**Neuromuscular Pathology Competency**

**A. Clinical Components**

1. Acquire the skill of obtaining a pertinent neuromuscular history relevant to processing the specimen and interpreting the findings.
2. Independently examine and generate a written report on a minimum of 50 muscle or nerve biopsy specimens of which at least 25 must be of nerve. The reports must accurately describe the findings and indicate the diagnosis or diagnoses and provide clinical comments when appropriate. Additional nerve cases (15) should be reviewed after signout by others.
3. If the fellow feels like their cases do not represent a cross-section of muscle or nerve disorders, they should review additional cases from the digital slide collection. In muscle, the fellow should readily identify dermatomyositis, inclusion body myositis, autoimmune necrotizing myopathy, polymyositis, dystrophies in general, neurogenic atrophy, toxic myopathy, and type 2 fiber atrophy. In nerve, the fellow should readily identify basic histopathologic changes of axonal degeneration and regeneration, demyelination and remyelination, and inflammatory (CIDP, vasculitis) as well as infiltrative and toxic disorders including amyloid.
4. The fellow should understand the methods for processing nerve for both paraffin (H&E, trichrome, Congo red, CD3, CD57) and plastic embedded sections. They should also be familiar with immunostaining using selected antibodies (other inflammatory markers, actin) and the basics of ultrastructural exam. Teased fiber preparation from at least 10 cases should be reviewed.
5. The fellow should understand the process of freezing muscle specimens and be able to do so. They should be expert with evaluating all of the routine stains (H&E, more trichrome, NADH, SDH, cytochrome oxidase, ATPase, esterase, oil red O, PAS, Congo red, MHC 1), special metabolic stains (MADA, phosphorylase, phosphofructokinase) as well as immunostains commonly used for evaluating inflammatory myopathies and muscular dystrophies. They should be able to identify the various types of artifact seen in muscle.
6. **Didactic and Non-clinical Components**

I. The fellow should read regularly to broaden medical knowledge in muscle and nerve pathology. Suggested references are Muscle Biopsy: A Practical Approach 4th Edition by Dubowitz and Biopsy Diagnosis of Peripheral Neuropathy by **Bilbao and Schmidt** and the teased fiber interpretation section from Peripheral Neuropathy by Peter Dyck and PK Thomas

II. Attend weekly neuromuscular pathology conferences.

III. Present at 2-3 neuromuscular pathology conferences per year

**Interpersonal and Communication Skills**- the fellow should be able to succinctly present the clinical history and histopathologic findings along with the interpretation to the attending and be able to clearly deliver the diagnostic conclusions to the referring physicians