC – Kellaway Library P522

READING MATERIALS

Copies of the following textbooks are available for reading in the Kellaway Library at BSLMC and in the EEG laboratory at MEDVAMC. The books are to remain at the Section of Clinical Neurophysiology and may **not** be taken off the premises. If needed, selected chapters can be copied for home study.

Core Texts: EEG

Comprehensive Clinical Neurophysiology, 2000, eds: Saunders, Levin and Luders

Current Practice of Clinical Electroencephalography, 2003, eds: Ebersole & Pedley

Supplemental Reading:

Electroencephalography: Niedermeyer's - Basic principles, clinical applications, and related fields, Schomer & Lopes da Silva, 7th edition

A Practical Approach to Neurophysiologic Intraoperative Monitoring, Hussain Spehlmann's Evoked Potential Primer, Misulis & Fakhoury

A Practical Approach to Stereo EEG, 2020, ed: Schuele.

EMG

Electromyography and Neuromuscular Disorders: Clinical-Electrophysiologic Correlations, Preston and Shapiro

Intraoperative Monitoring

Intraoperative Neurophysiology: An Interactive Monitoring Session. Alan Legatt, Demos Medical Publishing, 2014.

Evoked Potentials

Illustrated Manual of Clinical Evoked Potentials. Aatif Husain, Demos Medical Publishing, 2017.

MEETINGS/CONFERENCES/ALLOWANCES

Fellows may attend **one** meeting/conference per year that is appropriate for:
Clinical Neurophysiology Fellow – **ACNS, CNS, AAN or AES**
Epilepsy Fellow – **AES, ACNS, CNS or AAN**
$2,000.00 BCM travel allowance (domestic travel)
**Attendance to additional meetings/conferences are at the discretion of the Program Director

The fellowship program provides fellows with a $200.00 allowance towards the purchase of a textbook or subscription of their choice.
The Neurophysiology section provides funding for junior memberships to ACNS or AES. Additional memberships are the responsibility of the fellow.

DUTY HOURS

All fellows at Baylor College of Medicine must record their work hours using the web-based MedHub system found at: https://bcm.medhub.com/index.mh

Work hours should be logged frequently, and at least weekly. Record all patient care, administrative, vacation/sick time, scholarly activities and on call from home. All hours **must** be reported, including weekends.

Maximum Hours of Work per Week

The combined total of hours worked should **not** exceed 80 hrs per week, averaged over a four week period, inclusive of all in-house call activities. Both Clinical Neurophysiology and Epilepsy fellowship programs are committed to and responsible for the promotion of patient safety and fellow/resident well-being in a supportive educational environment.

Mandatory Time Free of Duty

Fellows must be scheduled for a minimum of one day free of duty every week (when averaged over four weeks). At-home call cannot be assigned on these free days. The program coordinator and program director are constantly vigilant to assure that frequency and intensity of hours worked does not adversely impact the fellows' educational experience.

MOONLIGHTING

Clinical Neurophysiology & Epilepsy Fellowship programs do not permit moonlighting.

MONITORING OF TRAINEE WELL-BEING

The Clinical Neurophysiology Program Director and teaching staff are sensitive to the need for timely provision of confidential counseling and psychological support services to fellows. Training situations that consistently produce undesirable stress on fellows are evaluated and modified. Trainees and faculty are educated to recognize the signs of fatigue and sleep deprivation, alertness management, and fatigue mitigation processes. While not likely to be needed in this fellowship, when necessary the program will adopt fatigue mitigation processes to manage potential negative effects of fatigue on patient care and learning.

IN- SERVICE TRAINING EXAMS

1. Baylor Institutional In service exam (*January 2022) – ALL Fellows*
2. American Clinical Neurophysiology Society In-service Exam (*Spring 2022) – Clinical Neurophysiology Fellows*
3. American Epilepsy Society In-service Exam (Spring 2022) – *Epilepsy Fellows*

The purpose of in-service training exams is to determine the fellow's current level of training and knowledge base and ensure fellows are progressing through expected milestones.

BOARD EXAMINATIONS

It is the program's expectation that all graduates of this fellowship will take the ABPN Clinical Neurophysiology or Epilepsy board examination, within 3 years of graduation.

SCHOLARLY ACTIVITY

Fellows are required to execute at least **one** scholarly activity during this year-long program. Early in the year (July/August), faculty will present potential projects that are available for fellow involvement. By September 1st of the fellowship year, fellows are expected to identify their projects and to select a faculty mentor. Regular meetings approximately every 2-3 months during the Friday 1:00 pm – 2:00 pm will occur with all fellows and core faculty to discuss progress on scholarly activity and other research methodologic topics.

At the end of the year, fellows will be expected to prepare a grand rounds presentation to discuss their scholarly activity. An abstract of your scholarly activity and QI project will be reviewed by the program director during the semiannual and final evaluations. ***ACGME requirement***

Fellows are encouraged to work on a quality improvement project at BSLMC, TCH or the VA under the supervision of a faculty mentor aimed at improving inpatient and/or outpatient practice.

TEACHING

Clinical Neurophysiology & Epilepsy fellows assist in teaching neurology to medical students and neurology residents. This will include module presentations for the neurology clerkship, presentations at the case conference, journal club, grand rounds and others. Fellows will also be assigned specific topics as part of Fellow-directed learning lecture series and are responsible for preparing the lecture in conjunction with a faculty mentor.

