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Welcome to the University of Kansas Neuromuscular Medicine Fellowship program. We look forward to this academic year with an excellent fellow. Our continued focus on clinical research, inpatient and outpatient clinical evaluations, diagnostic, procedural and technical skills essential to the performance of Neuromuscular Medicine is reflected in both our didactic and clinical experiences.

This is an ACGME-accredited fellowship that spans one year at the University of Kansas Medical Center. We offer a variety of experiences in many different settings. The experience includes opportunities to observe, evaluate, and manage inpatients and outpatients of all ages with a wide variety of disorders of the nervous system and muscles, as well as to learn the effectiveness of diagnostic and therapeutic procedures. Experiences at the Landon Center on Aging, the Kansas University Hospital, Kansas City Veterans Administration Medical Center and the General Clinical Research Center provide opportunities to work with medical professionals as well as assist patients with medical problems. Neurologists successfully completing the program, once certified in Neurology, will be eligible for certification by the American Board of Psychiatry and Neurology in Neuromuscular Medicine.

We believe our program will prepare fellows for careers in private practice and academic settings. We look forward to working with you this year!
FELLOWSHIP ROTATIONS

The emphasis of the fellowship training is on the evaluation and care of the patients suffering from Neuromuscular disorders in adulthood and childhood, with direct patient care responsibilities. Fellows actively participate in the weekly Muscle Biopsy/Journal Club, Neuromuscular and EMG lecture series. A sign-in sheet documents attendance to required conferences. Fellows' educational didactic offerings are further detailed under Educational Programs. Fellows are similarly expected to attend Neurology Grand Rounds (Friday at 8 am) and the Case Presentation preceding that.

The fellowship consists of five rotations:

A. **NEUROMUSCULAR EVALUATION ROTATION (NMM Clinic)**  
B. **ELECTROMYOGRAPHY ROTATION (EMG Lab)**  
C. **MUSCLE, NERVE AND SKIN PATHOLOGY ROTATION**  
D. **REHABILITATION MEDICINE ROTATION**  
E. **NEUROMUSCULAR RESEARCH ELECTIVE ROTATION**

<table>
<thead>
<tr>
<th>Type of Experience</th>
<th>How Structured</th>
<th>Amount of Time (months)</th>
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<tbody>
<tr>
<td>NMM Rotation 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>1 half-day/week</td>
<td>4</td>
</tr>
<tr>
<td>ALSA Clinic / PT / OT / RT</td>
<td>1 half-day/week</td>
<td>4</td>
</tr>
<tr>
<td>Adult MDA Clinic (alternating adult and pediatric)</td>
<td>1 half-day/2 weeks</td>
<td>4</td>
</tr>
<tr>
<td>Peds MDA Clinic (alternating adult and pediatric)</td>
<td>1 half-day/2 weeks</td>
<td>4</td>
</tr>
<tr>
<td>Neuromuscular Clinic</td>
<td>2 half-days/week</td>
<td>4</td>
</tr>
<tr>
<td>Muscle &amp; Nerve Biopsy</td>
<td>1 half-day/week</td>
<td>4</td>
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<tr>
<td>NMM Hospital Consultations</td>
<td>2 half-days/week</td>
<td>4</td>
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<tr>
<td>Outpt EMG</td>
<td>2 half-days/week</td>
<td>4</td>
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<tr>
<td>NMM Rotation 2</td>
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<tr>
<td>Research</td>
<td>1 half-day/week</td>
<td>4</td>
</tr>
<tr>
<td>Neuropathy Clinic/EMG</td>
<td>1 half-day/week</td>
<td>4</td>
</tr>
<tr>
<td>Neuromuscular Clinic</td>
<td>2 half-days/week</td>
<td>4</td>
</tr>
<tr>
<td>Muscle, Skin &amp; Nerve Biopsy</td>
<td>2 half-days/week</td>
<td>4</td>
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<tr>
<td>Inpatient EMG</td>
<td>2 half-days/week</td>
<td>4</td>
</tr>
<tr>
<td>Outpatient EMG</td>
<td>2 half-days/week</td>
<td>4</td>
</tr>
<tr>
<td>NMM Rotation 3</td>
<td></td>
<td></td>
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<tr>
<td>Research</td>
<td>3 half-days/week</td>
<td>2</td>
</tr>
<tr>
<td>Service</td>
<td>Hours/Week</td>
<td>Day(s)/Week</td>
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<tr>
<td>ALSA Clinic / PT / OT / RT</td>
<td>1 half-day</td>
<td>2</td>
</tr>
<tr>
<td>Neuromuscular Clinic</td>
<td>2 half-days</td>
<td>2</td>
</tr>
<tr>
<td>Muscle, Skin &amp; Nerve Biopsy</td>
<td>2 half-days</td>
<td>2</td>
</tr>
<tr>
<td>Outpatient EMG</td>
<td>2 half-days</td>
<td>2</td>
</tr>
<tr>
<td><strong>VA Rotation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>1.5 half-days</td>
<td>2</td>
</tr>
<tr>
<td>VA EMG</td>
<td>5 half-days</td>
<td>2</td>
</tr>
<tr>
<td>VA Clinic</td>
<td>½ half-day</td>
<td>2</td>
</tr>
<tr>
<td>IOM</td>
<td>1 half-day</td>
<td>2</td>
</tr>
<tr>
<td>Chemodenervation</td>
<td>1 half-day</td>
<td>2</td>
</tr>
<tr>
<td>Muscle &amp; Nerve Biopsy</td>
<td>1 half-day</td>
<td>2</td>
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The goal of training in Neuromuscular Medicine is to provide the resident with the opportunity to develop the expertise necessary to evaluate and manage patients with neuromuscular disorders using specialized procedures and techniques.

It is the intent of the Neuromuscular Medicine training program to develop neurologists and physical medicine and rehabilitation specialists into competent neuromuscular specialists. Neurologists/physiatrists successfully completing this program will be eligible for Neuromuscular Medicine subspecialty certification by the American Board of Psychiatry and Neurology. The object is to provide residents with the opportunity to develop the expertise necessary to evaluate and manage patients using the procedures and techniques of Neuromuscular Medicine and that all trainees will pass the certifying examination.

Neuromuscular Medicine includes the assessment of selective neurological disorders involving central, peripheral and autonomic nervous systems and muscles. Assessment, monitoring and treatment are involved in electrophysiological testing in combination with clinical evaluation.

The goals of the training program include extensive experience in neuromuscular clinical evaluation, rehabilitation, nerve and muscle pathology, motor and sensory conduction studies and diagnostic electromyography. Familiarity with single fiber electromyography, skin pathology and autonomic function is included.

Clinical competence in Neuromuscular Medicine requires:

a. a solid fund of basic clinical knowledge and the ability to maintain it at current levels for a lifetime of continuous education
b. the ability to perform an adequate history and physical examination
c. the ability to appropriately order and interpret diagnostic tests
d. adequate technical skills to carry out selected diagnostic procedures
e. clinical judgment to critically apply the above data to individual patients
f. attitudes conducive to the practice of neurology, including appropriate interpersonal interactions with patients, professional colleagues and supervisory faculty, as well as paramedical personnel
g. personal integrity
h. regular, timely attendance at educational activities in the Department of Neurology
i. timely dictation of test reports and appropriate letters and phone calls to referring physicians
j. recognition of professionals
k. controversial issues require direct and immediate participation of the responsible attending supervising physician
Basic neuroscience pertaining to Neuromuscular Medicine includes knowledge of neuroanatomy, neuropharmacology, neurophysiology, neurochemistry and neuropathology in normal and disease states.

The fellow will have the instruction and practical experience to permit him or her to develop diagnostic, procedural, technical and interventional skills essential to the performance of Neuromuscular Medicine. The experience includes opportunities to observe, evaluate and manage inpatients and outpatients of all ages with a wide variety of disorders of the nervous system and muscles as well as to learn the effectiveness of the procedure. The opportunity includes experience in clinical diagnosis and accumulation/interpretation of laboratory data relevant to these disorders as part of the outpatient and inpatient diagnostic evaluations with good support from pathology, rehabilitation medicine and radiology. Basic clinical knowledge should include the neuromuscular aspects of the nervous system:

- a) motor neuron disease
- b) myopathy/neuromuscular transmission disorders
- c) peripheral neuropathy
- d) cranial/spinal single and multiple neuropathies
- e) polyneuropathy: infectious/inflammatory
- f) inherited neuropathy
- g) polyneuropathy: ischemia/physical agents/toxins
- h) polyneuropathy/systemic disease

Basic and clinical Neuromuscular Medicine topics will be covered during the one year training period through a combination of clinical experiences of both inpatient and outpatient, basic and clinical Neuromuscular Medicine conferences and EMG case conferences.

The Neuromuscular Medicine program consists of five rotations. Goals for the competency Clinical Science/Medical Knowledge are listed by rotation and are as follows:

A. NEUROMUSCULAR EVALUATION ROTATION
B. ELECTROMYOGRAPHY ROTATION
C. MUSCLE, NERVE AND SKIN PATHOLOGY ROTATION
D. REHABILITATION MEDICINE ROTATION
E. NEUROMUSCULAR RESEARCH ELECTIVE ROTATION
A. NEUROMUSCULAR EVALUATION ROTATION:

The Neuromuscular Medicine rotation is a seven month rotation located in the Landon Center on Aging, Veterans Administration Medical Center and the University of Kansas Hospital. Fellows are involved in the evaluation and management of patients with neuromuscular disease with close faculty supervision. During this rotation the fellow is exposed to a wide variety of diseases in the outpatient and inpatient settings.

DELINEATION OF RESIDENT RESPONSIBILITIES:

1. Present and discuss neuromuscular consultations with the attending physician and dictate neuromuscular consultation reports on the day of service
2. Edit dictated reports on the following day for attending physician review
3. Organize Muscle and Nerve Biopsy conferences
4. Present EMG/neuromuscular topics
5. Participate in Journal Club
6. Prepare for participation in the Carrell-Krusen Symposium in Neuromuscular Disease
7. Give one case presentation per year
8. Give one Grand Rounds per year
9. Participate in neuromuscular lectures to neurology residents
10. Reading suggestions:

   Feldman, Grisold, Russell and Zifko: Atlas of Neuromuscular Diseases
   Amato and Russell: Neuromuscular Disorders
   Engel and Franzini-Armstrong: Myology
   Dyck and Thomas: Peripheral Neuropathy
   Mendell, Kissel and Cornblath: Diagnosis and Management of Peripheral Nerve Disorders
   Mitsumoto, Przdeboreski and Gordon: Amyotrophic Lateral Sclerosis
   Engel: Myasthenia Gravis and Myasthenic Disorders
   Dimitiur and Amato: Electrodiagnostic Medicine
   Brown and Bolton: Clinical Electromyography
   Levin and Luders: Comprehensive Clinical Neurophysiology
   Preston and Shapiro: Electromyography and Neuromuscular Disorders
   Kimura: Electrodiagnosis in Disease of Nerve and Muscle

11. At the beginning of the academic year, fellows are provided with a CD containing an extensive list of published references on a variety of neuromuscular diseases

I. Clinical Science/Medical Knowledge

Goal: Fellows must demonstrate knowledge about established and evolving neuroscience that would be critical to the practice of Neuromuscular Medicine in the inpatient and outpatient settings. This includes initiation of and participation in research projects. The
locations include the Landon Center on Aging and the Kansas City VAMC.

**Objectives/Knowledge** – Fellows will demonstrate knowledge of:

1. The theoretical basis for clinical interventions used in Neuromuscular Medicine
2. Major disorders, including:
   a) the epidemiology of the disorders
   b) the etiology of the disorder, including contributing medical, genetic and social factors
   c) the phenomenology of the disorder
   d) diagnostic criteria
   e) appropriate evaluation
   f) course and prognosis
   g) effective treatment strategies
3. Pathophysiology of major Neuromuscular Medicine disorders and familiarity with the scientific basis of neurologic diseases, including:
   a) neuroanatomy
   b) neuropathology
   c) neurochemistry
   d) neurophysiology
   e) neuropharmacology
   f) neuroimmunology/neurovirology
   g) neurogenetics/molecular neurology and neuroepidemiology
   h) neuroimaging
   i) neuro-ophtalmology
   j) neuro-otology
   k) cerebrospinal fluid
   l) neurological rehabilitation
   m) issues related to neuromuscular disorders
4. Gross and microscopic specimens taken from the normal nervous system and from patients with major neuromuscular disorders

**Objectives/Skills** – Fellows will demonstrate ability to:

1. Perform and document a comprehensive history and examination to include, as appropriate:
   a) chief complaint
   b) history of present illness
   c) developmental history
   d) past medical history
   e) review of systems
   f) family history
   g) social history
   h) mental status
   i) neuromuscular examination
2. Create differential diagnoses:
   a) to determine if a patient’s symptoms are the result of a disease affecting the central and/or peripheral nervous system or are of another origin
   b) to make a formulation, laboratory investigation, and cost-effective management plan

3. To develop and maintain the technical skills to:
   a) perform edrophonium testing
   b) identify and describe abnormalities seen in common neuromuscular disorders on radiographic testing including plain film, myelography, angiography, CT, isotope and MRI
   c) evaluate the application and relevance of investigative procedures and interpretation in the diagnosis of neurologic disease, including the following:
      i. electroencephalogram
      ii. motor and sensory nerve conduction studies
      iii. electromyography
      iv. evoked potentials
      v. polysomnography
      vi. electronystagmogram
      vii. audiometry
      viii. perimetry
      ix. psychometry
      x. CSF analysis
      xi. vascular imaging (Duplex, transcranial Doppler)
      xii. radiographic studies as outlined above
   d) identify and describe gross and microscopic specimens taken from the normal nervous system and from patients with major neuromuscular disorders

4. To recognize and treat major neuromuscular disorders

Objective/Attitudes – Fellows must maintain and apply an investigatory and analytic thinking approach to clinical situations

Demonstrated by:

Clinical care of patients; teaching residents and other professionals; formal presentations at conferences; self-initiated independent learning

Evaluation:

Fellow evaluation
Formal and informal observation

Remediation:

The program director will semi-annually review the fellow's performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

II. Patient Care

Goal: Fellows must be able to provide patient care that is compassionate, appropriate and effective for the treatment of neurological problems

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. The lesion localization and differential diagnosis in neuromuscular disorders
2. Investigational plan
3. Interpretation of NCS, EMG and muscle, nerve and skin biopsies
4. Available treatment methods for the major neuromuscular medicine disorders and the evidence which supports their use
5. Preventive interventions used in neuromuscular medicine

Objectives/Skills – Fellows will demonstrate the ability to:

1. Perform and document a comprehensive history and examination to include, as appropriate:
   a) chief complaint
   b) history of present illness
   c) developmental history
   d) past medical history
   e) review of systems
   f) family history
   g) social history
   h) mental status
2. Create differential diagnoses
3. Evaluate, assess and recommend cost-effective management of patients
4. Recognize and treat neuromuscular medicine disorders
5. Apply the use of electrical, tissue pathological and mechanical methods in the evaluation and treatment of a wide range of diseases

Objectives/Attitudes – Fellows will:

1. Be strong advocates for the patient’s best interests
2. Strive to provide quality care within available resources
3. Be sensitive to patient’s cultural differences
4. Be sensitive to confidentiality and consent issues

Demonstrated by:

Clinical care of patients; teaching residents and other professionals; formal presentations at conferences; self-initiated independent learning; direct observation by faculty during clinics
and on clinic rotations; case conferences; chart review with supervisors

**Evaluation:**

Supervision and rotation evaluations
Formal and informal observations

**Remediation:**

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

**III. Interpersonal and Communication Skills**

**Goal:** Fellows must demonstrate the knowledge, skills and attitudes necessary to develop and maintain appropriate interpersonal relationships and to communicate effectively with patients, families, colleagues and the public.

**Objectives/Knowledge** – Fellows will demonstrate knowledge of:

1. Interviewing techniques
2. Communication techniques

**Objectives/Skills** – Fellows will be able to:

1. Demonstrate the ability to obtain, interpret and evaluate consultations from other medical specialties. This shall include:
   a) knowing when to solicit consultation and having sensitivity to assess the need for consultation
   b) discussing consultation findings with patients and their families
   c) evaluating the consultation findings
2. Serve as an effective consultant to other medical specialists and community agencies. This shall include:
   a) communicating effectively with the requesting party to refine the consultation question
   b) maintain the role of consultant
   c) communicate clear and specific recommendations
   d) respect the knowledge and expertise of the requesting party
3. Demonstrate the ability to communicate effectively with patients and their families by:
   a) gearing all communication to the educational/intellectual levels of patients and their families
   b) providing explanations of neuromuscular medicine disorders and treatment
that are jargon-free and geared to the educational/intellectual level of patients and their families

c) providing preventive education that is understandable and practical as well as applicable
d) respecting the patient’s cultural, ethnic and economic background
e) developing and enhancing rapport and a working alliance with patients and their families

4. Maintain medical records and written prescriptions that are legible and up-to-date. These records must capture essential information while simultaneously respecting patient privacy and be useful to health professionals outside neuromuscular medicine

a) recognize the need for, and effectively use, interpreters when necessary
b) give one Grand Rounds per year and/or present at a national or regional meeting
c) provide feedback to students, residents and other professionals

**Objectives/Attitudes** – Fellows will:

1. Maintain an attitude of respect for others, even those with differing points of view
2. Exhibit culturally sensitive, professional, ethically sound behavior in all patient and professional interactions
3. Maintain an attitude of interdisciplinary collaboration
4. Maintain a polite and courteous attitude at all times

**Demonstrated by:**

Chart documentation; direct observation; teaching others; professional relationships; formal presentations; independent learning; seeking feedback on communication and performance

**Evaluation:**

Direct observation
Rotation evaluation

**Remediation:**

The program director will regularly review the fellow's performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

**IV. Practice Based Learning and Improvement**

**Goal:** Fellows will demonstrate knowledge, skills and attitudes necessary to initiate self-directed and independent learning. Fellows must keep abreast of current information and practices relevant to neuromuscular medicine.
Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. Research methodology, including critical assessment of professional journal articles
2. Principles of evidence-based medicine
3. Awareness of available information technologies and the ability to assess them

Objectives/Skills – Fellows will be able to:

1. Demonstrate the ability to obtain, interpret and evaluate up-to-date information from the scientific and practice literature to assist in the quality of care of patients. This shall include:
   a) use of medical libraries
   b) use of information technology, including internet-based searches and literature databases (e.g., Medline)
   c) use of drug information databases
   d) active participation, as appropriate, in educational courses, conferences and other organized educational activities both at the local and national levels
   e) conducting and presenting reviews of current research in such formats as journal clubs, Grand Rounds and/or original publications
   f) participation in funded research projects
2. Assess the generalizability or applicability of research findings to patients in relation to their socio-demographic and clinical characteristics. The physician shall demonstrate the ability to critically evaluate the relevant medical literature
3. Evaluate the caseload and practice experience in a systematic manner. This may include:
   a) case-based learning
   b) the review of patient records and outcomes
   c) obtaining appropriate supervision and consultation
   d) maintaining a system for examining errors in practice and initiating improvements to eliminate or reduce errors

Objectives/Attitudes – Fellows will:

1. Maintain an attitude of inquiry and scholarship, recognizing the need for lifelong learning
2. Maintain openness and flexibility in treatment approaches with patients, assimilating new knowledge in patient care practices

Demonstrated by:

Self-directed inquiry guiding clinical care of patients; formal presentations which include literature review; teaching others
Evaluation:

Direct observation
Rotation evaluation

Remediation:

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

V. Professionalism and Ethical Behavior

Goal: Fellows must demonstrate the knowledge, skills and attitudes necessary to practice professionally responsible, ethical and compassionate care in neuromuscular medicine

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. The impact of gender, culture, religion, socioeconomic factors, and family structures and systems on issues pertaining to neuromuscular medicine
2. The different roles a neuromuscular specialist might fulfill in different settings
3. Legal issues relevant to neuromuscular medicine
4. Ethical issues in neuromuscular medicine. This includes knowledge of the American Academy of Neurology Code of Ethics
5. Ethical issues important in conducting research with humans and the role of the Committee for Protection of Human Subjects

Objectives/Skills – Fellows will be able to:

1. Respond to communications from patients and health professionals in a timely manner. If unavailable, the physician shall establish and communicate back-up arrangements
2. Use medical records for appropriate documentation of the course of illness and its treatment
3. Provide continuity of care including appropriate consultation, transfer or termination of patients (clinic rotation)
4. Demonstrate ethical behavior, integrity, honesty, professional conduct, compassion and confidentiality in the delivery of patient care, including obtaining informed consent/assent, and declaring conflict of interest
5. Demonstrate respect for patients and colleagues as individuals by showing sensitivity to their age, culture, disabilities, ethnicity, gender, socioeconomic background, religious beliefs, political affiliations, and sexual orientation
6. Demonstrate appreciation of end-of-life care and issues regarding provision for or withholding of care
7. Acknowledge responsibility for his or her decisions and demonstrate commitment to the review and remediation of his or her professional conduct
8. Promote the highest standards of medical healthcare to the public and participate in the review of the professional conduct of his or her colleagues

**Objectives/Attitudes** – Fellows will:

1. Maintain an attitude of inquiry and scholarship, recognizing the need for lifelong learning
2. Maintain openness and flexibility in treatment approaches with patients, assimilating new knowledge in patient care practices

**Demonstrated by:**

Self-directed inquiry guiding clinical care of patients; formal presentations which include literature review; teaching others

**Evaluation:**

Rotation evaluation
Regular review by the program director

**Remediation:**

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

**VI. Systems Based Practice**

**Goal:** Fellows must demonstrate the knowledge, skills and attitudes necessary to effectively in multiple, diverse, complex systems of care to provide effective treatment, consultations and referrals for patients.

