# CURRICULUM VITAE

## Biographical Information


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## Education

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|---|---|
| 1978 | Dartmouth College, Hanover, New Hampshire, B.A.<br>(Summa Cum Laude, Highest Distinction in Biochemistry) |
| 1982 | University of Florida College of Medicine, Gainesville, Florida, M.D. (With Honors) |

## Postgraduate Training

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|---|---|
| 1982-1983 | Resident in Medicine, University of Iowa Hospitals and Clinics, Iowa City, Iowa |
| 1983-1986 | Resident in Neurology, University of Iowa Hospitals and Clinics, Iowa City, Iowa |
| 1990-1992 | Fellow in EMG and Neuromuscular Diseases, Departments of Neurology and Physical Medicine and Rehabilitation, University of Michigan Medical Center, Ann Arbor, Michigan |

## Academic Appointments

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|---|---|
| 1990-1992 | Lecturer in Neurology, University of Michigan Medical School, Ann Arbor, MI |
| 1992-1997 | Assistant Professor of Medicine, Division of Neurology, Penn State College of Medicine, Hershey, PA |
| 1997-2002 | Associate Professor of Medicine, Division of Neurology, Penn State College of Medicine, Hershey, PA |
| 1997- | Member, Graduate School Faculty, Penn State University, State College, Pennsylvania |
| 2000-2002 | Associate Professor, Department of Orthopaedics and Rehabilitation, Penn State College of Medicine, Hershey, PA |
| 2003-2004 | Interim Chair, Department of Neurology, Penn State College of Medicine, Hershey, PA |
| 2002- | Professor, Department of Neurology (formerly Division of Neurology) and Department of Orthopaedics and Rehabilitation, Penn State College of Medicine, Hershey, PA |

## Administrative Appointments

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|---|---|
| 1986-1988 | General Neurology Private Practice, Ithaca, NY |
| 1988-1990 | General Neurology Private Practice, Greenbelt, MD |
| 1996-2003 | Director, Clinical Neurophysiology Training Program, Penn State Milton S. Hershey Medical Center, Hershey, PA |

1992- Medical Director, Clinical Neurophysiology Laboratory and Neuromuscular Program, Penn State Milton S. Hershey Medical Center, Hershey, PA

1993- Director, Muscular Dystrophy Association Clinic, Penn State Milton S. Hershey Medical Center, Hershey, PA

1995- Director, Amyotrophic Lateral Sclerosis Center, Penn State Milton S. Hershey Medical Center, Hershey, PA

2006- Director, ALS Clinic, John P. Murtha Neuroscience and Pain Institute, Johnstown, PA.

**Membership in Professional Societies**

American Academy of Neurology (Fellow)
American Association of Electrodiagnostic Medicine (Fellow)
Peripheral Nerve Society
Central Pennsylvania Neurological Society
Pennsylvania Medical Society
American Neurological Association

**Licensure and Certification**

1989 Board Certification, American Board of Psychiatry and Neurology #31681

1989 Board Certification, American Board of Electrodiagnostic Medicine #0809

1992 Pennsylvania Medical License #MD-046572-L

1994 Board Certification, American Board of Psychiatry and Neurology: Added Qualifications in Clinical Neurophysiology, #0450. Recertification 2004-2014.

**Committees and Administrative Services: Penn State University and Hershey Medical Center**

1994-1998 Member, Rehabilitation Council

1998- Member, Committee for the Development of Guidelines for Treatment of Painful Diabetic Neuropathy

2001-2002 Member, Revenue Enhancement Committee

2002-2003 Co-chair, Neurosciences Advisory Committee

2004- Member, Department of Neurology Promotion and Tenure Committee

2005- Member, Department of Neurosurgery Promotion and Tenure Committee

2005-2006 Member, Department of Neurology Steering Committee

2006- Member, Penn State Hershey Medical Center Ethics Committee, including Brain Death Subcommittee

**Committees and Administrative Services: Regional and National**

1992-1994 Member, Training Program Committee, American Association of Electrodiagnostic Medicine

1993-2000 Training Program Liaison, American Association of Electrodiagnostic Medicine

1994- Examiner, American Board of Electrodiagnostic Medicine

1994-1996 Member, Workshop Committee, American Association of Electrodiagnostic Medicine

