

RESIDENCY REVIEW COMMITTEE FOR PHYSICAL MEDICINE AND REHABILITATION

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PROGRAM INFORMATION FORM - NEUROMUSCULAR MEDICINE

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**PROGRAM INFORMATION FORM - NEUROMUSCULAR MEDICINE
(Part 1)**

FOR NEW APPLICATIONS ONLY

SECTION 1. GENERAL PROGRAM INFORMATION

A. Accreditation Information

Date: October 26, 2007
Title of Program: University of California (Davis) Health System Program
10 Digit ACGME Program ID# (for accredited programs): 3400521004

B. Program Director Information

Name: Jay J. Han, MD			
Title: Director, Neuromuscular Medicine Fellowship Program; Assistant Professor, Dept of Physical Medicine & Rehabilitation			
Address: UC Davis Department of PM&R, 4860 Y Street, Suite 3850			
City, State, Zip code: Sacramento, CA, 95817			
Telephone: 916-734-5291	FAX: 916-734-7838	Email: jay.han@ucdmc.ucdavis.edu	
Date First Appointed: July 1, 2005			
Principal Activity Devoted to Resident Education: Yes			
Term of PD Appointment: Indefinite			
Primary Specialty Board Certification: Physical Medicine and Rehabilitation	Most Recent Date: 2004		
Secondary Specialty Board Certification: Neuromuscular Medicine	Most Recent Date: 2008		
Number of years spent teaching in GME in this specialty: 6			
Director based at primary teaching institution? (X) YES () NO			
Number of hours per week Director Spends in:			
Clinical Supervision: 20	Administration: 4	Research: 12	Didactics/Teaching: 4
Is Program Director also Department Chair? () YES (X) NO			
If No, Chair Name: David D. Kilmer, MD			
The signatures of the director of the program, the chief of the department and the designated institutional official attest to the completeness and accuracy of the information provided on these forms.			
Signature of Program Director (and date):			
Signature of Chief/Department Chair if different from Program Director (and date):			
Signature of Designated Institutional Official (DIO) (and date):			

SECTION 2. PARTICIPATING INSTITUTIONS

SPONSORING INSTITUTION: (The university, hospital, or foundation that has ultimate responsibility for this program.)	
Name of Sponsor: University of California (Davis) Health System [058115]	
Address: University of California (Davis) Health System 2315 Stockton Blvd. 1011 House Staff Building	Single Program Sponsor? () YES (X) NO
City, State, Zip code: Sacramento, CA, 95817	
Type of Institution: (e.g., Teaching Hospital, General Hospital, Medical School) General/Teaching Hospital/Medical School	
Name of Designated Institutional Official: Dr. James Nuovo	
Mailing Address: 4610 X Street Sacramento, CA 95817	Phone Number: (916) 734-7131 Email: james.nuovo@ucdmc.ucdavis.edu
Name of Chief Executive Officer: Ms. Ann Madden Rice	
Does SPONSOR have an affiliation with a medical school (could be the sponsoring institution)? (X) YES () NO If yes, name the medical school below and have an affiliation agreement that describes the effect of these arrangements on this program available.	
Name of Medical School #1: University of California, Davis School of Medicine	
Name of Medical School #2:	

PRIMARY INSTITUTION (Institution #1)	
Name: University of California (Davis) Medical Center [050436]	
Address: University of California (Davis) Medical Center, 2315 Stockton Blvd	
City, State, Zip Code: Sacramento, CA, 95817	
Type of Relationship with Program: Sponsor (X) Major () Clinical () Other ()	
Type of Rotation Elective () Required (X) Both () (select one)	
Length of Resident Rotation (in months) Year 1: 12	
CEO/Director/President's Name: Ms. Ann Madden Rice	JCAHO Approved? (X) YES () NO () NA
Type of Institution: (e.g., Teaching Hospital, General Hospital, Medical School) Teaching/General Hospital	
Ownership Type: (e.g., State, Corporation, Church) State	
Brief Educational Rationale:	The Neuromuscular Medicine fellow will receive both inpatient and outpatient clinical teaching regarding various neuromuscular disorders at the UC Davis medical center and its outpatient PM&R and Neurology clinics. The fellow will be exposed to a variety of neuromuscular diseases affecting both pediatric and adult populations. The fellow will also receive teaching regarding various electrodiagnostic evaluation, as well as laboratory workup as they pertain to evaluation and treatment of patients with neuromuscular diseases. Research and didactics are primarily provided at this teaching site.

PARTICIPATING INSTITUTION (Institution #2)	
Name: Shriners Hospitals for Children Northern California (Sacramento) [050239]	
Address: Shriners Hospitals for Children Northern California, 2425 Stockton Blvd	
City, State, Zip Code: Sacramento, CA, 95817-1495	
Type of Relationship with Program: Sponsor () Major () Clinical (X) Other ()	
Does this institution also sponsor its own program in this specialty? No	
Does it participate in any other ACGME accredited programs in this specialty? No	
Distance between 2 & 1: Miles: 0 Minutes: 5	
Type of Rotation Elective (X) Required () Both () (select one)	
Length of Resident Rotation (in months) Year 1: 1 month equivalent	
CEO/Director/President's Name: Mr. Ralph Semb	JCAHO Approved? (X) YES () NO () NA

Type of Institution: (e.g., Teaching Hospital, General Hospital, Medical School) Teaching/General Hospital	
Ownership Type: (e.g., State, Corporation, Church) Corporation	
Brief Educational Rationale:	The purpose of this educational assignment is for the fellow to obtain additional experience in neuromuscular medicine, electrodiagnostic evaluation, as well as orthopedic management of children with neuromuscular disorders. These goals will be met primarily through the responsibility of caring for children in the designated neuromuscular disease specialty clinic at the site, with the supervision and guidance of a neuromuscular medicine attending/teaching physician.

PARTICIPATING INSTITUTION (Institution #3)	
Name: California Pacific Medical Center	
Address: 2333 Buchanan Street	
City, State, Zip Code: San Francisco, CA, 94115	
Type of Relationship with Program: Sponsor () Major () Clinical (X) Other ()	
Does this institution also sponsor its own program in this specialty? No	
Does it participate in any other ACGME accredited programs in this specialty? No	
Distance between 3 & 1: Miles: 75 Minutes: 90	
Type of Rotation Elective (X) Required () Both () (select one)	
Length of Resident Rotation (in months) Year 1: 1 month equivalent	
CEO/Director/President's Name: Robert Miller, MD (Director of Forbes Norris ALS/MDA clinic)	JCAHO Approved? (X) YES () NO () NA
Type of Institution: (e.g., Teaching Hospital, General Hospital, Medical School) Teaching/General Hospital	
Ownership Type: (e.g., State, Corporation, Church) Corporation	
Brief Educational Rationale:	The purpose of this educational assignment is for the fellow to obtain additional experience in neuromuscular medicine, especially in the care of patients with ALS and motor neuron disease diagnosis. These goals will be met primarily through didactics and clinic experience at the ALS/MDA neuromuscular disease specialty clinic and its satellite clinics, with the supervision of a neuromuscular medicine attending/teaching physician.

SECTION 3. FELLOW COMPLEMENT

A. Number of Positions (current academic year)

The number of filled positions should correspond to the list of actively enrolled fellows in Section 3.B.

Positions	Total
Number of Filled Positions	1
Number of Positions Requested	1

B. Actively Enrolled Fellows (if applicable)

List all fellows actively enrolled in this program as of August 31 of current academic year (see Section 3.A). List names alphabetically within Year in Program. Place an (*) asterisk next to the name of each fellows accepted as a transfer. Documentation of previous experience for transfer students should be available for review by the site visitor.

Name	Program Start Date	Expected Completion Date	Year in Program	Type of Position	Years of Prior GME	Specialty of Most Recent Prior GME	Medical School	Year of Med School Graduation
Dr. Nanette Joyce	7/1/08	6/30/09	1	Fellow	4	Physical Med and Rehab.	Touro U. College of Medicine	2004

C. Aggregate Data on Fellows Completing or Leaving the Program for the Last Three (3) Years (if applicable)

Based in academic year ending:	June 30, 2008 (indicate year)	June 30, 2007 (indicate year)	June 30, 2006 (indicate year)
Number of Graduates Who Started in Program Year 1 and Finished this Program*	1	N/A	N/A
Number of Graduates Regardless of Whether They Began in this Program*	1	N/A	N/A
Number of Fellows That Completed Preliminary Year(s)	0	N/A	N/A
Number of Fellows Who Withdrew from the Program	0	N/A	N/A
Number of Fellows Who Transferred Out of the Program	0	N/A	N/A
Number of Fellows on Leave of Absence from the Program	0	N/A	N/A
Number of Fellows Dismissed from the Program	0	N/A	N/A

*Excludes residents preliminary complement year(s).

D. Fellows Completing Program in the Last Three Years (if applicable)

List of fellows who completed all training for this specialty based on the last academic year ending June 30, 2008.

Name	Start Date	Actual Date of Completion	Date Took First Stage of NMM Board Exam - Passed on First Attempt (Y/N/Unknown)	Date First Took Second Stage of NMM Board Exam - Passed on First Attempt (Y/N/Unknown)
Dr. Andrew Skalsky	7/1/07	6/30/08	Plans to take in 2009	N/A

List of fellows who completed all training for this specialty based on the last academic year ending June 30, 2007.

Name	Start Date	Actual Date of Completion	Date Took First Stage of NMM Board Exam - Passed on First Attempt (Y/N/Unknown)	Date First Took Second Stage of NMM Board Exam - Passed on First Attempt (Y/N/Unknown)
N/A				

List of fellows who completed all training for this specialty based on the last academic year ending June 30, 2006.

Name	Start Date	Actual Date of Completion	Date Took First Stage of NMM Board Exam - Passed on First Attempt (Y/N/Unknown)	Date First Took Second Stage of NMM Board Exam - Passed on First Attempt (Y/N/Unknown)
N/A				

E. Withdrawn Fellows (if applicable)

List fellows who withdrew or were dismissed from the program for the last three years and provide the reason.

Name	Start Date	End Date	Withdrawn or Dismissed	Reason
None				

F. Scholarly Activity (if applicable)

Based on Academic Year Ending	June 30, 2008.	June 30, 2007.	June 30, 2006.
Number of Nationally Peer-Reviewed Published Articles Authored or Co-Authored by Fellows in the Past Year.	3	N/A	N/A
Number of Fellows Presentations at Regional or National Meetings in the Past Year.	3	N/A	N/A

G. Duty Hours (if applicable)

For the previous four week period:	Yr 1
Excluding call from home, what was the average number of hours on duty per fellow per week?	40
Excluding call from home, what was the maximum number of continuous hours worked by any fellow?	10
On average, how many days per week of in-house call were fellows assigned?	0
How many times (in the last 4 weeks) have fellows worked more than 30 continuous hours? (This continuous time includes in-house call that directly follows a regular duty shift. Add together the number of times for all fellows.)	0
On average, how many days (for the entire last 4 week period) did each fellow have completely free from all educational and clinical responsibilities?	8
On average, how many hours off duty did each fellow have between duty shifts? (Duty shifts include in-house call.)	16

B. Faculty Curriculum Vitae - Complete for each teaching staff member listed in Section 4.A.

First Name: Jay	MI: J.	Last Name: Han
Present Position: Assistant Professor, Dept of Physical Medicine and Rehabilitation; Director, Neuromuscular Medicine Program; Co-Director, MDA Neuromuscular Disease Clinic at UC Davis		
Medical School Name: University of California San Francisco (UCSF)		
Degree Awarded: MD	Year Completed: 1998	
Graduate Medical Education Program Name: University of Washington, Seattle		
Specialty/Field Physical Medicine and Rehabilitation	Date From: 7/1/1998	To: 6/30/2002

Certification and Re- Certification Information			Current Licensure Data	
Specialty	Certification Year	Re-Certification Year	State	Date of Expiration
PM&R	2004	2014	CA	2/28/2009
Neuromuscular Medicine	2008	2018	WA	2/2/2009
Other (specify): ABEM	2005	2015		

Academic Appointments - List the past ten years, beginning with your current position.

Start Date	End Date	Description of Position(s)
2005	Present	Assistant Professor University of California, Davis Dept. of Physical Medicine and Rehabilitation
2002	2005	Acting Instructor University of Washington, Seattle Dept. of Rehabilitation Medicine

Concise Summary of Role in Program: Neuromuscular Medicine Fellowship Program Director
 Dr. Han will direct and oversee all aspects of the neuromuscular medicine fellowship training program at UC Davis. Dr. Han will be responsible for the maintenance of ACGME accreditation. Dr. Han will serve as the contact person for the program. Dr. Han will also be one of the primary teaching faculty members for the training program.

Current Professional Activities / Committees (Limit of 10):

2005-2006	AANEM Taskforce on Neuromuscular Education committee member
2007-2008	Chair of Research Council, Association of Academic Physiatrists (AAP)
2007-2008	AANEM Secretary of Neuromuscular Update Course Committee
2007-Present	Co-Director, MDA Neuromuscular Diseases Clinic at UC Davis
2007-Present	AANEM Neuromuscular Update Course Committee
2005-Present	Fellow, American Academy of Physical Medicine and Rehabilitation
2005-Present	Fellow, American Association of Neuromuscular and Electrodiagnostic Medicine
2007-Present	Manuscript Reviewer, Journal of Neurodegeneration and Regeneration
2007-Present	Manuscript Reviewer, American Journal of Physical Med and Rehabilitation
2008-Present	Manuscript Reviewer, Physical Medicine & Rehabilitation

Selected Bibliography - Most representative Peer Reviewed Publications / Journal Articles from the last 5 years (limit of 10):

Han JJ, Carter GT, Hecht TW, Schuman NE, Weiss MD, Krivickas LS. The Amyotrophic Lateral Sclerosis Center: A Model of Multidisciplinary Management. *Critical Reviews in Physical Medicine and Rehabilitation Medicine* 15(1):21-40, 2003.

Han JJ, Massagli TL, Jaffe KM. Fibrocartilaginous Embolism – An Uncommon Cause of Spinal Cord Infarction: A Case Report and Review of the Literature. *Arch Phys Med Rehabil* 85:153-7, 2004.

Carter GT, Weiss MD, Lou JS, Jensen MP, Abresch RT, Martin TK, Hecht TW, Han JJ, Weydt P, Kraft GH. Modafinil in Amyotrophic Lateral Sclerosis: An Open Label Pilot Study. *Am J Hosp Palliat Care* 22(1):55-9, 2005.