**Objectives/Knowledge** – Fellows will demonstrate knowledge of:

1. Basic concepts of systems theory
2. How patient care practices of fellows and residents and related actions impact component units of health care delivery
3. Systems-based approaches for controlling health care costs and allocating resources

**Objectives/Skills** – Fellows will be able to:

1. Advocate for patients within a variety of systems
2. Partner with insurance and managed care companies to meet patient needs
3. Strive to practice cost-effective health care and resource allocation that does not compromise the quality of care

**Objectives/Attitudes** – Fellows will:

1. Maintain an attitude of interdisciplinary collaboration, advocacy and cooperation
2. Maintain flexibility in adapting to the needs and expectations of different settings and systems
3. Maintain the patient's best interests as the top priority

**Demonstrated by:**

Care of patients; interactions with other agencies involved in the care of patients; consultation with other professionals; participation in Quality Assurance, Utilization Review and Performance Improvement committees; self-directed independent learning; teaching others

**Evaluation:**

Rotation evaluation
Regular review by the program director

**Remediation:**

The program director will regularly review the fellow's performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

**B. ELECTROMYOGRAPHY ROTATION:**

The Electromyography rotation is located in the Landon Center on Aging and the Kansas City VAMC. Fellows are involved in the supervised performance and interpretation of electromyography, nerve conduction studies, single fiber EMG, and autonomic nervous system testing with close faculty supervision.

**DELINEATION OF RESIDENT RESPONSIBILITIES:**

1. Discuss with the attending physician, interpret and dictate NCS/EMG studies on the day of service in light of clinical presentation
2. Edit dictated reports on the following day for attending physician review
3. Organize Muscle and Nerve Biopsy Conferences
4. Present EMG/neuromuscular topics
5. Participate in Journal Club
6. Prepare for participation in the Carrell-Krusen Neuromuscular Disease Symposium
7. Participate in EMG lectures and nerve conduction studies to neurology residents
8. Read the relevant chapters in *Comprehensive Clinical Neurophysiology* by Levin and Luders
9. Reading suggestions:

   Amato and Russell: *Neuromuscular Disorders*
   Engel and Franzini-Armstrong: *Myology*
   Dyck and Thomas: *Peripheral Neuropathy*
   Mendell, Kissel and Cornblath: *Diagnosis and Management of Nerve Disorders*
   Mitsumoto, Przdebski, and Gordon: *Amyotrophic Lateral Sclerosis*
   Engel: *Myasthenia Gravis and Myasthenic Disorders*
   Dumitiur and Amato: *Electrodiagnostic Medicine*
   Brown and Bolton: *Clinical Electromyography*
   Levin and Luders: *Comprehensive Clinical Neurophysiology*
   Preston and Shapiro: * Electromyography and Neuromuscular Disorders*
   Kimura: *Electrodiagnosis in Disease of Nerve and Muscle*

10. At the beginning of the academic year fellows are provided with a CD containing an extensive list of published references on a variety of neuromuscular diseases

I. Clinical Science/Medical Knowledge

Goal: Fellows must demonstrate knowledge about established and evolving neuroscience that would be critical to the practice of electromyography and nerve conduction studies as well as autonomic nervous system testing in the inpatient and outpatient settings.

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. The theoretical basis for clinical interventions used in electromyography and nerve conduction studies
2. Major disorders, including:
   a) the epidemiology of the disorders
   b) the etiology of the disorder, including contributing medical, genetic and social factors
   c) the phenomenology of the disorder
   d) diagnostic criteria
   e) appropriate evaluation
   f) course and prognosis
   g) effective treatment strategies
3. Pathophysiology of major Neuromuscular Medicine disorders and familiarity with the scientific basis of neurologic diseases, including:
a) neuroanatomy  
b) neuropathology  
c) neurochemistry  
d) neurophysiology  
e) neuropharmacology  
f) neuroimmunology/neurovirology  
g) neurogenetics/molecular neurology and neuroepidemiology  
h) neuroimaging  
i) neuro-ophthalmology  
j) neuro-otology  
k) cerebrospinal fluid  
l) neurological rehabilitation  
m) issues related to neuromuscular disorders

4. Gross and microscopic specimens taken from the normal nervous system and from patients with major neuromuscular disorders

Objectives/Skills – Fellows will demonstrate ability to:

1. Use common devices to perform good quality:  
a) nerve conduction studies  
b) electromyography

2. Perform:  
a) an abbreviated history and physical exam within 5 to 10 minutes in order to develop a plan for the nerve conduction studies  
b) nerve conduction studies in 10 to 30 minutes per limb, assisted by a technologist and progressing to independence as determined by the faculty evaluations  
c) needle exams of appropriate muscles in 10 to 30 minutes per limb with attending supervision and progressive independence based on the level of skill as evidenced from the faculty evaluations

3. To assess major disorders including disorders of anterior horn cell, root, plexus, nerve, neuromuscular junction and muscle

4. To use electrophysiological methods in the evaluation and treatment of a wide range of diseases

Objective/Attitudes – Fellows must maintain and apply an investigatory and analytic thinking approach to clinical situations

Demonstrated by:

Clinical care of patients; teaching residents and other professionals; formal presentations at conferences; self-initiated independent learning
Evaluation:

Fellow evaluation
Formal and informal observation

Remediation:

The program director will semi-annually review the fellow's performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

II. Patient Care

Goal: Fellows must be able to provide patient care that is compassionate, appropriate and effective for the treatment of neurological problems

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. The lesion localization and differential diagnosis in neuromuscular disorders
2. Investigational plan
3. Interpretation of NCS, EMG and muscle, nerve and skin biopsies
4. Available treatment methods for the major neuromuscular medicine disorders and the evidence which supports their use
5. Preventive interventions used in neuromuscular medicine

Objectives/Skills – Fellows will demonstrate the ability to:

1. Perform and document a comprehensive history and examination to include, as appropriate:
   a) chief complaint
   b) history of present illness
   c) developmental history
   d) past medical history
   e) review of systems
   f) family history
   g) social history
   h) mental status
2. Create differential diagnoses
3. Evaluate, assess and recommend cost-effective management of patients
4. Recognize and treat neuromuscular medicine disorders
5. Apply the use of electrical, tissue pathological and mechanical methods in the evaluation and treatment of a wide range of diseases
Objectives/Attitudes – Fellows will:

1. Be strong advocates for the patient’s best interests
2. Strive to provide quality care within available resources
3. Be sensitive to patient’s cultural differences
4. Be sensitive to confidentiality and consent issues

Demonstrated by:

Clinical care of patients; teaching residents and other professionals; formal presentations at conferences; self-initiated independent learning; direct observation by faculty during clinics and on clinic rotations; case conferences; chart review with supervisors

Evaluation:

Supervision and rotation evaluations
Formal and informal observations

Remediation:

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

III. Interpersonal and Communication Skills

Goal: Fellows must demonstrate the knowledge, skills and attitudes necessary to develop and maintain appropriate interpersonal relationships and to communicate effectively with patients, families, colleagues and the public.

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. Interviewing techniques
2. Communication techniques

Objectives/Skills – Fellows will be able to:

1. Demonstrate the ability to obtain, interpret and evaluate consultations from other medical specialties. This shall include:
   a) knowing when to solicit consultation and having sensitivity to assess the need for consultation
   b) discussing consultation findings with patients and their families
   c) evaluating the consultation findings
2. Serve as an effective consultant to other medical specialists and community agencies.
This shall include:

a) communicating effectively with the requesting party to refine the consultation question
b) maintain the role of consultant
c) communicate clear and specific recommendations
d) respect the knowledge and expertise of the requesting party

3. Demonstrate the ability to communicate effectively with patients and their families by:

a) gearing all communication to the educational/intellectual levels of patients and their families
b) providing explanations of neuromuscular medicine disorders and treatment (both verbally and in written form) that are jargon-free and geared to the educational/intellectual level of patients and their families
c) providing preventive education that is understandable and practical as well as applicable
d) respecting the patient's cultural, ethnic and economic background
e) developing and enhancing rapport and a working alliance with patients and their families

Objectives/Attitudes – Fellows will:

1. Maintain an attitude of respect for others, even those with differing points of view
2. Exhibit culturally sensitive, professional, ethically sound behavior in all patient and professional interactions
3. Maintain an attitude of interdisciplinary collaboration
4. Maintain a polite and courteous attitude at all times

Demonstrated by:

Chart documentation; direct observation; teaching others; professional relationships; formal presentations; independent learning; seeking feedback on communication and performance

Evaluation:

Direct observation
Rotation evaluation

Remediation:

The program director will regularly review the fellow's performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies
IV. Practice Based Learning and Improvement

**Goal:** Fellows will demonstrate knowledge, skills and attitudes necessary to initiate self-directed and independent learning. Fellows must keep abreast of current information and practices relevant to neuromuscular medicine.

**Objectives/Knowledge** – Fellows will demonstrate knowledge of:

1. Research methodology, including critical assessment of professional journal articles
2. Principles of evidence-based medicine
3. Awareness of available information technologies and the ability to assess them

**Objectives/Skills** – Fellows will be able to:

1. Demonstrate the ability to obtain, interpret and evaluate up-to-date information from the scientific and practice literature to assist in the quality of care of patients. This shall include:
   a) use of medical libraries
   b) use of information technology, including internet-based searches and literature databases (e.g., Medline)
   c) use of drug information databases
   d) active participation, as appropriate, in educational courses, conferences and other organized educational activities both at the local and national levels
   e) conducting and presenting reviews of current research in such formats as journal clubs, Grand Rounds and/or original publications
   f) participation in funded research projects
2. Assess the generalizability or applicability of research findings to patients in relation to their socio-demographic and clinical characteristics. The physician shall demonstrate the ability to critically evaluate the relevant medical literature
3. Evaluate the caseload and practice experience in a systematic manner. This may include:
   a) case-based learning
   b) the review of patient records and outcomes
   c) obtaining appropriate supervision and consultation
   d) maintaining a system for examining errors in practice and initiating improvements to eliminate or reduce errors

**Objectives/Attitudes** – Fellows will:

1. Maintain an attitude of inquiry and scholarship, recognizing the need for lifelong learning
2. Maintain openness and flexibility in treatment approaches with patients, assimilating new knowledge in patient care practices
Demonstrated by:

Self-directed inquiry guiding clinical care of patients; formal presentations which include literature review; teaching others

Evaluation:

Direct observation
Rotation evaluation

Remediation:

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

V. Professional and Ethical Behavior

Goal: Fellows must demonstrate the knowledge, skills and attitudes necessary to practice professionally responsible, ethical and compassionate care in neuromuscular medicine

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. The impact of gender, culture, religion, socioeconomic factors, and family structures and systems on issues pertaining to neuromuscular medicine
2. The different roles a neuromuscular specialist might fulfill in different settings
3. Legal issues relevant to neuromuscular medicine
4. Ethical issues in neuromuscular medicine. This includes knowledge of the American Academy of Neurology Code of Ethics
5. Ethical issues important in conducting research with humans and the role of the Committee for Protection of Human Subjects

Objectives/Skills – Fellows will be able to:

1. Respond to communications from patients and health professionals in a timely manner. If unavailable, the physician shall establish and communicate back-up arrangements
2. Use medical records for appropriate documentation of the course of illness and its treatment
3. Provide continuity of care including appropriate consultation, transfer or termination of patients (clinic rotation)
4. Demonstrate ethical behavior, integrity, honesty, professional conduct, compassion and confidentiality in the delivery of patient care, including obtaining informed consent/assent, and declaring conflict of interest
5. Demonstrate respect for patients and colleagues as individuals by showing sensitivity to their age, culture, disabilities, ethnicity, gender, socioeconomic background, religious beliefs, political affiliations, and sexual orientation
6. Demonstrate appreciation of end-of-life care and issues regarding provision for or withholding of care
7. Acknowledge responsibility for his or her decisions and demonstrate commitment to the review and remediation of his or her professional conduct
8. Promote the highest standards of medical healthcare to the public and participate in the review of the professional conduct of his or her colleagues

**Objectives/Attitudes** – Fellows will:

1. Maintain an attitude of inquiry and scholarship, recognizing the need for lifelong learning
2. Maintain openness and flexibility in treatment approaches with patients, assimilating new knowledge in patient care practices

**Demonstrated by:**

Self-directed inquiry guiding clinical care of patients; formal presentations which include literature review; teaching others

**Evaluation:**

Rotation evaluation
Regular review by the program director

**Remediation:**

The program director will regularly review the fellow's performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

**VI. Systems Based Practice**

**Goal:** Fellows must demonstrate the knowledge, skills and attitudes necessary to effectively in multiple, diverse, complex systems of care to provide effective treatment, consultations and referrals for patients.

**Objectives/Knowledge** – Fellows will demonstrate knowledge of:

1. Basic concepts of systems theory
2. How patient care practices of fellows and residents and related actions impact component units of health care delivery
3. Systems-based approaches for controlling health care costs and allocating resources

Objectives/Skills – Fellows will be able to:

1. Advocate for patients within a variety of systems
2. Partner with insurance and managed care companies to meet patient needs
3. Strive to practice cost-effective health care and resource allocation that does not compromise the quality of care

Objectives/Attitudes – Fellows will:

1. Maintain an attitude of interdisciplinary collaboration, advocacy and cooperation
2. Maintain flexibility in adapting to the needs and expectations of different settings and systems
3. Maintain the patient’s best interests as the top priority

Demonstrated by:

Care of patients; interactions with other agencies involved in the care of patients; consultation with other professionals; participation in Quality Assurance, Utilization Review and Performance Improvement committees; self-directed independent learning; teaching others

Evaluation:

Rotation evaluation
Regular review by the program director

Remediation:

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

C. MUSCLE, NERVE AND SKIN PATHOLOGY ROTATION:

The Muscle, Nerve and Skin Pathology rotation is located in the Landon Center on Aging. Fellows are involved in the performance and interpretation of tissue biopsies with close faculty supervision. During this rotation, each fellow is expected to demonstrate knowledge critical to this rotation. This rotation is longitudinal on all Wednesday mornings and Friday mornings or afternoons.
DELINEATION OF RESIDENT RESPONSIBILITIES:

1. Perform muscle and nerve biopsies with faculty supervision
2. Discuss with the attending physician, interpret and dictate pathology reports within 2-10 days from the day of service in light of the clinical presentation
3. Present findings at the Biopsy conference to neuromuscular faculty for feedback and discussion
4. Edit dictated reports on the following day for attending physician review
5. Read the following:
   a) first three chapters in Amato and Russell, *Neuromuscular Disorders*
   b) first five chapters in Oh, *Color Atlas of Nerve Biopsy Pathology*
   c) all of Brumback and Leech, *Color Atlas of Muscle Histochemistry*
6. Present EMG/neuromuscular topics
7. Participate in Journal Club
8. Prepare for participation in the Carrell-Krusen Neuromuscular Symposium
9. Participate in lectures in EMG and nerve conduction studies to neurology residents
10. Additional suggested reading:

  Carpenter and Karpati: *Pathology of Skeletal Muscle*
  Amato and Russell: *Neuromuscular Disorders*
  Engel and Franzini-Armstrong: *Myology*
  Feldman, Grisold, Russell and Zifko: *Atlas of Neuromuscular Diseases*
  Dyck and Thomas: *Peripheral Neuropathy*
  Mendell, Kissel and Cornblath: *Diagnosis and Management of Peripheral Nerve Disorders*
  Mitsumoto, Przdebski, Gordon: *Amyotrophic Lateral Sclerosis*
  Engel: *Myasthenia Gravis and Myasthenic Disorders*
  Dumitriu and Amato: *Electrodiagnostic Medicine*
At the beginning of the academic year, fellows are provided with a CD containing an extensive list of published references on a variety of neuromuscular diseases.

I. Clinical Science/Medical Knowledge

Goal: Fellows must demonstrate knowledge about established and evolving neuroscience that would be critical to the practice of muscle, nerve and skin biopsy.

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. The theoretical basis for processing and evaluating muscle, nerve and skin tissues based on comprehensive understanding of basic tissue reactions to a wide variety of neuromuscular disorders.

2. Major disorders, including:
   a) the epidemiology of the disorders
   b) the etiology of the disorder, including contributing medical, genetic and social factors
   c) the phenomenology of the disorder
   d) diagnostic criteria
   e) appropriate evaluation
   f) course and prognosis
   g) effective treatment strategies

3. Pathophysiology of major Neuromuscular Medicine disorders and familiarity with the scientific basis of neurologic diseases, including:
   a) neuroanatomy
   b) neuropathology
   c) neurochemistry
   d) neurophysiology
   e) neuropharmacology
   f) neuroimmunology/neurovirology
   g) neurogenetics/molecular neurology and neuroepidemiology
   h) neuroimaging
   i) neuro-ophthalmology
   j) neuro-otology
   k) cerebrospinal fluid
   l) neurological rehabilitation
   m) issues related to neuromuscular disorders

4. Gross and microscopic specimens taken from the normal nervous system and from patients with major neuromuscular disorders.
Objectives/Skills – Fellows will demonstrate ability to:

1. Use common devices to perform good quality:
   a) muscle, nerve and skin biopsies
   b) tissue preparation, preservation and processing
   c) tissue histopathologic, enzymatic and immunologic studies
2. Perform:
   a) an abbreviated history and physical exam
   b) an interpretation of the tissue pathologic alterations within 24 hours of the biopsy
   c) review the tissue within 48 hours of the biopsy with the neuromuscular specialist
3. To assess major disorders including disorders of anterior horn cell, root, plexus, nerve, neuromuscular junction and muscle
4. To use electrophysiological methods in the evaluation and treatment of a wide range of diseases

Objective/Attitudes – Fellows must maintain and apply an investigatory and analytic thinking approach to clinical situations

Demonstrated by:

Clinical care of patients; teaching residents and other professionals; formal presentations at conferences; self-initiated independent learning

Evaluation:

Fellow evaluation
Formal and informal observation

Remediation:

The program director will semi-annually review the fellow's performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

II. Patient Care

Goal: Fellows must be able to provide patient care that is compassionate, appropriate and effective for the treatment of neurological problems

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. The lesion localization and differential diagnosis in neuromuscular disorders
2. Investigational plan  
3. Interpretation of NCS, EMG and muscle, nerve and skin biopsies  
4. Available treatment methods for the major neuromuscular medicine disorders and the evidence which supports their use  
5. Preventive interventions used in neuromuscular medicine  

Objectives/Skills – Fellows will demonstrate the ability to:

1. Perform and document a comprehensive history and examination to include, as appropriate:  
a) chief complaint  
b) history of present illness  
c) developmental history  
d) past medical history  
e) review of systems  
f) family history  
g) social history  
h) mental status  
2. Create differential diagnoses  
3. Evaluate, assess and recommend cost-effective management of patients  
4. Recognize and treat neuromuscular medicine disorders  
5. Apply the use of electrical, tissue pathological and mechanical methods in the evaluation and treatment of a wide range of diseases  

Objectives/Attitudes – Fellows will:

1. Be strong advocates for the patient’s best interests  
2. Strive to provide quality care within available resources  
3. Be sensitive to patient’s cultural differences  
4. Be sensitive to confidentiality and consent issues  

Demonstrated by:

Clinical care of patients; teaching residents and other professionals; formal presentations at conferences; self-initiated independent learning; direct observation by faculty during clinics and on clinic rotations; case conferences; chart review with supervisors  

Evaluation:

Supervision and rotation evaluations  
Formal and informal observations  

Remediation:

The program director will regularly review the fellow’s performance and will:
1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

III. Interpersonal and Communication Skills

Goal: Fellows must demonstrate the knowledge, skills and attitudes necessary to develop and maintain appropriate interpersonal relationships and to communicate effectively with patients, families, colleagues and the public.

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. Interviewing techniques
2. Communication techniques

Objectives/Skills – Fellows will be able to:

1. Demonstrate the ability to obtain, interpret and evaluate consultations from other medical specialties. This shall include:
   a) knowing when to solicit consultation and having sensitivity to assess the need for consultation
   b) discussing consultation findings with patients and their families
   c) evaluating the consultation findings
2. Serve as an effective consultant to other medical specialists and community agencies. This shall include:
   a) communicating effectively with the requesting party to refine the consultation question
   b) maintain the role of consultant
   c) communicate clear and specific recommendations
   d) respect the knowledge and expertise of the requesting party
3. Demonstrate the ability to communicate effectively with patients and their families by:
   a) gearing all communication to the educational/intellectual levels of patients and their families
   b) providing explanations of neuromuscular medicine disorders and treatment (both verbally and in written form) that are jargon-free and geared to the educational/intellectual level of patients and their families
   c) providing preventive education that is understandable and practical as well as applicable
   d) respecting the patient’s cultural, ethnic and economic background
   e) developing and enhancing rapport and a working alliance with patients and their families
4. Maintain medical records and written prescriptions that are legible and up-to-date. These records must capture essential information while simultaneously respecting patient privacy and be useful to health professionals outside neuromuscular medicine
**Objectives/Attitudes** – Fellows will:

1. Maintain an attitude of respect for others, even those with differing points of view
2. Exhibit culturally sensitive, professional, ethically sound behavior in all patient and professional interactions
3. Maintain an attitude of interdisciplinary collaboration
4. Maintain a polite and courteous attitude at all times

**Demonstrated by:**

Chart documentation; direct observation; teaching others; professional relationships; formal presentations; independent learning; seeking feedback on communication and performance

**Evaluation:**

Direct observation
Rotation evaluation

**Remediation:**

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

**IV. Practice Based Learning and Improvement**

**Goal:** Fellows will demonstrate knowledge, skills and attitudes necessary to initiate self-directed and independent learning. Fellows must keep abreast of current information and practices relevant to neuromuscular medicine.