Ongoing educational initiatives that fellows will be asked to participate in include EEG case review Wednesdays 1130a-12p. Fellow rotating in the EMU at the VA will lead an EEG focused educational session with the VA residents with supervision from VA faculty. At St. Lukes, there is a EMU case review with EEG technologists occurring regularly. Fellows on the EMU at the time will be asked to help lead the case discussion with the faculty.

ROTATION SWAPS

Fellows who desire to swap rotations must arrange the swaps themselves. Any swaps must not result in any change in percentage of time at any given site. All swaps must be approved by the program director.

POLICIES & PROCEDURES

Refer to the Institution Policy Manual located on the GME website at https://www.bcm.edu/education/graduate-medical-education for Baylor College of Medicine Graduate Medical Education specific policies.

The Clinical Neurophysiology & Epilepsy Fellowship programs are subspecialties of the Neurology Residency program and therefore are governed by the policies listed in the Neurology residency manual. https://www.bcm.edu/departments/neurology/education/neurology

Should policies in the Neurology Program Residency Manual or this Fellowship Manual conflict with the Institution Manual, the Institution Manual takes precedence.

GRIEVANCES

We have an open door policy for any concerns that you may have. The program director and all faculty are available to discuss any problems or concerns that arise. Confidentiality will be respected and every attempt will be made to provide prompt resolution of the problem. Baylor College of Medicine offers several avenues to address fellow concerns. Informally, the office of the Ombudsman offers a confidential resource to discuss Baylor related concerns, including interpersonal conflict or misunderstandings, and academic or administrative concerns. Formal grievances can be filed through the Integrity Hotline http://www.bcm.ethicspoint.com/ or

(855) 764-7292. The fellow may also contact the Graduate Medical Education office.

ABSENCES (BCM GME policy attached)

Fellows are granted up to **44 days** off, per academic year – July 1, 2021 to June 30, 2022

Vacation - 21 days total (15 weekdays & 6 weekend days)

Sick - 14 days

PTO (paid time off) – 9 days, includes **all** BCM Holidays (7 total); remaining 2 days will be for meeting or conferences.

**Additional days for educational leave to attend a meeting or conference will require approval from the program director and Graduate Medical Education Office.

Vacations should be planned well in advance and coordinated with the faculty and clinic where you rotate. Please notify affected faculty, program director and program coordinator at least 4 weeks in advance of scheduled absence. No more than two weeks of vacation may be taken at one time. No more than 1 fellow can take vacation in the same block rotation. All vacation/time away requests must be submitted in MedHub for approval at least 4 weeks prior to the scheduled time away. The rotation faculty must also approve the vacation request.

GME Leaves and Vacation Policy

All residents and fellows are provided 44 paid days off per academic year (July 1 – June 30). This time off is non-vested (meaning you are not paid for it if you leave before having utilized), does not accrue, and does not roll over from one academic year to the next. These 44 days include:

*21 vacation days

*14 sick days (to be used only for personal illness)
A treating physician's statement, from a non-house staff physician, is necessary if the illness or injury extends beyond three (3) consecutive calendar days. In addition, to return to work, a statement is required from the treating physician that stipulates the involved house staff physician is fit to return to duty. In addition, if a house-staff physician is absent from work for more than four (4) non-consecutive days in a calendar month, a statement may be required from the treating physician. The Senior Associate Dean for Graduate Medical Education shall resolve any disputes regarding the house staff physician's fitness for duty (e.g., disagreements between the house staff physician, program director, or director of the Occupational Health Program).

A house staff physician may be eligible to use sick days under the federal Family and Medical Leave Act.

Baylor College of Medicine, effective July 1, 2014, provides a Core benefit of Short Term Disability (STD) insurance to all residents and fellows. After 44 consecutive calendar days of personal disability (including maternity leave), the STD insurance policy would be available, and provide benefits up to a maximum of 20 weeks. Approval for STD benefits is made by the insurance carrier based on treating physician reports and the type of disability. As a Core benefit STD is provided at no cost to residents and fellows.

These STD benefits would include 60% weekly earnings, up to a maximum of $750 per week for a maximum of 20 weeks depending on the type of disability.

*9 Paid Time Off (PTO) days
This includes personal days, holiday, and educational leave. A program is not permitted to provide any additional leave without the written approval of the Office of Graduate Medical Education.

Makeup: GME programs shall provide house staff physicians with certifying Board requirements. Time missed for any reasons beyond that permitted by the relevant certifying Board must be made up. All made up time required for GME program completion will be paid. Each GME program shall have a written policy regarding makeup time and shall provide a copy of this policy to its house staff physicians.

When total (cumulative) time lost for any reason exceeds that permitted by the appropriate certifying Board, the house staff physician's promotion to the next level of training will be delayed by an amount equal to the time that needs to be made up. This delay supersedes any existing letter of appointment regarding dates, year of appointment, and stipend, but does not negate the reappointment.

It is the responsibility of the program to document and report all time off as required per Baylor Human Resources and Payroll policies.

MedHub: Baylor College of Medicine uses MedHub. This is an online web-based Trainee Management System, designed to track and document a variety of critical program and Trainee activities relating to educational experiences, institutional reimbursement, and program accreditation. GME requires that all work activity including work hours are documented by fellows in Medhub

Please go to https://bcm.medhub.com/u/a/help.mh for more information and instructions on its use.