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| 1996- | Member, Advisory Board, ALS Association, Greater Philadelphia Chapter |
| 1998-2003 | Member, Program Committee, American Association of Electrodiagnostic Medicine |
| 1998- | Member, ALS Center Directors Group |
| 2000-2001 | Member, ALS Peer Workgroup on Excellence in End of Life Care |
| 2000-2004 | Member and Chair, Maintenance of Certification Committee, American Board of Electrodiagnostic Medicine |
| 2001- | Member, Medical/Scientific Advisory Board, Myasthenia Gravis Foundation of America |
| 2003-2004 | Member, Professional Practice Committee, American Association of Electrodiagnostic Medicine |
| 2004- | Chair, Publication Committee, ALS Research Group |
| 2004- | Member and site Primary Investigator, North East ALS Consortium |
| 2004-2006 | Member, Program Committee, American Association of Electrodiagnostic Medicine |
| 2004- | Member, Examination Committee, American Board of Electrodiagnostic Medicine |
| 2006- | Chair, Examination Committee, American Board of Electrodiagnostic Medicine |
| 2006-2007 | Member, Strategic Planning Committee, ALS Association |

**Teaching Activities: Pennsylvania State University and Hershey Medical Center**

*Yearly Lecture Responsibilities - Students*

- College of Medicine students, year 2: Clinical pathological correlations, Neuropathology – 2 lectures yearly on neuromuscular pathology
- College of Medicine students, year 2: Patients, Physicians and Society" PPS 724, Ethics and Professionalism Component – 1 lecture yearly on ALS
- College of Medicine students, year 2: Problem-based learning, Neural & Behavioral Science Block – 24 hours yearly as facilitator of small group
- Masters level Bioengineering course: Clinical Neurophysiology – 1 lecture yearly
- Biological Basis of Human Health and Disease (CMBIO 506 - PhD and MD/PhD): 1 lecture yearly

*Material Written for Student Courses*

- "Painless Arm Weakness in a 55-Year-Old Woman." Original Case for Problem-based learning, Neural & Behavioral Science Block. Co-authored with Stacey L. Clardy, PhD.

*Yearly Lecture Responsibilities - Residents:*

- Neurology Resident Lecture Series: Neuromuscular Diseases – 2 lectures yearly
- Internal Medicine Board Review course: Neuromuscular Diseases – 1 lecture yearly
- Basic Neuroscience Course for Neurology and Neurosurgery Residents – 1 lecture yearly
- Lecture Series for Clinical Neurophysiology and Neuromuscular Medicine fellows – 4 lectures yearly.

*Regular Neurology Resident Teaching Conferences*

- Muscle and Nerve Biopsy Review Conference (every 2 weeks)

- Morning report (weekly)

*Student Mentoring/Preceptorships*

- Preceptor, MD/PhD Clinical Exposure Program
  - 2003-2004: Stacey Grab
  - 2004-2005: Meredith Hannan
  - 2005-2006: Meredith Hannan, Ryan Mitchell
- Elements of Neuroscience: Clinical exposure of Neuroscience graduate students
  - 2006-2007: Colleen Henry
- Medical Student Research
  - Summer 2004: Jennifer Hespell
- Physician's assistant student preceptorship
  - 2006: Ryan Stoltzfus, Arcadia University

*Dissertation and Thesis Committees*

1999 Member, Doctoral Dissertation Committee, Heecheon You, Department of Industrial and Manufacturing Engineering, The Pennsylvania State University Graduate School: "The development of a risk assessment model for carpal tunnel syndrome."

2001 Member, Master's Thesis Committee, Raghu Kolluri, Graduate Program in Physiology, The Pennsylvania State University: "Acute quadriplegic myopathy and loss of myosin in ICU patients: cellular and molecular insight from a porcine model."

2001 Member, Doctoral Dissertation Committee, Virginia Murphy-Reiley, Department of Psychology, Philadelphia College of Osteopathic Medicine: "Social problem solving, relationship satisfaction, and spirituality as predictors of quality of life and psychological morbidity in caregivers of patients with amyotrophic lateral sclerosis."

2003 Member, Doctoral Dissertation Committee, Jessica Allen, Department of Psychology, Philadelphia College of Osteopathic Medicine: "Caregivers' relationship satisfaction and perception of competency as predictors of quality of life for ALS patients."

2004 Member, Doctoral Dissertation Committee, Krista Olex, Department of Psychology, Philadelphia College of Osteopathic Medicine: "Caregiving in amyotrophic lateral sclerosis: a proposed investigation of coping mechanisms and grief processes."

2005 Member, Doctoral Dissertation Committee, Beatrice Chakroborty, Department of Psychology, Philadelphia College of Osteopathic Medicine: "Resiliency factors: predictors of quality of life and psychological hardiness in spousal caregivers of patients with amyotrophic lateral sclerosis."

2007 Member, Doctoral Dissertation Committee, Diana McNeil, Department of Psychology, Philadelphia College of Osteopathic Medicine: "A qualitative study of health outcomes of spousal caregivers of patients diagnosed with amyotrophic lateral sclerosis."