**Objectives/Knowledge** – Fellows will demonstrate knowledge of:

1. Research methodology, including critical assessment of professional journal articles
2. Principles of evidence-based medicine
3. Awareness of available information technologies and the ability to assess them

**Objectives/Skills** – Fellows will be able to:

1. Demonstrate the ability to obtain, interpret and evaluate up-to-date information from the scientific and practice literature to assist in the quality of care of patients. This shall include:
   a) use of medical libraries
   b) use of information technology, including internet-based searches and literature databases (e.g., Medline)
c) use of drug information databases
d) active participation, as appropriate, in educational courses, conferences and other organized educational activities both at the local and national levels
e) conducting and presenting reviews of current research in such formats as journal clubs, Grand Rounds and/or original publications
f) participation in funded research projects

2. Assess the generalizability or applicability of research findings to patients in relation to their socio-demographic and clinical characteristics. The physician shall demonstrate the ability to critically evaluate the relevant medical literature.

3. Evaluate the caseload and practice experience in a systematic manner. This may include:
   a) case-based learning
   b) the review of patient records and outcomes
   c) obtaining appropriate supervision and consultation
   d) maintaining a system for examining errors in practice and initiating improvements to eliminate or reduce errors

Objectives/Attitudes – Fellows will:

1. Maintain an attitude of inquiry and scholarship, recognizing the need for lifelong learning.
2. Maintain openness and flexibility in treatment approaches with patients, assimilating new knowledge in patient care practices.

Demonstrated by:

Self-directed inquiry guiding clinical care of patients; formal presentations which include literature review; teaching others.

Evaluation:

Direct observation
Rotation evaluation

Remediation:

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

V. Professionalism and Ethical Behavior

Goal: Fellows must demonstrate the knowledge, skills and attitudes necessary to practice professionally responsible, ethical and compassionate care in neuromuscular medicine.
Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. The impact of gender, culture, religion, socioeconomic factors, and family structures and systems on issues pertaining to neuromuscular medicine
2. The different roles a neuromuscular specialist might fulfill in different settings
3. Legal issues relevant to neuromuscular medicine
4. Ethical issues in neuromuscular medicine. This includes knowledge of the American Academy of Neurology Code of Ethics
5. Ethical issues important in conducting research with humans and the role of the Committee for Protection of Human Subjects

Objectives/Skills – Fellows will be able to:

1. Respond to communications from patients and health professionals in a timely manner. If unavailable, the physician shall establish and communicate back-up arrangements
2. Use medical records for appropriate documentation of the course of illness and its treatment
3. Provide continuity of care including appropriate consultation, transfer or termination of patients (clinic rotation)
4. Demonstrate ethical behavior, integrity, honesty, professional conduct, compassion and confidentiality in the delivery of patient care, including obtaining informed consent/assent, and declaring conflict of interest
5. Demonstrate respect for patients and colleagues as individuals by showing sensitivity to their age, culture, disabilities, ethnicity, gender, socioeconomic background, religious beliefs, political affiliations, and sexual orientation
6. Demonstrate appreciation of end-of-life care and issues regarding provision for or withholding of care
7. Acknowledge responsibility for his or her decisions and demonstrate commitment to the review and remediation of his or her professional conduct
8. Promote the highest standards of medical healthcare to the public and participate in the review of the professional conduct of his or her colleagues

Objectives/Attitudes – Fellows will:

1. Maintain an attitude of inquiry and scholarship, recognizing the need for lifelong learning
2. Maintain openness and flexibility in treatment approaches with patients, assimilating new knowledge in patient care practices

Demonstrated by:

Self-directed inquiry guiding clinical care of patients; formal presentations which include literature review; teaching others
Evaluation:

Rotation evaluation
Regular review by the program director

Remediation:

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

VI. Systems Based Practice

Goal: Fellows must demonstrate the knowledge, skills and attitudes necessary to effectively in multiple, diverse, complex systems of care to provide effective treatment, consultations and referrals for patients.

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. Basic concepts of systems theory
2. How patient care practices of fellows and residents and related actions impact component units of health care delivery
3. Systems-based approaches for controlling health care costs and allocating resources

Objectives/Skills – Fellows will be able to:

1. Advocate for patients within a variety of systems
2. Partner with insurance and managed care companies to meet patient needs
3. Strive to practice cost-effective health care and resource allocation that does not compromise the quality of care

Objectives/Attitudes – Fellows will:

1. Maintain an attitude of interdisciplinary collaboration, advocacy and cooperation
2. Maintain flexibility in adapting to the needs and expectations of different settings and systems
3. Maintain the patient’s best interests as the top priority

Demonstrated by:

Care of patients; interactions with other agencies involved in the care of patients; consultation with other professionals; participation in Quality Assurance, Utilization Review and Performance Improvement committees; self-directed independent learning; teaching others
Evaluation:

Rotation evaluation
Regular review by the program director

Remediation:

The program director will regularly review the fellow's performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

D. REHABILITATION MEDICINE ROTATION:

The Rehabilitation Medicine rotation is integrated in the four month neuromuscular rotation at KU. Fellows work in conjunction with the physical therapists, occupational therapists, speech therapists, respiratory therapists, nutritionists, a seating clinic specialist, a respiratory health care representative, and a social worker from the multidisciplinary ALS Association and MDA clinics. This is on a weekly basis and with close faculty supervision.

DELINEATION OF RESIDENT RESPONSIBILITIES:

1. Discuss with the attending physician, interpret and dictate seating clinic consultations on the day of service
2. Edit dictated reports on the following day for attending physician review
3. Work in conjunction with the physical therapists, occupations therapists, speech therapists, nutritionist, a seating clinic specialist, an Apria Health Care representative, and a social worker from the multidisciplinary ALS Association and MDA clinics
4. Organize Muscle and Nerve Biopsy conferences
5. Present EMG/neuromuscular topics
6. Participate in Journal Club
7. Prepare for participation in the Carrell-Krusen Symposium in Neuromuscular Disease
8. Give one case presentation per year
9. Participate in neuromuscular lectures to neurology residents
10. Additional suggested reading:

Feldman, Grisold, Russell and Zifko: Atlas of Neuromuscular Diseases
Amato and Russell: Neuromuscular Disorders
Engel and Franzini-Armstrong: Myology
Dyck and Thomas: Peripheral Neuropathy
Mendell, Kissel and Cornblath: Diagnosis and Management of Peripheral Nerve Disorders
Mitsumoto, Przdebski, Gordon: Amyotrophic Lateral Sclerosis
Engel: Myasthenia Gravis and Myasthenic Disorders
11. At the beginning of the academic year, fellows are provided with a CD containing an extensive list of published references on a variety of neuromuscular diseases

I. Clinical Science/Medical Knowledge

Goal: Fellows must demonstrate knowledge about established and evolving neuroscience that would be critical to the practice of rehabilitative medicine and chemodenervation

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. The theoretical basis for clinical interventions used in neuromuscular medicine

2. Major disorders, including:
   a) the epidemiology of the disorders
   b) the etiology of the disorder, including contributing medical, genetic and social factors
   c) the phenomenology of the disorder
   d) diagnostic criteria
   e) appropriate evaluation
   f) course and prognosis
   g) effective treatment strategies

3. Pathophysiology of major Neuromuscular Medicine disorders and familiarity with the scientific basis of neurologic diseases, including:
   a) neuroanatomy
   b) neuropathology
   c) neurochemistry
   d) neurophysiology
   e) neuropharmacology
   f) neuroimmunology/neurovirology
   g) neurogenetics/molecular neurology and neuroepidemiology
   h) neuroimaging
   i) neuro-ophthalmology
   j) neuro-otology
   k) cerebrospinal fluid
   l) neurological rehabilitation
   m) issues related to neuromuscular disorders

4. Gross and microscopic specimens taken from the normal nervous system and from patients with major neuromuscular disorders
**Objectives/Skills** – Fellows will demonstrate ability to:

1. Perform and document a comprehensive history and examination to include, as appropriate:
   a) chief complaint
   b) history of present illness
   c) developmental history
   d) past medical history
   e) review of systems
   f) family history
   g) social history
   h) mental status
   i) neuromuscular examination

2. Create differential diagnoses:
   a) to determine if a patient’s symptoms are the result of a disease affecting the central and/or peripheral nervous system or are of another origin
   b) to make a formulation, laboratory investigation, and cost-effective management plan
   c) rehabilitation plan

3. To recognize and treat major neuromuscular and musculoskeletal disorders

**Objective/Attitudes** – Fellows must maintain and apply an investigatory and analytic thinking approach to clinical situations

**Demonstrated by:**

Clinical care of patients; teaching residents and other professionals; formal presentations at conferences; self-initiated independent learning

**Evaluation:**

Fellow evaluation
Formal and informal observation

**Remediation:**

The program director will semi-annually review the fellow's performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

**II. Patient Care**

**Goal:** Fellows must be able to provide patient care that is compassionate, appropriate and effective for the treatment of neurological problems
Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. The lesion localization and differential diagnosis in neuromuscular disorders
2. Investigational plan
3. Interpretation of NCS, EMG and muscle, nerve and skin biopsies
4. Available treatment methods for the major neuromuscular medicine disorders and the evidence which supports their use
5. Preventive interventions used in neuromuscular medicine

Objectives/Skills – Fellows will demonstrate the ability to:

1. Perform and document a comprehensive history and examination to include, as appropriate:
   a) chief complaint
   b) history of present illness
   c) developmental history
   d) past medical history
   e) review of systems
   f) family history
   g) social history
   h) mental status
2. Create differential diagnoses
3. Evaluate, assess and recommend cost-effective management of patients
4. Recognize and treat neuromuscular medicine disorders
5. Apply the use of electrical, tissue pathological and mechanical methods in the evaluation and treatment of a wide range of diseases

Objectives/Attitudes – Fellows will:

1. Be strong advocates for the patient’s best interests
2. Strive to provide quality care within available resources
3. Be sensitive to patient’s cultural differences
4. Be sensitive to confidentiality and consent issues

Demonstrated by:

Clinical care of patients; teaching residents and other professionals; formal presentations at conferences; self-initiated independent learning; direct observation by faculty during clinics and on clinic rotations; case conferences; chart review with supervisors

Evaluation:

Supervision and rotation evaluations
Formal and informal observations
Remediation:

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

III. Interpersonal and Communication Skills

Goal: Fellows must demonstrate the knowledge, skills and attitudes necessary to develop and maintain appropriate interpersonal relationships and to communicate effectively with patients, families, colleagues and the public.

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. Interviewing techniques
2. Communication techniques

Objectives/Skills – Fellows will be able to:

1. Demonstrate the ability to obtain, interpret and evaluate consultations from other medical specialties. This shall include:
   a) knowing when to solicit consultation and having sensitivity to assess the need for consultation
   b) discussing consultation findings with patients and their families
   c) evaluating the consultation findings
2. Serve as an effective consultant to other medical specialists and community agencies. This shall include:
   a) communicating effectively with the requesting party to refine the consultation question
   b) maintain the role of consultant
   c) communicate clear and specific recommendations
   d) respect the knowledge and expertise of the requesting party
3. Demonstrate the ability to communicate effectively with patients and their families by:
   a) gearing all communication to the educational/intellectual levels of patients and their families
   b) providing explanations of neuromuscular medicine disorders and treatment (both verbally and in written form) that are jargon-free and geared to the educational/intellectual level of patients and their families
   c) providing preventive education that is understandable and practical as well as applicable
   d) respecting the patient’s cultural, ethnic and economic background
   e) developing and enhancing rapport and a working alliance with patients and their families

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4. Maintain medical records and written prescriptions that are legible and up-to-date. These records must capture essential information while simultaneously respecting patient privacy and be useful to health professionals outside neuromuscular medicine
   a) recognize the need for, and effectively use, interpreters when necessary
   b) give one Grand Rounds per year and/or present at a national or regional meeting
   c) present up-to-date information to students and residents in an organized fashion
   d) provide feedback to students, residents and other professionals

**Objectives/Attitudes** – Fellows will:

1. Maintain an attitude of respect for others, even those with differing points of view
2. Exhibit culturally sensitive, professional, ethically sound behavior in all patient and professional interactions
3. Maintain an attitude of interdisciplinary collaboration
4. Maintain a polite and courteous attitude at all times

**Demonstrated by:**

Chart documentation; direct observation; teaching others; professional relationships; formal presentations; independent learning; seeking feedback on communication and performance

**Evaluation:**

Direct observation
Rotation evaluation

**Remediation:**

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

**IV. Practice Based Learning and Improvement**

**Goal:** Fellows will demonstrate knowledge, skills and attitudes necessary to initiate self-directed and independent learning. Fellows must keep abreast of current information and practices relevant to neuromuscular medicine.

**Objectives/Knowledge** – Fellows will demonstrate knowledge of:

1. Research methodology, including critical assessment of professional journal articles
2. Principles of evidence-based medicine
3. Awareness of available information technologies and the ability to assess them
Objectives/Skills – Fellows will be able to:

1. Demonstrate the ability to obtain, interpret and evaluate up-to-date information from the scientific and practice literature to assist in the quality of care of patients. This shall include:
   a) use of medical libraries
   b) use of information technology, including internet-based searches and literature databases (e.g., Medline)
   c) use of drug information databases
   d) active participation, as appropriate, in educational courses, conferences and other organized educational activities both at the local and national levels
   e) conducting and presenting reviews of current research in such formats as journal clubs, Grand Rounds and/or original publications
   f) participation in funded research projects
2. Assess the generalizability or applicability of research findings to patients in relation to their socio-demographic and clinical characteristics. The physician shall demonstrate the ability to critically evaluate the relevant medical literature
3. Evaluate the caseload and practice experience in a systematic manner. This may include:
   a) case-based learning
   b) the review of patient records and outcomes
   c) obtaining appropriate supervision and consultation
   d) maintaining a system for examining errors in practice and initiating improvements to eliminate or reduce errors

Objectives/Attitudes – Fellows will:

1. Maintain an attitude of inquiry and scholarship, recognizing the need for lifelong learning
2. Maintain openness and flexibility in treatment approaches with patients, assimilating new knowledge in patient care practices

Demonstrated by:

Self-directed inquiry guiding clinical care of patients; formal presentations which include literature review; teaching others

Evaluation:

Direct observation
Rotation evaluation

Remediation:

The program director will regularly review the fellow’s performance and will:
1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

V. Professionalism and Ethical Behavior

Goal: Fellows must demonstrate the knowledge, skills and attitudes necessary to practice professionally responsible, ethical and compassionate care in neuromuscular medicine

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. The impact of gender, culture, religion, socioeconomic factors, and family structures and systems on issues pertaining to neuromuscular medicine
2. The different roles a neuromuscular specialist might fulfill in different settings
3. Legal issues relevant to neuromuscular medicine
4. Ethical issues in neuromuscular medicine. This includes knowledge of the American Academy of Neurology Code of Ethics
5. Ethical issues important in conducting research with humans and the role of the Committee for Protection of Human Subjects

Objectives/Skills – Fellows will be able to:

1. Respond to communications from patients and health professionals in a timely manner. If unavailable, the physician shall establish and communicate back-up arrangements
2. Use medical records for appropriate documentation of the course of illness and its treatment
3. Provide continuity of care including appropriate consultation, transfer or termination of patients (clinic rotation)
4. Demonstrate ethical behavior, integrity, honesty, professional conduct, compassion and confidentiality in the delivery of patient care, including obtaining informed consent/assent, and declaring conflict of interest
5. Demonstrate respect for patients and colleagues as individuals by showing sensitivity to their age, culture, disabilities, ethnicity, gender, socioeconomic background, religious beliefs, political affiliations, and sexual orientation
6. Demonstrate appreciation of end-of-life care and issues regarding provision for or withholding of care
7. Acknowledge responsibility for his or her decisions and demonstrate commitment to the review and remediation of his or her professional conduct
8. Promote the highest standards of medical healthcare to the public and participate in the review of the professional conduct of his or her colleagues

Objectives/Attitudes – Fellows will:

1. Maintain an attitude of inquiry and scholarship, recognizing the need for lifelong learning
2. Maintain openness and flexibility in treatment approaches with patients, assimilating new knowledge in patient care practices

**Demonstrated by:**

Self-directed inquiry guiding clinical care of patients; formal presentations which include literature review; teaching others

**Evaluation:**

Rotation evaluation
Regular review by the program director

**Remediation:**

The program director will regularly review the fellow's performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

**VI. Systems Based Practice**

**Goal:** Fellows must demonstrate the knowledge, skills and attitudes necessary to effectively in multiple, diverse, complex systems of care to provide effective treatment, consultations and referrals for patients.

**Objectives/Knowledge** – Fellows will demonstrate knowledge of:

1. Basic concepts of systems theory
2. How patient care practices of fellows and residents and related actions impact component units of health care delivery
3. Systems-based approaches for controlling health care costs and allocating resources

**Objectives/Skills** – Fellows will be able to:

1. Advocate for patients within a variety of systems
2. Partner with insurance and managed care companies to meet patient needs
3. Strive to practice cost-effective health care and resource allocation that does not compromise the quality of care

**Objectives/Attitudes** – Fellows will:

1. Maintain an attitude of interdisciplinary collaboration, advocacy and cooperation
2. Maintain flexibility in adapting to the needs and expectations of different settings and systems
3. Maintain the patient’s best interests as the top priority

**Demonstrated by:**

Care of patients; interactions with other agencies involved in the care of patients; consultation with other professionals; participation in Quality Assurance, Utilization Review and Performance Improvement committees; self-directed independent learning; teaching others

**Evaluation:**

Rotation evaluation
Regular review by the program director

**Remediation:**

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

**E. NEUROMUSCULAR RESEARCH ELECTIVE ROTATION:**

The Neuromuscular Research Elective rotation is a 1-2 month rotation located in the Landon Center on Aging and the General Clinical Research Center (GCRC). Fellows are involved in the design, conduct and result interpretation of studies with close faculty supervision with direct longitudinal involvement throughout the year in all KU investigator initiated studies and in other neuromuscular research studies. During this rotation each fellow works in conjunction with the neuromuscular research faculty to gain knowledge in neuromuscular research trials, endpoint measures and their applications, benefits and limitations.

Fellows are required to participate in the four-week Introduction to Biostatistics for Clinical and Translational Researchers course offered through FRONTIERS: The Heartland Institute for Clinical and Translational Research.

Additionally, fellows are expected to become familiar with the following on-line courses and information designed to assist investigators in understanding clinical research and developing proposals/grant submissions for potential funding:

- **Introduction to the Principals and Practice of Clinical Research (IPPCR)** – a lecture in real time with the 2011-2012 archive videos available. Course runs from October-March. Previous year is available at any time
- **University of Iowa Institute for Clinical and Translational Sciences – Clinical Research Professionals Basic Certificate** Course (through ICTS Virtual University –
account creation/login required). Provides basic introduction to clinical research and also offers courses on bioethics, genetics and pharmacology

- **NIH Grants and Funding – About Grants** – site that provides the investigator with grant writing guidance, strategy and instruction
- **CTSpedia** – a collaborative vehicle for the CTSA’s Biostatistics/Epidemiology/Research/Design (BERD) Online Resources and Education Task Force to identify and share resources across the national consortium and community researchers world-wide. BERD Educational Materials links to biostats course materials, searchable by keyword, format, audience, etc., submitted by many consortium institutions
- **NIH Ethical and Regulatory Aspects of Clinical Research** – full links to 2012 course including syllabus, readings, videocasts and podcasts of lectures. The 2013 course will register in the summer
- **CTSA Central Education and Training resources** – provides links to various resources at CTSA consortium institutions

**DELINEATION OF RESIDENT RESPONSIBILITIES:**

1. Discuss with the attending physician, interpret and dictate neuromuscular research consultations on the day of service
2. Edit dictated reports on the following day for attending physician review
3. Work in conjunction with the research coordinators, research assistants, investigators, clinical evaluators and staff of the GCRC
4. Organize Muscle and Nerve Biopsy conferences
5. Present EMG/neuromuscular topics
6. Participate in Journal Club
7. Prepare for participation in the Carrell-Krusen Symposium in Neuromuscular Disease
8. Give one case presentation per year
9. Participate in neuromuscular lectures to neurology residents
10. Additional suggested reading:

   - **Feldman, Grisold, Russell and Zifko:** *Atlas of Neuromuscular Diseases*
   - **Amato and Russell:** *Neuromuscular Disorders*
   - **Engel and Franzini-Armstrong:** *Myology*
   - **Dyck and Thomas:** *Peripheral Neuropathy*
   - **Mendell, Kissel and Cornblath:** *Diagnosis and Management of Peripheral Nerve Disorders*
   - **Mitsumoto, Przdebski, Gordon:** *Amyotrophic Lateral Sclerosis*
   - **Engel:** *Myasthenia Gravis and Myasthenic Disorders*
   - **Dumitru and Amato:** *Electrodiagnostic Medicine*
   - **Brown and Bolton:** *Clinical Electromyography*
   - **Levin and Luders:** *Comprehensive Clinical Neurophysiology*
   - **Preston and Shapiro:** *Electromyography and*
11. At the beginning of the academic year, fellows are provided with a CD containing an extensive list of published references on a variety of neuromuscular diseases.