Han JJ, Carter GT, Ra JJ, Abresch RT, Chamberlain JS, Robinson LR. Electromyographic studies in *mdx* and wild-type C57 mice. *Muscle Nerve* 33(2):208-14, 2005.

Carter GT, Han JJ, Mayadev, A, Weiss, M. Modafinil Reduces Fatigue in Charcot-Marie-Tooth Disease Type 1A: A Case Series. *Am J Hospice & Palliative Med* 23(5):412-416, 2006.

Carter GT, Han JJ, Abresch RT, Jensen MP. The importance of assessing quality of life in patients with neuromuscular disorders. *Am J Hosp Palliat Care*, 23(6): 493-7, 2007.

Davidson LT; Carter GT, Kilmer DD, Han JJ. Iatrogenic axillary neuropathy after intramuscular injection of the deltoid muscle. *Am J Phys Med Rehabil*, 86(6): 507-11, 2007.

Carter GT, Weiss MD, Han JJ, Chance PF, England JD. Charcot-marie-tooth disease. *Curr Treat Options Neurol.* 2008 Mar;10(2):94-102.

Han JJ*, Kimura E*, Li S, Fall B, Ra J, Haraguchi M, Tapscott SJ, Chamberlain JC. Cell-lineage regulated myogenesis for dystrophin replacement: a novel therapeutic approach for treatment of muscular dystrophy. *Hum Mol Gen*, 2008 Aug 15;17(16):2507-17. * Joint first authors.

Werner BW, Skalsky AJ, McDonald CM, Han, JJ. Convexity of Scoliosis Related Handedness in Identical Twin Boys With Duchenne's Muscular Dystrophy: A Case Report. *Arch Phys Med Rehabil* 2008 Oct;89(10):2021-4.

Selected Review Articles, Chapters and/or Textbooks (Limit of 5):

Han JJ, Carter GT, Weiss MD, Shekar C, Kornegay JN. Using Electromyography to Assess Function in Humans and Animal Models of Muscular Dystrophy. In *Phys Med Rehab Clin N Am*, George Kraft (Ed.), WB Saunders, Philadelphia, 2005, pp 981-97.

McDonald CM, Han JJ, Carter GT. Myopathic Disorders. In *Physical Medicine and Rehabilitation (Ed.3)*, Braddom RL (Ed), WB Saunders Publishing Co., Philadelphia, 2006.

Han JJ, Carter GT. Staying Strong: Rehab for Duchenne Muscular Dystrophy Slows Muscle Wasting. In *Advance for Directors in Rehabilitation* 9/06:25-28, 2006.

Han JJ and McDonald CM: Diagnosis and Clinical Management of Spinal Muscular Atrophy, In *Phys Med Rehabil Clin N Am*, 2008 Aug;19(3):661-80.

Han JJ and Kilmer DD: Myopathies, Frontera WR (Ed): In *Physical Medicine and Rehabilitation, Principles and Practice* (In press)

Participation in Local, Regional, and National Activities / Presentations (Limit of 5):

Presentation: Body composition assessed with regional dual energy x-ray absorptiometry (DEXA) in Facioscapulohumeral muscular dystrophy, *AAP Annual Meeting*, San Juan, Puerto Rico, April 2007

Presentation: Body Composition Analysis Using Whole Body and Regional Dual X-ray Absorptiometry (DEXA) in Duchenne Muscular Dystrophy, ISPRM2007, Seoul, South Korea, June 2007

Discussant: Genetics Research Group, Northern California, Kaiser Permanent, Sacramento, May 2008

Lecturer: Electrodiagnosis for Primary Care Physicians, 4th Annual Spine Care Conference for the Primary Care Practitioner, Sacramento, CA. May 2008

Faculty: Small Fiber Neuropathy, Asymmetric Weakness, Metabolic Myopathy in Neuromuscular Update Course, AANEM, Providence, RI, Sept 2008

If not board certified, explain equivalent qualifications:

Dr. Han is board certified in PM&R and Neuromuscular Medicine, with additional certification in Electrodiagnostic Medicine

First Name: David	MI: D.	Last Name: Kilmer
Present Position: Professor and Chair, Dept. of Physical Medicine and Rehabilitation		
Medical School Name: University of California Davis		
Degree Awarded: MD	Year Completed: 1985	
Graduate Medical Education Program Name: University of California, Davis, Medical Center		
Specialty/Field Physical Medicine and Rehabilitation	Date From: 7/1/1985	To: 6/30/1989

Certification and Re- Certification Information			Current Licensure Data	
Specialty	Certification Year	Re-Certification Year	State	Date of Expiration
PM&R	1990	NA	CA	7/31/2010
Neuromuscular Medicine	2007	2017		
Other (specify): ABEM	1991	NA		

Academic Appointments - List the past ten years, beginning with your current position.		
Start Date	End Date	Description of Position(s)
2000	Present	Chairman Department of Physical Medicine and Rehabilitation University of California, Davis, School of Medicine
1999	2000	Acting Chairman Department of Physical Medicine and Rehabilitation University of California, Davis, School of Medicine
2002	Present	Professor of Clinical Physical Medicine and Rehabilitation University of California, Davis, School of Medicine
1996	2002	Associate Professor of Clinical Physical Medicine and Rehabilitation University of California, Davis, School of Medicine
1989	1996	Assistant Professor of Clinical Physical Medicine and Rehabilitation University of California, Davis, School of Medicine

Concise Summary of Role in Program: Teaching Faculty Member	
Current Professional Activities / Committees (Limit of 10):	
2005 – Present	Board of Directors, American Board of Physical Medicine and Rehabilitation, Rochester, MN
2005 – Present	Neuromuscular Medicine Subspecialty Committee, American Board of Psychiatry & Neurology
2007 – Present	Maintenance of Certification Task Force, American Academy of PM&R/American Board of PM&R
2008 – Present	Residency Review Committee for Physical Medicine & Rehabilitation, American College of Graduate Medical Education (ACGME)
2001 – Present	Editorial Board, Archives of Physical Medicine and Rehabilitation
2000 – 2005	Written Examination Associate, American Board of Physical Medicine and Rehabilitation, Rochester, MN
2000 -2006	Manuscript Reviewer, Journal of Trauma
1997 – 2001	Associate Editor, Archives of Physical Medicine and Rehabilitation
1993 – Present	Manuscript Reviewer, Archives of Physical Medicine and Rehabilitation
1991 – Present	Fellow, American Association of Neuromuscular & Electrodiagnostic Medicine

Selected Bibliography - Most representative Peer Reviewed Publications / Journal Articles from the last 5 years (limit of 10):

Kilmer DD, Aitkens SG, Wright NC, McCrory MA: Response to high-intensity eccentric muscle contractions in persons with myopathic disease. *Muscle Nerve* 24:1181-1187, 2001.

Paulson LE, Kilmer DD: Orthotic Management of Peripheral Neuropathy. *Phys Med Rehab Clin North Am* 12(2): 433-445, 2001.

Abresch RT, Carter GT, Jensen MP, Kilmer DD: Assessment of pain and health-related quality of life in slowly progressive neuromuscular disease. *Am J Hosp Palliat Care* 19:39-48, 2002.

Kilmer DD: Response to resistive strengthening exercise training in humans with neuromuscular disease. *Am J Phys Med Rehabil* 81:S121-S126, 2002

Kilmer DD: Response to aerobic exercise training in humans with neuromuscular disease. *Am J Phys Med Rehabil* 81:S148-S150, 2002

Aitkens S, Kilmer DD, Wright NC, McCrory MA: Metabolic syndrome in neuromuscular disease. *Arch Phys Med Rehabil* 86;1030-1036, 2005.

McDonald CM, Carter GT, Abresch RT, Widman L, Styne DM, Warden N, Kilmer DD. Body composition and water compartment measurements in boys with Duchenne Muscular Dystrophy. *Am J Phys Med Rehabil.* 84;483-491, 2005.

Kilmer DD, Wright NC, Aitkens S. Impact of a home-based activity and dietary intervention in persons with slowly progressive neuromuscular diseases. *Arch Phys Med Rehabil* 86;2150-2156, 2005.

Kilmer DD, Zhao HH. Obesity, physical activity and the metabolic syndrome in adult neuromuscular disease. *Phys Med Rehabil Clin North Am* 16; 1053-1062, 2005.

Davidson LT, Carter GT, Kilmer DD, Han JJ. Iatrogenic axillary neuropathy after intramuscular injection of the deltoid muscle. *Am J Phys Med Rehabil* 86;507-511, 2007.

Selected Review Articles, Chapters and/or Textbooks (Limit of 5):

Kilmer, DD: Case Studies in Neuromuscular Disease Exercise Prescription. In *Exercise Prescription*, Kamala Shankar (Ed.), Hanley & Belfus, Philadelphia, 1998, pp 265-276.

McCrory MA, Wright NC, Kilmer DD: Nutritional Aspects of Neuromuscular Diseases. *Phys Med Rehabil Clin North Am* 9(1): 127-143, 1998.

Kilmer DD, Aitkens S: Neuromuscular Disease. In *Exercise in Rehabilitation Medicine*. Walter R. Frontera, David M. Dawson, David M. Slovik (Eds.), Human Kinetics, Champaign IL, 1999, pp 253-266.

Kilmer DD: Myopathy. In *Physical Medicine and Rehabilitation: Principles and Practice* (Ed. 4), Joel A. DeLisa (Editor-in-Chief), Lippincott Williams & Wilkins, Philadelphia, 2004, Vol. 1, pp 913-929.

Kilmer DD, Aitkens S: Neuromuscular Diseases. In *Exercise in Rehabilitation Medicine*. Walter R. Frontera, David M. Slovik, David M. Dawson (Eds.), Human Kinetics, Champaign,IL, 2006, pp 180-190.

Participation in Local, Regional, and National Activities / Presentations (Limit of 5):

2001 "The Role of Exercise in the Treatment of Neuromuscular Diseases." 38th Annual Meeting of the Japanese Association of Rehabilitation Medicine, Yokohama.

2001 "The Role of Physical Activity and Exercise Training in Neuromuscular Disease." American Academy of Physical Medicine and Rehabilitation Annual Meeting, Chicago.

2006 "Approach to Bracing in Neuromuscular Disorders". American Association of Neuromuscular and Electrodiagnostic Medicine, Washington DC

2007 "Pedometer and step activity monitor use and its efficacy as a rehabilitation outcome measure", Association of Academic Physiatrists, San Juan PR.

2008 "Measuring and Promoting Physical Activity in a Free-Living Environment in Persons with Neuromuscular Diseases". American Association of Neuromuscular & Electrodiagnostic Medicine, Providence, RI.

If not board certified, explain equivalent qualifications:

Dr. Kilmer is board certified in PM&R and Neuromuscular Medicine, with additional certification in Electrodiagnostic Medicine

First Name: Craig	MI: M.	Last Name: McDonald
Present Position: Professor, Dept of Physical Medicine and Rehabilitation; Co-Director, MDA Neuromuscular Disease Clinic		
Medical School Name: University of Washington, Seattle		
Degree Awarded: MD	Year Completed: 1987	
Graduate Medical Education Program Name:	UCLA Medical Center Los Angeles, California 1989 Pediatrics University of Washington Medical Center Seattle, Washington 1989-1992 Physical Medicine & Rehabilitation Children's Hospital and Medical Center, University of Washington Seattle, Washington 1992 Chief Resident, Pediatric Rehabilitation	
Specialty/Field	Physical Medicine & Rehabilitation	Date From: 7/1/1989 To: 6/30/1992

Certification and Re- Certification Information			Current Licensure Data	
Specialty	Certification Year	Re-Certification Year	State	Date of Expiration
PM&R	1993	2013	CA	12/31/2009
Neuromuscular Medicine	2008	2018		
Other (specify): Pediatric Rehab Med	1992	2013		

Academic Appointments - List the past ten years, beginning with your current position.		
Start Date	End Date	Description of Position(s)
2004	Present	Vice Chairperson University of California, Davis Department of Physical Medicine and Rehabilitation
2002	Present	Professor of Clinical Physical Medicine and Rehabilitation University of California, Davis Department of Physical Medicine and Rehabilitation
2002	Present	Professor of Clinical Pediatrics University of California, Davis Department of Pediatrics
1997	2002	Adjunct Associate Professor University of California, Davis Graduate Studies Program in Exercise Science
1996	2002	Associate Professor of Clinical Physical Medicine and Rehabilitation University of California, Davis Department of Physical Medicine and Rehabilitation
1996	2002	Associate Professor of Clinical Pediatrics University of California, Davis Department of Pediatrics
1993	1996	Assistant Professor of Clinical Pediatrics University of California, Davis Department of Pediatrics
1992	1996	Assistant Professor of Clinical Physical Medicine and Rehabilitation University of California, Davis Department of Physical Medicine and Rehabilitation

Concise Summary of Role in Program: Co-Director and Teaching Faculty Member
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Current Professional Activities / Committees (Limit of 10):

9/2002-12/2003	Course Co-Chairman: The Howard H. Steel Conference: Injuries and Dysfunction of the Spinal Cord in Children. Dec 7-9, 2003, Orlando, FL
12/2004	National Institutes of Health Special Emphasis Panel to Review U54 applications in response to RFA-04-008 (Senator Paul D. Wellstone Muscular Dystrophy Cooperative Research Centers), Washington, DC, December 5-6, 2004
9/2004-1/2005	National Institutes of Arthritis, Musculoskeletal Diseases and Skin Planning Committee for the NIH Burden of Muscle Disease Workshop, Bethesda, MD, January 26-27, 2005.
2/1/2005	Center for Disease Control Duchenne and Becker Muscular Dystrophy Program Planning Workgroup, February 1, 2005
07/2005	Cooperative International Neuromuscular Research Group Therapeutics Subcommittee; Washington DC, July 8, 2005
07/2005	National Institutes of Health Special Emphasis Panel to Review U54 applications in response to RFA-04-008 (Senator Paul D. Wellstone Muscular Dystrophy Cooperative Research Centers); Washington, DC, July 12-13, 2005
08/2005	National Institutes of Health, Muscular Dystrophy Coordinating Committee: Muscular Dystrophy Scientific Working Group; Co-Chairperson: Living with Muscular Dystrophy Topic Group; August 16-17, 2005
3/2005 to present	Centers for Disease Control Duchenne Muscular Dystrophy Care Considerations Steering Committee Member
3/2007 to present	Duchenne Muscular Dystrophy Care Considerations Project: Rehabilitation Medicine Expert Panel Discussions; Sponsored by the Center for Disease Control, May 14-15, 2007