2007 Member, Doctoral Dissertation Committee, Jason Duff, Department of Psychology, Philadelphia College of Osteopathic Medicine: "Does verbal communication impairment affect quality of life in amyotrophic lateral sclerosis patients?"

2007 Member, Doctoral Dissertation Committee, Ryan Mitchell, Penn State University (trainee of Dr. James Connor).

2007 Member, Doctoral Dissertation Committee, Colleen Henry, Penn State University (trainee of Dr. Robert Levenson).

2008 Member, Doctoral Dissertation Committee, Jenna Jebitsch, Department of Psychology, Philadelphia College of Osteopathic Medicine.

*Neurophysiology Fellowship Trainees*

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| 1994-1995 | Sanjeevi Tivakaran, MD |
| 1996-1997 | Raymond Reichwein, MD |
| 1997-1998 | Ziad Mahadeen, MD |
| 1998-1999 | Jason Stabley, DO |
| 1999-2000 | Timothy Sullivan, MD |
| 2002-2003 | B. Lee Peterlin, DO |
| 2003-2004 | Kevin Scott, MD |
| 2005-2006 | Justin Fisher, MD; Gary Thomas, MD |
| 2006-2007 | Daniel Chehebar, MD; Mamta Verma, MD |
| 2007-2008 | Aiesha Ahmed, MD |

**Honors and Awards**

1978 Phi Beta Kappa, Dartmouth College

1981 Alpha Omega Alpha, University of Florida College of Medicine

1996 Listing in The Best Doctors in America, Northeast Region, 1996-1997

1996- Listing in Who's Who in the East, America, and the World

2000 Accepted for Membership in the American Neurological Association

2004- Listing in Best Doctors in America

2007 Patient satisfaction 99th percentile nationwide

**Editorial Board**

Applied Neurology

**Ad Hoc Reviewer**

American Journal of Physical Medicine and Rehabilitation
Archives of Physical Medicine and Rehabilitation
CNS Drugs
Diabetes Care

Expert Review of Neurotherapeutics
Journal of Clinical Neuromuscular Disease
Muscle & Nerve
Neurology
Neurology Network Commentary

**Invited Presentations**

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| 11/11/92 | Parkinson's Disease and Alzheimer's Disease | Berwick Hospital, Berwick, PA |
| 4/14/93 | Acute and Chronic Demyelinating Polyneuropathy: Evaluation and Treatment | Central Pennsylvania Neurological Society MDA Conference, Grantville, PA |
| 4/19/93 | New Research in Muscular Dystrophy and ALS | International Association of Firefighters MDA Conference, Grantville, PA |
| 11/8/93 | Acute and Chronic Demyelinating Polyneuropathy: Evaluation and Treatment | Department of Neurology Conference, Geisinger Medical Center, Bloomsburg, PA |
| 2/15/94 | Approach to Polyneuropathy | Polyclinic Medical Center Grand Rounds Polyclinic Medical Center, Harrisburg, PA |
| 3/7/94 | CIDP and Guillain-Barré Syndrome | Allentown Area Neurologists, Allentown Hilton, Allentown, PA |
| 3/11/94 | Guillain-Barré Syndrome and Other Demyelinating Polyneuropathies | American Association of Neuroscience Nurses Hershey, PA |
| 3/29/94 | Chronic Inflammatory Demyelinating Polyradiculoneuropathy | Penn State – Lehigh Valley Neurology Conference, Plymouth Meeting, PA |
| 7/6/94 | Immunotherapy of Neuromuscular Diseases | Central Pennsylvania Neurological Society Hershey, PA |
| 10/11/94 | Neuromuscular Diseases | Department of Occupational Therapy Elizabethtown College, Elizabethtown, PA |
| 10/14/94 | Outpatient Approach to Neuromuscular Disease | Neuroscience Symposium Lehigh Valley Hospital, Allentown, PA |
| 3/22/95 | Intravenous Immunoglobulin in the Treatment of Neuromuscular Diseases | Quantum Health Resources, Holiday Inn Grantville, PA |
| 10/20/95 | ALS: An Overview | ALS Workshop Harrisburg Area Community College Harrisburg, PA |
| 11/17/95 | Parkinson's Disease, Other Movement and Dementia | Central Pennsylvania Psychiatric Society Harrisburg, PA |
| 11/21/95 | MDA-Sponsored Research | Muscular Dystrophy Association Support Group, Harrisburg, PA |
| 6/21/96 | Neuromuscular Disease and Respiratory Dysfunction | Pennsylvania Society for Respiratory care Camp Hill, PA |