12. Attend and successfully complete the Introduction to Clinical Research Program.

I. Clinical Science/Medical Knowledge

Goal: Fellows must demonstrate knowledge about established and evolving neuroscience that would be critical to the practice of rehabilitative medicine and chemodenervation.

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. The theoretical basis for clinical interventions used in neuromuscular medicine.

2. Major disorders, including:
   a) the epidemiology of the disorders
   b) the etiology of the disorder, including contributing medical, genetic and social factors
   c) the phenomenology of the disorder
   d) diagnostic criteria
   e) appropriate evaluation
   f) course and prognosis
   g) effective treatment strategies

3. Pathophysiology of major Neuromuscular Medicine disorders and familiarity with the scientific basis of neurologic diseases, including:
   a) neuroanatomy
   b) neuropathology
   c) neurochemistry
   d) neurophysiology
   e) neuropharmacology
   f) neuroimmunology/neurovirology
   g) neurogenetics/molecular neurology and neuroepidemiology
   h) neuroimaging
   i) neuro-ophthalmology
   j) neuro-otology
   k) cerebrospinal fluid
   l) neurological rehabilitation
   m) issues related to neuromuscular disorders

Objectives/Skills – Fellows will demonstrate ability to:

1. Perform and document a comprehensive history and examination to include, as appropriate:
a) chief complaint
b) history of present illness
c) developmental history
d) past medical history
e) review of systems
f) family history
g) social history
h) mental status
i) neuromuscular examination

2. Create differential diagnoses:
   a) to determine if a patient’s symptoms are the result of a disease affecting the
central and/or peripheral nervous system or are of another origin
   b) to make a formulation, laboratory investigation, and cost-effective
management plan
   c) rehabilitation plan

3. To recognize and treat major neuromuscular and musculoskeletal disorders

**Objective/Attitudes** – Fellows must maintain and apply an investigatory and analytic
thinking approach to clinical situations

**Demonstrated by:**

Clinical care of patients; teaching residents and other professionals; formal presentations at
conferences; self-initiated independent learning

**Evaluation:**

Fellow evaluation
Formal and informal observation

**Remediation:**

The program director will semi-annually review the fellow's performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

**II. Patient Care**

**Goal:** Fellows must be able to provide patient care that is compassionate, appropriate and
effective for the treatment of neurological problems

**Objectives/Knowledge** – Fellows will demonstrate knowledge of:

1. The lesion localization and differential diagnosis in neuromuscular disorders
2. Investigational plan
3. Interpretation of NCS, EMG and muscle, nerve and skin biopsies
4. Available treatment methods for the major neuromuscular medicine disorders and the evidence which supports their use
5. Preventive interventions used in neuromuscular medicine

**Objectives/Skills** – Fellows will demonstrate the ability to:

1. Perform and document a comprehensive history and examination to include, as appropriate:
   a) chief complaint
   b) history of present illness
   c) developmental history
   d) past medical history
   e) review of systems
   f) family history
   g) social history
   h) mental status
2. Create differential diagnoses
3. Evaluate, assess and recommend cost-effective management of patients
4. Recognize and treat neuromuscular medicine disorders
5. Apply the use of electrical, tissue pathological and mechanical methods in the evaluation and treatment of a wide range of diseases

**Objectives/Attitudes** – Fellows will:

1. Be strong advocates for the patient’s best interests
2. Strive to provide quality care within available resources
3. Be sensitive to patient’s cultural differences
4. Be sensitive to confidentiality and consent issues

**Demonstrated by:**

Clinical care of patients; teaching residents and other professionals; formal presentations at conferences; self-initiated independent learning; direct observation by faculty during clinics and on clinic rotations; case conferences; chart review with supervisors

**Evaluation:**

Supervision and rotation evaluations
Formal and informal observations

**Remediation:**

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

III. Interpersonal and Communication Skills

Goal: Fellows must demonstrate the knowledge, skills and attitudes necessary to develop and maintain appropriate interpersonal relationships and to communicate effectively with patients, families, colleagues and the public.

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. Interviewing techniques
2. Communication techniques

Objectives/Skills – Fellows will be able to:

1. Demonstrate the ability to obtain, interpret and evaluate consultations from other medical specialties. This shall include:
   a) knowing when to solicit consultation and having sensitivity to assess the need for consultation
   b) discussing consultation findings with patients and their families
   c) evaluating the consultation findings
2. Serve as an effective consultant to other medical specialists and community agencies. This shall include:
   a) communicating effectively with the requesting party to refine the consultation question
   b) maintain the role of consultant
   c) communicate clear and specific recommendations
   d) respect the knowledge and expertise of the requesting party
3. Demonstrate the ability to communicate effectively with patients and their families by:
   a) gearing all communication to the educational/intellectual levels of patients and their families
   b) providing explanations of neuromuscular medicine disorders and treatment (both verbally and in written form) that are jargon-free and geared to the educational/intellectual level of patients and their families
   c) providing preventive education that is understandable and practical as well as applicable
   d) respecting the patient’s cultural, ethnic and economic background
   e) developing and enhancing rapport and a working alliance with patients and their families
4. Maintain medical records and written prescriptions that are legible and up-to-date. These records must capture essential information while simultaneously respecting patient privacy and be useful to health professionals outside neuromuscular medicine
   a) recognize the need for, and effectively use, interpreters when necessary
   b) give one Grand Rounds per year and/or present at a national or regional
Objectives/Attitudes – Fellows will:

1. Maintain an attitude of respect for others, even those with differing points of view
2. Exhibit culturally sensitive, professional, ethically sound behavior in all patient and professional interactions
3. Maintain an attitude of interdisciplinary collaboration
4. Maintain a polite and courteous attitude at all times

Demonstrated by:

Chart documentation; direct observation; teaching others; professional relationships; formal presentations; independent learning; seeking feedback on communication and performance

Evaluation:

Direct observation
Rotation evaluation

Remediation:

The program director will regularly review the fellow's performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

IV. Practice Based Learning and Improvement

Goal: Fellows will demonstrate knowledge, skills and attitudes necessary to initiate self-directed and independent learning. Fellows must keep abreast of current information and practices relevant to neuromuscular medicine.

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. Research methodology, including critical assessment of professional journal articles
2. Principles of evidence-based medicine
3. Awareness of available information technologies and the ability to assess them

Objectives/Skills – Fellows will be able to:

1. Demonstrate the ability to obtain, interpret and evaluate up-to-date information from the scientific and practice literature to assist in the quality of care of patients. This
shall include:
  a) use of medical libraries
  b) use of information technology, including internet-based searches and literature databases (e.g., Medline)
  c) use of drug information databases
  d) active participation, as appropriate, in educational courses, conferences and other organized educational activities both at the local and national levels
  e) conducting and presenting reviews of current research in such formats as journal clubs, Grand Rounds and/or original publications
  f) participation in funded research projects

2. Assess the generalizability or applicability of research findings to patients in relation to their socio-demographic and clinical characteristics. The physician shall demonstrate the ability to critically evaluate the relevant medical literature

3. Evaluate the caseload and practice experience in a systematic manner. This may include:
   a) case-based learning
   b) the review of patient records and outcomes
   c) obtaining appropriate supervision and consultation
   d) maintaining a system for examining errors in practice and initiating improvements to eliminate or reduce errors

**Objectives/Attitudes** – Fellows will:

1. Maintain an attitude of inquiry and scholarship, recognizing the need for lifelong learning
2. Maintain openness and flexibility in treatment approaches with patients, assimilating new knowledge in patient care practices

**Demonstrated by:**

Self-directed inquiry guiding clinical care of patients; formal presentations which include literature review; teaching others

**Evaluation:**

Direct observation
Rotation evaluation

**Remediation:**

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies
V. Professionalism and Ethical Behavior

**Goal:** Fellows must demonstrate the knowledge, skills and attitudes necessary to practice professionally responsible, ethical and compassionate care in neuromuscular medicine

**Objectives/Knowledge** – Fellows will demonstrate knowledge of:

1. The impact of gender, culture, religion, socioeconomic factors, and family structures and systems on issues pertaining to neuromuscular medicine
2. The different roles a neuromuscular specialist might fulfill in different settings
3. Legal issues relevant to neuromuscular medicine
4. Ethical issues in neuromuscular medicine. This includes knowledge of the American Academy of Neurology Code of Ethics
5. Ethical issues important in conducting research with humans and the role of the Committee for Protection of Human Subjects

**Objectives/Skills** – Fellows will be able to:

1. Respond to communications from patients and health professionals in a timely manner. If unavailable, the physician shall establish and communicate back-up arrangements
2. Use medical records for appropriate documentation of the course of illness and its treatment
3. Provide continuity of care including appropriate consultation, transfer or termination of patients (clinic rotation)
4. Demonstrate ethical behavior, integrity, honesty, professional conduct, compassion and confidentiality in the delivery of patient care, including obtaining informed consent/assent, and declaring conflict of interest
5. Demonstrate respect for patients and colleagues as individuals by showing sensitivity to their age, culture, disabilities, ethnicity, gender, socioeconomic background, religious beliefs, political affiliations, and sexual orientation
6. Demonstrate appreciation of end-of-life care and issues regarding provision for or withholding of care
7. Acknowledge responsibility for his or her decisions and demonstrate commitment to the review and remediation of his or her professional conduct
8. Promote the highest standards of medical healthcare to the public and participate in the review of the professional conduct of his or her colleagues

**Objectives/Attitudes** – Fellows will:

1. Maintain an attitude of inquiry and scholarship, recognizing the need for lifelong learning
2. Maintain openness and flexibility in treatment approaches with patients, assimilating new knowledge in patient care practices
Demonstrated by:

Self-directed inquiry guiding clinical care of patients; formal presentations which include literature review; teaching others

Evaluation:

Rotation evaluation
Regular review by the program director

Remediation:

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

VI. Systems Based Practice

Goal: Fellows must demonstrate the knowledge, skills and attitudes necessary to effectively in multiple, diverse, complex systems of care to provide effective treatment, consultations and referrals for patients.

Objectives/Knowledge – Fellows will demonstrate knowledge of:

1. Basic concepts of systems theory
2. How patient care practices of fellows and residents and related actions impact component units of health care delivery
3. Systems-based approaches for controlling health care costs and allocating resources

Objectives/Skills – Fellows will be able to:

1. Advocate for patients within a variety of systems
2. Partner with insurance and managed care companies to meet patient needs
3. Strive to practice cost-effective health care and resource allocation that does not compromise the quality of care

Objectives/Attitudes – Fellows will:

1. Maintain an attitude of interdisciplinary collaboration, advocacy and cooperation
2. Maintain flexibility in adapting to the needs and expectations of different settings and systems
3. Maintain the patient’s best interests as the top priority
Demonstrated by:

Care of patients; interactions with other agencies involved in the care of patients; consultation with other professionals; participation in Quality Assurance, Utilization Review and Performance Improvement committees; self-directed independent learning; teaching others

Evaluation:

Rotation evaluation
Regular review by the program director

Remediation:

The program director will regularly review the fellow’s performance and will:

1. Identify any specific deficits
2. Document all areas requiring remediation or additional concentration
3. Provide additional recommendations for remediation of specific deficiencies

Fellow Duties/Expectations:

The neuromuscular fellow is expected to submit and present abstract(s) pertaining to their research project at regional and national scientific meetings. During the last month of fellowship, on a designated date and time, each fellow is expected to give a 15-minute presentation about their year’s research. An award will be given for the best presentation/project and the name of the winner placed yearly on a plaque. The best research project will be selected based on the novelty of the concept, potential for publication in a peer-reviewed journal and the likelihood of obtaining intramural or extramural research funding in order to expand the research project. An attempt should be made to complete and submit the results of the study to a peer-reviewed journal.
EDUCATIONAL POLICIES AND INFORMATION

PROGRAM ELIGIBILITY

All required clinical education for the entry into ACGME-accredited fellowship programs must be completed in an ACGME-accredited residency program or in an RCPSC-accredited or CFPC-accredited residency program located in Canada.

Prior to appointment in the program, fellows must have successfully completed an ACGME-accredited program in Neurology or Physical Medicine and Rehabilitation or a program in one of these specialties that is located in Canada and accredited by the RCPSC.

Applicants must meet the following qualifications to be eligible for appointment to an accredited residency program:

1.1 Graduation from an acceptable medical school, as outlined by the University of Kansas School of Medicine and Kansas State Board of Healing Arts (KSBHA):

a) Graduation from a medical school in the United States of Canada accredited by Liaison Committee on Medical Education (LCME), or

b) Graduation from a college of osteopathic medicine in the United States accredited by the American Osteopathic Association (AOA), or

c) Graduation from an acceptable medical school outside the United States or Canada with one of the following:

i) successful completion of a Fifth Pathway program provided by an LCME accredited medical school, or

ii) a current, valid certificate from the Educational Commission for Foreign Medical Graduates (ECFMG) prior to appointment, or

iii) all Canadian citizens and eligible Canadian Landed Immigrants who are NOT graduates of a foreign medical school must hold a status which allows employment as a medical resident and maintain an appropriate status throughout the length of the graduate medical training program. Possession of valid immigration documents that verify the status must be presented, or

iv) a full, unrestricted license to practice medicine in the State of Kansas and Missouri, depending on the training program

d) Foreign medical schools are deemed acceptable as defined by the KSHBA (K.S.A. 65-2873). This is the minimum standard for graduates of foreign medical schools, however individual programs may have more stringent rules for foreign medical school graduates:
i) inclusion in the list of “approved” medical schools on the KSBHA’s website (http://ksbha.org/medicalschoolapprovedunapproved.html),

ii) the school must not appear on the list of “disapproved” schools, also on the KSBHA website,

iii) to be eligible for appointment, all Canadian citizens and eligible Canadian Landed Immigrants who ARE graduates of a foreign medical school must seek and maintain sponsorship through ECFMG for J-1 non-immigrant visa status

1.2 The Office of Graduate Medical Education reserves the right to reject any candidate at the point it is determined that they have matriculated from an unacceptable medical school

1.3 Some ACGME program requirements stipulate further qualifications that must be met for eligibility to an ACGME accredited program at the University of Kansas. Additionally, some programs may have more stringent qualification requirements as specified in their individual program manuals

Applicants are required to demonstrate spoken, auditory, reading and writing proficiency in the English language

During the in-person interview, the applicant may be asked to complete a writing exercise that will provide information on the applicant’s writing skills, including the ability to organize information, content development and grammatical skills

1.4 To be eligible, applicants must meet, with or without reasonable accommodation, all duties and responsibilities as described through this link http://www.kumc.edu/human-resources/accommodation-policy.html

1.5 Residency program applicants for the PGY1, 2 or 3 levels must provide evidence of passing USMLE Step II/COMLEX Level 2 before they will be admitted. Residency program applicants for the PGY 3 level or beyond must provide evidence of sitting for the USMLE Step III/COMLEX Level 3 before they will be admitted. Fellowship program applicants must provide evidence that they successfully passed USMLE Step III/COMLEX Level 3 before they will be admitted

**FELLOW ELIGIBILITY EXCEPTION**

A review committee may grant the following exception to the fellowship eligibility requirements:

An ACGME-accredited fellowship program may accept an exceptionally qualified applicant who does not satisfy the eligibility requirements listed above but who does meet all of the following additional qualifications and conditions:
Assessment by the program director and fellowship selection committee of the applicant’s suitability to enter the program based on prior training and review of the summative evaluations of training in the core specialty; and ACGME institutional requirements

Review and approval of the applicant’s exceptional qualifications by the GMEC or a subcommittee of the GMEC; and

Satisfactory completion of the United States Medical Licensing Examination (USMLE) Steps 1, 2 and, if the applicant is eligible, 3; and

For an international graduate, verification of Educational Commission for Foreign Medical Graduates (ECFMG) certification; and

Applicants accepted by this exception must complete fellowship Milestones evaluation (for the purposes of establishment of baseline performance by the Clinical Competency Committee), conducted by the receiving fellowship program within six weeks of matriculation. This evaluation may be waived for an applicant who has completed an ACGME international-accredited residency based on the applicant’s Milestones evaluation conducted at the conclusion of the residency program; and

If the trainee does not meet the expected level of Milestones competency following entry into the fellowship program, the trainee must undergo a period of remediation, overseen by the Clinical Competency Committee and monitored by the GMEC or a subcommittee of the GMEC. This period of remediation must not count toward time in a fellowship training.

**SUPERVISION OF FELLOWS**

Supervision may be exercised through a variety of methods. Some activities require the physical presence of the supervising faculty member. For many aspects of patient care, the supervising physician may be a more advanced fellow. Other portions of care provided by the fellow can be adequately supervised by the immediate availability of the supervising faculty member or fellow physician, either in the institution, or by means of telephonic and/or electronic modalities. In some circumstances, supervision may include post-hoc review of fellow-delivered care with feedback as to the appropriateness of that care.

**A. Introduction**

- In the clinical learning environment, each patient must have an identifiable, appropriately-credentialed and privileged attending physician (or licensed independent practitioner as approved by each Review Committee) who is ultimately responsible for that patient’s care.
- This information should be available to residents, faculty members, and patients
  - *Inpatient*: Patient information sheet included in the admission packet and listed on the “white board” in each patient room
  - *Outpatient*: Provided during introduction verbally by residents and/or faculty
Residents and faculty members should inform patients of their respective roles in each patient’s care
The program must demonstrate that the appropriate level of supervision is in place for all residents who care for patients

B. Methods of Supervision

- Some activities require the physical presence of the supervision faculty member
- For many aspects of patient care, the supervising physician may be a more advanced resident or fellow
- Other portions of care provided by the resident can be adequately supervised by the immediate availability of the supervising faculty member or resident physician in his/her “final years of training”, either in the institution or by means of telephonic and/or electronic modalities
- In some circumstances, supervision may include post-hoc review of resident delivered care with feedback as to the appropriateness of that care
- The privilege of progressive authority and responsibility, conditional independence, and a supervisory role in patient care delegated to each resident must be assigned by the program director and faculty members
- The program director must evaluate each resident’s abilities based on the following specific criteria and when available should be guided by specific national standards-based criteria
- Faculty members functioning as supervising physicians should delegate portions of care to residents based on the needs of the patient and the skills of the residents
- “Residents in their final years of training” or fellows should serve in a supervisory role to PGY1 and “intermediate” residents in recognition of their progress toward independence based on the needs of each patient and the skills of the individual resident or fellow

C. Levels of Supervision Defined

To ensure oversight of resident supervision and graded authority and responsibility, the program must use the following classification of supervision established by the ACGME.

1. **Direct Supervision:**
   - This means the supervising physician is physically present with the resident and patient.
2. **Indirect Supervision A (with direct supervision immediately available):**
   - This means the supervising physician is physically within the hospital or other site of patient care, and is immediately available to provide Direct Supervision.
3. **Indirect Supervision B (with direct supervision available):**
   - This means the supervising physician is not physically present within the hospital or other site of patient care, but is immediately available by means of telephonic and/or electronic modalities, and is available to provide Direct Supervision.
4. **Oversight:**
This means the supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered

<table>
<thead>
<tr>
<th>RRC APPROVED LICENSED INDEPENDENT PRACTITIONER SUPERVISOR (PR VI.D.1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are no program specific RRC requirements</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OPTIMAL CLINICAL WORKLOAD (PR VI.E.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>This has not been established by the Neurology RRC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEMBERS OF THE INTERPROFESSIONAL TEAM (PR VI.F.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The members of the interprofessional team on the hospital based services includes the attending neurologist, neuromuscular medicine fellow, neurology residents, rotating residents, medical students, the head nurse (or delegate), the floor nurses, pharmacists, and the social worker</td>
</tr>
</tbody>
</table>

In the outpatient clinics the interprofessional team includes the attending neurologist, neuromuscular medicine fellow, clinic nursing personnel, medical assistants, EMG/EEG technologists, medical records technicians, occupational, physical and speech therapists, and the social worker

<table>
<thead>
<tr>
<th>COMPETENCIES TO ALLOW PGY1 RESIDENTS TO PROGRESS TO INDIRECT SUPERVISION (PR VI.D.5.a).(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are no Neurology specific RRC requirements</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DEFINING RESIDENT LEVELS “INTERMEDIATE LEVEL” &amp; “FINAL YEARS OF TRAINING” For establishing the minimum rest period between duty periods (PR VI.G.5.b&amp;c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuromuscular medicine fellows are considered to be in their final year of training</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CIRCUMSTANCES WHEN RESIDENTS IN THEIR FINAL YEARS OF EDUCATION MAY REMAIN OR RETURN IN &lt; 8 HOURS (PR VI.G.5.c).(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required continuity of care for a severely ill or unstable patient, or a complex patient with whom the resident has been involved; events of exceptional educational value; or, humanistic attention to the needs of a patient or family. However, fellows are not the primary care takers for inpatients</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DEFINED MAXIMUM NUMBER OF CONSECUTIVE WEEKS AND MAXIMUM NUMBER</th>
</tr>
</thead>
</table>

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The neuromuscular medicine fellowship does not have a night float system.