Selected Bibliography - Most representative Peer Reviewed Publications / Journal Articles from the last 5 years (limit of 10):

- Moxley RT, Ashwal S, Pandya S, Connolly A, Florence J, Mathews K, Baumbach L, McDonald C, Sussman M, Wade C: Practice Parameter: Corticosteroid Treatment of Duchenne Muscular Dystrophy. (Report of the American Academy of Neurology and the Child Neurology Society). *Neurology*. 64(1):13-20, 2005.
- McDonald CM, Widman LM, Abresch RT, Walsh SA, Walsh DD: Use of a step activity monitor for the measurement of daily ambulatory activity in children. *Archives of Physical Medicine & Rehabilitation*. 86(4):793-801, 2005.
- McDonald CM, Widman LM, Walsh DD, Walsh SA, Abresch RT: Use of step activity monitoring for continuous physical activity assessment in boys with Duchenne muscular dystrophy. *Archives of Physical Medicine & Rehabilitation*. 86(4):802-8, 2005.
- Jensen MP, Abresch RT, Carter GT, McDonald CM: Chronic Pain in Persons with Neuromuscular Disease. *Archives of Physical Medicine & Rehabilitation*. 86:1155-1163, 2005.
- McDonald CM, Carter GT, Abresch RT, Widman L, Styne DM, Warden N, Kilmer DD. Body Composition in Duchenne Dystrophy using Impedance Analysis and Dual X-ray Absorptiometry. *Am J Phys Med Rehabil*, 84(7):483-91, 2005.
- Vogel LC, Anderson CJ, Betz RR, Mulcahey MJ, McDonald CM: The child with a high tetraplegic spinal cord injury. *Topics in Spinal Cord Injury Rehabilitation*. 10 (3): 19-29, 2005.
- Sanders JO, McConnell SL, King R, Lanford A, Montpetit K, Gates P, Rich MM, Shepherd K, Cupp T, Haynes R, Bush P, Tahir F, Santiago J, Lighter DE, Smrcina C, Niederpreum M, McDonald C, Curry DB: A prospective evaluation of the WeeFIM In patients with cerebral palsy undergoing orthopaedic surgery. *J Pediatr Orthop*. 26(4): 542-546, 2006.
- Widman LM, McDonald CM, Abresch RT: Effectiveness of an Upper Extremity Exercise Device integrated with Computer Gaming for Aerobic Training in Adolescents with Spinal Cord Dysfunction. *J Spinal Cord Med*. 29(4):363-370, 2006.
- Mendell JR, Csima C, McDonald CM, Escolar D, Janis S, Porter J, Hesterlee S, Howell RR: Challenges in Drug Development for Muscle Disease: A stakeholders' meeting. *Muscle & Nerve*. 35(1):8-16, 2007.
- Wijesekera S, Gupta MC, Sossan A, Martin L, Boakes JC, Lerman JA, Vogel LC, McDonald CM, Betz RR: Reliability of radiographic parameters in neuromuscular scoliosis. *Spine*, 32(6):691-695, 2007.

Selected Review Articles, Chapters and/or Textbooks (Limit of 5):

McDonald CM: Electrodiagnosis in Pediatrics. In Molnar GE, Alexander MA (eds): Pediatric Rehabilitation, 3rd Edition, Hanley and Belfus, Philadelphia, PA, 1999.

McDonald CM: Neuromuscular Diseases. In Molnar GE, Alexander MA (eds): Pediatric Rehabilitation, 3rd Edition, Hanley and Belfus, Philadelphia, PA, 1999.

McDonald CM: Mobility Aids for Children with high level myelomeningocele. In Sarwark JF, Lubicky J (eds.): Caring for the Child with Myelomeningocele. Shriners Hospitals for Children Symposium, American Academy of Orthopaedic Surgeons, Rosemont, IL, 2001.

McDonald CM, Carter, GT, Han JJ, Benditt JO. Rehabilitation management of Duchenne muscular dystrophy. In Chamberlain JC, Rando TA, (eds): Duchenne Muscular Dystrophy: Advances in Therapeutics. New York, Taylor & Francis Group Publishing Co., 2006.

McDonald CM, Han JJ, Carter GT. Rehabilitation of children and adults with myopathies, in Braddom RL (ed): Physical Medicine and Rehabilitation, 3rd edition. Philadelphia, WB Saunders Publishing Co. (book chapter)

Participation in Local, Regional, and National Activities / Presentations (Limit of 5):

Presentation: Body composition assessed with regional dual energy x-ray absorptiometry (DEXA) in Facioscapulohumeral muscular dystrophy. Presented at the Annual Meeting of the Association of Academic Physiatrists. San Juan, Puerto Rico, April 14, 2007 2007.

Presentation: Regional lean tissue mass by DEXA and quantitative muscle strength in Facioscapulohumeral muscular dystrophy. Presented at the Annual Meeting of the Association of Academic Physiatrists. San Juan, Puerto Rico, April 13, 2007.

Lecturer: Functional Assessment in Neuromuscular Diseases. Presented as part of the Instructional Course: Emerging Diagnostic and Therapeutic Concepts/Technologies in PM&R. Association of Academic Physiatrists. San Juan, Puerto Rico, April 13, 2007.

Presentation: Six Minute Walk Test in Duchenne Muscular Dystrophy as a Primary Clinical Endpoint. The Food and Drug Administration as part of the Phase 3 Program in Non-sense-Mutation-Mediated Duchenne Muscular Dystrophy (IND 68,431 – Serial No. 0017) - PTC124, sponsored by PTC Therapeutics, South Plainfield, NJ. Bethesda, MD, April 19, 2007.

Presentation: The Pediatric Quality of Life Assessment (PedsQL) shows disease progression and correlates with timed motor performance in children with Duchenne muscular dystrophy. 61st Annual American Academy of Cerebral Palsy and Developmental Medicine. Vancouver BC, Canada, October 2007.

If not board certified, explain equivalent qualifications:

Dr. McDonald is board certified in PM&R, and Neuromuscular Medicine, with subspecialty certification in Pediatric Rehabilitation Medicine

RESIDENCY REVIEW COMMITTEE FOR PHYSICAL MEDICINE AND REHABILITATION

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PROGRAM INFORMATION FORM - NEUROMUSCULAR MEDICINE (Part 2)

FOR NEW APPLICATIONS ONLY

SECTION 5. BACKGROUND INFORMATION

A. Previous Citations or Concerns (if applicable)

List the citations from last RRC accreditation if applicable and describe briefly the steps that have been taken to address the citations or suggestions made by the RRC. If documentation is required, provide a specific reference to the information provided in the PIF or append additional support materials. If no citations were listed, indicate this in the response.

N/A

B. Changes (if applicable)

Briefly describe major changes, other than those included in the response to previous citations and/or concerns (above), that have been implemented since the last survey and review. Include changes in sponsoring organization, participating hospitals, required rotations, resident complement, and facility or facilities.

N/A

C. Sponsoring Institution/Single or Limited Residency Institution (see ACGME Institutional Requirements)

For those institutions which are either a single-program institution (e.g., Physical Medicine and Rehabilitation only), or an institution with multiple residencies accredited by the **same** Residency Review Committee, the institutional review will be conducted in conjunction with the review of the program. **Only programs in these two categories are to complete the following institutional questions. Complete only if "single/limited site sponsor" field in Part 1, Section 2 is YES.**

1. Provide an institutional statement that commits the necessary financial, educational and human resources to support the GME program(s) and provide documentation that the statement has been approved by the governing body, the administration and the teaching staff (Appendix A).
2. Describe the formal method by which a periodic evaluation of the program's educational quality and compliance with the program requirements occurs. Explain how residents and faculty in the program are involved in the evaluation process.

N/A

3. Describe how the institution complies with the Institutional Requirements regarding "Resident Eligibility and Selection" and the development of appropriate criteria for the selection, evaluation, promotion and dismissal of residents in accordance with the Program and Institutional Requirements.

N/A

4. Summarize how the institution complies with the ACGME Institutional Requirements regarding resident support, benefits and conditions of employment to include the details of the resident contract or agreement as outlined in the ACGME Institutional Requirements. (Do not append the resident contract/agreement to the PIF but state when it is given to the residents and applicants. Have a copy available for verification by the site visitor on the day of the survey with the various items required by the

ACGME numbered according to the Institutional Requirements.)

N/A

5. Describe in detail the grievance (due process) procedure(s) that is available to residents, including the composition of the grievance committee, and mechanisms for handling complaints and grievances related to actions which could result in dismissal, non-renewal of a resident's contract, or other actions that could significantly threaten a resident's intended career development.

N/A

SECTION 6. ADDITIONAL FELLOW INFORMATION

A. Other Fellows

List other Neuromuscular Medicine fellows in training who do not meet the preliminary training requirements specified in PR I.B.1. before beginning in the program's Neuromuscular Medicine Fellowship.

Name	Year in Program	Years of Prior GME	Specialty of Prior Training	Medical School	Year of Med. School Graduation	Program Start Date	Expected Completion Date
N/A							

Have each of these residents been told in writing that they are ineligible to take the ABPMR board examination for certification in Physical Medicine and Rehabilitation? YES () NO ()

If the answer is no, please explain below.

N/A

B. Rotating Residents

List the graduate medical education (GME) residents (fellows) from other specialties who rotated through Neuromuscular Medicine service during the last academic year. Institutions are identified and numbered in Part 1, Section 2.

Specialty & Years of GME (e.g. Pediatric PGY - 2)	Number of these Residents on a NMM Service	Average Number Residents per Month on NMM Service	Assignment (ward, clinic, other)	Location(s) (Institution #1, 2, or 3)
PM&R PGY-2	0.3	0.3	clinic	1
PM&R PGY-3	0.5	0.5	Ward, clinic	2
PM&R PGY-4	0.1	0.1	clinical	1

SECTION 7. PROGRAM DIRECTOR

1. Is the program director ABPMR certifiedYES (X) NO ()

If not, please indicate appropriate educational qualifications.

2. Is the program director full-time?YES (X) NO ()

What percentage of time does the program director give to the leadership, direction and monitoring of the program?

20 % hours per week

3. Has the program director prepared a written statement of the program's overall goals and objectives and the educational goals and objectives of the program with respect to knowledge, skills and other attributes of residents at each level of training and for each one month FTE or longer rotation of or other program assignment?YES (X) NO ()

Provide a copy of the goals and objectives in **Appendix B**.

4. Have these goals and objectives been provided to the residents?.....YES (X) NO ()

Give a brief description of the program director's responsibilities and activities.

As the program director, Dr. Jay Han will direct and oversee all aspects of the neuromuscular medicine fellowship training program at UC Davis and specific duties as outlined in the ACGME program requirement for graduate medical education in Neuromuscular Medicine. Briefly, Dr. Han will be responsible for the general administration of the program, and for the establishment and maintenance of a stable educational environment for the fellows. This responsibility extends to those activities related to the recruitment, selection, instruction, supervision, counseling, evaluation, and advancement of fellows, as well as the maintenance of records pertinent to program accreditation. Dr. Han will be responsible for the maintenance of ACGME accreditation and all record keeping for compliance. Dr. Han will serve as the contact person for the training program. Dr. Han will oversee and organize the activities of the educational program in all institutions that participate in the program. This includes selecting and supervising the faculty and other program personnel at each participating institution, appointing a local site director, and monitoring appropriate fellow supervision at all participating institutions. Dr. Han will be responsible for scheduling didactic courses, lecture series, and other educational opportunities for the fellow. Dr. Han will be one of the primary teaching faculty members for the training program. Dr. Han will also be responsible for monitoring the educational progress of the fellow as well as reviewing formal evaluations of the fellow from the faculty and staff. Dr. Han will also ensure the implementation of fair policies, grievance procedures, and due process, as established by the sponsoring institution and in compliance with the Institutional Requirements. Dr. Han will prepare a written statement outlining the educational goals of the program with respect to knowledge, skills, and other attributes of fellows at each level of training and for each major rotation or other program assignment. Dr. Han will provide explicit written descriptions of supervisory lines of responsibility for the care of patients. Such guidelines will be communicated to all members of the program staff. Dr. Han will provide fellows with prompt, reliable systems for communication and interaction with supervisory physicians. Dr. Han will provide timely direct one on one feedback to the fellow regarding his/her educational progress and evaluation comments from faculty/staff. Dr. Han will also be available to the fellow as a mentor for career counseling.

SECTION 8. CLINICAL AND EDUCATIONAL FACILITIES AND RESOURCES

A. Facilities

Use the table below to describe the following office space and resources. Institutions are identified and numbered in Part 1, Section 2.

	Institution 1	Institution 2	Institution 3
Faculty Offices and Facilities			
Neuromuscular Medicine Faculty Offices	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
Secretary Office space for Neuromuscular Medicine	YES (x) NO ()	YES () NO (x)	YES (x) NO ()
Neuromuscular Medicine Library	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
Fellow Offices and Resources			
Does each fellow have his/her own office space?	YES (x) NO ()	YES () NO (x)	YES () NO (x)
Are the offices for groups of fellows?	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
Do the offices have computers and internet search capabilities?	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
Do the fellows have secretarial support?	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
Do the fellows have access to other offices equipment such as copiers, slide projectors, equipment or services to make slides, illustration services?	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
Do the fellows have access to major texts in the office?	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()

B. Library Facilities

Use the table below to describe the institutional and departmental library holdings and other reference resources at each institution. Institutions are identified and numbered in Part 1, Section 2.

	Institution 1	Institution 2	Institution 3
Journals			
Number of Neuromuscular Medicine Journals	7 neuromuscular medicine specific journals are available at the site; and all other essential neuromuscular medicine related journals are available via institutional online access	All essential neuromuscular medicine journals are available via institutional online access or via library request	All essential neuromuscular medicine journals are available via institutional online access or via library request
Access to all Medline Journal articles	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
References databases	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
Computer databases available	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
access in NMM clinics	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
access in library	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
access to major texts and full text journals	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
Computer internet search capabilities	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
Library available on site	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
Library with major texts in all areas of medicine on site or near by	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()
Textbook availability			
Major neuromuscular medicine texts in clinic	YES (x) NO ()	YES (x) NO ()	YES (x) NO ()

SECTION 9. EDUCATIONAL PROGRAM

A. Curriculum

Describe in block form the typical curriculum for residents by months, not weeks, including the institution (#1, 2, 3, 4) and the experience on each rotation during the program. Exclude mention of vacation time. Institutions are identified and numbered in Part 1, Section 2. The major experiences in any month should be listed in the BLOCK diagram. Part time experiences during one or more months should be listed in the longitudinal experience table.