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| 9/8/96 | Myotrophin in the Treatment of ALS | ALS Support Group, Hershey Medical Center, Hershey, PA |
| 10/17/96 | Update on ALS | Central Pennsylvania Neurological Society, Hershey, PA |
| 1/28/97 | Congenital Myasthenic Syndromes | Penn State – Lehigh Valley Neurology Conference, Shartlesville, PA |
| 3/6/97 | Diabetic Neuropathy | Polyclinic Hospital, Harrisburg, PA |
| 9/19/97 | Workshop on Motor Unit Number Estimation | American Association of Electrodiagnostic Medicine Annual Meeting, San Diego, CA |
| 10/3/97 | Amyotrophic Lateral Sclerosis | Department of Medicine Grand Rounds Geisinger Medical Center, Danville, PA |
| 1/7/98 | Evaluation of Peripheral Neuropathy | General Internal Medicine Faculty Conference, Hershey Medical Center, Hershey, PA |
| 3/20/98 | Entrapment Neuropathies | Williamsport Hospital Visiting Professor Program, Williamsport, PA |
| 9/18/98 | ALS: Overview and Symptom Management | ALS Association Symposium on Managing ALS, Pittston Township, PA |
| 9/17/99 | ALS: Medical Update and Symptom Management | ALS Association Symposium on Managing ALS, Reading, PA |
| 9/22/99 | Chronic Acquired Demyelinating Peripheral Neuropathies | Department of Neurology, University of Iowa, Iowa City, IA |
| 10/7/99 | Workshop on Motor Unit Number Estimations | American Association of Electrodiagnostic Medicine Annual Meeting, Vancouver, BC |
| 10/9/99 | Reproducibility of Motor Unit Number Estimation in Individual Subjects | American College of Osteopathic Neurologists Neurologists and Psychiatrist Annual Meeting |
| 1/20/00 | Localized Hypertrophy Neuropathy | Penn State – Lehigh Valley Neurology Conference, Shartlesville, PA |
| 3/24/00 | Amyotrophic Lateral Sclerosis (ALS): Current Concepts in Clinical Management | American Association of Neuroscience Nurses Annual Meeting, Hershey, PA |
| 5/6/00 | Variants of Guillain-Barré Syndrome | American Academy of Neurology Annual Meeting, San Diego, CA |
| 9/15/00-9/16/00 | Immunotherapy in Neuromuscular Diseases | American Association of Electrodiagnostic Medicine Annual Meeting, Philadelphia, PA |
| 9/29/00 | Case Studies in Peripheral Neuropathy | General Internal Medicine Faculty Conference Hershey Medical Center, Hershey, PA |
| 12/1/00 | Muscle Pain, Fatigue, Fasciculations, and HyperCKemia | Medical Staff Meeting Research Medical Center, Kansas City, MO |
| 12/2/00 | Myasthenia Gravis: Review and Update | Myasthenia Gravis Association, Kansas City, MO |

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| 1/21/01 | Myasthenia Gravis: Review and Update | Myasthenia Gravis Foundation of America Hershey Medical Center, Hershey, PA |
| 1/31/01 | Muscle Pain, Fatigue, Fasciculations and HyperCKemia | Visiting Professor, Department of Neurology University of Michigan |
| 4/7/01 | Peripheral Neuropathy 101: How Neurologists Classify and Evaluate Peripheral Neuropathies | Peripheral Neuropathy Symposium Lehigh Valley Hospital, Allentown, PA |
| 5/6/01 | Chronic Inflammatory Neuropathies | American Academy of Neurology Annual Meeting, Philadelphia, PA |
| 5/7/01 | A Case of Lifelong Weakness: In Unusual Diagnostic and Management Problems in Neuromuscular Disease | American Academy of Neurology Annual Meeting, Philadelphia, PA |
| 5/11/01 | Variants of Guillain-Barré Syndrome | American Academy of Neurology Annual Meeting, Philadelphia, PA |
| 9/21/01 | ALS: Medical Update and Symptom Management | Symposium on Managing ALS ALS Association, Wilkes-Barre, PA |
| 10/4/01 | Introduction to Immunotherapy | American Association of Electrodiagnostic Medicine Annual Meeting, Albuquerque, NM |
| 10/6/01 | Amyotrophic Lateral Sclerosis | American Association of Electrodiagnostic Medicine, Albuquerque, NM |
| 3/22/02 | Quality of Life in ALS | ALS Association Research Symposium, Philadelphia, PA |
| 4/15/02 | Variants of Guillain-Barré Syndrome | American Academy of Neurology Annual Meeting, Philadelphia, PA |
| 4/15/02 | A Case of Lifelong Weakness: In Unusual Diagnostic and Management Problems in Neuromuscular Disease | American Academy of Neurology Annual Meeting, Philadelphia, PA |
| 4/19/02 | Chronic Inflammatory Neuropathies | American Academy of Neurology Annual Meeting, Philadelphia, PA |
| 9/20/02 | ALS Update and Symptom Management | Symposium on Managing ALS ALS Association, Wilkes-Barre, PA |
| 9/25/02 | Demyelinating Polyneuropathies | Peripheral Neuropathy Course, Stony Brook University, Long Island, NY |
| 9/25/02 | Neuropathies Associated With Connective Tissue Disease | Peripheral Neuropathy Course, Stony Brook University, Long Island, NY |
| 10/11/02 | Amyotrophic Lateral Sclerosis | American Association of Electrodiagnostic Medicine, Toronto, Ontario, Canada |
| 10/12/02 | Amyotrophic Lateral Sclerosis | American Association of Electrodiagnostic Medicine, Toronto, Ontario, Canada |