Program-specific guidelines for circumstances and events in which residents must communicate with appropriate supervising faculty (PR VI.D.5)

- Admission to Hospital
- Transfer of patient to a higher level of care
- End-of-Life decisions

Source of specific criteria and/or specific national standards-based criteria used to evaluate each resident’s abilities (PR VI.D.4.a)

N/A

### RESIDENTS IN FINAL YEARS OF TRAINING

<table>
<thead>
<tr>
<th>LEVEL of SUPERVISION</th>
<th>ACTIVITIES /PROCEDURES (as defined by RRC &amp; Program)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIRECT</td>
<td>Tissue biopsy, EMG/NCS, Consultation, Research visits</td>
</tr>
<tr>
<td>INDIRECT A (with direct supervision immediately available)</td>
<td>Tissue biopsy, EMG/NCS, Consultation, Research visits</td>
</tr>
<tr>
<td>INDIRECT B (with direct supervision available)</td>
<td>N/A</td>
</tr>
<tr>
<td>OVERSIGHT (with direct supervision available)</td>
<td>N/A</td>
</tr>
</tbody>
</table>
PROGRAM ADMINISTRATION

The Program Director develops and oversees the implementation of a curriculum to educate fellows and other health care professionals in neuromuscular disease. To this end, the Program Director reviews applications, oversees the interview process, interviews and selects applicants for positions in the fellowship program, ensures fellow evaluations are completed at least every other month, and quarterly evaluates the fellows with feedback on the individual fellows, identifies fellows who are academically or emotionally troubled and require intervention, chairs the Fellowship Coordinating Committee, performs direct care of patients with neuromuscular disease, participates in teaching activities by preceptoring inpatient and outpatient neuromuscular medicine services services and delivering lectures, and performs neuromuscular medicine research and ensures that fellows participate in departmental research.

The Program Director is accountable for the operations of the fellowship program; together with the neuromuscular medicine faculty, he/she is responsible for the general administration of the program as well as for establishing and maintaining a stable educational environment. This includes all activities related to recruitment, selection, instruction, supervision, counseling, evaluation and advancement of the fellow(s), as well as maintenance of all records relevant to program accreditation.

Qualifications of the Program Director include Board certification in neuromuscular medicine, licensure in the State of Kansas, an active medical staff appointment and demonstrated educational and administrative expertise.

Administration and maintenance of the educational environment in each of the ACGME competency areas includes, but is not limited to:

- oversight of the quality of all didactic and clinical education, including preparing and implementing a comprehensive, well-organized and effective curriculum that includes the presentation of core specialty knowledge supplemented by the addition of current information
- ensures neuromuscular medicine fellows are provided with direct experience in progressive responsibility for patient management
- ensures that a formal curriculum exists for bioethics, cost-effective care, and palliative care as well as psychological support and counseling for patients and families
- participation in the evaluation of program faculty
- monitoring and oversight of participating sites
- preparation and timely submission of all information required or requested by the ACGME
- documented semi-annual and final performance evaluations, with feedback, of each clinical neurophysiology fellow
- ensuring compliance with grievance and due process procedures
• monitors neuromuscular medicine policies and procedures to ensure they are consistent with institutional and program requirements for fellow duty hours and the working environment, including moonlighting
• monitors the need for, and ensures, the provision of back-up support systems in case patient care responsibilities are unusually difficult or prolonged
• complies with sponsoring institution policies and procedures, including those for selection, evaluation and promotion of residents, disciplinary action and supervision of fellows
• complies with all ACGME policies and procedures
• monitors the well-being of the fellows, including stress and impairment, and ensures that appropriate confidential help is available

Additionally, the Program Director ensures that faculty and fellows meet on a yearly basis to review and complete the Program Outcomes Assessment and Action Plan Report which includes:

1. Program Quality
   • ACGME common and specialty RRC requirements
   • ACGME institutional requirements
   • ACGME accreditation letter and correspondence
   • most recent GMEC internal review report
   • previous annual Program Outcomes Assessment and Action Plan Reports
   • overall program educational goals
   • competency-based goals and objectives for each rotation assignment at each PGY-level
   • department Policy and Procedure manual
   • KUMC GME Policy and Procedure manual
   • program letters of agreement
   • department curriculum including conference and didactics schedule
   • annual program, rotation and curriculum evaluations by fellows
   • annual program, rotation and curriculum evaluations by faculty
   • duty hour violation reports/duty hour monitoring system
   • ACGME and GME Resident/Fellow Survey Summary Data Report and national percentile results

2. Resident Performance
   • end-of-rotation competency-based resident evaluations by faculty
   • 360° evaluations of fellows
   • individual fellow patient case and/or procedure logs
   • reports of quarterly Program Director evaluation meetings with fellows
   • final summative evaluations of graduating fellows
   • in-training examination results

3. Faculty Development
   • faculty evaluations by fellows
   • annual Program Director evaluative review of fellows
• annual faculty and resident/fellow publication list
• annual faculty and resident/fellow presentation list
• annual faculty and resident/fellow peer-reviewed grant list
• annual faculty and resident/fellow national committee and educational organization participation list

4. Graduate Performance
• Board certification examination first time pass rate

EDUCATIONAL PROGRAMS

Basic neuromuscular medicine topics will be covered during the one year training period through a combination of both inpatient and outpatient clinical experiences, basic neuromuscular conferences, and EMG/neuromuscular disease conferences including areas of clinical neurophysiology such as autonomic testing, quantitative sensory testing and single fiber EMG. The fellows are required to register for the Introduction to Clinical Research course offered by the University of Kansas Medical Center. This course takes place at 5:00 pm on Thursdays and educates the fellows about research methodology. Attendance at the Introduction to Clinical Research course is mandatory.

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00-8:00 am</td>
<td></td>
<td>Clinical Neuropathology Lecture Series*</td>
<td>Neurology/Neurosurgery Case Presentations</td>
<td></td>
</tr>
<tr>
<td>7:30-8:30 am</td>
<td>Neuromuscular Lecture Series*</td>
<td>EMG Case Discussion*</td>
<td></td>
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</tr>
<tr>
<td>8:00-9:00 am</td>
<td>Neuromuscular Research Checklist Meeting</td>
<td>Epilepsy/EEG Lecture Series*</td>
<td>Neurology/Neurosurgery Grand Rounds</td>
<td></td>
</tr>
<tr>
<td>10:00-11:00 am</td>
<td></td>
<td>Muscle, Skin &amp; Nerve Biopsy Conference or Journal Club</td>
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<td>12:00-1:00 pm</td>
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</tbody>
</table>

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* Attendance is required
** Neuromuscular Journal Club 2nd Monday of each month:** Fellows and neuromuscular faculty present and critically review an article, analyze study design, statistical methods and conclusions using the principles of evidence-based medicine. **Neuromuscular Section Meeting** is on the 4th Monday of the month. It is open to neuromuscular faculty and neuromuscular fellows.

**Grand Rounds:** fellows present once a year

**Block Rotations**

<table>
<thead>
<tr>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
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<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
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</thead>
<tbody>
<tr>
<td>NMM Clinic</td>
<td>NMM Clinic</td>
<td>NMM Clinic</td>
<td>EMG Lab</td>
<td>EMG Lab</td>
<td>EMG Lab</td>
<td>IOM/Botox</td>
<td>Research Elective</td>
<td>Muscle, Nerve and Skin Pathology Lab</td>
<td>KUH NMM: EMG and Consult</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Neuromuscular Medicine Rotation Schedule July 2016 through June 2017**

<table>
<thead>
<tr>
<th>JULY 2016</th>
<th>NMM 1</th>
<th>NMM 2</th>
<th>NMM 3</th>
<th>VA - Neuromuscular</th>
</tr>
</thead>
<tbody>
<tr>
<td>JULY 2016</td>
<td></td>
<td></td>
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<tr>
<td>AUGUST</td>
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<tr>
<td>SEPTEMBER</td>
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<tr>
<td>OCTOBER</td>
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<tr>
<td>NOVEMBER</td>
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<tr>
<td>DECEMBER</td>
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<tr>
<td>JANUARY 2017</td>
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<tr>
<td>FEBRUARY</td>
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<tr>
<td>MARCH</td>
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<td>APRIL</td>
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<tr>
<td>MAY</td>
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<tr>
<td>JUNE</td>
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</tr>
</tbody>
</table>

NMM 1 = includes inpatient consults
NMM 2 = includes inpatient EMG
NMM 3 = research elective

Muscle/Nerve/Skin Biopsy included on NMM 2 and VA rotations
### Clinical Neurophysiology Rotation Schedule July 2016 through June 2017

<table>
<thead>
<tr>
<th></th>
<th>NMM 1</th>
<th>NMM 2</th>
<th>EEG/Epilepsy-KU/CMH</th>
<th>VA-Neurophys</th>
</tr>
</thead>
<tbody>
<tr>
<td>JULY 2016</td>
<td>Murphy</td>
<td>Veerapaneni</td>
<td>Hamasaki</td>
<td>Kimple</td>
</tr>
<tr>
<td>AUGUST</td>
<td>Murphy</td>
<td>Veerapaneni</td>
<td>Hamasaki</td>
<td>Kimple</td>
</tr>
<tr>
<td>SEPTEMBER</td>
<td>Hamasaki</td>
<td></td>
<td>Veerapaneni (CMH)/Kimple (KU)</td>
<td>Murphy</td>
</tr>
<tr>
<td>OCTOBER</td>
<td>Hamasaki</td>
<td></td>
<td>Veerapaneni/Kimple</td>
<td>Murphy</td>
</tr>
<tr>
<td>NOVEMBER</td>
<td>Kimple</td>
<td>Veerapaneni</td>
<td>Murphy</td>
<td>Hamasaki</td>
</tr>
<tr>
<td>DECEMBER</td>
<td>Kimple</td>
<td></td>
<td>Murphy (CMH)</td>
<td>Hamasaki</td>
</tr>
<tr>
<td>JANUARY 2017</td>
<td>Murphy</td>
<td></td>
<td>Hamasaki (CMH)</td>
<td>Kimple</td>
</tr>
<tr>
<td>FEBRUARY</td>
<td>Murphy</td>
<td></td>
<td>Hamasaki</td>
<td>Kimple</td>
</tr>
<tr>
<td>MARCH</td>
<td>Hamasaki</td>
<td></td>
<td>Kimple (CMH)</td>
<td>Murphy</td>
</tr>
<tr>
<td>APRIL</td>
<td>Hamasaki</td>
<td></td>
<td>Kimple</td>
<td>Murphy</td>
</tr>
<tr>
<td>MAY</td>
<td>Kimple</td>
<td></td>
<td>Murphy</td>
<td>Hamasaki</td>
</tr>
<tr>
<td>JUNE</td>
<td>Kimple</td>
<td></td>
<td>Murphy</td>
<td>Hamasaki</td>
</tr>
</tbody>
</table>

**NMM 1 =** includes inpatient consults with option of inpatient EMG  
**NMM 2 =** includes inpatient EMG with option of inpatient consults  
**EEG/Epilepsy =** one month will be spent at Children’s Mercy
# CONFERENCE SCHEDULE

## Neuromuscular Lecture Series

*July 1, 2016 through June 30, 2017*

*Tuesday 7:30 - 8:30 am - Landon Center*

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 12, 2016</td>
<td>Introduction to Muscle Biopsies (Part I)</td>
<td>Barohn</td>
</tr>
<tr>
<td>July 19, 2016</td>
<td>Myasthenia Gravis</td>
<td>Dimachkie</td>
</tr>
<tr>
<td>July 26, 2016</td>
<td>Introduction to Muscle Biopsies (Part II)</td>
<td>Barohn</td>
</tr>
<tr>
<td>August 2, 2016</td>
<td>AAN/Carrell-Krusen Planning</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>August 9, 2016</td>
<td>ALS</td>
<td>Jawdat</td>
</tr>
<tr>
<td>August 16, 2016</td>
<td>Cryptogenic Sensory Polyneuropathy</td>
<td>Pasnoor</td>
</tr>
<tr>
<td>August 23, 2016</td>
<td>AAN/Carrell-Krusen Planning</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>August 30, 2016</td>
<td>Diabetic Polyneuropathy</td>
<td>Pasnoor</td>
</tr>
<tr>
<td>September 6, 2016</td>
<td>Introduction to Nerve Biopsies</td>
<td>Barohn</td>
</tr>
<tr>
<td>September 13, 2016</td>
<td>AAN/Carrell-Krusen Planning</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>September 20, 2016</td>
<td>Vasculitic Neuropathy</td>
<td>Pasnoor</td>
</tr>
<tr>
<td>September 27, 2016</td>
<td>AAN/Carrell-Krusen Planning</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>October 4, 2016</td>
<td>Channelopathies</td>
<td>Statland</td>
</tr>
<tr>
<td>October 11, 2016</td>
<td>Approach to Peripheral Neuropathy (Part I – Clinical Phenotypes)</td>
<td>Barohn</td>
</tr>
<tr>
<td>October 18, 2016</td>
<td>AAN/Carrell-Krusen Abstracts</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>October 25, 2016</td>
<td>Entrapment Mononeuropathies (Part I)</td>
<td>Glenn</td>
</tr>
<tr>
<td>November 1, 2016</td>
<td>AAN/Carrell-Krusen Abstracts</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>November 8, 2016</td>
<td>Approach to Peripheral Neuropathy (Part II – Clinical Evaluation)</td>
<td>Barohn</td>
</tr>
<tr>
<td>November 15, 2016</td>
<td>Entrapment Mononeuropathies (Part II)</td>
<td>Glenn</td>
</tr>
<tr>
<td>November 22, 2016</td>
<td>AAN/Carrell-Krusen Abstracts</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>November 29, 2016</td>
<td>Epidermal Nerve Biopsy</td>
<td>Pasnoor</td>
</tr>
<tr>
<td>December 6, 2016</td>
<td>Approach to Myopathy</td>
<td>Dimachkie</td>
</tr>
<tr>
<td>December 13, 2016</td>
<td>AAN/Carrell-Krusen Abstracts</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>December 20, 2016</td>
<td>AAN/Carrell-Krusen Abstracts</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>December 27, 2016</td>
<td><strong>No Lecture</strong></td>
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</tr>
<tr>
<td>January 3, 2017</td>
<td>CADP and Related Disorders</td>
<td>Dimachkie</td>
</tr>
<tr>
<td>January 10, 2017</td>
<td>AAN/Carrell-Krusen Practice</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>January 17, 2017</td>
<td>Laboratory Pitfalls in Diagnosing Neuromuscular Disease</td>
<td>Dimachkie</td>
</tr>
<tr>
<td>January 24, 2017</td>
<td>Immunosuppressive Treatment</td>
<td>Barohn</td>
</tr>
<tr>
<td>January 31, 2017</td>
<td>AAN/Carrell-Krusen Practice</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>February 7, 2017</td>
<td>AAN/Carrell-Krusen Practice</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>February 14, 2017</td>
<td>AAN/Carrell-Krusen Practice</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>February 21, 2017</td>
<td>AAN/Carrell-Krusen Practice</td>
<td>Staff/Fellows</td>
</tr>
<tr>
<td>February 28, 2017</td>
<td>Hereditary Neuropathy</td>
<td>Statland</td>
</tr>
<tr>
<td>March 7, 2017</td>
<td>Neurologic Complications in B12 Deficiency</td>
<td>Pasnoor</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
<td>Faculty</td>
</tr>
<tr>
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</tr>
<tr>
<td>March 14, 2017</td>
<td>IBM/Inflammatory Myopathies</td>
<td>Dimachkie</td>
</tr>
<tr>
<td>March 21, 2017</td>
<td>Metabolic Myopathy Evaluation</td>
<td>Statland</td>
</tr>
<tr>
<td>March 28, 2017</td>
<td>Weakness in the ICU</td>
<td>Dimachkie</td>
</tr>
<tr>
<td>April 4, 2017</td>
<td>Facial Nerve and Blink Reflex</td>
<td>Herbelin</td>
</tr>
<tr>
<td>April 11, 2017</td>
<td>Pediatric Muscular Dystrophies</td>
<td>Dimachkie</td>
</tr>
<tr>
<td>April 18, 2017</td>
<td>Quantitative Motor Testing</td>
<td>Herbelin</td>
</tr>
<tr>
<td>April 25, 2017</td>
<td>AAN</td>
<td></td>
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<tr>
<td>May 2, 2017</td>
<td>Fatigue Testing</td>
<td>Herbelin</td>
</tr>
<tr>
<td>May 9, 2017</td>
<td>Adult Muscular Dystrophies</td>
<td>Statland</td>
</tr>
<tr>
<td>May 16, 2017</td>
<td>Coding and Billing</td>
<td>Teferra</td>
</tr>
<tr>
<td>May 23, 2017</td>
<td>Spinal Muscular Atrophy</td>
<td>Dimachkie</td>
</tr>
<tr>
<td>May 30, 2017</td>
<td>Floppy Infant Syndrome</td>
<td>Dimachkie</td>
</tr>
<tr>
<td>June 6, 2017</td>
<td></td>
<td></td>
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<tr>
<td>June 13, 2017</td>
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</tr>
</tbody>
</table>

**Additional educational offerings to the fellows include:**

**Neurophysiology Lecture Series**
*July 1, 2016 through June 30, 2017*

**Wednesday 7:30 am – Room 270, Landon Center**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 13, 2016</td>
<td>Muscle Anatomy for EMG/Designing an EMG Study (begins at 7:15)</td>
<td>Glenn</td>
</tr>
<tr>
<td>July 20, 2016</td>
<td>Nerve Conduction Studies</td>
<td>Jawdat/Herbelin</td>
</tr>
<tr>
<td>July 27, 2016</td>
<td>Mononeuropathies (begins at 7:15)</td>
<td>Pasnoor</td>
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<tr>
<td>August 3, 2016</td>
<td>Anomalous Innervation: Common Errors in Nerve and Temperature Effect</td>
<td>Jawdat/Herbelin</td>
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<td>August 10, 2016</td>
<td>Axonal vs Demyelinating Nerve Conduction Studies: Acquired vs Hereditary Demyelinating Polyneuropathy</td>
<td>Glenn/Herbelin</td>
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<td>Plexopathies (begins at 7:15)</td>
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<td>Radiculopathies (begins at 7:15)</td>
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<td>August 31, 2016</td>
<td>Excitable Cells: The Ionic Basis of Membrane Potentials</td>
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<td>September 7, 2016</td>
<td>Needle EMG Part I: Principles and Spontaneous Activity</td>
<td>Glenn</td>
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<td>Needle EMG Part II: Voluntary Activity</td>
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<td>Excitable Membranes: Local Responses and Propagation</td>
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<td>September 28, 2016</td>
<td>Noise, Averaging and Statistics</td>
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<td>October 5, 2016</td>
<td>Synaptic Transmission</td>
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<td>October 12, 2016</td>
<td>Neuromuscular Junction Physiology</td>
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<tr>
<td>October 19, 2016</td>
<td>EEG in the ICU</td>
<td>Landazuri</td>
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<tr>
<td>October 26, 2016</td>
<td>F Waves and H Reflexes</td>
<td>Herbelin</td>
</tr>
<tr>
<td>November 2, 2016</td>
<td>Electrodes, Montages, Localization and Polarity</td>
<td>Uysal</td>
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<tr>
<td>November 9, 2016</td>
<td>Quantitative Electromyography and Special Electromyography</td>
<td>Pasnoor</td>
</tr>
<tr>
<td>Date</td>
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<tr>
<td>November 16, 2016</td>
<td>Waveform Analysis and Near-and-Far Field Concepts</td>
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<td>November 23, 2016</td>
<td>Somatosensory Evoked Potentials</td>
<td>Pasnoor</td>
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<tr>
<td>November 30, 2016</td>
<td>Visual Evoked Potentials</td>
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<td>December 7, 2016</td>
<td>Signal Conditioning of Neurophysiologic Signals: Amplifiers and Filters</td>
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<td>December 14, 2016</td>
<td>Auditory Evoked Potentials</td>
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</tr>
<tr>
<td>January 11, 2017</td>
<td>Pediatric EMG and NCS</td>
<td>Dimachkie</td>
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**EEG/Epilepsy Lecture Series**