SAMPLE BLOCK ROTATIONS

July	August	September	October	November	December	January	February	March	April	May	June
NMM clinic	NMM clinic	NMM clinic	NMM clinic	NMM clinic	NMM clinic	NMM clinic	NMM hospital EMG & consults	EMG lab	Muscle pathology lab	Nerve pathology lab	NMM clinic

SAMPLE LONGITUDINAL EXPERIENCES

Type Of Experience*	How Structured	Amount Of Time
Nerve and muscle biopsy	One half day per week	September - January
EMG lab	Two half days per week	September - January
PMR and sports medicine outpatient clinic	Two half-days per month	March - June
NMM Hospital consultations	As needed	July - June

BLOCK ROTATIONS

July	August	September	October	November	December	January	February	March	April	May	June
NMM clinic (1,2,3)	NMM clinic (1,2,3)	NMM clinic (1,2,3)	NMM clinic (1,2,3)	NMM clinic (1,2,3)	NMM clinic (1,2,3)	NMM clinic (1,2,3)	NMM clinic (1,2,3)	NMM clinic (1,2,3)	NMM clinic (1,2,3)	NMM clinic (1,2,3)	NMM clinic (1,2,3)
EMG lab (1,2)	EMG lab (1,2)	EMG lab (1,2)	EMG lab (1,2)	EMG lab (1,2)	EMG lab (1,2)	EMG lab (1,2)	EMG lab (1,2)	EMG lab (1,2)	EMG lab (1,2)	EMG lab (1,2)	EMG lab (1,2)
NMM hospital EMG and consults (1)	NMM hospital EMG and consults (1)	NMM hospital EMG and consults (1)	NMM hospital EMG and consults (1)	NMM hospital EMG and consults (1)	NMM hospital EMG and consults (1)	NMM hospital EMG and consults (1)	NMM hospital EMG and consults (1)	NMM hospital EMG and consults (1)	NMM hospital EMG and consults (1)	NMM hospital EMG and consults (1)	NMM hospital EMG and consults (1)
Muscle/ Nerve pathology lab (1)	Muscle/ Nerve pathology lab (1)	Muscle/ Nerve pathology lab (1)	Muscle/ Nerve pathology lab (1)	Muscle/ Nerve pathology lab (1)	Muscle/ Nerve pathology lab (1)	Muscle/ Nerve pathology lab (1)	Muscle/ Nerve pathology lab (1)	Muscle/ Nerve pathology lab (1)	Muscle/ Nerve pathology lab (1)	Muscle/ Nerve pathology lab (1)	Muscle/ Nerve pathology lab (1)

WEEKLY DIDACTIC AND CLINIC SCHEDULE

		Monday	Tuesday	Wednesday	Thursday	Friday
AM	AM	EMG at SHCNC (site 2)	Didactic Lectures	NMD clinic at UCD	Didactic Lectures/ Grand Rounds	NMD clinic at SHCNC (site 2)
	Alt.	Inpatient consult at UCD	Research/Elective time or Neurology ALS clinic at CPMC (site 3)	Inpatient consult at UCD Pathology Rounds	Pediatric NMD clinic at UCD NMD Restrictive Lung Disease Clinic at UCD	Post Polio or Neurology ALS clinics at UCD
PM	PM	EMG clinic at UCD	Neurology Myasthenia clinic at UCD	NMD clinic at UCD	Pediatric NMD clinic at UCD	EMG clinic at UCD
	Alt.		Neurology ALS clinic at CPMC (site 3)	Research/Elective time	Adult NMD clinic at UCD	

UCD: University of California Davis (training site 1)
 SHCNC: Shriners Hospitals for Children Northern California (training site 2)
 CPMC: California Pacific Medical Center (training site 3)
 EMG: Electromyography or electrodiagnostic clinic
 NMD: Neuromuscular disease
 ALS: Amyotrophic Lateral Sclerosis

LONGITUDINAL EXPERIENCES

Type Of Experience*	How Structured	Amount Of Time
Neuromuscular Medicine Clinic (various NMD Clinics)	Five to six half days per week (alternate weeks)	July - June
EMG lab	Two to three half days per week	July - June
Muscle/Nerve pathology lab	One conference per month	July - June
Didactics/Lectures/Research	One to Two half days per week	July - June
NMM hospital EMG and consultations	One to two half day per week and as needed	July - June
Research/Elective time	One half day per week	July - June

B. Seminars and Conferences

1. List didactic lectures and courses in neuromuscular medicine. Indicate with an asterisk which lectures are mandatory for Neuromuscular Medicine fellows.

Electrodiagnostic Medicine Topics	<u>Lecture/Course</u>	<u>Speaker/alternate</u>
	Basics of NCS & EMG/ Instrumentation *	Han/Davis/Kilmer
	Single Fiber EMG *	Han/Maselli
	Rep Stim & NMJunction Disorders *	Han/Kilmer
	Radiculopathy and plexopathy *	Kilmer/Davis/Han
	NCS & EMG in CTS *	Kilmer/Shin/Han
	Other special electrodiagnostic studies *	Han/McDonald
	Intraoperative Monitoring	McDonald
Neuromuscular Medicine Topics	Motor neuron diseases/ALS *	Carter/Miller/Oskarsson
	Spinal muscular atrophy *	McDonald/Han
	Floppy Infant	Chang/McDonald
	Post-polio/Aging *	Vandenakker
	Movement disorders/Ataxias	Wheelock
	Hereditary neuropathies *	Han/McDonald
	Acute & chronic acquired neuropathies *	Gorin/Han
	Metabolic/Toxic/Nutritional Neuropathies *	Gorin/Han
	Vasculitic Neuropathies	Richman/Kilmer
	Neuromuscular junction disorders *	Richman/Maselli/Han
	Myopathies *	Han/Richman
	Duchenne/Becker muscular dystrophies *	McDonald/Han
	Other Muscular Dystrophies *	Han/McDonald
	Myotonic Disorders *	McDonald/Han
	Metabolic and mitochondrial myopathies	Richman
Medical Misc.	Restrictive lung disease *	Bonekat/Benditt
	Genetics/genetic counseling *	Moghaddam/Boyd
	Muscle and Nerve Biopsy & Pathology *	Greco/Jin/Oskarsson/Rab
	Cardiac issues in Rehabilitation Medicine	Parrish/Choy
Gait, Orthotics, DME	Normal Gait & Gait Evaluation	McDonald/Kilmer
	UE/LE & Spinal orthoses	McDonald/Vandenakker
	DME: WC, Lifts, Beds, Commodes, Shower/tub Rx	McDougal/Newman
Speech/ Nutrition	Swallowing evaluations	Lundstrom
	Nutritional assessments	Dieticians
Musculoskeletal	Orthopedic interventions in rehabilitation	Rab/Lerman
	Scoliosis	Gupta/Roberto
Chronic Pain	Psych approach to patient care	Wanlass
	Pain in NMD/ALS	Carter
Research	Research: critical literature review/design/analysis	Abresch/Henricson

2. List neuromuscular medicine clinical conferences. Indicate which conferences are mandatory for Neuromuscular Medicine fellows.

*The conferences are 1 hour long.	
Monthly muscle and nerve pathology conference	(mandatory)*
Monthly Physical Medicine and Rehabilitation Departmental Grand Rounds	(mandatory)*
Weekly neuromuscular and muscular dystrophy research conference	(mandatory)*
Monthly Journal club and research conference	(mandatory)*
Bi-weekly electrodiagnostic medicine conference	(mandatory)*
Weekly PM&R Departmental Resident Teaching conferences: 2-3 hrs	(optional, select topics)
Weekly Neurology Departmental Resident Teaching conferences: 2-3 hrs	(optional, select topics)
Monthly Neurology Departmental Grand Rounds: 1 hr	(optional, select topics)

3. List clinical courses, conferences and/or lectures given in NMM genetics, EMG, muscle/nerve pathology at each institution.

At the University of California Davis (Site #1):	
<u>Lecture/Course/Conference</u>	<u>Speaker/alternate</u>
<i>NMM Genetics:</i>	
A formal lecture on genetics of neuromuscular disorders	Moghaddam/Boyd
<u>Conferences with staff genetic counselor or geneticist on an as needed basis</u>	<u>Genetics Staff</u>
<i>Muscle/Nerve Pathology:</i>	
A formal lectures on muscle/nerve pathology and interpretation	Greco/Jin
Conferences to review patient muscle and nerve biopsies	Greco/Jin
<u>Opportunity to observe and participate in muscle/nerve biopsy procedures</u>	<u>Oskarsson/Rab</u>
<i>Lecture series in Electrodiagnostic Medicine:</i>	
Basics of NCS & EMG/ Instrumentation	Han/Davis/Kilmer
Single Fiber EMG	Han/Maselli
Repetitive stimulation test & neuromuscular junction disorders	Han/Kilmer
Radiculopathy and plexopathy evaluations	Kilmer/Davis/Han
NCS & EMG in carpal tunnel syndrome	Kilmer/Shin/Han
Other special electrodiagnostic studies	Han/McDonald
Intraoperative Monitoring	McDonald
Bi-weekly electrodiagnostic medicine conferences discussing various topics	Staff physicians
<u>Perform electrodiagnostic evaluation and studies with faculty supervision</u>	<u>Han/McDonald/Kilmer</u>
At the training site #2:	
Exposure to performing EMG and NCS studies on pediatric patients with neuromuscular diseases. This experience will be supervised by Dr. McDonald	

C. Clinical and Basic Science

1. Describe the manner in which the program ensures that fellows are provided with formal instruction in: (a) the rehabilitation aspects of neuromuscular disorders, (b) neuroanatomy, (c) neurophysiology, (d) neuropathology, and

Fellows are provided with formal instructions in (a) the rehabilitation aspects of neuromuscular disorders, (b) neuroanatomy, (c) neurophysiology, (d) neuropathology. The fellows will receive formal didactic lectures on the rehabilitation aspects of various neuromuscular disorders as part of the core lecture series for the neuromuscular fellows. The fellows will also receive basic neuroanatomy didactic lectures from the neuromuscular medicine, PM&R, and/or Neurology faculty as part of the core lecture series and as part of the EMG training. The fellows will also have opportunities to learn peripheral nerve and muscle anatomy through didactic lecture series and anatomy dissection laboratory sessions offered to the PM&R residents/fellows. Fellows will be provided with formal instruction in neurophysiology through didactic lecture series as part of EMG training. The fellows will also attend journal club and electrodiagnostic medicine conferences to further their learning in neurophysiology. There are neuropathology conferences that the fellow will attend in conjunction with neuropathologists, neurologists, and physiatrists specializing in neuromuscular diseases. The fellows will have didactic lectures on nerve and muscle biopsy as well as partake in microscope review of actual biopsy samples of patients from the clinic with muscle and neuropathologists.

2. Describe the manner in which the program ensures that fellows are provided opportunity to observe nerve conduction and EMG studies (including neuromuscular junction testing and safety issues related to diagnostic testing) and the pathology of nerve and muscle biopsy. Include a description of opportunities available for fellows to observe nerve and muscle biopsies.

Fellows rotate through the EMG clinics at both UC Davis (UCD) and at the Shriners Hospitals for Children at Northern California (SHCNC). Approximately 1300 EMG evaluations are performed at UCD per year, and approximately 50-70 additional pediatric EMGs are done at the SHCNC per year. Fellows will have the opportunity to observe and perform EMGs at both UCD and SHCNC with attending physician supervision. Fellows will have the opportunity to observe and perform repetitive nerve stimulation test and single fiber EMGs (SFEMG) for neuromuscular junction evaluation. Fellows will also have opportunities for inpatient EMG consultations, and perform EMGs in the intensive care unit (ICU) settings. Fellows will learn about safety issues related to EMG diagnostic testing through formal didactic lectures, and also during individualized teaching by the supervising attending physicians. Fellows receive formal didactic lectures on nerve and muscle biopsies, and interpretations by the neuropathologists. Fellows will have opportunity to observe nerve and muscle biopsies performed at UCD where approximately 80 muscle and 20 nerve biopsies are performed per year, and will be available to fellow to either observe or partake in the procedure.

3. Describe the manner in which the program ensures that fellows gain experience in the inpatient management and evaluation of patients presenting with acute and severe neuromuscular disorders.

UC Davis Medical Center and Children's Hospital is the only Level I Trauma Center and the only fully accredited children's hospital in the region, with a 528-bed tertiary care facility with over 34,000 admissions and 172,500 patient days annually. Fellows will have designated inpatient consultation duties at UC Davis Medical Center where both adult and pediatric patients with various neuromuscular diseases are cared for. Fellows will be contacted when a relevant inpatient consultation is requested. Fellows will work with either Neurology or PM&R attending physicians in the care of inpatients presenting with acute and severe neuromuscular disorders.

4. Describe the manner in which the program ensures that fellows are provided with experience in critical care management of patients with conditions such as myasthenic crisis and acute, severe Guillain-Barre syndrome.

As noted above, UC Davis Medical Center and Children's Hospital is a very active regional tertiary care facility. Fellows will have designated inpatient consultation duties at the UC Davis Medical Center and Children's Hospital where both adult and pediatric patients with various neuromuscular diseases are care for. Fellows will have the opportunity to partake in the management of critically ill patients in the ICU setting as a consultant with the supervision of either Neurology or PM&R faculty attending physicians. Fellows will also be contacted by the primary care team when a relevant inpatient consultation for conditions such as myasthenia crisis and Guillain-Barre syndrome is requested. Fellows will be exposed to critical care management of patients with conditions such as myasthenic crisis and acute, severe Guillain-Barre syndrome with neurology or PM&R attending physician supervision.

5. Describe the opportunities for fellows to gain experience in the outpatient evaluation and diagnosis of patients with non-emergent neuromuscular disease.

UC Davis Neuromuscular Diseases (NMD) Clinic is the only dedicated specialty clinic in the Sacramento region taking care of both adult and pediatric patients with various neuromuscular disorders. UC Davis NMD clinic has a long tradition of providing excellent care for patients with various neuromuscular disorders for more than 30 years, and currently follows more than 500 pediatric and adult patients with various NMDs. Fellows will see new patient consultations as well as provide longitudinal follow up care for patients in this busy neuromuscular specialty clinic setting with the supervision of neuromuscular medicine board certified PM&R and Neurology faculty attending physicians. In addition, fellows will have additional experience in outpatient evaluation and diagnosis of patients with non-emergent neuromuscular diseases through rotations at the participating clinical sites: California Pacific Medical Center and the Shriners Hospitals for Children Northern California. Specifically, at the California Pacific Medical Center, the purpose of the educational assignment is for the fellow to obtain additional experience in neuromuscular medicine, as well as in the care of patients with ALS and other motor neuron disease diagnoses. These goals will be met primarily through didactics and clinic experience at the ALS/MDA neuromuscular disease specialty clinic and its satellite clinics, with the supervision of a neuromuscular medicine attending/teaching physician. At the Shriners Hospital, the purpose of educational assignment is for the fellow to obtain additional experience in neuromuscular medicine, electrodiagnostic evaluation, as well as orthopedic management of pediatric patients with neuromuscular disorders. These goals will be met primarily through the responsibility of caring for children in the designated neuromuscular disease specialty clinic at the site, with the supervision and guidance of a neuromuscular medicine board certified attending/teaching physician.