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| 11/15/02 | Neuropathy in the Elderly | Geriatric Grand Rounds, Penn State Hershey Medical Center, Hershey, PA |
| 5/19/03 | ALS: Overview and Research Update | ALS Symposium, Harrisburg, PA |
| 5/28/03 | Neurological Evaluation; Neuromuscular Diseases | Internal Medicine Board Review Course, Hershey Medical Center, Hershey, PA |
| 9/5/03 | ALS Update | Department of Neurology Grand Rounds, Penn State University, Hershey, PA |
| 9/17/03 | Amyotrophic Lateral Sclerosis | American Association of Electrodiagnostic Medicine, San Francisco, CA |
| 9/18/03 | Immunotherapy in Neuromuscular Diseases | American Association of Electrodiagnostic Medicine Annual Meeting, San Francisco, CA |
| 11/7/03 | Quality of Life in ALS | ALS Research Symposium, Hershey, PA |
| 4/26/04 | A Case of Lower Extremity Weakness: In Unusual Diagnostic and Management Problems in Neuromuscular Disease | American Academy of Neurology Annual Meeting, San Francisco, CA |
| 9/19/04 | Quality of Life in Amyotrophic Lateral Sclerosis | 15th International Conference on Care of the Terminally Ill, Montreal, Quebec, Canada |
| 10/22/04 | ALS Research at Penn State Hershey Medical Center: Overview and Future Plans | ALS Research Symposium, Hershey, PA |
| 11/4/04 | Workshop on Quantitative Sensory Testing | American Association of Electrodiagnostic Medicine, Savannah, GA |
| 11/6/04 | Amyotrophic Lateral Sclerosis | American Association of Electrodiagnostic Medicine, Savannah, GA |
| 12/2/04 | Key Determinants of Quality of Life in ALS | 15th International Symposium on ALS/MND, Philadelphia, PA |
| 2/16/05 | Neurology | Pennsylvania Youth Apprenticeship Program, Hershey, PA |
| 2/18/05 | ALS Update | Department of Neurology Grand Rounds, Penn State University, Hershey, PA |
| 5/14/05 | Motor Neuron Disease | Neuromuscular Disease Symposium, Lehigh Valley Hospital, Allentown, PA |
| 9/8/05 | Measuring Quality of Life in ALS | 4th Annual Meeting, North East ALS Consortium, Boston, MA |
| 9/24/05 | Amyotrophic Lateral Sclerosis | American Association of Electrodiagnostic Medicine, Monterey, CA |
| 10/21/05 | Oxidative Stress/Drug Delivery in ALS | 3rd Annual ALS Research Symposium, Hershey, PA |