*July 1, 2016 through June 30, 2017*

*Wednesday 8:00 am – Room 270, Landon Center*

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Faculty</th>
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<tbody>
<tr>
<td>July 13, 2016</td>
<td>Instrumentation of EEGs/EPs (in glass conference room)</td>
<td>Landazuri</td>
</tr>
<tr>
<td>July 20, 2016</td>
<td>Safety, Electronics, Instrumentation</td>
<td>Dubinsky</td>
</tr>
<tr>
<td>July 27, 2016</td>
<td>Filters and Montages</td>
<td>Landazuri</td>
</tr>
<tr>
<td>August 3, 2016</td>
<td>Diagnosis and Management of Status Epilepticus</td>
<td>Ulloa</td>
</tr>
<tr>
<td>August 10, 2016</td>
<td>Normal Adult EEG</td>
<td>Hammond</td>
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<tr>
<td>August 17, 2016</td>
<td>Pediatric EEG</td>
<td>CMH/Hall</td>
</tr>
<tr>
<td><strong>August 24, 2016</strong></td>
<td><strong>Neonatal EEG – not confirmed</strong></td>
<td>CMH</td>
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<tr>
<td>August 31, 2016</td>
<td>Normal EEG Variants</td>
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</tr>
<tr>
<td>September 7, 2016</td>
<td>Abnormal EEG – Non-Epileptiform</td>
<td>Hammond</td>
</tr>
<tr>
<td>September 14, 2016</td>
<td>Abnormal EEG – Epileptiform</td>
<td>Hegazy</td>
</tr>
<tr>
<td>September 21, 2016</td>
<td>Seizure Semiology</td>
<td>Landazuri</td>
</tr>
<tr>
<td>September 28, 2016</td>
<td>Classification of Seizures</td>
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<tr>
<td>October 5, 2016</td>
<td>Video-EEG Monitoring</td>
<td>Hegazy</td>
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<tr>
<td>October 12, 2016</td>
<td>Psychogenic Non-Epileptic Seizures</td>
<td>Thompson</td>
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<tr>
<td>October 19, 2016</td>
<td>Psychiatric Comorbidity in Epilepsy</td>
<td>Pearson</td>
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<tr>
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<tr>
<td>November 2, 2016</td>
<td>Neuropsychological Testing</td>
<td>Pearson</td>
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<tr>
<td>November 9, 2016</td>
<td>Role of WADA and fMRI in Pre-Surgical Planning</td>
<td>Pearson</td>
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<tr>
<td>November 16, 2016</td>
<td>Neuroimaging in Epilepsy</td>
<td>Uysal</td>
</tr>
<tr>
<td>November 23, 2016</td>
<td>Pre-Surgical Evaluation and Patient Selection</td>
<td>Uysal</td>
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<tr>
<td>November 30, 2016</td>
<td>Neurostimulation for Intractable Epilepsy</td>
<td>Ulloa</td>
</tr>
<tr>
<td>December 7, 2016</td>
<td>Resective Epilepsy Surgery</td>
<td>Landazuri</td>
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<td>December 14, 2016</td>
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<td>January 11, 2017</td>
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<tr>
<td>January 18, 2017</td>
<td>Post Stroke Epilepsy</td>
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</tr>
<tr>
<td>January 25, 2017</td>
<td>Women’s Issues in Epilepsy</td>
<td>Hammond</td>
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<tr>
<td>February 1, 2017</td>
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<tr>
<td>February 8, 2017</td>
<td>Post-Traumatic Epilepsy</td>
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<td>February 15, 2017</td>
<td>Morbidity and Mortality in Epilepsy</td>
<td>Hammond</td>
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<tr>
<td>February 22, 2017</td>
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<td>Carrell-Krusen</td>
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<tr>
<td>March 1, 2017</td>
<td>Temporal Lobe Epilepsy</td>
<td>Ulloa</td>
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<tr>
<td>March 8, 2017</td>
<td>Pediatric Syndromes I – not confirmed</td>
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<td>March 15, 2017</td>
<td>Pediatric Syndromes II – not confirmed</td>
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<td>March 22, 2017</td>
<td>Genetics in Epilepsy</td>
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<td>March 29, 2017</td>
<td>Frontal Lobe Epilepsy</td>
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<td>Parieto-Occipital Epilepsy</td>
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<td>AEDs II</td>
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<td>May 3, 2017</td>
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<tr>
<td>May 10, 2017</td>
<td>Brain Death</td>
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<tr>
<td>June 7, 2017</td>
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**Sleep Disorders Lecture Series**  
**July 1, 2016 through June 30, 2017**  
**Friday 10:00 am – Wescoe Conference Room**

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<td>July 15, 2016</td>
<td>Sleep Physiology I</td>
<td>Stevens</td>
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<tr>
<td>July 22, 2016</td>
<td>Polysomnography Review</td>
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<tr>
<td>August 5, 2016</td>
<td>Sleep Physiology II</td>
<td>Stevens</td>
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<td>Polysomnography Review</td>
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<td>Polysomnography Review</td>
<td>Stevens</td>
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<tr>
<td>August 26, 2016</td>
<td>Neuroanatomy of Sleep</td>
<td>Stevens</td>
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<td>September 2, 2016</td>
<td>Polysomnography Review</td>
<td>Stevens</td>
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<td>September 16, 2016</td>
<td>Polysomnography Review</td>
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<td>September 23, 2016</td>
<td>Diagnostic Tests in Sleep Medicine</td>
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<td>September 30, 2016</td>
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<td>October 7, 2016</td>
<td>Polysomnography Review</td>
<td>Stevens</td>
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<tr>
<td>October 14, 2016</td>
<td>Snoring and Obstructive Sleep Apnea</td>
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<td>October 21, 2016</td>
<td>Polysomnography Review</td>
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<td>October 28, 2016</td>
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<td>Mixed and Central Sleep Apnea</td>
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<td>November 18, 2016</td>
<td>Polysomnography Review</td>
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<td>December 2, 2016</td>
<td>Restless Leg Syndrome and Periodic Lim Movement Disorder</td>
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<td>January 6, 2017</td>
<td>Narcolepsy</td>
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<td>Hypersomnias of Central Origin</td>
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<td>March 3, 2017</td>
<td>Movement Disorders and Sleep</td>
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<td>Neurological Disorders and Sleep</td>
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<td>May 5, 2017</td>
<td>Circadian Rhythm Disorders</td>
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<td>Stevens</td>
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<tr>
<td>May 26, 2017</td>
<td>Insomnia</td>
<td>Stevens</td>
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**Introduction to Clinical Research**

*5:00 – 6:30 PM, Thursday*

**Fairway Auditorium, CRC**

**4350 Shawnee Mission Parkway**

<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Presenter</th>
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<tr>
<td>August 25, 2016</td>
<td>Putting It All Together: How I Got My Research Off the Ground at KUMC</td>
<td>Burns</td>
</tr>
<tr>
<td>September 1, 2016</td>
<td>Developing Clinical Research Questions</td>
<td>Ellerbeck</td>
</tr>
<tr>
<td>September 8, 2016</td>
<td>Open Discussion of Projects</td>
<td>Vidoni/Burns</td>
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</table>
DUTY HOURS

Duty hours are defined as all clinical and academic activities related to the residency program, i.e., patient care (both inpatient and outpatient), administrative duties related to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled academic activities such as conferences. Duty hours do not include reading and preparation time spent away from the duty site.

Duty hours are limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities.

Residents are provided with one day in seven free from all educational and clinical responsibilities, averaged over a four-week period, inclusive of call. One day is defined as one continuous 24-hour period of time free from all clinical, educational and administrative activities.

Adequate time for rest and personal activities must be provided. This should consist of a ten-hour time period provided between all daily duty periods and after in-house call.

The institutional policy on duty hours is detailed in the Policy and Procedure Manual Governing Graduate Medical Education at the University of Kansas School of Medicine (see Appendix F).

HAND-OFF POLICY

It is important to have, for patient safety and continuity of care, a solid transition of case performance for any absence and at the end of each of the three rotations.

Transitions in care are difficult. Every effort must be made by our fellows for smooth
transitions in care. The key elements in care transitions are:

- The patient knows who is providing care for them at the fellow and at the faculty levels
  - The fellows introduce themselves to the patient when they first meet and when another fellow takes over
  - The faculty introduce themselves to the patient when they first meet
- Service hand-off is handled in person at the end of each rotation and during absences
- The fellow checks out daily to the service resident. At the end of the day, the fellows may also check out to the on-call resident if need be on a case by case basis
- The hand-off has the pertinent demographic information, urgent test results to be followed up, and current treatment. It is preferred that this be kept electronically and then wiped from memory. If a paper copy is used, it must be placed in a shred box when done

**FELLOW CALL DUTIES**

There is no in-house call. The institutional policy on duty hours is detailed in Section 15 of the Policy and Procedure Manual Governing Graduate Medical Education at the University of Kansas School of Medicine (see Appendix F).

**FATIGUE MITIGATION**

GMEC Fatigue (Transportation/Swing Room) Guidelines

- If you are fatigued and unable to perform your patient care duties, contact your supervisor (i.e., faculty supervisor, program director, Chair and/or GME Office/DIO). Please inform your supervisor of your situation so that they can arrange for alternate coverage to ensure continuity of patient care
- Program call rooms should be utilized for fatigued residents/fellows for rest and/or power napping
- If your program does not have a call room, or if your assigned call room is not available or in use, you may use the swing call room (HH Room 2901 – code 1023*)
- If adequate rest facilities are not available, then you may use the voucher for fatigue transportation service
- **Program leadership and administration will receive 2 vouchers for every 10 residents** (sample attached – See Appendix J)
- For each event 2 vouchers will be needed (one for home and then one for back to work the following morning)
- The vouchers will need to be completed by the resident/fellow and the transportation service driver (designated as KUMC Resident Program Transportation Voucher)
- Please call the 10/10 Taxi Service (913-647-0010) when you are ready to leave and specify that you are using the KUMC Resident Program Transportation Voucher
• The transportation service is allowed to pick up at the Main Entrance to the hospital and take the resident to their home address, without any interval stops. This also applies to the return trip the next morning.
• The resident is responsible for discussing the event and fatigue issues with their program leadership the following day. This must be documented by the program leadership in the “Fatigue/Transportation Incident Report”.

Section 29.1 of the University of Kansas School of Medicine Graduate Education Policy and Procedure Manual details the complete GMEC Fatigue Guidelines.

WORK ENVIRONMENT

1. Programs and sponsoring institutions must educate fellows and faculty members concerning the professional responsibilities of physicians to appear for duty appropriately rested and fit to provide the services required by their patients.
2. The program must be committed to and responsible for promoting patient safety and fellow well-being in a supportive educational environment.
3. The program director must ensure that fellows are integrated and actively participate in interdisciplinary clinical quality improvement and patient safety programs.
4. The learning objectives of the program must:
   1. Be accomplished through an appropriate blend of supervised patient care responsibilities, clinical teaching, and didactic educational events; and
   2. Not be compromised by excessive reliance on fellows to fulfill non-physician service obligations.
5. The program director and sponsoring institution must ensure a culture of professionalism that supports patient safety and personal responsibility.
6. Fellows and faculty members must demonstrate an understanding and acceptance of their personal role in the following:
   a) Assurance of the safety and welfare of patients entrusted to their care;
   b) Provision of patient- and family-centered care;
   c) Assurance of their fitness for duty;
   d) Management of their time before, during, and after clinical assignments;
   e) Recognition of impairment, including illness and fatigue, in themselves and in their peers;
   f) Attention to lifelong learning;
   g) The monitoring of their patient care performance improvement indicators; and
   h) Honest and accurate reporting of duty hours, patient outcomes and clinical experience data.
7. All fellows and faculty members must demonstrate responsiveness to patient needs that supersedes self-interest. They must recognize that under certain circumstances, the best interests of the patient may be served by transitioning that patient’s care to another qualified and rested provider.
LIBRARY AND FELLOW OFFICES

Fellows have access to the Dykes Medical Library, within brief walking distance. Library services also include on-site electronic retrieval from medical databases. There is on-site access to textbooks and journals through the neurophysiology laboratories as well as the Department of Neurology’s Ziegler Library. These are available during nights and weekends as well. Computer access for fellows to perform journal searches is available in the clinics, neurophysiology laboratories, and in the resident office of the Department of Neurology (PC with online access, desks, designated patient contact computer, phone with voice mail).

DAILY PATIENT LIST/PATIENT ENCOUNTER DOCUMENTATION

Fellows are required to maintain a Patient Encounter Log. Booklets and actual report copies allow fellows to document patient demographics, diagnoses, hospital or clinic setting.

MEDICAL RECORDS GENERATION AND DICTATION

Fellows are responsible for the dictation and/or completion of all patient reports on the day of service for all cases in which he/she has participated. Medical records must be completed in a timely fashion on the same day of interaction. This includes clinic visits as well as EMG studies.

FACULTY AND PROGRAM EVALUATIONS

(see Appendix C-E)

Fellows are required to evaluate each faculty member and the rotations on a monthly basis. Fellows evaluate the program and perform a 360° evaluation every six months. We do our best to maintain fellow anonymity. Candid feedback is strongly encouraged. Strength and weakness analysis is also requested.

The performance of the faculty must be evaluated by the program no less frequently than at the midpoint of the accreditation cycle, and again prior to the next site visit. The evaluations should include a review of their teaching abilities, commitment to the educational program, clinical knowledge, and scholarly activities. This evaluation must include written confidential evaluations by the residents.

FELLOW EVALUATIONS

Faculty members evaluate fellows every month. Evaluations include judging the fellow’s knowledge, basic clinical competence, both general skills in the primary specialty and specific technical skills, overall performance, the development of professional attitudes consistent with being a physician, ethical behavior and professionalism. The Program Director will review evaluations with the fellow on a quarterly basis. The summary and final evaluation of the resident in neuromuscular medicine will be prepared by the Program Director of the Neuromuscular Medicine training program and will reflect the periodic evaluation by all teaching faculty and is signed by the fellow. These may be reviewed upon request. Each fellow is required to be proficient in the clinical and technical skills.
determined to be necessary for a neuromuscular medicine specialist and any related standards relevant to neurology. Advancement to positions of higher responsibility is in accordance to performance. A permanent record is kept of the final evaluations.

**MILESTONES**

Outcomes based milestones have been developed as a framework for determining resident and fellow performance within the six ACGME core competencies. Each milestone is a competency based developmental outcome that can be demonstrated progressively by residents and fellows from the beginning of their education through graduation to the unsupervised practice of their specialties.

For program accreditation, milestones allow for continuous monitoring of programs, provide public accountability by reporting on aggregate competency outcomes by specialty at a national level and focus on continuous improvement of graduate medical education. For the educational program, milestones provide a framework for clinical competency committees, guide curriculum development, support better assessment practices, and enhance opportunities for early identification of struggling residents and fellows. For the residents and fellows, milestones provide more explicit and transparent expectations of performance, support better self-directed assessment and learning, and facilitate better feedback for professional development.

**EXAMS**

Fellows are required to sit for two multiple-choice written examinations. The newly established Neuromuscular Medicine in-service examination measures knowledge in the evaluation and management of patients with neuromuscular medicine disorders. EMG and neuromuscular knowledge are also tested through an American Board of Electrodiagnostic Medicine written examination (AANEM). There will be a post-examination review. This series of examinations will assist faculty and fellows in gauging fellow medical knowledge and application of basic sciences.

Throughout the year, fellow investigatory and analytic thinking of medical knowledge will be evaluated at the bedside using an oral examination on randomly selected cases. The fellow addresses a clinical problem relating to a patient case scenario and the examiner asks the fellow to manage the case. Fellows should anticipate being asked questions about the reasons for the clinical findings, interpretation of clinical findings, and the treatment plan. These brief (< 5 minute) sessions will total at least 90 minutes per evaluation interval. Performance on the oral examination will be reflected in the periodic evaluation by the Program Director and will be verbally discussed with the fellow.

**FELLOWSHIP COORDINATING COMMITTEE**

The Director of the Neuromuscular Medicine fellowship program, Dr. Mazen M. Dimachkie, chairs the Fellowship Coordinating Committee (FCC) meeting which includes the faculty as well as the fellow and the fellowship coordinator. The FCC convenes at least three times a
year to address policies and administrative matters. The teaching staff and fellows meet periodically to evaluate the utilization of resources available to the program, the contribution of each institution participating in the program, the financial and administrative support of the program, the volume and variety of patients available to the program for educational purposes, the performance of members of the teaching staff, and the quality of supervision of residents. Dr. Dimachkie also reviews cumulative fellow performance individually at least twice a year and anonymous faculty evaluations.

At the end of the year meeting, the FCC reviews the fellow evaluation of the program, fellow performance on metric tests (see EXAMS section above), and new regulatory policies as promulgated by the sponsoring institution and the ACGME RRC. The FCC discusses and votes on changes to the curriculum to continually improve on and maintain the excellence of the program and submits a yearly APE Outcomes Report to the GME.

**CLINICAL COMPETENCY COMMITTEE**

A Clinical Competency Committee (CCC) has been established under the ACGME guidelines to provide a process for early identification of residents who are having difficulties. To this end the CCC, composed of no less than three members of the program faculty, meets at least twice a year to use the neuromuscular medicine Milestones to achieve a more objective assessment of each resident, to get better feedback, earlier detection of a resident having difficulty, and earlier intervention and remediation when necessary.

The purpose of the CCC is to review all resident evaluations at least semi-annually, to prepare and assure the reporting of Milestones evaluations of each resident semi-annually to the ACGME, and to advise the program director regarding resident progress, including promotion, remediation and dismissal.

**PROGRAM EVALUATION COMMITTEE**

The Program Evaluation Committee (PEC), composed of at least two faculty members and one resident, is appointed by the program director and actively participates in planning, developing, implementing and evaluating the educational activities of the program. The program monitors and tracks resident performance, faculty development, graduate performance (including performance on certification examinations), and program quality. Faculty and residents are given the opportunity to confidentially evaluate the program, in writing, annually. These results, along with progress on the previous year’s action plans, are used to track ongoing program improvements and help document progress for the Self-Study visits required by the ACGME.

**PROFESSIONAL CONDUCT**

Neuromuscular Medicine is a clinically, research and procedurally oriented discipline that requires professional conduct and decorum at all times when interacting with patients, nurses, technicians, attendings, residents, and administrative and support personnel of the department. It is expected that fellows carry out their clinical and administrative
responsibilities in a timely, courteous and trustworthy manner at all times. If a personal conflict or problem arises with another individual (faculty, fellow, resident, student or staff), the resident has the right to file an official grievance with the Program Director.

**MEDICAL ETHICS**

Fellows are required to attend lecture series offered by KUMC.

**RESPONSIBILITIES TO RESIDENT EDUCATION**

Fellows are responsible for actively teaching and supervising neurology residents rotating on Neuromuscular Medicine. Fellows should cover the basics of neuromuscular medicine at the start of the rotation. Fellows instruct residents on required conferences and expectations. Moreover, fellows and residents must set aside time throughout the month to review neuromuscular medicine case studies. This is a learning experience for the residents and fellows, so feedback and constructive criticism is mandatory throughout the month. If problems arise that cannot be resolved between the fellow and resident, they should be brought to the attention of the Program Director.

**PROMOTIONAL GUIDELINES**

Neuromuscular Medicine training is a one-year program with progressively increased fellow responsibility. Neuromuscular medicine fellows are supervised in their responsibilities by faculty who allow the fellows to evaluate and treat patients under close supervision, with faculty always in attendance. As their competence increase according to the milestones, fellows are given increasing degrees of independence in patient evaluation and management. By the end of the year, neuromuscular medicine fellows are able to function independently and competently. Failure to satisfactorily complete the rotations will lead to formal counseling sessions and a sequence of disciplinary actions that may lead to probation and subsequent dismissal from the program. Disciplinary action will be administered in accordance with the Policy and Procedure Manual Governing Graduate Medical Education at the University of Kansas School of Medicine (section 10) and in compliance with ACGME guidelines. Promotion to the next fellow year, for the interested candidate, is dependent on satisfactory completion of the rotations with favorable faculty evaluations (see Fellow Evaluations).

**ACADEMIC DISCIPLINE**

Fellow evaluations, in addition to the annual AANEM and Neuromuscular Medicine in-service examinations, will be used to monitor a fellow's progress and performance. Occasionally, it is necessary to counsel a fellow regarding their weaknesses and problem areas in an effort to address these issues early. Failure to rectify problems may lead to a formal sequence of disciplinary actions, which can lead to probation or dismissal from the program. Disciplinary action will be administered according to the Policy and Procedure Manual Governing Graduate Medical Education at the University of Kansas School of Medicine (section 12).
Fair procedures for academic discipline and resident complaints or grievances are in accordance with institutional policies. The Program Director is responsible for monitoring resident stress, including mental or emotional conditions inhibiting performance or learning and drug- or alcohol-related dysfunction. The Program Director and teaching staff will be sensitive to the need for timely provision of confidential counseling and psychological support services to residents. Training situations that consistently produce undesirable stress on fellows will be evaluated and modified.

**FELLOW STIPENDS AND BENEFITS**

All residents in ACGME accredited programs must receive stipends as prescribed in the Resident Agreement and the Policies and Procedures Governing Graduate Medical Education. All residents at a given postgraduate year level of training will receive the same stipend. The base stipend is determined by the resident's PGY level and is set during the state government's annual budgetary process. Stipends are subject to yearly revision, and all residents will be granted revised stipends appropriate for their PGY level when and if such revisions are made effective.