6. Describe the opportunities available for fellows to gain experience in the ordering and clinical interpretation of electrophysiologic studies and nerve and muscle biopsies and their role in the diagnosis and management of patients.

UC Davis Neuromuscular Diseases (NMD) Clinic is also the regional MDA (Muscular Dystrophy Association) clinic where many patients with neuromuscular diseases, both adult and children, are followed. As the region's neuromuscular medicine specialty clinic, the UC Davis NMD clinic receives many new consultation referrals as well as requests for assistance in management of complicated neuromuscular medicine cases. Fellows also rotate through the Shriners Hospital for Children Northern California, where a dedicated pediatric neuromuscular medicine clinic exists, and the California Pacific Medical Center where the ALS/MDA (Amyotrophic Lateral Sclerosis Association and Muscular Dystrophy Association) centers exist. In this fertile clinical environment, fellows will have ample opportunities to order and perform electrophysiologic studies regarding various neuromuscular disorders evaluated during clinic, as well as during dedicated EMG rotations. Clinical interpretations of electrophysiologic studies will be formulated by the fellows with supervision by attending physicians. Fellows will also have opportunities to order nerve and muscle biopsies on patients seen during clinic visits. Fellows will learn about appropriate tests to order and their role in the diagnosis and management of patients through didactic lectures (as noted in the above didactic courses description) as well as through ongoing teaching sessions that occur with supervising faculty attendings during clinic. In addition, as noted above, fellows will be able to review results of ordered nerve and muscle biopsies with neuropathologists when appropriate in the course of diagnosis and management of patients seen during clinic.

7. Describe opportunities for fellows to gain experience in the ordering and clinical interpretation of diagnostic blood tests, including those involving molecular genetic testing.

The fellows will have ample experience in ordering laboratory tests, blood tests, and performing diagnostic tests when appropriate, in the course of a patient's diagnostic workup and medical follow ups. Fellows will learn about appropriate lab tests to order, when to order, and their role in the diagnosis and management of patients through didactic lectures (as noted in the above didactic courses description) as well as through ongoing teaching sessions that occur with supervising faculty attendings during clinic. Specifically, fellows will learn about appropriate diagnostic blood tests and molecular genetic tests to perform in the course of a medical workup, and will have ample opportunities to order these tests during the clinic with supervision of faculty attending physicians. Once the results are available, the fellow will review the results with the supervising attending physician and formulate a clinical interpretation that will guide in patient care.

8. Describe opportunities for fellows to consult with other medical professionals, including radiologists, rheumatologists, neurosurgeons, pathologists, or neuropathologists, and neurologists in the overall care and management of patients with neuromuscular disorders.

The fellows will have ample opportunities to consult and interact with various other medical professionals involved in the care of patients with neuromuscular disorders. The program incorporates into the fellow's education many expert specialists from different fields and allows the fellow many opportunities to interact with these medical professionals in the care of patients with neuromuscular disorders. The UC Davis NMD clinic is a multidisciplinary clinic composed of physiatrists, physical therapist, occupational therapist, social worker, clinic coordinator, and a nurse. Fellow will learn to function in the team as a member and as her/his experience increases in the course of the fellowship, as the team leader. Fellow will be mentored and supervised by the faculty attending physician in this education process. The clinic also works closely with cardiologists, pulmonologists, gastroenterologists, radiologists, rheumatologists, neurosurgeons, genetic counselors, nutritionists, speech therapists, and otolaryngologists. Fellows will have opportunities to interact and consult with these various specialists available through the institution. As part of the fellow's training, neurologists and neuropathologists are already members of core teaching faculty. Similar experience and exposure to other medical professionals will be available to fellows at the participating institutions. Fellows will have regular contact with these specialists and will receive didactic lectures as well as through ongoing teaching during clinic rotations.

9. Describe opportunities for fellows to evaluate and manage pediatric and adult patients with neuromuscular diseases in various settings, including subspecialty clinics and intensive care units.

As noted above, the Neuromuscular Medicine Fellowship Program at UC Davis provides extensive clinical opportunities for fellows to evaluate and manage both pediatric and adult patients with various neuromuscular diseases in various settings. Briefly, the program is based at UC Davis where a very active regional MDA neuromuscular diseases clinic resides taking care of both adult and pediatric populations. The fellow's training will also take place at the UC Davis Medical Center and Children's Hospital where both adult and pediatric inpatients are taken care of, and where critically ill neuromuscular patients are taken care of in the ICU. The fellows will have opportunities to interact and consult with all the medical and surgical specialists available at a regional tertiary care center. Fellows will also have opportunities to work with neurologists specializing in neuromuscular diseases at UC Davis and participating centers. This integrative educational program for the fellows will be important as both neurologists and physiatrists with subspecialty training in neuromuscular medicine will be taking care of patients with neuromuscular diseases. The program also provides the fellow with additional focused pediatric experience through clinic rotations at the Shriners Hospital for Children Northern California. This is a unique opportunity rarely found elsewhere. The fellows will also have opportunities to follow patients at nursing homes or subacute rehabilitation facilities when it's appropriate and available. Additional strengths of the program are opportunities for the fellows to work with national and international leaders in neuromuscular medicine and research fields at UC Davis and California Pacific Medical Center. For those fellows who desire it, there will also be opportunities available to follow patients in research settings as part of clinical studies.

D. Clinical Teaching - Inpatient

Provide the number of inpatients in each of the following diagnostic categories that were available in the program for the past year. Each patient should be listed only once in the most appropriate category.

	Institution 1		Institution 2		Institution 3		Institution 4	
	Adult	Child	Adult	Child	Adult	Child	Adult	Child
Myopathies	18	5	N/A	N/A	N/A	N/A	N/A	N/A
Neuropathies	12	2	N/A	N/A	N/A	N/A	N/A	N/A
NMJ disorders	5	3	N/A	N/A	N/A	N/A	N/A	N/A
Motor neuron diseases	3	2	N/A	N/A	N/A	N/A	N/A	N/A
NMM in intensive care units	10	7	N/A	N/A	N/A	N/A	N/A	N/A
Total	53	19	N/A	N/A	N/A	N/A	N/A	N/A

E. Consultation Diagnostic Categories

Provide the number of consults in each of the following diagnostic categories that were available in the program for the past year. Each patient should be listed only once in the most appropriate category.

Dates 7/1/07 to 6/30/08

Diagnostic Category	Institution 1		Institution 2		Institution 3		Institution 4	
	Adult	Child	Adult	Child	Adult	Child	Adult	Child
Myopathies	60	28	N/A	25	25	N/A	N/A	N/A
Neuropathies	69	31	N/A	44	40	N/A	N/A	N/A
NMJ disorders	60	12	N/A	4	10	N/A	N/A	N/A
Motor neuron diseases	25	7	N/A	8	50	N/A	N/A	N/A
NMM in intensive care units	9	4	N/A	N/A	N/A	N/A	N/A	N/A
Total	223	82	N/A	81	125	N/A	N/A	N/A

F. Outpatient Diagnostic Categories

Provide the number of outpatients in each of the following diagnostic categories that were available in the program for the past year. Each patient should be listed only once in the most appropriate category.

Dates 7/1/07 to 6/30/08

Diagnostic Category	Institution 1		Institution 2		Institution 3		Institution 4	
	Adult	Child	Adult	Child	Adult	Child	Adult	Child
Myopathies	370	350	N/A	123	110	N/A	N/A	N/A
Neuropathies	120	80	N/A	176	150	N/A	N/A	N/A
NMJ disorders	155	15	N/A	18	30	N/A	N/A	N/A
Motor neuron diseases	115	20	N/A	35	300	N/A	N/A	N/A
TOTAL	760	465	N/A	352	590	N/A	N/A	N/A

G. Educational Policies

1. Describe opportunities for fellows to be involved informally and formally in the teaching of neuromuscular medicine to other residents, medical students, nurses, and other health care personnel.

The fellow will have both formal and informal opportunities to teach other residents, medical students, and other health care personnel. The fellow will be expected to give two formal grand rounds type presentations during the year on a neuromuscular medicine related topic of choosing. These may include but not limited to interesting case presentations, review of the literature, and research projects in the neuromuscular medicine field. The departmental grand rounds and conferences are attended by the faculty, residents, medical students, and other health care providers. The fellow will have ample opportunity to teach neuromuscular medicine informally to residents, medical students, and other health care personnel in the neuromuscular diseases specialty clinic setting, and during inpatient consultation. The fellow will also have opportunity to teach residents and medical students during electrodiagnostic medicine (EMG) clinics.

2. Outline fellow responsibility for and frequency of night call at each institution. How does the program ensure that fellows are assigned in-house call no more often than every third night, averaged over a four week period?

The neuromuscular medicine fellow will not take in-house call at the institution/hospital. To provide fellows with continuity of patient care experiences throughout a 24 hour period, fellows will take at-home calls for a weeklong duration at a time approximately every six months, or two times per year. The program director will ensure that the frequency of at-home calls is not back to back and will also ensure that fellows taking at-home call will be provided with at least one day in seven (averaged over a four week period) completely free of all educational and clinical responsibilities.

4. How does the program ensure that fellows are provided with (a) at least one day in seven (averaged over a four week period) free of all program duties; and (b) a 10 hour rest period between daily duty assignments and after in-house call?

The outpatient clinics that the fellow attends will for the most part end in late afternoons, and does not run into evening times. The inpatient consultations will take place during the usual daytime working hours whenever possible. The fellow will have almost all weekends without clinical duties or calls, except those weeks when the fellow is on at-home calls. There will be no night calls and no clinical duties during night time expected for the fellow. If there happens to be an occasion where at least 10 hours of rest period between daily duty assignments is not available to the fellow, the fellow will report to the program director who will then relieve the fellow of all clinical duties and allow the fellow to return home for rest. The fellow will be made aware of this duty hour agreement and will be given a copy of the agreement at the start of the training program.

5. What provision is there to assure increasing patient responsibility and professional maturation of fellows?

The fellows will be provided with a written statement outlining the educational goals of the program with respect to knowledge, skills, and other attributes of fellows at each level of training and for each major rotation or other program assignment. Dr. Han will also provide explicit written descriptions of supervisory lines of responsibility for the care of patients. Such guidelines will be communicated to the new fellow by the program director at the beginning of the training program as well as to all members of the program staff (Appendix C). The program director will monitor fellow's progress on a regular basis with assistance of inputs/evaluations from the program staff. As the fellow progresses in knowledge, skills, and other professional attributes in taking care of patients with neuromuscular disorders, increasing responsibilities in patient care will be granted to the fellows to promote fellow's professional maturation. The program director will meet with the fellow quarterly and discuss fellow's evaluation and achievement of educational goals, and come to a mutually satisfactory level of increasing patient responsibility for the fellow. In general, the new fellows at the beginning of the training program will discuss all patient related issues with the supervising faculty attending. The faculty attending will provide close one-on-one supervision during patient evaluation including history, examination, review of tests, performance of diagnostic tests when appropriate, discussion of differential diagnosis, and care plan. The fellow will order all tests, make referrals, write prescriptions, and any other tasks related to patient care with the

supervision of attending physician. As the fellow advances in training, the fellow will have supervisory and teaching responsibilities over residents and medical students. As skill and experience grow, fellows are allowed increased responsibility in decision-making regarding care of their patients with review by the faculty. Near the end of the training, ideally the fellow should be able to, and will be allowed as appropriate, to make all decisions regarding medical care of neuromuscular patients with the supervision of the faculty attending physician, who will be available at all times for consultation and support.

6. Attach as an **Appendix C** the written statement of the supervisory lines of responsibility for residents involved in patient care.

SECTION 10. RESEARCH AND SCHOLARLY ACTIVITY

A. Fellow Research Projects

1. Describe the research projects, supervisors and their specialties, and the nature of fellow involvement in departmental research during the past five years. List by name those fellows who participated in such research and the duration of their assignment.

Fellow Name: Andrew J. Skalsky, MD

1. Research Project: Understanding Relationship Between Regional Body Composition and Quantitative Strength in Facioscapulohumeral Muscular Dystrophy (FSHD)
Supervisors: Craig M. McDonald, MD (PM&R); Jay J. Han, MD (PM&R)
Fellow Role: Andrew J. Skalsky, MD performed the primary data analysis. The fellow conducted literature review and prepared the manuscript for publication with supervision from Drs. McDonald and Han. The research effort took approximately one year.
2. Research Project: Understanding Relationship Between Regional Body Composition and Quantitative Strength in Duchenne muscular dystrophy (DMD)
Supervisors: Jay J. Han, MD (PM&R); Craig M. McDonald, MD (PM&R); Ted Abresch (PM&R)
Fellow Role: Andrew J. Skalsky, MD performed the primary data analysis. The fellow conducted literature review and prepared the manuscript for publication with supervision from Drs. McDonald and Han. The research effort took approximately one year.
3. Literature review: Convexity of Scoliosis Related Handedness in Identical Twin Boys With Duchenne's Muscular Dystrophy
Supervisors: Jay J. Han, MD (PM&R); Craig M. McDonald, MD (PM&R)
Fellow Role: Andrew J. Skalsky, MD assisted the resident physician in literature review and preparation of the manuscript for publication. The manuscript preparation took place during his fellowship year.

2. Provide a list of the publications of fellows from the section/division during the past 36 months.

Skalsky AJ, Abresch RT, Han JJ, Shin CS, McDonald CM. The Relationship Between Regional Body Composition and Quantitative Strength in Facioscapulohumeral Muscular Dystrophy (FSHD). *Neuromuscular Disorders*, 2008. Nov;18(11):873-80.

Werner BW, **Skalsky AJ**, McDonald CM, Han, JJ. Convexity of Scoliosis Related Handedness in Identical Twin Boys With Duchenne's Muscular Dystrophy: A Case Report. *Arch Phys Med Rehabil*. Arch Phys Med Rehabil. 2008 Oct;89(10):2021-4.