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| 10/21/05 | Measuring Quality of Life in Individuals with ALS | 3rd Annual ALS Research Symposium, Hershey, PA |
| 2/10/06 | ALS: New Concepts About an Old Disease | Department of Neurology Grand Rounds, Penn State University, Hershey, PA |
| 9/8/06 | A Multicenter Validation Study of a New ALS Quality of Life Instrument | 5th Annual Meeting, North East ALS Consortium, Boston, MA |
| 10/14/06 | MRI: A New Way to Look at ALS | American Association of Neuromuscular and Electrodiagnostic Medicine, Washington, DC |
| 10/20/06 | MRI and Cognitive Assessments in ALS: New Ways to Study an Old Disease | ALS Research Update, ALS Association Greater Phila Chapter, Philadelphia, PA |
| 11/5/06 | Quality of Life: What Does it Mean for Those With ALS? | ALS Research Symposium and Reception, ALS Association DC/MD/VA Chapter, Washington, DC |
| 1/10/07 | Care for Patients with ALS | Palliative Medicine Clinical Conference, Penn State University, Hershey, PA |
| 3/6/07 | Lou Gehrig's Disease: More Than Just Weakness | Mini-Medical School, Penn State College of Medicine, Hershey, PA |
| 4/13/07 | ALS – It's Not Just a Disorder of Motor Neurons | Department of Neurology Grand Rounds, Penn State University, Hershey, PA |
| 4/27/07 | Quality of life in ALS: What have we learned? Why are we studying this? | 4th Annual ALS Research Symposium, Hershey, PA |
| 4/27/07 | Clinical trials past and present | 4th Annual ALS Research Symposium, Hershey, PA |
| 6/12/07 | Language Syndromes and Lexical Access in ALS | 2nd International Research Workshop on Frontotemporal Dementia in ALS, London, Ontario, Canada |
| 6/16/07 | Lou Gehrig's Disease: An overview | Living With ALS 2007 Symposium, Pittsburgh, PA |
| 6/16/07 | ALS Research Summary: Frontotemporal Dementia and Clinical Trials | Living With ALS 2007 Symposium, Pittsburgh, PA |
| 9/28/07 | Measuring Quality of Life in ALS: A Web-Based Initiative | 6th Annual Meeting, North East ALS Consortium, Boston, MA |
| 10/18/07 | EDX Studies Generally are Helpful in the Evaluation of Patients with Weakness and Normal Neurological Examinations | 54th Annual Meeting, American Association of Neuromuscular and Electrodiagnostic Medicine, Phoenix, AZ |

**Courses/Sessions Chaired**

2007 Crossfire: Controversies in Neuromuscular and EDX Medicine. 54th Annual Meeting, American Association of Neuromuscular and Electrodiagnostic Medicine, Phoenix, AZ

2007 Palliative Care. 18th International Symposium on ALS/MND, Toronto, Ontario, Canada.

## Participation in Expert Workgroups, Panel Discussions by Invitation

1995 Participant in Panel Discussion, ALS Pathogenesis and Treatment Conference, ALS Association, Philadelphia, PA

1996 Participant in Panel Discussion, ALS Pathogenesis and Treatment Conference, ALS Association, Philadelphia, PA

2000 Participant in meeting of ALS Peer Workgroup on Excellence in End-of-Life Care

2007 Speaker, Second International Research Workshop on Frontotemporal Dementia in ALS, London, Ontario, Canada

## Other Professional Accomplishments

2007 Supervised, edited, and approved the production of a nerve conduction manual for our lab, to be used in training of technicians and physicians (residents and fellows), and to provide a compendium of the standard procedures used in our lab for performing nerve conduction studies.

2007 Supervised the purchase and installation of new software for the EMG lab which displays normal values for nerve conduction studies as the studies are performed, and in the reports. The goal is to facilitate the adoption of uniform normal values by all physicians in the EMG lab, familiarize the technicians with normal values, facilitate the education of our physician trainees (residents and fellows), and facilitate communication with our referring physicians.

## Funded Research

*Ongoing Research Support*

**The ALS Association** **2/1/2008-1/31/2009** **5% effort (no salary support)**
The Role of HFE Polymorphisms in ALS
Total award: $40,000
This is a collaborative effort with a basic science colleague to further explore the role of the hemochromatosis (HFE) gene in the etiopathogenesis of ALS.
Role: Co PI (with James Connor, PhD)

**The Judith & Jean Pape Adams Charitable Foundation** **1/1/2008-12/31/2008** **5% effort (no salary support)**
The Role of HFE Gene Polymorphisms in ALS
Total award: $140,770
This is a collaborative effort with a basic science colleague to further explore the role of the hemochromatosis (HFE) gene in the etiopathogenesis of ALS.
Role: Co-Investigator (PI James Connor, PhD)

**NIH (R01 NS045087-01), Univ, of Kentucky** **8/1/2004-11/30/2008** **2% effort**

Early Treatment of ALS With Nutrition and NIPPV
Total award: $183,445 ($129,649 direct costs)
This is a multicenter study. The objectives of this proposal are: 1) to develop and validate strategies to improve tolerability of noninvasive positive pressure ventilation (NIPPV) in patients with ALS; 2) to identify factory that influence acceptance of this treatment modality; 3) to evaluate measures of early respiratory dysfunction in ALS; 4) to develop and validate methods to determine energy balance in ALS.
Role: Principal Investigator at Penn State University College of Medicine
(Overall PI: Edward Kasarskis, M.D.)