**LEAVE POLICY**

All requests for any form of leave (vacation, professional, sick, funeral, leave of absence, FMLA, etc.) must be approved by the Program Director in accordance with applicable state and federal laws and accreditation requirements. For more details, please refer to the Policy and Procedure Manual Governing Graduate Medical Education at the University of Kansas School of Medicine (section 5). Fellows are required to complete a request form for absence when planning any leave including vacation or professional leave (to attend meetings). The fellow must complete the absence form, get the signatures from the supervising faculty and Program Director and turn them in to Paula Mengel at least 30 days in advance. The fellow should notify, in writing, affected faculty members of their absence at least 30 days in advance. Further questions should be addressed to the Program Director.

The program will provide up to a maximum of three weeks (15 working days) of vacation per contract year, which is covered by the resident stipend.

Vacation must be requested from, and approved by, the Program Director or a designee in advance in a manner proscribed by the program. Denial of a specific request for vacation is a management decision on the part of program and is not a grievable matter.

The University will provide up to ten work days of sick leave per year, covered by the resident’s stipend, to cover personal illness or illness in the resident’s immediate family (spouse, parents or children). The use of sick leave must be approved by the Program Director or the Department Chair. At the discretion of the Chair or Program Director, a physician’s written statement may be required as a condition of approval for sick leave. The University may also require a certification that the resident is released to return to work following three more consecutive days of absence resulting from the resident’s own illness.
Paid leave, (e.g., vacation, sick) cannot be accumulated or carried over from contract year to contract year

A resident eligible for FMLA leave may request FMLA designation pursuant to the University’s FMLA policy for up to twelve weeks of leave per academic year or contract year (please refer to Section 5 of the GME Policy and Procedure Manual for details)

A resident who does not qualify for FMLA or who has used the maximum amount of FMLA for the year but who still requires relief from the responsibilities of the program, may request a Leave of Absence (please refer to Section 5 of the GME Policy and Procedure Manual for details)

RESIDENT ASSISTANCE AND ACCESS TO COUNSELING

The University is interested in the health and well being of all residents and provides assistance to those with personal problems involving alcohol, drugs, family, marriage, financial, emotional or other conditions that may interfere with work attendance, productivity, and the ability to get along with co-workers. The Employee and Student Assistance Program is designed to provide information, assessment and referral services to help faculty, staff, residents and students identify problems and develop lifestyles that are physically and emotionally healthy (please refer to Section 18 of the GME Policy and Procedure Manual for details)

BENEFITS

All residents in ACGME accredited program must receive benefits as prescribed in the Policies and Procedures Governing Graduate Medical Education. All residents are given the following benefits (please refer to Section 5 of the GME Policy and Procedure Manual for details):

1. Health, Dental and Vision Insurance and Flexible Spending and Health Savings Account
   House staff and their families are eligible for the State of Kansas Employee’s Group Health, Dental and Vision Insurance and Flexible Spending and Health Savings Account. Coverage begins the first day of the month following the first 30 days of employment. Premiums are deducted from the paycheck.

2. Professional Liability Insurance
   Kansas Statutes Annotated (KSA 40-3401 et seq) provides professional liability coverage and tail coverage for residents for acts committed while carrying out their program responsibilities in the amounts of $1,000,000 per occurrence and $3,000,000 annual aggregate. Tail coverage assures that, even after residents and fellows have completed their training at KUMC, any claims brought as a result of those training activities will continue to be covered by their resident/fellow policy
3. **Worker’s Compensation**
   Through the Kansas Self-Insurance Fund, benefits are provided to residents and fellows who are injured performing their job duties.

5. **ACLS, PALS, NRP or ATLS Training**
   Residents are provided initial certification fees (including books) for ACLS, PALS, NRP or ATLS certification. Programs are responsible for renewal costs during the course of the residency program. However, charges assessed for residents who do not attend their scheduled sessions, or for repeat classes after failing a certification course, are the responsibility of the resident.

6. **Pagers, Parking and White Coats**
   Pagers are provided at no cost. Residents and fellows are provided free parking by their respective departments. Residents receive a limited number of white coats.

**TRAVEL PROCEDURES**

The Program Director, in consultation with the department chairman, will base financial support for travel of fellows who are presenting at the Carrell-Krusen Symposium and/or the American Academy of Neurology annual meeting. Travel of fellows who are not presenting at these meetings will not be reimbursed. All travel for reimbursement must have written pre-approval by Dr. Dimachkie at least six weeks before departure date. Fellows need permission by Dr. Dimachkie for travel, and fellows must complete an absence from at least one month in advance. Expenses will be reimbursed according to KU policy which requires original receipts for reimbursement. The fellow will notify, in writing, faculty members affected by their absence. This should be done 30 days in advance. Questions should be addressed to the Program Director. Reimbursement beyond the limit of $1,500 is subject to fund availability as assessed by the Program Director.

For international travel, fellows should consult at least two months in advance with the Office of International Programs (Kimberly Connelly or Irina Aris). Please refer to Section 21 of the GME Policy and Procedure Manual for guidelines on international travel.

**HOLIDAYS**

The Neuromuscular Medicine program and the Department of Neurology at the University of Kansas Medical Center observe eight holidays each academic year. These holidays are as follows:

- Independence Day
- Labor Day
- Thanksgiving Day
- The day after Thanksgiving
- Christmas Day
- New Year’s Day
MARTIN LUTHER KING DAY
MEMORIAL DAY

MOONLIGHTING POLICY

Professional activities outside the program (moonlighting) are generally discouraged. Fellows are not required to engage in moonlighting. If a fellow chooses to moonlight, the time spent in doing so must be personal free time away from the training program. The moonlighting workload must not interfere with the ability of the fellow to achieve the goals and objectives of the training program. Time spent by fellows in internal and external moonlighting must be counted towards the 80-hour maximum weekly duty hour limit. The Program Director will monitor fellow performance to assure that factors such as fatigue are not contributing to diminished learning or performance, or detracting from patient safety. Under the institutional requirements, there must be written acknowledgement by the Program Director that a fellow is engaged in moonlighting and signed by the GME. In it, the fellows are required to report the hours spent moonlighting. The acknowledgement must be kept in the fellow's file. All fellows engaged in moonlighting must be licensed for unsupervised medical practice in the state where the moonlighting occurs. It is the responsibility of the institution hiring the fellow to moonlight to determine whether such licensure is in place, adequate liability coverage is provided, and whether the resident has the appropriate training and skills to carry out assigned duties. For more details, please consult Section 16 of the GME Policy and Procedure Manual

GENERAL POLICIES AND PROCEDURES

RISK MANAGEMENT

Please see Section 19 of the GME Policy and Procedure Manual

DEPOSITIONS AND MEDICAL/LEGAL ISSUES

Do NOT communicate (verbal or written) with attorneys, give depositions, or sign documents of a medical/legal nature without first discussing the matter with the Program Director and/or involved faculty member. As a general rule, any contact by a lawyer regarding a patient or anyone affiliated with the medical center must be reported to the Risk Manager. If contact is made by phone, the caller is to be directed to contact the Risk Manager in the Office of Legal Counsel.

MANDATORY ANNUAL IMMUNIZATIONS

Fellows are required to submit to a series of immunizations on a regular annual basis. These immunizations are provided at no cost to the fellows at the time of orientation. Fellows who remain in non-compliance may be removed from service.
NEUROMUSCULAR MEDICINE FELLOWS

2014-2015 Academic Year
Duaa Jabari

2013-2014 Academic Year
Ahmad Abuzinadah
Omar Jawdat

2012-2013 Academic Year
Maryam Tahmasbi Sohi

2011-2012 Academic Year
Iryna Muzyka

2010-2011 Academic Year
Bachir Estephan Dajda

2009-2010 Academic Year
No fellow

2008-2009 Academic Year
Faisal Raja

CLINICAL NEUROPHYSIOLOGY FELLOWS

2016-2017 Academic Year
Anai Hamasaki
Daniel Kimple
Robert Murphy

2015-2016 Academic Year
Karthika Veerapaneni

2014-2015 Academic Year
Ahmad Abuzinadah
Kim Johnson
Tara Quesnell

2013-2014 Academic Year
Dipika Aggarwal
Lipika Nayak

2012-2013 Academic Year
Brennen Bittel
Behrouz Zamani Fekri
2011-2012 Academic Year
No fellow

2010-2011 Academic Year
Iryna Muzyka
Remia Paduga

2009-2010 Academic Year
Dobrin Dobrev
Samiullah Kundi
Samir Macwan

2008-2009 Academic Year
Farhan Ahmed
Srinivas Bandi

2007-2008 Academic Year
Ziad Haddad
Faisal Raja
James Southwell

2006-2007 Academic Year
Dan Dimitru
Gary Miller
Kazi Syed

2005-2006 Academic Year
Saud Khan
Reddiah Mummaneni
Mamatha Pasnoor

2004-2005 Academic Year
Sarab Alseoudi
Heather Anderson
Ijaz Rashid

2003-2004 Academic Year
Sanjeev Kumar
Yunxia Wang

2002-2003 Academic Year
Hazem Ali
Blanca Marky
Christopher Milford
2001-2002 Academic Year
Ziad El-Chami
Haidar Kabbani
Gary Lian

2000-2001 Academic Year
Francis Obi Okonkwo-Onuigo

NEUROMUSCULAR MEDICINE FACULTY

Richard J. Barohn, MD  Professor and Chairman, Department of Neurology
EMG/Neuromuscular Disease/MDA/ALSA/
Pathology

Richard Dubinsky, MD, MPH  Professor, Department of Neurology
Neurology Residency Director
EMG/Movement Disorders

Arthur Dick, MD  Professor, Department of Neurology
Director, MDA Clinic

Mazen M. Dimachkie, MD  Professor, Department of Neurology
Neuromuscular Medicine Fellowship Director
Clinical Neurophysiology Fellowship Director
Neuromuscular Section Director
EMG/Neuromuscular Disease/ALSA/Pathology

Melanie Glenn, MD  Clinical Assistant Professor, Department of Neurology
Neuromuscular Disease

Laura Herbelin, BSc  Clinical Instructor, Department of Neurology
Neuromuscular Research

Omar Jawdat, MD  Clinical Assistant Professor, Department of Neurology
Neuromuscular Disease

Mamatha Pasnoor, MD  Associate Professor, Department of Neurology
Co-Director, University of Kansas Neuropathy Center & Fellowship Program
EMG/Neuromuscular Disease/Pathology

Jeff Statland, MD  Assistant Professor, Department of Neurology
Neuromuscular Disease
APPENDIX A

Specific Major Neuromuscular Medicine Disorders

Neuromuscular Medicine is a subdiscipline of neurology and physical medicine and rehabilitation that include abnormalities of the motor neuron, nerve roots, peripheral nerves, neuromuscular junction, and muscle including disorders that affect adults and children. Specialists in Neuromuscular Medicine possess specialized knowledge in the science, clinical evaluation and management of these disorders. This encompasses the knowledge of the pathology, diagnosis and treatment of these disorders at a level that is significantly beyond the training and knowledge expected of a general neurologist, pediatric neurologist or physiatrist.

Neuromuscular Medicine includes the evaluation and treatment of a wide range of diseases, including:

a) motor neuron disease  
b) myopathy/neuromuscular transmission disorders  
c) peripheral neuropathy  
d) cranial/spinal single and multiple neuropathies  
e) polyneuropathy: infectious/inflammatory  
f) inherited neuropathy  
g) polyneuropathy: ischemia/physical agents/toxins  
h) polyneuropathy/systemic disease

Knowledge includes the following:

1.0 Neuroanatomy
   1.1. cerebral cortex
   1.2. connecting systems
   1.3. basal ganglia/thalamus
   1.4. brainstem
   1.5. cerebellum
   1.6. cranial nerves
   1.7. spinal cord
   1.8. spinal roots/peripheral nerves
   1.9. ventricular system/CSF pathways
   1.10. vascular
   1.11. neuromuscular junction/muscles
   1.12. autonomic nervous system
   1.13. embryology
   1.14. pain pathways
   1.15. radiologic anatomy/cerebral blood vessels (angio or MRA)

2.0 Neuropathology
   2.1. basic patterns of reaction
   2.2. epilepsies,
   2.3. cerebrovascular disease,
2.4. dementia and encephalopathies (coma, stupor, confusion, developmental delay, regression),
2.5. multiple sclerosis (including other demyelinating disorders),
2.6. movement disorders,
2.7. brain tumors and other mass lesions,
2.8. encephalitis/meningitis,
2.9. sleep disorders,
2.10. traumatic disorders,
2.11. myelopathies,
2.12. motor neuron disease,
2.13. radiculopathies and plexopathies,
2.14. mononeuropathies,
2.15. polyneuropathies and
2.16. myopathies and neuromuscular transmission disorders.
2.17. Another application of increasing importance is the use of intraoperative monitoring to guide surgical interventions.
2.18. radiologic pathology pertinent to assigned pathology sections

3.0 Neurochemistry
3.1. carbohydrate metabolism
3.2. lipid metabolism
3.3. protein metabolism
3.4. neurotransmitters
3.5. axonal transport
3.6. energy metabolism
3.7. blood-brain barrier
3.8. biochemistry of membranes/ receptors/ ion channels
3.9. neuronal excitation
3.10. vitamins (general aspects)
3.11. inborn errors of metabolism
3.12. electrolytes and minerals
3.13. neurotoxins
3.14. free radical scavengers
3.15. excitotoxicity

4.0 Neurophysiology
4.1. basic
4.2. membrane physiology
4.3. synaptic transmission
4.4. sensory receptors and perception
4.5. special senses
4.6. reflexes
4.7. segmental and suprasegmental control of movement
4.8. cerebellar function
4.9. reticular system/ mechanisms of sleep and arousal/ consciousness/ circadian rhythms
4.10. rhinencephalon/ limbic system/ the visceral brain
4.11. learning and memory
4.12. cortical organizations and function
4.13. pathophysiology of epilepsy
4.14. cerebral blood flow
4.15. autonomic function
4.16. blood-brain barrier
APPENDIX B

American Academy of Neurology Code of Professional Conduct

PREFACE
The Ethics and Humanities Subcommittee of the Practice Committee of the American Academy of Neurology developed the Code of Professional Conduct to formalize the standards of professional behavior for neurologist members of the Academy. The primary goal of the Code is to promote the highest quality of neurologic care. The Code is framed to outline the set of professional standards that neurologists must observe in their clinical and scientific activities.

The Code embodies traditional medical ethical standards dating from the time of Hippocrates as well as more contemporary standards. It includes general principles of medical ethics and provides their application to the specific demands of neurologic practice. The Code is delineated to be generally consistent with the American Medical Association Code of Medical Ethics and the American Medical Association Current Opinions of the Council on Ethical and Judicial Affairs.

The Code is written in relatively broad language. It is designed to be a dynamic instrument that can grow and change in response to future developments in the practice and science of neurology. While ethical principles do not change with time, developments in science, technology, and clinical practice may lead to a change in application of these ethical principles.

The Code outlines the standards of professional conduct for Academy members. Violations of these standards may serve as the basis for disciplinary action as provided in the Bylaws of the Academy.

1.0 The Neurologist-Patient Relationship

1.1. The Practice of Neurology
The profession of neurology exists primarily to study, diagnose and treat disorders of the nervous system. The neurologist-patient relationship forms the foundation for neurologic care.

1.2. Fiduciary and Contractual Basis
The neurologist has fiduciary and contractual duties to patients. As a fiduciary, the neurologist has an ethical duty to consider the interests of the patient first. As a party to an implied contract, the neurologist has a duty to practice competently and to respect patients’ autonomy, confidentiality, and welfare.

1.3. Beginning and Ending the Relationship
The neurologist is free to decide whether or not to undertake medical care of a particular person. The neurologist must not decline a patient on the basis of race, religion, nationality, or gender. Once the relationship has begun, the neurologist must provide care until care is complete, the patient ends the relationship, or the neurologist returns the patient to the care of the referring physician. If the
neurologist justifiably desires to end the relationship, and if continued neurologic care is appropriate, he/she should assist in arranging care by another neurologist.

1.4. Informed Consent
The neurologist must obtain the patient’s consent for tests or treatment. The neurologist should disclose information that the average person would need to know to make an appropriate medical decision. This information should include benefits, risks, costs, and alternatives to the proposed treatment. If the patient lacks medical decision-making capacity, the neurologist must obtain informed consent from an appropriate proxy.

1.5. Communication
The neurologist has a duty to communicate effectively with the patient. The neurologist should convey relevant information in terms the patient can understand and allow adequate opportunity for the patient to raise questions and discuss matters related to treatment.

1.6. Emergency Care
In an emergency situation, the neurologist should render services to the patient to the best of his/her ability. While obtaining informed consent is desirable before beginning treatment, the neurologist should not delay urgently needed treatment because of concerns about informed consent.

1.7. Medical Risk to the Physician
A neurologist should not refuse to care for a patient solely because of the real or perceived medical risk to the neurologist. The neurologist should take appropriate precautions to minimize his/her medical risk.

1.8. Medical Decision-Making
The patient has the ultimate right to accept or reject the neurologist’s recommendation about medical treatment. The neurologist should respect decisions made by patients with decision-making capacity and by the lawful proxy of patients who lack decision-making capacity. If the neurologist cannot honor the patient’s or proxy’s decision, the neurologist should seek to arrange transfer of the patient’s care to another physician.

2.0 General Principles of Neurologic Care

2.1 Professional Competence
The neurologist must practice only within the scope of his/her training, experience, and competence. The neurologist should provide care that represents the prevailing standards of neurologic practice. To this end, neurologists should participate in a regular program of continuing education.

2.2 Consultation
The neurologist should obtain consultations when indicated. The neurologist should refer patients only to competent practitioners and should assure that adequate information is conveyed to the consultant. Any differences of opinion between the neurologist and consultant or between the neurologist and their referring physician should be resolved in the best interest of the patient.
2.3 Confidentiality
The neurologist must maintain patient privacy and confidentiality. Details of the patient’s life or illness must not be publicized.

2.4 Patient Records
The neurologist should prepare records that include relevant history, neurologic findings, assessment, and plan of evaluation and treatment. Patients are entitled to information within their medical records.

2.5 Professional Fees
The neurologist is entitled to reasonable compensation for medical services to or on behalf of patients. The neurologist should receive compensation only for services actually rendered or supervised. The neurologist must not receive a fee for making a referral ("fee-splitting") or receive a commission from anyone for an item or service he/she has ordered for a patient ("kickback"). The agreed upon division of practice income among members of an organized medical group is acceptable.

2.6 Appropriate Services
The neurologist should order and perform only those services that are medically indicated.

3.0 Special Categories of Neurologic Care
3.1 The Dying Patient
The neurologist should strive to relieve the suffering of dying patients. The neurologist should respect the expressed wishes of dying patients about life-prolonging therapy including lawful advance directives.

3.2 The Profoundly Paralyzed Patient
The neurologist should attempt to enhance the independence and communication of profoundly paralyzed patients. Patients with advanced degrees of paralysis who retain decision-making capacity should be encouraged and assisted to participate in decisions about their medical care including decisions about withdrawing life-support.

3.3 The Demented Patient
The neurologist should define a course of treatment which respects the wishes expressed by the patient before dementia had impaired decision-making capacity. If such wishes are not ascertainable, the neurologist should be guided about appropriate treatment by the patient’s lawful proxy.

3.4 The Patient in a Persistent Vegetative State
The neurologist managing the patient in a persistent vegetative state should follow the provisions of lawful advance directives for medical care and, in their absence, the health care decisions of a lawfully authorized proxy.

3.5 The Brain-Dead Patient
The neurologist should determine brain death using accepted tests and techniques. The neurologist should be mindful that some patients may have religious or other strongly held objections to the concept of brain death. Compassionate management in these situations is desirable.
4.0 Personal Conduct

4.1 Respect for the Patient
The neurologist must treat patients with respect, honesty, and conscientiousness. The neurologist must not abuse or exploit the patient psychologically, sexually, physically, or financially.

4.2 Respect for Agencies and the Law
The neurologist should observe applicable laws. Because agencies may impact on patients’ welfare, the neurologist should cooperate and comply with reasonable requests from insurance, compensation, reimbursement, and government agencies within the constraints of patient privacy and confidentiality.

4.3 Maintenance of the Neurologist's Personal Health
The neurologist should strive to maintain physical and emotional health. The neurologist should refrain from practices that may impair capacities to provide adequate patient care.

5.0 Conflicts of Interest

5.1 The Patient's Interest is Paramount
Whenever a conflict of interest arises, the neurologist must attempt to resolve it in the best interest of the patient. If the conflict cannot be eliminated, the neurologist should withdraw from the care of the patient.

5.2 Avoidance and Disclosure of Potential Conflicts
The neurologist must avoid practices and financial arrangements that would, solely because of personal gain, influence decisions in the care of patients. Financial interests of the neurologist that might conflict with appropriate medical care should be disclosed to the patient.

5.3 Dispensing Medication
The neurologist may dispense medication, assistive devices, and related patient-care items as long as this practice provides a convenience or an accommodation to the patient without taking financial advantage of the patient. The patient should be given a choice to accept the dispensed medication or device or to have a prescription filled outside the neurologist's office.

5.4 Health-Care Institutional Conflicts
The neurologist generally should support his patient's medical interests when they are compromised by policies of a health-care institution or agency. Physicians employed by healthcare institutions should represent the patient's medical interests and serve as their medical advocate to the institutional administration.