Skalsky AJ, Han JJ, Abresch RT, Shin CS, McDonald CM. Assessment of Regional Body Composition with Dual Energy X-Ray Absorptiometry in Duchenne Muscular Dystrophy: Correlation of Regional Lean Mass and Quantitative Strength. *Muscle and Nerve* (Accepted & In press).

B. Fellow Meeting Attendance

Comment on how many and how often fellows attend local, regional, and national neuromuscular related meetings. Provide a list of meetings that fellows have attended over the past three years, showing the fellows by name.

Fellows are encouraged to submit poster or podium presentations and abstracts to neuromuscular medicine related meetings. The fellowship program and the sponsoring department provide funding for the fellow's travel and cost of attending one national meeting per year. The fellow may choose to attend more than one meeting per year either local, regional, or national.

Fellow Name: Andrew J. Skalsky, MD

Year: 2007-2008

1. Association of Academic Physiatrists (AAP) Annual Meeting, San Juan, Puerto Rico, April 2007, Poster, Body composition assessed with regional dual energy x-ray absorptiometry (DEXA) in Duchenne muscular dystrophy
2. Association of Academic Physiatrists (AAP), Annual Meeting, Anaheim, CA Feb 2008
3. New Directions in Biology and Disease of Skeletal Muscle, New Orleans, April 2008, Poster, Regional lean tissue mass by DEXA and quantitative muscle strength in Facioscapulohumeral muscular dystrophy (FSHD)

Fellow Name: Nanette Joyce, DO

Year: 2008-2009

1. AANEM annual meeting, Providence, RI, Sept 2008
2. 2008 AOA Annual Meeting Lecture Presentations, Motor Neuron Diseases
3. Muscular Dystrophy Association Director's meeting, Jan 2009

SECTION 11. EVALUATION

A. Fellow Evaluation

1. Describe the system of formative evaluation of fellows. How often does it occur?

The program faculty evaluates the fellows every 6 months using the 360 global evaluation to assess knowledge, skills, and professional growth of the fellows, and quarterly with mini-CEX and record review. The faculty also conducts a mock oral exam annually and will review the fellow's Neuromuscular SAE test scores. Administrative staff, ancillary health professionals and patients are also asked to evaluate the fellows every 6 months using the global 360 evaluation. The program director reviews all the evaluations as well as test scores, attendance and compliance with required courses and medical records and compiles a yearly assessment of the six core competencies on the ABPMR evaluation form. The fellow's progress towards achieving the six core competencies will also be reviewed. Specifically, 1) Patient Care competency will be evaluated by: Global eval, mini-CEX, record review; 2) Medical Knowledge by: Global eval, mini-CEX, oral boards, SAE; 3) Practice Based Learning and Improvement by: Global eval, oral exam, record review; 4) Interpersonal and Communication Skills by: Global eval, mini-CEX, formal presentations, oral exam; 5) Professionalism by: Global eval, monitoring of medical records completion, attendance; 6) Systems-Based Practice by: Global eval, mini-CEX, oral boards. All the evaluations will be reviewed with the fellow, a signed and the final copy placed in their individual files. At the completion of fellowship training, all these evaluations are compiled and if all competencies are met, the fellow is deemed competent to practice Neuromuscular Medicine independently.

2. Does the faculty review a representative sample of fellows' written patient records?YES (X) NO ()
3. Does the faculty provide feedback to fellows on audits of their written patient records? ...YES (X) NO ()
4. Fellow Feedback and Records: Describe how and by whom feedback to fellows is provided and what remedial actions are taken in cases of deficiency. What kind of records of fellow evaluations does the program maintain?

Feedback to fellows will be provided by the program director at formal one-on-one review meetings semiannually. The program director will review the fellow's global 360 evaluation as well as the mini-CEX and medical record reviews. The program director will also review attendance and compliance with required courses and medical record keeping. The program director will summarize the evaluations and review the results with the fellow during a formal evaluation semi-annually. The quarterly mini-CEX evaluations and record review as well as the mock oral board evaluations will be discussed immediately upon completion with the fellow. The fellow's progress towards achieving the six core competencies will also be reviewed. After the review of the fellow's performance and progress, signed and the final copies will be placed in their individual files. If remedial action, additional experience or counseling is indicated, it is initiated as soon as the need is recognized. Goals for improvement and a schedule of more frequent evaluations are established and discussed with the fellow by the program director. Unsatisfactory performance on a rotation will be reported by the faculty to the program director and will be immediately addressed and reviewed with the fellow. Assistance will be given in directed study, remedial reading, or counseling regarding expected behaviors and attitudes. Often intervention can be initiated early and the objectives of the rotation, course, or clinic experience successfully completed. The fellow's performance is closely monitored on subsequent rotations and months. If found unsatisfactory, that portion of training will be repeated. Any special concerns/issues will be followed up by conferences between the program director and the faculty. The program will maintain all fellow evaluation records including global 360 evaluations, mini-CEX, records review, mock oral examination review, and neuromuscular medicine SAE test scores. Failure to meet expected performance standards, or failure to make academic progress, will result in appropriate corrective action as described in the University Resident and Medical Staff Personnel Policy #430.

5. Impaired Fellows: Describe the process used by the program to deal with impaired fellows?

The program policies and process regarding impaired fellows (#500 and 510) are found in the institutional UC DHS Resident and Clinical Fellow Medical Staff Personnel Policy manual that is distributed to all

fellows at the beginning of the training. In summary: the University will provide special assistance to fellows who become disabled when such disabilities substantially limit their performance of assigned clinical or didactic activities related to their training. This assistance will include information about vocational rehabilitation services and reasonable accommodation. A fellow who becomes disabled will be informed of the availability of vocational rehabilitation services as soon as such services are appropriate. The Human Resources Administrator will assure that the position held at the onset of the illness or injury, if still available, is analyzed to identify essential functions (critical and important tasks) and conditions of the work environment to aid in determining if reasonable accommodation can be made. The fellow is responsible for providing medical documentation to assist in understanding the nature of any restrictions due to a disability. Such a statement will relate specifically to the job analysis information provided by the Human Resources Administrator and will be subject to confirmation by a University-appointed physician. In regards to physical impairment and substance abuse issues, the training program policy follows that as found in the UCDHS Resident and Clinical Fellow Medical Staff Personnel Policy manual (#510): The Medical Staff Health Committee is comprised of at least five members of the Medical Staff. The Committee educates members of the Medical Staff about physician health, well-being and impairment; about appropriate responses to different levels and kinds of distress and impairment; and about appropriate resources for prevention, treatment, and rehabilitation. The Committee shall serve as a resource where information and concerns about the health of a physician can be referred for confidential consideration. The Committee provides advise, recommendations, and assistance to individual physicians and to groups or committees who request assistance or recommendations.

6. Fellow Stress: How does the does the program monitor resident stress, provide counseling and support services to residents?

Fellow stress is monitored informally during day-to-day performance and formally during meetings with the program director. There is an open door policy for the program director and fellows are encouraged to take advantage of this. The fellows also have direct access to a clinical psychologist through the GME office and other resources through the Academic and Staff Assistance Program (ASAP) program. Each month the program director will meet with the fellow informally to discuss issues of importance to the fellow, and formally during the quarterly evaluation meetings.

7. Moonlighting Policies: Describe the policies on fellow moonlighting; explain whether the policies are written and distributed to all fellows; and describe how the program director monitors the effects of outside activities, including moonlighting, on the training program. (Be prepared to provide documentation to the site visitor.)

The program policies regarding moonlighting are found in the UCDHS Resident and Clinical Fellow Medical Staff manual (#310) that is distributed to all fellows at the beginning of the training. Only licensed physicians may moonlight with prior approval of the program director. In general, fellows wishing to engage in moonlighting outside of UCDHS must obtain prior written approval of the program director, and are encouraged to discuss their reasons for seeking this approval. Fellows are generally expected to refrain from moonlighting. The training program director may grant or deny permission for external moonlighting after considering 1) the reasons for seeking approval presented by the fellow; 2) the impact of such employment on the fellow's ability to effectively carry out assigned clinical and educational responsibilities; and 3) the impact on the department's ability to provide safe, effective patient care. A completed written request detailing the description of the moonlighting activity including name of the facility/clinic/hospital/company, contact person, location, contact phone number, description of work, and work hours must be completed and submitted to the program director for approval. A copy will be kept in the fellow's file. Moonlighting must not interfere with normal fellow duties, as well as the goals and objectives of the training program. For the fellows who moonlight, the program director will require weekly report of days and hours worked, and this will be kept in the fellow's file. The fellow will be evaluated regarding performance during the training program as previously detailed above.

8. Final Evaluation: Does the program have a final evaluation of the fellows? If so please describe how this evaluation is done and what the evaluation covers.

The program director reviews all the evaluations and compiles results of the six core competencies on the ABPMR final evaluation form. Based on the compiled results, it is determined whether the fellow is

able to practice neuromuscular medicine competently and independently without supervision. In addition, the fellow will be evaluated as to whether the fellow has achieved goals and objectives necessary to be a specialist in neuromuscular medicine, and this is indicated on the form. The form is then reviewed with the fellow, signed and the final copy placed in their individual files.

B. Faculty Evaluation

Describe the system by which the faculty is evaluated. Are written evaluations by fellows used in this process? If not, please explain.

The performance of the faculty will be evaluated yearly. The evaluation will include a review of the faculty member's teaching abilities, commitment to the educational program, clinical knowledge, and scholarly activities. In addition, written faculty evaluations will be done at the end of each year by the fellows. Results will be compiled with resident evaluations and comments summarized by the program coordinator. Only the compiled results will be shared with the program director, department chairman and the individual faculty member, to maintain anonymity.

C. Program Evaluation

Describe the system by which the program is evaluated. Are written evaluations by fellows used in this process?.....YES (X) NO ()

If not, please explain.

D. Curriculum Evaluation and Development:

1. Is there a written curriculum for each learning experience of more than one month FTE? YES (X) NO ()
2. Describe the criteria used in assessing the extent to which these goals and objectives are met.

Achievement of educational goals and objectives will be measured by fellow's performance on the NMM SAE, EMG SAE, mock oral boards, EMG board examination, and the neuromuscular medicine subspecialty board examination. The curriculum is evaluated formally as part of the annual program evaluation. Evaluations from the fellow and teaching faculty will be reviewed to assess the extent to which the outlined goals and objectives are met.

3. Describe the frequency and the mechanism by which these are distributed to residents and faculty.

The written curriculum as well as the goals and objectives for each learning experience are distributed to the incoming fellow each year at the start of the program. A hardcopy will also be available to the fellow at anytime for review. The program director will also distribute these to the faculty and review with them any changes that have taken place.

4. Describe the process by which the teaching staff is organized and has regular, documented meetings to review program goals and objectives, the programs effectiveness in achieving them, and the needs of the fellows. Include the frequency of such meetings and frequency of fellow attendance

The teaching staff for the program is organized and recruited by the program director. All PM&R neuromuscular medicine faculty participate in the educational committee which meets as part of a documented monthly medical staff meeting at UC Davis and includes a standing report from the program director regarding relevant issues of the training program. As they are pertinent, feedback such as SAE and subspecialty test results, and institutional reviews are included in this report. During this time, the fellow program evaluation report, fellow education outcome measures, areas of strength and weakness, and any changes in education requirements are discussed. Education goals and objectives are reviewed and modified if necessary. The fellow may attend monthly medical staff meetings to provide feedback, review the fellow's needs, and as requested by the program director.

5. Describe the participation by residents and how written evaluation by the residents is utilized in this process.

The fellow will meet with the program director on a quarterly basis and review fellow needs and feedback for the program. The fellow will also fill out written faculty and rotation feedback throughout the training program. The program director will review the fellow's feedback and make any modifications to the program as needed.

6. Describe how the performance by graduates on the certifying examinations is used to evaluate the effectiveness of the program and to modify the goals and objectives?

Review of performance by graduates on the EMG board exam and the NMM certifying board exam will be used to assess the strong and weak areas of the program and determine what improvements are indicated. Adjustments in didactics and/or clinical experience are made as indicated. The program director will keep track of past graduate's performance and overall pass rates for the NMM certification examination.

APPENDIX A. Not Applicable.

APPENDIX B. GOALS AND OBJECTIVES

UC Davis PM&R Neuromuscular Medicine Program Manual (Statement of Goals and Objectives)

Mission Statement

The Neuromuscular Medicine Program at UC Davis Department of Physical Medicine and Rehabilitation strives to enhance the medical care, quality of life, and functional independence of persons with neuromuscular disorders through excellence in diagnostic and clinical care, training and education of fellows in the discipline of neuromuscular medicine, and through advancement of knowledge through research.

Overall Goals and Objectives

The Neuromuscular Fellowship Program at UC Davis is designed to provide advanced knowledge and experience in the subspecialty practice of neuromuscular medicine beyond that expected of a general physiatrist. The program will familiarize fellows with all aspects of neuromuscular clinical practice from diagnosis to rehabilitation and treatment strategies, including a broad clinical experience in both inpatient and outpatient settings of neuromuscular medicine, as well as clinical care of both pediatric and adult populations with a wide variety of neuromuscular disorders.

Fellows participating in the training program will acquire expertise in the evaluation and management of patients with various nerve and muscle pathology. This includes skill in the interview and examination of patients with neuromuscular complaints, knowledge of the appropriate laboratory investigations for diagnosis of neuromuscular disorders, knowledge of the differential diagnoses for the various clinical presentations of nerve and muscle problems and expertise in the management of these conditions.

Fellows will also receive training in the performance and interpretation of nerve and muscle biopsies; performance and interpretation of electrodiagnostic studies (including electromyography, nerve conduction studies and advanced electrodiagnostic studies relevant to neuromuscular medicine). Supporting services in pathology, radiology, and electrodiagnosis will be available to fellows for education and training.

Fellows participating in the program are expected to develop and demonstrate the competence, skills and knowledge necessary to diagnose and manage a variety of acute and chronic neuromuscular disorders affecting both pediatric and adult populations in various medical care settings. Fellows completing the training program will meet the eligibility requirement for the subspecialty board of Neuromuscular Medicine and the American Board of Electrodiagnostic Medicine.

In addition, all fellows are required to achieve competence in the six core competency areas as listed in the ACGME program requirements, *Patient care, Medical Knowledge, Practice-based learning and improvement, Interpersonal and communication skills, Professionalism, Systems-based practice* (specific goals and objectives listed below in detail) to the level expected of a new practitioner with subspecialty expertise in neuromuscular medicine.