**ALS Association** **10/01/01-ongoing**
Developing a Disease-Specific Tool to Assess Quality of Life in Amyotrophic Lateral Sclerosis
$28,028 + Private Donations
Principal Investigator

**Jacobus Pharmaceuticals, Inc.** **9/1/99 – ongoing**
Treatment of Congenital Myasthenia with 3,4-Diaminopyridine (3,4-DAP)
Sponsor supplies investigational drug (compassionate use)
Principal Investigator

**Jacobus Pharmaceuticals, Inc** **8/1/98 – ongoing**
Treatment of Lambert-Eaton Syndrome with 3,4-Diaminopyridine (3,4-DAP)
Sponsor supplies investigational drug (compassionate use)
Principal Investigator

*Ongoing Philanthropic Support*

**Harriett and Paul Campbell Fund for ALS Research** **10/4/04-ongoing**
at Penn State Milton S. Hershey Medical Center
Ongoing support of ALS research
$100,000 annually

**Zimmerman Family Love Fund** **7/1/03-ongoing**
Support of ALS Research at Penn State College of Medicine/MS Hershey Medical Center
$20,000 initial, plus approximately $10,000 annually

**ALS Association, Greater Philadelphia Chapter** **2/1/03-ongoing**
Support of ALS research
In excess of $100,000 annually

*Research Support Applications Approved*
**The ALS Association** **2/1/2008-1/31/2009** **5% effort**
The Role of HFE Polymorphisms in ALS.
Total award: $40,000
This is a study of the genetic analysis of polymorphisms of the hemochromatosis gene as they relate to amyotrophic lateral sclerosis.
Role: Co PI (with James Connor, PhD)

**CytRx** **Estimated to begin 4/1/2008** **2% effort**
A Multicenter, Double-Blind, Placebo-Controlled, Phase 2b Study to Investigate the Safety and Efficacy of Arimoclomol in Patients with Amyotrophic Lateral Sclerosis (ALS)
Total award at this site: To be determined
This is a double-blind, placebo-controlled, multicenter study of the efficacy of an inducer of heat-shock protein for the treatment of ALS.
Role: Principal investigator at Penn State University College of Medicine
(Overall PI: Merit Cudkowicz, MD)

**NIH, via Massachusetts General Hospital** **Estimated to begin 6/1/2008** **2% effort**
Pharmacokinetics, Safety and Efficacy of Ceftriaxone in Patients with ALS (a multicenter study)
Total award at this site: To be determined
This is a double-blind, placebo-controlled, multicenter study of the efficacy of Ceftriaxone for the treatment of ALS.
Role: Principal investigator at Penn State University College of Medicine
(Overall PI: Merit Cudkowicz, MD)

*Research Support Applications Pending*
None currently

*Completed Research Support*

**CytRx** **1/31/2006-1/31/2007** **2% effort**
A Multicenter , Dose Ranging Safety and Pharmacokinetics Study of Arimoclomol in Amyotrphic Lateral Sclerosis (ALS) – Open Label Extension
Total award at this site: $26,550 ($19,923 direct costs)
This is an open-label extension of a multicenter study to assess safety and tolerability of Arimoclomol for the treatment of patients with amyotrophic lateral sclerosis.
Role: Principal Investigator at Penn State University College of Medicine
(Overall PI: Merit Cudkowicz, M.D.)

**CytRx** **8/17/2005-8/16/2006** **2% effort**
A Multicenter , Dose Ranging Safety and Pharmacokinetics Study of Arimoclomol in Amyotrphic Lateral Sclerosis (ALS)
Total award at this site: $34,992 ($29,162 direct costs)

This is a multicenter study to assess safety and tolerability of Arimoclomol for the treatment of patients with amyotrophic lateral sclerosis.
Role: Principal Investigator at Penn State University College of Medicine
(Overall PI: Merit Cudkowicz, M.D.)

**Muscular Dystrophy Association** **7/1/2003-6/30/2006** **5% effort (no salary support)**
Genotyping Analysis for Hfe Mutations in Amyotrophic Lateral Sclerosis
$265,242

Co-Investigator (PI: James Connor, PhD)

**Indiana University School of Medicine 9/1/98 – 12/31/05**
A Registry of Arrhythmias in Myotonic Muscular Dystrophy
Ongoing payment for costs incurred
Principal Investigator at Penn State site

**Milton S. Hershey Neuromuscular Disease Research Support Grant 10/1/98-11/30/2005**
Ongoing support of neuromuscular research at Penn State Milton S. Hershey Medical Center
$15,000 annually

**Geisinger Clinic 3/1/2004-5/31/2005**
Characterization of Sarcoglycan Mutations in Limb-Girdle Muscular Dystrophy (LGMD) Patients
The objectives of this study are: 1) to screen limb-girdle muscular dystrophy patients for mutations in sarcoglycans in order to assess genotype-phenotype correlations; and 2) to identify patients or families who might potentially have mutations in novel genes that have not been characterized.
Total amount of award: $8,419
Role: Principal Investigator at Penn State Site 2% effort ($5,080)