5.5 Conflicting Ethical Duties
While a neurologist ordinarily must respect a patient’s confidentiality, there are circumstances in which a breach of confidentiality may be justified. When the neurologist is aware that an identifiable third party is endangered by a patient, the neurologist must take reasonable steps to warn the third party. When the neurologist is aware that members of the general public are endangered by a patient, the neurologist must take reasonable steps to advise responsible public officials or agencies of that danger.
6.0 Relationships with other Professionals

6.1. Cooperation with Health Care Professionals
The neurologist should cooperate and communicate with other health care professionals, including other physicians, nurses, and therapists, in order to provide the best care possible to patients.

6.2. Peer Review
The neurologist should participate in peer review activities in order to promote the best care possible of patients.

6.3. Criticism of a Colleague
The neurologist should not unjustifiably criticize a colleague’s judgment, training, knowledge, or skills. Neurologists should not knowingly ignore a colleague’s incompetence or professional misconduct, thus jeopardizing the safety of the colleague’s present and future patients.

6.4. Legal Expert Testimony
The neurologist called upon to provide expert medical testimony should testify only about those subjects for which the neurologist is qualified as an expert by training and experience. Before giving testimony the neurologist should carefully review the relevant records and facts of the case and the prevailing standards of practice. In providing testimony, the neurologist should provide scientifically correct and clinically accurate opinions. Compensation for testimony should be reasonable and commensurate with time and effort spent, and must not be contingent upon outcome.

6.5. Health Care Organizations
The neurologist may enter into contractual agreements with managed health care organizations, prepaid practice plans, or hospitals. The neurologist should retain control of medical decisions without undue interference. The patient's welfare must remain paramount.

6.6. The Impaired Physician
The neurologist should strive to protect the public from an impaired physician and to assist the identification and rehabilitation of an impaired colleague.

7.0 Relationships with the Public and Community

7.1 Public Representation
The neurologist should not represent himself/herself to the public in an untruthful, misleading, or deceptive manner. A patient's medical condition must not be discussed publicly without the patient's consent.

7.2 Duties to Community and Society
Neurologists should work toward improving the health of all members of society. This may include participation in educational programs, research, public health activities, and the provision of care to patients who are unable to pay for medical services. The neurologist should be aware of the limitation of society's health care resources and should not squander those finite resources by ordering unnecessary tests and ineffective treatments.

7.3 Disclosure of Potential Conflicts
Neurologists who make written or oral public statements concerning a product of a company from which they receive compensation or support, or in which they hold a
significant equity position, have a duty to disclose their financial relationship with the company in that public statement.

8.0 Clinical Research

8.1 Institutional Review
The neurologist who participates in clinical research must ascertain that the research has been approved by an Institutional Review Board (IRB) or other comparable body and must observe the requirements of the approved protocol.

8.2 Disclosure of Potential Conflicts
The neurologist who is paid for treating patients in a clinical research project should inform the patient of any compensation the neurologist receives for the patient’s participation. The compensation for patient treatment should be reasonable in amount. The neurologist should not bill the patient or the insurer for services already compensated by the study sponsor.

8.3 Individual Patient Experimentation
The neurologist who begins a patient on an experimental therapy that has not been approved as a valid clinical study by an IRB should obtain informed consent from the patient.

8.4 Reporting Research Results
The neurologist should publish research results truthfully, completely, and without distortion. In reporting research results to the news media, the neurologist should make statements that are clear, understandable, and supportable by the facts. Neurologists should not publicize results of research until after the data have been subjected to appropriate peer review.

(Copyright 1993 - American Academy of Neurology)

References
Portions of this Code were modified from the following codes of professional ethics and professional conduct:

8. American Medical Association: Code of Medical Ethics and Current Opinions of
the American Medical Association Council on Ethical and Judicial Affairs, 1992.

**Ethics and Humanities Subcommittee**


Approved EB 02/92
Revised EB 05/94
Revised EB 02/97
I will add the appendix material as we did with the CNP handbook
APPENDIX F

RESIDENT DUTY HOURS AND CALL SCHEDULES (Section 15, Graduate Medical Education Policy and Procedure Manual)

Limitations on Resident Duty Hours

- The School policy is that resident duty hours will be in compliance with the guidelines established by the Accreditation Council for Graduate Medical Education (ACGME). Each ACGME RRC may impose stricter duty hour restrictions in their program requirements. Each program’s leadership should be familiar and fully comply with these requirements

- Exceptions to Duty Hour Policy

The GME Leadership and GMEC will carefully evaluate the duty hour exception request through the GMEC Major Program Change Application. The GMEC’s criteria for application approval depends upon the specific Major Program Change being requested, but generally relates to the application’s merit with regards to how the proposed change;

1. Enhances the education of the Program residents (i.e., improvement in education/service ratio, introduction of unique educational experience),
2. Does not detract from the education of surrounding ACGME-accredited core and affiliated residency programs,
3. Substantially improves compliance of a program with ACGME Program or Institutional requirements,
4. Improves resident safety and well-being (i.e., improvement in work environment) and
5. Maintains or improves the quality of patient care

The GMEC will review the application according to the written procedures and criteria for endorsing requests for an exception to the duty hour limits delineated in the ACGME Manual on Policies and Procedures. If allowed by the Program’s ACGME Residency Review Committee, exceptions for up to 10% or a maximum of 88 hours may be considered. The duty hour exception application will be reviewed by the GMEC prior to submission to the ACGME. Approved applications will also be monitored during the Program’s Periodic/Special Review, Site Visit/Self-Study Preparation process and at other intervals dependent on program and GME duty hour monitoring. Review will also be considered if other interval accreditation issues arise. The overall Review Criteria are described on the Application Tracking Form, but duty hour exception applications also include, but are not limited to;

1. Allowances specified in the ACGME Program Requirements,
2. Magnitude and PGY-level of duty hour exception requested,
3. Educational rationale for exception in terms of service/education ratio and rotations,
4. Anticipated effects on patient safety
5. Program’s current moonlighting policy and level of moonlighting,
6. ACGME accreditation history with special regard to duty hour rule compliance,
7. Appropriateness and anticipated effectiveness of enhanced duty hour monitoring process, and
8. Program outcomes (i.e., first-attempt Board certification pass rate, disciplinary issues, scholarly activity level)

Duty hours are defined as all clinical and academic activities related to the residency program; i.e., patient care (both inpatient and outpatient), administrative duties relative to patient care, the provision for transfer of patient care; time spent in-house during call activities, and scheduled activities such as conferences. Duty hours do not include reading and preparation time spent away from the duty site.

   a. Duty hours must be limited to 80 hours per week, averaged over a four week period, inclusive of all in-house call activities and all moonlighting
   b. Duty hour periods of PGY-1 residents must not exceed 16 hours in duration
   c. Residents must be provided with 1 day in 7 free from all educational and clinical responsibilities, averaged over a 4-week period, inclusive of call. One day is defined as 1 continuous 24-hour period free from all clinical, educational and administrative duties
   d. Adequate time for rest and personal activities must be provided. This should consist of a 10-hour time and MUST have an 8-hour time period provided between all daily duty periods for PGY-1 and intermediate-level residents. Intermediate-level residents must have 14 hours free of duty after 24 hours of in-house duty
   e. Senior-level residents will be defined by each ACGME RRC, but generally includes residents in their final years of education. It is desirable that senior-level residents have 8 hours free of duty between scheduled duty periods. Each ACGME RRC will define specific circumstances when senior-level residents may stay on duty to care for their patients or return to the hospital with fewer than 8 hours free of duty. Circumstances of return-to-hospital activities with fewer than 8 hours away from the hospital by the senior-level residents must be monitored by the Program Director

The resident is expected to be rested and alert during duty hours, and the resident and resident’s attending medical staff are collectively responsible for determining whether the resident is able to safely and effectively perform his/her duties.

If a scheduled duty assignment is inconsistent with the Resident Agreement or the Institutional Duty Hours and Call Policies, the involved resident shall bring that inconsistency first to the attention of the Program Director for reconciliation or correction. If the Program Director does not reconcile or correct the inconsistency, it shall be the obligation of the resident to notify the Department Chair or Associate Dean for Graduate Medical Education, who shall take the
necessary steps to reconcile or correct the raised inconsistency

**Duty Hour Monitoring**
- Program Responsibilities – programs must include at minimum the following processes
  a) Ensure residents submit duty hours by the 10\(^{th}\) of the following month, preferably weekly
  b) Program is notified of potential violations as duty hours are submitted in order to correct any schedules as needed
  c) Program Director must review Duty Hour Review Period violations by the 15\(^{th}\) of the following month
  d) Review quarterly Key Indicator Report
- GMEC Goals and Responsibilities
  a) Overall goals
    i) In compliance with the ACGME duty hour requirements, the committee will identify trends of violations within programs, rotations and residents
    ii) Establish duty hour monitoring policies for each program
    iii) Actively support accurate reporting
    iv) Provide increased awareness of the ACGME duty hour rules
  b) Responsibilities
    i) Standard reporting
    ii) Develop action plans
    iii) Initiate special reviews as needed
    iv) Ensure programs have a process for fatigue mitigation
    v) Internal surveys
    vi) Standardize and review Duty Hours monitoring program

**On-Call and Resident Time Record Reporting**
- The objective of on-call activities is to provide residents with continuity of patient care experiences throughout a 24-hour period. **In-house call** is defined as those duty hours beyond the normal work day, when residents are required to be immediately available in the assigned institution
- In-house call must occur no more frequently than every third night, averaged over a 4-week period for PGY-2 residents and above
- For PGY-2 residents and above, continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Programs must encourage residents to use alertness management strategies in the context of patient care responsibilities. Strategic napping, especially after 16 hours of continuous duty and between the hours of 10:00 pm and 8:00 am is encouraged. Residents may remain on duty for up to 4 additional hours to participate in effective transition of care
- Residents must not be assigned additional clinical responsibilities after 24 hours of continuous in-house duty. In unusual circumstances, residents, on their own initiative, may remain beyond their scheduled period of duty to continue to provide care to a single patient. Justifications for such extensions of duty are limited to reasons of required continuity for a severely ill or unstable patient, academic
importance of the events transpiring, or humanistic attention to the needs of a patient or family. Under those circumstances, the resident must:

a) Appropriately hand over the care of all other patients to the team responsible for their continuing care; and document the reasons for remaining to care for the patient in question and submit that documentation in every circumstance to the program director

b) The program director must review each submission of additional service and track both individual resident and program-wide episodes of additional duty

- Residents must be scheduled for more than 6 consecutive nights of night float
- At-home call (or pager call) is defined as call taken from outside the assigned institution
  a) The frequency of at-home call is not subject to the every-third night or “24+4” limitations. At-home call, however, must not be so frequent as to preclude rest and reasonable personal time for each resident. Residents taking at-home call must be provided with 1 day in 7 completely free from all educational and clinical responsibilities, averaged over a 4-week period
  b) When residents are called into the hospital from home, the hours residents spend in-house are counted toward the 80-hour limit. Resident call backs to the hospital while on home-call do not initiate a new off-duty period (i.e., are not subject to the hour between duty period restrictions)
  c) The program director and the faculty must monitor the demands of at-home call in their programs, and make scheduling adjustments as necessary to mitigate excessive service demands and/or fatigue

- The call schedule and schedule of duty assignments will be published and made available for review by the residents on a monthly basis
- Changes to the call and duty schedules will be made and the revisions published by the Program Director or a designee
- The Graduate Medical Education Committee Duty Hour Subcommittee oversees duty hour reporting in programs showing trends of variance from requirements. The GME Leadership meets with Program Leadership to develop an action plan, which is then brought back to the Duty Hour Subcommittee and GMEC for reviewing and monitoring
APPENDIX G

Supervisory Lines of Responsibility for Neuromuscular Medicine Fellows

The Neuromuscular Medicine Program Director oversees the activities of the program. Ultimately the Neuromuscular Medicine attending assigned to teach the resident is responsible for all aspects of patient care in the inpatient and outpatient settings. The Neuromuscular Medicine resident is involved in the care of all patients on the hospital consultative service and reports directly to the attending. General neurology residents report to the Neuromuscular Medicine resident and/or attending.

Clinical faculty must devote sufficient time to directly supervise all of the resident work and teach them. The faculty must demonstrate a strong interest in the education of residents, sound clinical and teaching abilities, a commitment to their own continuing medical education, and participate in scholarly activities, and must support the goals and objectives of the educational program. The resident level of training allocates responsibilities. Over the duration of the one-year training program, the responsibilities and clinical activities of the resident in training is structured to allow progression from a strictly supervised patient care to a supervised but independent level of care.

Each resident is assigned a qualified faculty supervisor for each rotation or clinical experience (inpatient or outpatient). Explicit written descriptions of lines of responsibility for the care of patients are provided in the core curriculum descriptions for each required rotation in the Neuromuscular Medicine Resident Handbook, and given to all residents and faculty at the beginning of the academic year. Residents and faculty are provided with personal pagers to ensure appropriate involvement of supervisory physicians. The call schedule is published online with dates, resident and faculty assigned and pager numbers for each service. Laminated cards with resident and faculty phone and pager numbers are distributed at the beginning of each year. Office and home phone numbers and pager numbers of the staff and residents are provided at least yearly to all members of the department for the department emergency call roster.

The supervising faculty:

1. Critiques and confirms findings from resident presentations of patient history and physical examination in all teaching settings
2. Evaluates and discusses resident differential diagnosis and management plan
3. For Muscle and Nerve Pathology Laboratory patients, the faculty:
   a. Develops with the resident a plan for tissue biopsies in difficult cases
   b. Is available to assist on muscle and nerve biopsies in difficult cases
   c. Discusses with the resident physician tissue histopathologic data in light of clinical history and physical examination
   d. Supervises the resident performing muscle and nerve biopsy interpretation
   e. Reviews with the resident the overall meaning of tissue pathology
4. For EMG Laboratory patients, the faculty:
   a. Develops with the resident a plan for the EMG/NCS study of an individual patient
   b. Is available to assist on nerve conduction studies in difficult cases
   c. Discusses with the resident physician NCS data in light of clinical history and physical
examination
d. Supervises the resident performing needle electromyography (EMG)
e. Discuss with the resident the overall interpretation of the whole study

5. For the research rotation:
   a. Discuss with the attending physician and evaluate neuromuscular research subjects
   b. Edit dictated reports on the following day for attending physician review
   c. Work in conjunction with the research clinical evaluator and research faculty to gain knowledge in neuromuscular medicine, clinical endpoint measures, their applications, benefits and limitations
   d. Attend monthly Neuromuscular Research Conference, participate in the K30 research program, and enroll in the Introduction to Clinical Research course.

Though extremely rare, if a resident has not been able to reach the faculty member on call, they contact the Program Director, Dr. Mazen Dimachkie, or the Chairman, Dr. Richard Barohn. The Program Director ensures and documents adequate supervision of residents at all times. Faculty schedules are structured so that residents are provided with continuous supervision and consultation. Faculty contact the Program Director to provide additional resident coverage or relief from clinical responsibilities for residents under their supervision displaying depression, fatigue or stress. Neuromuscular Medicine residents receive a lecture on fatigue by Dr. Dubinsky and also are required to attend the institutional core competency resident conference “Sleep Deprivation and Well-Being”.

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APPENDIX H

K30 CLINICAL RESEARCH CURRICULUM PROGRAM and INTRODUCTION TO CLINICAL RESEARCH COURSE

K30 Clinical Research Curriculum Program

The goal of the K30 program is to develop clinician scholars with a strong foundation in patient-oriented research principles and methods. Benefits of program participation include:

- formal training in research skills that can lead to a Master’s degree (MPH or MS-CR)
- access to nationally recognized researchers via the Distinguished Visiting Scholars series
- interaction with other researchers in the Clinical and Translational Research Seminar series
- mentored research training experiences
- access to biostatistical consultation, mentorship and funding opportunities

The program supports two levels of trainees – the novice and the transitional investigator. The program for the novice offers a structured learning process for trainees with demonstrated interest but little training in patient-oriented research. The core of this experience is formal coursework. The program for the transitional investigator provides support for more advanced scholars who need mentoring and specific additional knowledge and skills. Participants have the option of completing a Master’s degree (MPH or MS-CR), but this is not required. Overall, the program is designed to increase the number clinical scholars who receive funding from patient-oriented research at both the career development and individual investigator levels.

Student services continue to evolve, offering new courses such as Introduction to Clinical Research, providing seminars and personal assistance in scientific writing, and supporting development of grant writing skills.

Introduction to Clinical Research Course

Course Description:
The course will provide a basic and broad overview to clinical research. The student will gain an understanding of how to develop clinical research questions including protocol design and factors that should be considered in initiating a clinical research study. This will include biostatistical considerations, the recruitment of study participants, regulatory issues, data management, and defining measures and instruments. Students will gain knowledge of how to define clinical research among the various institutional entities involved with clinical research at the University of Kansas Medical Center such as the Research Institute (RI), General Clinical Research Center (GCRC) and the Human Subjects Committee (HSC). Additionally, one component of the course will focus on how to apply for funding (grantsmanship), critical appraisal of research studies, and how to present research data.

Course Objectives:
Upon completion of the course, participants will be able to
• describe the process of identifying a clinical research idea
• discuss principles of clinical research study design and protocol development
• describe ethical and regulatory issues in conducting research involving human subjects
• discuss biostatistical significance including data management and defining measures and instruments
• describe how to present research data

Introduction to Clinical Research
5:00 – 6:30 PM, Thursday
Fairway Auditorium, CRC
4350 Shawnee Mission Parkway

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<th>Topic</th>
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<td>Putting It All Together: How I Got My Research Off the Ground at KUMC</td>
<td>Burns</td>
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<td>September 1, 2016</td>
<td>Developing Clinical Research Questions</td>
<td>Ellerbeck</td>
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<td>Open Discussion of Projects</td>
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<td>Study Design</td>
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<td>Effective Data Presentations: Platforms and Posters</td>
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<td>Critically Appraising Research: A Consumer's Perspective</td>
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<td>Manuscript Development and Reporting Guidelines</td>
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Fellows are required to participate in the four-week Introduction to Biostatistics for Clinical and Translational Researchers course offered through FRONTIERS: The Heartland Institute for Clinical and Translational Research.
Open outpatient O2→ select Encounter from the top bar→ type in your patient’s name or number and find the patient→ a box will open; Click on NEW on the bottom left corner→ Fill out this box:

Date: Always marked as today
Type: Documentation
Provider: Attending’s name
Department: UKP-LCOA Neuro

(Now a new encounter is opened) → open the progress note → bring in the BX template from My Smart Phrases → Make modifications → close the note, but don't close the encounter. Attendings will review, sign and close the encounter later. Notify the attending when report is ready.
To: Program Directors

Date: July 24th, 2011

RE: GMEC Fatigue (Transportation/Swing Room) Guidelines

The new ACGME Common Program requirements for July 1, 2011 state:

VI.C.3. The sponsoring institution must provide adequate sleep facilities and/or safe transportation options for residents who may be too fatigued to safely return home.

- If you are fatigued and unable to perform your patient care duties, please contact your supervisor (i.e., chief resident, faculty supervisor, program director, Chair and/or GME Office/DIO). Please inform your supervisor of your situation so that they can arrange for alternate coverage to ensure continuity of patient care.
- Program call rooms should be utilized for fatigued residents/fellows for rest and/or power napping.
- If your program does not have a call room or if your assigned call rooms are unavailable or in use, you may use the swing call room – (HH room 2901 [code 1023*])
- If adequate rest facilities are not available, then you may use the voucher fatigue transportation service
- **The program leadership and administration will receive 2 vouchers for every 10 residents.** [(Attached)]
  The PC should keep this in a place well known to the residents for easy access afterhours.
- For each event 2 vouchers will be needed (one for home and then one for back to work the following morning)
- The Vouchers will need to be filled in by the resident/fellow and the transportation service driver (designated as KUMC Resident Program Transportation voucher). Please print your name, Department and home address on the voucher.
- When you are ready to leave, please call 10/10 Taxi Service (913-647-0010) and tell them you are using the KUMC Resident Program Transportation voucher and your destination. They will pick you up at the Main Entrance of the hospital.
- The transportation service will collect each voucher white copy and submit to the GME Office. It is important that you return the YELLOW copy of the voucher to your program director.
- The transportation service is allowed to pick you up from the KUH Hospital Main Entrance and drop you off at your home address, without any interval stops. This also applies for the return trip from your home to back to the hospital main entrance the next morning. You need to use the second voucher for the return trip.
- The resident is responsible for discussing the event and fatigue issue with their Program Leadership the following day. This must be documented by the program leadership in the "Fatigue/Transportation Incident Report" This is available in E*Value – Fatigue/Transportation Incident Report (example below). Again, please return the yellow voucher copies to your program director at this time as well. The purpose of this file is to track both individual and program-wide episodes of fatigue and additional duty in order to mitigate future recurrences.
- The GME Office will manage the cab vouchers and bill back the departments as they are being used as well as replenish the voucher supply.
Sample KUMC Resident Program Transportation voucher:

Fatigue/Transportation Incident Report

(Question 1 of 4 - Mandatory)

Date of the Transportation incident:

Rotation Name/Location  (Question 2 of 4 - Mandatory)

Fatigue Situation Circumstances:  (Question 3 of 4 - Mandatory)

Actions to mitigate fatigue are as follows:  (Question 4 of 4 - Mandatory)