The program additionally provides a research and education component that emphasizes scholarship and original contributions to the field of neuromuscular medicine while reinforcing publication and presentation skills. The fellowship program also encourages the fellows to develop teaching and professional leadership skills necessary to promote team efforts in delivery of comprehensive, quality patient care to persons with neuromuscular disorders. The training program aims to produce high caliber neuromuscular medicine specialists who will educate other physicians (including internists, family practitioners, residents, and other neuromuscular subspecialists), other healthcare personnel, and the public about neuromuscular disorders.

Program Organization and Administration

The fellowship will be offered under the auspices of the Department of PM&R with additional close collaboration with the Departments of Neurology, Pathology, and Genetics at UC Davis and the Forbes Norris MDA/ALS Research Center at California Pacific Medical Center (CPMC). Additional opportunities at Shriners Hospital for Children Northern California (SHCNC) will enhance the pediatric neuromuscular medicine training. Fellows will be under the general direction of the UC Davis Graduate Medical Education Committee's and the Department of PM&R's Medical Staff Policy and Procedure Manual.

Fellow Eligibility Criteria

The Neuromuscular Medicine fellow must have successfully completed a residency program in PM&R or neurology accredited by the ACGME or the Royal College of Physicians and Surgeons.

Timetable for Training

The neuromuscular medicine fellowship program is 1 year long. Fellows who are interested in additional training in clinical research methods are encouraged to pursue an additional year of non-ACGME accredited training.

Program Curriculum:

a) Format

Clinical experience in which fellow develops and executes a plan of evaluation and treatment, including the appropriate technical skills, under a close supervision by an attending physician with specialty training in neuromuscular medicine. Clinical experience will be comprised of various outpatient clinics (pediatric and adult neuromuscular disorders clinic, EMG clinic) and inpatient consultation duties. In addition, fellow education will be complemented by a curriculum of formal didactics with basic and advanced knowledge/concepts important for practice of neuromuscular medicine. The didactic component will be comprised of both formal and informal lecture, workshop, and conference formats.

b) Clinic rotations and sites

Adult Neuromuscular Disease Clinics

- Multidisciplinary General Adult Neuromuscular Disease Clinic at UC Davis
- Multidisciplinary ALS, Forbes Norris MDA/ALS Research Center Clinic at CPMC*
- Neuromuscular Junction and Myasthenia Clinic at UC Davis
- ALS clinic at UC Davis
- Post Polio Clinic at UC Davis

Pediatric Neuromuscular Disease Clinics

- Multidisciplinary Pediatric Neuromuscular Disease Clinic at UC Davis
- Duchenne/Becker Muscular Dystrophy Clinic at UC Davis
- Multidisciplinary Neuromuscular Disease Clinic at SHCNC*

Neuromuscular Disease Consultant Clinics

- Neuromuscular Restrictive Lung Disease Clinic at UC Davis
- Neuromuscular pathology conferences at UC Davis

Neuromuscular Electrodiagnostic Clinics

- Pediatric Neuromuscular Electrodiagnosis Clinic at SHCNC*
- Electrodiagnostic Laboratory at UC Davis

Neuromuscular Inpatient and ICU consultation

- Neuromuscular Inpatient and ICU consultation at UC Davis Medical Center and Children's Hospital

* CPMC: California Pacific Medical Center; SHCNC: Shriners Hospital for Children Northern California

c) Didactics

Various lectures and conferences will take place during the year to provide both basic science and advanced clinical topics relevant to neuromuscular medicine including: neuroanatomy, neurophysiology, neuropathology, muscle pathology, genetic bases for neuromuscular diseases, genetic tests, electrodiagnosis, and various medical and rehabilitative issues in neuromuscular medicine.

- Weekly neuromuscular and muscular dystrophy conference
- Weekly PM&R Departmental Resident Teaching conferences
- Bi-weekly electrodiagnostic medicine conference
- Monthly muscle and nerve pathology conference
- Monthly PM&R Departmental Grand Rounds
- Monthly Journal club and research conference
- Monthly Neurology Departmental Grand Rounds

c) Goals & Objectives

General Core Competencies

Patient Care:

Goals:

1. Fellows are expected to provide patient care that is compassionate, appropriate, and effective for the promotion of health, prevention of illness, treatment of disease, and at the end of life.

Objectives:

1. Gather accurate and essential information from all sources including medical interviews, physical examination, medical records, and diagnostic/therapeutic procedures.
2. Make informed recommendations about preventive, diagnostic and therapeutic options, and interventions that are based on clinical judgment, scientific evidence, and patient preference.
3. Develop, negotiate, and implement effective patient management plans and integration of patient care.
4. Perform competently the diagnostic and therapeutic procedures considered essential to the practice of physical medicine and rehabilitation.
5. Exhibit Clinical Judgment. Clinical judgment is the process by which diagnostic and therapeutic decisions are made. Good clinical judgment encompasses integrating medical facts and clinical data, weighing alternatives, understanding the limitation of knowledge, and incorporating the consideration of cost awareness and risk-benefit ratio for the patient. It implies that the physician will be able to adapt to the scientific and technological changes in medicine as they occur.

Medical Knowledge:

Goals:

1. Fellows are expected to demonstrate knowledge of established and evolving biomedical, clinical, and social sciences, and the application of their knowledge to patient care and the education of others.
2. Knowledge includes both core and current knowledge and information required to evaluate and manage patients in the inpatient, ambulatory, and long-term care settings, and incorporates the application of this information to patient problems.
3. Specific medical knowledge and skill sets for the Neuromuscular Medicine fellow training is listed below in more detail.

Objectives:

1. Apply an open-minded, analytical approach to acquiring new knowledge.
2. Access and critically evaluate current medical information and scientific evidence.
3. Develop clinically applicable knowledge of the basic and clinical sciences that underlie the practice of physical medicine and rehabilitation.
4. Apply this knowledge to clinical problem-solving, clinical decision-making, and critical thinking.

Practice-Based Learning and Improvement:

Goals:

1. Fellows are expected to be able to use scientific evidence and methods to investigate, evaluate, and improve patient care practices.

Objectives:

1. Identify areas for improvement and implement strategies to enhance knowledge, skills, attitudes, and processes of care.

2. Analyze and evaluate practice experiences and implement strategies to continually improve the quality of patient practice.
3. Develop and maintain a willingness to learn from errors and use that knowledge to improve the system or processes of care.
4. Use information technology or other available methodologies to access and manage information, support patient care decisions, and enhance both patient and physician education.

Interpersonal and Communication Skills:

Goals:

1. Fellows are expected to demonstrate interpersonal and communication skills that enable them to establish and maintain professional relationships with patients, families, and other members of health care teams.
2. Fellows are expected to be proficient in presenting medical information in a clear and effective manner to professionals and patients in formal as well as informal settings.

Objectives:

1. Provide effective and professional consultation to other physicians and health care professionals and sustain therapeutic and ethically sound professional relationships with patients, their families, and colleagues.
2. Use effective listening, nonverbal, questioning, and narrative skills to communicate with patients and families.
3. Interact with consultants in a respectful, appropriate manner.
4. Maintain comprehensive, timely, and legible medical records.
5. Effectively present medical educational information in didactic lectures and grand rounds.

Professionalism:

Goals:

1. Fellows are expected to demonstrate behaviors that reflect a commitment to continuous professional development, ethical practice, an understanding and sensitivity to diversity.
2. Fellows will demonstrate a responsible attitude toward their patients, their profession, and society.

Objectives:

1. Demonstrate respect, compassion, integrity, and altruism in relationships with patients, families, and colleagues.
2. Demonstrate sensitivity and responsiveness to the gender, age, culture, religion, sexual preference, socioeconomic status, beliefs, behaviors, and disabilities of patients and professional colleagues.
3. Adhere to principles of confidentiality, scientific/academic integrity, and informed consent.
4. Recognize and identify deficiencies in peer performance

Systems-Based Practice:

Goals:

1. Fellows are expected to demonstrate both an understanding of the contexts and systems in which health care is provided and the ability to apply this knowledge to improve and optimize health care.

Objectives:

1. Understand, access, and utilize the resources, providers, and systems necessary to provide optimal care.

2. Understand the limitations and opportunities inherent in various practice types and delivery systems and develop strategies to optimize care for the individual patient.
3. Apply evidence-based, cost-conscious strategies to prevention, diagnosis, and disease management.
4. Collaborate with other members of the health care team to assist patients in dealing effectively with complex systems and to improve systematic processes of care.

Specific Educational Goals and Objectives

Motor Neuron Disease

Goals:

1. Understand the anatomic, physiologic, pathophysiologic and genetic basis for the various motor neuron diseases including acquired and hereditary motor neuron diseases.
2. Know the clinical features and differential diagnoses for the various motor neuron diseases affecting adult and pediatric populations.
3. Know the diagnostic and laboratory evaluation of patients with suspected motor neuron disease, including the use and limitations of electrodiagnosis, serologic, pathologic, radiologic, and molecular genetic testing for specific disorders.
4. Design an appropriate medical and rehabilitation care plan for a person with a specific motor neuron disease given the diagnosis, functional status, prognosis, and patient goals.
5. Design a medical and rehabilitation care plan for a person with a specific motor neuron disease, including aspects related to prevention and anticipation of common complications/comorbidity issues related to a specific diagnosis of motor neuron disease.
6. Effectively communicate with patients, family, caregivers, and health care professionals about all aspects of motor neuron disease to provide optimal care.
7. Keep up to date on latest research efforts and clinical trials in motor neuron diseases, and know the available resources.

Objectives:

1. Learn the anatomy, physiology, pathophysiology, and applicable genetic basis for various motor neuron diseases. Examples include but not limited to: sporadic and hereditary ALS, bulbar ALS, SMA types, Kennedy's disease, monomelic amyotrophy, poliomyelitis, and post-polio. Read about the various hereditary and acquired motor neuron diseases affecting pediatric and adult populations in textbooks, journals, and specialty resources.
2. Attend general adult and pediatric neuromuscular medicine clinics and the specific motor neuron disease focused clinics, as well as inpatient consultation service; and actively participate in the diagnosis and care of patients with various motor neuron diseases with the attending physician supervision.
3. Be able to formulate differential diagnoses for the various clinical presentations of motor neuron diseases. Refine knowledge and differential diagnosis skills as the fellow progresses in the training program.
4. Be able to independently develop a plan for diagnostic and laboratory evaluation of patients with suspected motor neuron disease. Know the use and limitations of electrodiagnosis, serologic, pathologic, and molecular genetic testing for specific disorders.
5. Read and review in detail about patients seen with diseases of the motor neuron, and understand diagnostic criteria and basic management approaches to specific motor neuron disease in both

inpatient and outpatient settings. Refine knowledge and medical/rehabilitation management skills as the fellow progresses in the training program with achievement of specific objectives below:

6. Be able to independently develop an appropriate medical and rehabilitation care plan considering the diagnosis, functional status, prognosis, and patient goals. Included in the care plan should be: available medication treatments if any, monitoring for treatment efficacy or potential side effects, appropriate therapies, timely and appropriate adaptive equipment/devices, and a follow up plan.
7. Be able to independently develop a medical and rehabilitation management plan for persons with a specific motor neuron disease, including aspects related to prevention and anticipation of common complications and comorbidity issues: swallowing and nutritional deficiencies, pulmonary complications and respiratory deficiency, scoliosis and other orthopedic issues, communication problems, pain, vocational, avocational, and psychosocial issues.
8. Be able to communicate effectively and knowledgeably with patients, family, caregivers, and other healthcare providers about all aspects of care regarding motor neuron diseases. Effectively communicate with various specialist consultants and coordinate a care plan to provide optimal care for persons with motor neuron diseases.
9. Keep up to date on latest research and clinical trials in motor neuron diseases through regular reading of specialty journals and other resources, as well as attending various neuromuscular lectures, research meetings, journal clubs, and conferences.

Myopathies

Goals:

1. Understand the anatomic, physiologic, pathophysiologic and genetic basis for the various muscle diseases including acquired and hereditary myopathies.
2. Know the clinical features and differential diagnoses for the various myopathies affecting adult and pediatric populations.
3. Know the diagnostic and laboratory evaluation of patients with suspected myopathies including the use and limitations of electrodiagnosis, serologic, pathologic, radiologic, and molecular genetic testing for specific disorders.
4. Design an appropriate medical and rehabilitation care plan for a person with a specific myopathy given the diagnosis, functional status, prognosis, and patient goals.
5. Design a medical and rehabilitation care plan for a person with a specific myopathy, including aspects related to prevention and anticipation of common complications/comorbidity issues related to a specific diagnosis of a myopathy.
6. Effectively communicate with patients, family, caregivers, and health care professionals about all aspects of a specific myopathy to provide optimal care.
7. Keep up to date on latest research efforts and clinical trials in myopathies, and know the available resources.

Objectives:

1. Learn the anatomy, physiology, pathophysiology, and applicable genetic basis for various primary muscle diseases. Examples include but not limited to various: congenital, metabolic, mitochondrial, distal, inflammatory, toxic, endocrine, infectious, granulomatous, critical illness myopathies, and the various muscular dystrophies. Read about the various hereditary and acquired myopathies affecting pediatric and adult populations in textbooks, journals, and specialty resources.
2. Attend general adult and pediatric neuromuscular medicine clinics and the specific muscle disease focused clinics, as well as inpatient consultation service; and actively participate in the diagnosis and care of patients with various muscle diseases with the attending physician supervision.

3. Be able to formulate differential diagnoses for the various clinical presentations of myopathies. Refine knowledge and differential diagnosis skills as the fellow progresses in the training program.
4. Be able to independently develop a plan for diagnostic and laboratory evaluation of patients with suspected myopathies. Know the use and limitations of electrodiagnosis, serologic, pathologic, and molecular genetic testing for specific disorders.
5. Read and review in detail about patients seen with myopathies, and understand diagnostic criteria and basic management approaches to a specific muscle disease in both inpatient and outpatient settings. Refine knowledge and medical/rehabilitation management skills as the fellow progresses in the training program with achievement of specific objectives below:
6. Be able to independently develop an appropriate medical and rehabilitation care plan considering the diagnosis, functional status, prognosis, and patient goals. Included in the care plan should be: available medication treatments if any, monitoring for treatment efficacy or potential side effects, appropriate therapies, timely and appropriate adaptive equipment/devices, and a follow up plan.
7. Be able to independently develop a medical and rehabilitation management plan for persons with a specific muscle disease, including aspects related to prevention and anticipation of common complications and comorbidity issues: swallowing and nutritional deficiencies, pulmonary complications and respiratory deficiency, cardiac complications, scoliosis and other orthopedic issues, communication problems, pain, vocational, avocational, and psychosocial issues.
8. Be able to communicate effectively and knowledgeably with patients, family, caregivers, and other healthcare providers about all aspects of care regarding myopathies. Effectively communicate with various specialist consultants and coordinate a care plan to provide optimal care for persons with muscle diseases.
9. Keep up to date on latest research and clinical trials in muscle diseases through regular reading of specialty journals and other resources, as well as attending various neuromuscular lectures, research meetings, journal clubs, and conferences.