**Allergan, Inc. 2/28/2003-12/31/2004**
Botulinum Toxin Injections to Decrease Sialorrhea in Patients with Amyotrophic Lateral Sclerosis : A Pilot Study
Sponsor supplies botulinum toxin for study
Principal Investigator

**Advanced Respiratory, Inc. 2/19/2003-12/31/2004**
Potential Clinical Efficacy of High Frequency Chest Wall Oscillation Administered Through Vest Device in Prolonging the Time Until Death or Tracheostomy in Patients with Amyotrophic Lateral Sclerosis
Sponsor supplies high-frequency chest wall oscillation device
Co-Investigator (PI: Robert Vender, MD)

**ALS Association 10/1/01 – 12/31/03**
A Disease-Specific Tool to Assess Quality of Life in ALS
$28,080
Principal Investigator

**Penn State Dean's Feasibility Grant 7/1/2002-6/30/2003**
Gene Profiling in ALS: A Targeted Assessment as a Diagnostic Tool and Means to Identify Novel Research Directions
$30,000
Co-Investigator (PI: James Connor, PhD)

**ALS Association 7/1/00 – 9/30/01**
Factors Which Affect Quality of Life in Caregivers of Patients with Amyotrophic Lateral Sclerosis
$14,000
Principal Investigator

**ALS Association** **2/1/99 – 1/31/00**
Measuring the Quality of Life in Patients with ALS – A Pilot Study
$18,000
Principal Investigator

**Abbot Laboratories** **4/19/00 – 12/1/01**
A Randomized, Double-Blind, Placebo-Controlled, Comparison of the Safety and Efficacy of the ABT-594 to Placebo in Subjects with Painful Diabetic Neuropathy
$43,595
Principal Investigator

**R.W. Johnson Pharmaceutical Research Institute** **12/9/00 – 12/1/01**
A Double-Blind, Placebo-Controlled, Parallel Group, Dose Ranging Study to Evaluate the Efficacy and Safety of Topiramate Versus Placebo in the Relief of Pain in Diabetic Peripheral Neuropathy
$45,719
Co-Investigator (PI: Milind Kothari, DO)

**Pro-Neuron, Inc** **11/7/97 – 6/30/99**
A Phase II, Multi-Center, Open Label, Clinical Trial to Assess the Safety and Efficacy of PN401 in Diabetic Neuropathy
$60,000
Principal Investigator

**Pfizer, Inc** **5/23/96 – 8/31/99**
A Multicenter, Double-Blind, Placebo-Controlled, Parallel-Group Study of the Effects of Oral Zopolrestat in Subjects with Peripheral Symmetrical Diabetic Polyneuropathy, Study #078-107-571
$360,673
Principal Investigator

**Cephalon, Inc** **10/28/96 – 12/31/1999**
A Treatment Protocol Using Myotrophin (human mescasermin [recombinant DNA origin]) Injections in Patients with Amyotrophic Lateral Sclerosis
Sponsor supplied investigational drug (compassionate use)
Principal Investigator

**Rhône-Poulenc Rorer Pharmaceuticals, Inc** **9/14/95 – 3/15/96**
Open-Label Trial of Rilutek (Riluzole) 50mg BID in the Treatment of Amyotrophic Lateral Sclerosis (ALS)
Sponsor supplied investigational drug prior to FDA approval (compassionate use)
Principal Investigator

**Dean's Feasibility Grant Program** **6/1/94 – 5/31/95**
Acetylcholine Receptor Induction Treatment in Myasthenia Gravis
$24,988
Co-Investigator (PI: Erich Leith, PhD)

**Sandoz Pharmaceuticals** **3/1/93 – 4/19/94**
Randomized Double-Blind Placebo-Controlled Trial of Sandoglobulin in the Treatment of Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)
$30.888
Principal Investigator

**Organon, Inc** **7/1/92 – 6/4/93**
A Randomized Multicenter Double-Blind Placebo-Controlled Dose Finding/Efficacy/Safety Study of ORG 2766 in the Prevention or Amelioration of Vincristine-Induced Neuropathies in Patients with Hodgkin's or Non-Hodgkin's Lymphoma, Study No. 002.006
$66,558
Principal Investigator

# PUBLICATIONS

## Articles in Peer-Reviewed Journals

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2. Simmons Z. Book Review: Clinical Electromyography, Second Edition. *Muscle Nerve* 1994;17:356-357.
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**Book Chapters**

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**Abstracts**

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