Neuromuscular Transmission Disorders

Goals:

1. Understand the anatomic, physiologic, pathophysiologic and genetic basis for the various neuromuscular junction (NMJ) disorders including acquired and hereditary forms of neuromuscular transmission disorders.
2. Know the clinical features and differential diagnoses for the various NMJ disorders affecting adult and pediatric populations.
3. Know the diagnostic and laboratory evaluation of patients with suspected NMJ disorders including the use and limitations of electrodiagnosis, serologic, pathologic, and molecular genetic testing for specific disorders.
4. Design an appropriate medical and rehabilitation care plan for a person with a specific NMJ disorder given the diagnosis, acuteness of presentation, functional status, prognosis, and patient goals.
5. Design a medical and rehabilitation care plan for a person with a specific NMJ disorder, including aspects related to prevention and anticipation of common complications/comorbidity issues related to a specific diagnosis.
6. Effectively communicate with patients, family, caregivers, and health care professionals about all aspects of a specific NMJ disorder to provide optimal care.
7. Keep up to date on latest research efforts and clinical trials in NMJ disorder, and know the available resources.

Objectives:

1. Learn the anatomy, physiology, pathophysiology, and applicable genetic basis for various acquired and hereditary NMJ disorders. Examples include but not limited to various: autoimmune myasthenia gravis, neonatal MG, childhood MG, ocular MG, MuSK positive MG, botulism and toxin related neuromuscular transmission problems, LEMS, and various congenital myasthenic syndromes. Read about the various hereditary and acquired NMJ disorders affecting pediatric and adult populations in textbooks, journals, and specialty resources.
2. Attend general adult and pediatric neuromuscular medicine clinics and the specific neuromuscular junction and myasthenia gravis focused clinics, as well as inpatient consultation service; and actively participate in the diagnosis and care of patients with various neuromuscular transmission disorders with the attending physician supervision.
3. Be able to formulate differential diagnoses for the various clinical presentations of NMJ disorders. Refine knowledge and differential diagnosis skills as the fellow progresses in the training program.
4. Be able to independently develop a plan for diagnostic and laboratory evaluation of patients with suspected NMJ disorders. Know the use and limitations of electrodiagnosis, serologic, pathologic, and molecular genetic testing for specific disorders.
5. Read and review in detail about patients seen with NMJ disorders, and understand diagnostic criteria and basic management approaches to a specific disorder in both inpatient and outpatient settings. Refine knowledge and medical/rehabilitation management skills as the fellow progresses in the training program with achievement of specific objectives below:
6. Be able to independently develop an appropriate medical and rehabilitation care plan considering the diagnosis, functional status, prognosis, and patient goals. Included in the care plan should be: available medication treatments including IVIG and plasma exchange and immunomodulators, monitoring for treatment efficacy or potential side effects, appropriate therapies, timely and appropriate adaptive equipment/devices, and a follow up plan.
7. Be able to independently develop a medical and rehabilitation management plan for persons with a specific NMJ disorders, including aspects related to prevention and anticipation of common complications and comorbidity issues: myasthenic crisis, swallowing and nutritional deficiencies, pulmonary complications and respiratory deficiency, communication problems, pain, vocational, avocational, and psychosocial issues.
8. Be able to communicate effectively and knowledgeably with patients, family, caregivers, and other healthcare providers about all aspects of care regarding NMJ disorders. Effectively communicate with various specialist consultants and coordinate a care plan to provide optimal care for persons with NMJ disorders.
9. Keep up to date on latest research and clinical trials in NMJ disorders through regular reading of specialty journals and other resources, as well as attending various neuromuscular lectures, research meetings, journal clubs, and conferences.

Neuropathies

Goals:

1. Understand the anatomic, physiologic, pathophysiologic and genetic basis for the various nerve disorders.
2. Know the clinical features and differential diagnoses for the various nerve disorders affecting adult and pediatric populations.
3. Know the diagnostic and laboratory evaluation of patients with suspected nerve disorders including the use and limitations of electrodiagnosis, serologic, pathologic, radiologic, and molecular genetic testing for specific disorders.

4. Design an appropriate medical and rehabilitation care plan for a person with a specific nerve disorder given the diagnosis, acuteness of presentation, functional status, prognosis, and patient goals.
5. Design a medical and rehabilitation care plan for a person with a specific nerve disorder, including aspects related to prevention and anticipation of common complications/comorbidity issues related to a specific diagnosis.
6. Effectively communicate with patients, family, caregivers, and health care professionals about all aspects of a specific nerve disorder to provide optimal care.
7. Keep up to date on latest research efforts and clinical trials in nerve disorders, and know the available resources.

Objectives:

1. Learn the anatomy, physiology, pathophysiology, and applicable genetic basis for various acquired and hereditary nerve disorders. Examples include but not limited to various: mononeuropathies, peripheral neuropathies, radiculopathies, plexopathies, small fiber neuropathies, immune neuropathies, infectious and inflammatory neuropathies, neuropathies associated with systemic illness, critical illness neuropathy, and hereditary neuropathies. Read about the various hereditary and acquired neuropathies affecting pediatric and adult populations in textbooks, journals, and specialty resources.
2. Attend general adult and pediatric neuromuscular medicine clinics and the specific neuropathy focused clinics, as well as inpatient consultation service; and actively participate in the diagnosis and care of patients with various nerve disorders with the attending physician supervision.
3. Be able to formulate differential diagnoses for the various clinical presentations of neuropathies. Refine knowledge and differential diagnosis skills as the fellow progresses in the training program.
4. Be able to independently develop a plan for diagnostic and laboratory evaluation of patients with suspected nerve disorders and neuropathies. Know the use and limitations of electrodiagnosis, serologic, pathologic, and molecular genetic testing for specific disorders.
5. Read and review in detail about patients seen with neuropathies, and understand diagnostic criteria and basic management approaches to a specific disorder in both inpatient and outpatient settings. Refine knowledge and medical/rehabilitation management skills as the fellow progresses in the training program with achievement of specific objectives below:
6. Be able to independently develop an appropriate medical and rehabilitation care plan considering the diagnosis, functional status, prognosis, and patient goals. Included in the care plan should be: available treatments including medications, IVIG, plasma exchange and immunomodulators, monitoring for treatment efficacy or potential side effects, appropriate therapies, timely and appropriate adaptive equipment/devices, and a follow up plan.
7. Be able to independently develop a medical and rehabilitation management plan for persons with a specific nerve disorder, including aspects related to prevention and anticipation of common complications and comorbidity issues: acute weakness due to Guillain-Barre syndrome, dysphagia, nutritional deficiencies, pulmonary complications and respiratory deficiency, dysautonomia, communication problems, pain, vocational, avocational, and psychosocial issues.
8. Be able to communicate effectively and knowledgeably with patients, family, caregivers, and other healthcare providers about all aspects of care regarding neuropathies. Effectively communicate with various specialist consultants and coordinate a care plan to provide optimal care for persons with neuropathies.
9. Keep up to date on latest research and clinical trials in nerve disorders and neuropathies through regular reading of specialty journals and other resources, as well as attending various neuromuscular lectures, research meetings, journal clubs, and conferences.

Electrodiagnosis

Goals:

1. Learn the anatomy, physiology, and pathophysiology of peripheral nerves and muscles and how these can be assessed by electrodiagnostic testing.
2. Understand the instrumentation and techniques used for electrodiagnosis including potential technical difficulties and errors.
3. Know how to design an appropriate diagnostic study to evaluate a clinical question.
4. Know how to perform basic nerve conduction and EMG studies in adult and pediatric patients with suspected neuromuscular diagnosis, taking care to understand potential differences in performance of the tests and interpretation of the results.
5. Know how to perform advanced electrodiagnostic studies including a single fiber EMG, repetitive stimulation studies, cranial nerve studies, and electrodiagnostic evaluation of patients in the ICU and operating room settings.
6. Understand the implications and limitations of electrodiagnostic findings and know how to interpret results.

Objectives:

1. Learn electrode placements for common upper and lower extremity nerve conduction studies, and upper and lower extremity needle EMG screens. Read and review basic material on performance and interpretation of electrodiagnostic studies.
2. Understand EMG/NCS waveform analysis, be able to troubleshoot studies to differentiate pathologic from technical findings, and design and perform basic studies to answer the clinical question.
3. Be able to design and perform a study to differentiate a more complex clinical question, know the appropriate amount of study to be thorough yet not excessive, be able to complete an examination in a timely manner with a report that reflects the findings, and learn techniques for less common nerves and muscles.
4. Be able to design and perform an electrodiagnostic study in pediatric patients with suspected neuromuscular disorder in an efficient but thorough manner, and write a report that reflects the findings cognizant of particular issues surrounding performance of electrodiagnostic evaluation in pediatric population.
5. Observe and be able to perform advanced electrodiagnostic studies including single fiber EMG, repetitive stimulation studies, cranial nerve studies, and electrodiagnostic evaluations in the ICU and operating room settings. Read and review advanced topics in electrodiagnosis and minimonographs, and participate in EMG conferences. Estimated cumulative number of EMGs performed during a year is over 200.

Neuromuscular Pathology

Goals:

1. Understands the role of nerve or muscle biopsy in the clinical care of patients with neuromuscular diseases.
2. Understands how muscle and nerve biopsies are performed and processed, the indications for muscle and nerve biopsies, and how to choose sites for biopsy.
3. Can differentiate artifact from true pathologic findings and trouble-shoot potential problems in processing.
4. Knows which enzyme histochemical, immunostains, molecular genetic tests are useful in evaluating muscle and nerve biopsy specimens.

5. Is able to identify characteristic histopathologic changes of various myopathy and neuropathy.
6. Effectively communicate with neuropathologist about various tests performed on nerve or muscle biopsy.

Objectives:

1. Read about nerve and muscle biopsy and pathology encountered in neuromuscular medicine in textbooks, specialty journals, and education resources. Prepare for the monthly nerve and muscle pathology conferences by compiling and reading up on the cases to discuss during the conference.
2. Know the relevant and important clinical history for evaluating peripheral nerve and muscle biopsy.
3. Know the rationale for performing and the process involved in skeletal and peripheral nerve biopsies.
4. Know the basic techniques of preparing skeletal muscle and peripheral nerve biopsies for analysis including paraffin, frozen, teased fiber, EM and various histochemical and immunostains.
5. Understand the limitations of the muscle and nerve biopsy and be able to recognize artifact from true pathological findings.
6. Observe and/or participate in muscle and nerve biopsy procedures.
7. Know and be able to recognize characteristic histopathologic findings in nerve or muscle biopsies including: demyelination and axonal loss in nerve biopsy, degeneration and regeneration in muscle fibers, neurogenic and myopathic features in muscle biopsy, and features of vasculitis and/or inflammation in the nerve and muscle biopsies.
8. Know and be able to recognize the major histopathological findings in specific neuromuscular diseases, and know the differential diagnosis associated with these findings (e.g. mitochondrial, congenital, toxic neuropathies and myopathies, demyelinating neuropathies, inflammatory myopathies, metabolic myopathies, muscular dystrophies, and dystrophin related myopathies)

In summary, the overall educational experience and achievement of the stated educational goals and objectives will allow the fellow to develop and possess specialized knowledge in the science, clinical evaluation, and management of a wide range of diseases encountered in Neuromuscular Medicine. The training program will provide the fellow to achieve specific skills and knowledge: a) skills in interviewing and examining patients with neuromuscular diseases; b) knowledge of differential diagnosis for the various clinical presentations of neuromuscular problems; c) knowledge of appropriate investigations for diagnosis of neuromuscular disorders, including laboratory, pathologic, radiologic, molecular genetic, and electrodiagnostic-neurophysiologic testing; d) and the knowledge and skills to manage both pediatric and adult inpatients and outpatients with neuromuscular diseases.

APPENDIX C. STATEMENT OF SUPERVISORY LINES OF RESPONSIBILITY

All fellow's patient care interactions are under direct supervision of a faculty attending. On the inpatient consultation services, during EMG clinics, and in all outpatient clinics, therapeutic and diagnostic problems are reviewed and discussed with the attending physician and the plan of care developed together. As the fellows gain experience and confidence, more responsibility is expected of them.

The program director will monitor fellow's progress on a regular basis with assistance of inputs/evaluations from the program staff. As the fellow progresses in knowledge, skills, and other professional attributes in taking care of patients with neuromuscular disorders, increasing responsibilities in patient care will be granted to the fellows to promote fellow's professional maturation. The program director will meet with the fellow quarterly and discuss fellow's evaluation and achievement of educational goals and objectives, and come to a mutually satisfactory level of increasing patient responsibility for the fellow. In general, the new fellows at the beginning of the training program will discuss all patient related issues with the supervising faculty attending. The faculty attending will provide close one-on-one supervision during patient evaluation including history, examination, review of tests, performance of diagnostic tests when appropriate, discussion of differential diagnosis, and care plan. The fellow will order all tests, make referrals, write prescriptions, and any other tasks related to patient care with the supervision of an attending physician.

As the fellow advances in training, the fellow will have supervisory and teaching responsibilities over residents and medical students. As skill and experience grow, fellows are allowed increased responsibility in decision-making regarding care of their patients with review by the faculty attending physician. Near the end of the training, ideally the fellow should be able to, and will be allowed as appropriate, to make all decisions regarding medical care of neuromuscular patients with the supervision of the faculty attending physician.

Faculty physicians will also be available throughout the day for clinical emergencies whether they happen in the outpatient clinic, inpatient ward or therapy areas. All fellows will have pagers and will be called to the area to evaluate patients as necessary. Faculty attending physician will also be available by pager for consultation. The program director will serve as a backup when the attending physician for the rotation is not available. Emergencies are managed by the fellow with attending physician back-up. A full-time faculty member is on call 24 hours per day, seven days per week, available to fellows for their assistance in any clinical emergency, patient care crisis, or administrative problem. Again, the program director will serve as a backup when the attending physician for the rotation is not available.