2011-2012
Summary of Scholarly Activities
Department of Neurology

I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS

Darbin O. The aging striatal dopamine function. Parkinsonism Relat Disord. 2012 Jun;18(5):426-32.

Eckstein C, Saidha S, Levy M. Differential diagnosis of central nervous system demyelination: beyond multiple sclerosis. J Neurol. 2012 May;259(5):801-16.

Eckstein C, Saidha S, Sotirchos E, Byraiah G, Seigo M, Stankiewicz A, Syc SB, Ford E, Sharma S, Calabresi PA, Pardo CA. Detection of clinical and subclinical retinal abnormalities in neurosarcoidosis with optical coherence tomography. J Neurol. 2012 Jan 4;259(7):1390-8.

Grigoryan M, Cordina SM, Khatri R, Hassan AE, Rodriguez GJ. Vessel occlusion using a single long oversized coil in vertebral artery dissection: a technical note. J Neurointerv Surg. 2012;Feb10. Available from: http://jnis.bmj.com/content/early/2012/02/09/neurintsurg-2011-010226.full.pdf+html

Ochoa J, Naritoku DK. Using a virtual training program to train community neurologists on EEG reading skills. Teach Learn Med. 2012;24(1):26-8.

Saidha S, Eckstein C, Calabresi PA. New and emerging disease modifying therapies for multiple sclerosis. Ann N Y Acad Sci. 2012 Jan;1247:117-37.

Saidha S, Sotirchos E, Eckstein C. Etiology of sarcoidosis: does infection play a role? Yale J Biol Med. 2012 Mar;85(1):133-41.

Saidha S, Syc SB, Durbin MK, Eckstein C, Oakley JD, Meyer SA, Conger A, Frohman TC, Newsome S, Ratchford JN, Calabresi PA. Visual dysfunction in multiple sclerosis correlates better with optical coherence tomography derived estimates of ganglion cell layer thickness than peripapillary retinal nerve fibre layer thickness. Mult Scler. 2011 Dec;17(12):1449-63.

Talnov AN, Isaeva E, Savotchenko AV, Dovgalets GV, Ochoa JG, Holmes GL, Isaev D. Electrolyte therapy reduces spike-and-wave discharges in the WAG/Rij rat model of absence epilepsy. Epilepsy Behav. 2012 Aug;24(4):399-402.

Zayek MM, Benjamin JT, Maertens P, Trimm RF, Lal CV, Eyal FG. Cerebellar hemorrhage: a major morbidity in extremely preterm infants. J Perinatol. 2012 Sep;32(9):699-704.

II. PUBLISHED ABSTRACTS

Beltran E, Bachelor A, Maertens P. Post neuroblastoma subacute hemiparesis in a toddler. J Child Neurol. 2012 Jul;27(7):962.

Eckstein C, Saidha S, Sotirchos E, Byraiah G, Syc S, Seigo M, Stankiewicz A, Ford E, Sharma S, Calabresi PA, Pardo-Villamizar C. Detection of clinical and subclinical retinal abnormalities in neurosarcoidosis with optical coherence tomography. American Academy of Neurology Annual Meeting; 2012 Apr 21-28; New Orleans, LA. Abstract no. S08.001. Available from: http://www.neurology.org/cgi/content/meeting_abstract/78/1_MeetingAbstracts/S08.001

Grant A, Loomba A, Maertens P. Teratogenicity of a single injection of methotrexate for previous ecoptic pregnancy. J Child Neurol. 2012 Jul;27(7):961-2.

Grover EH, Maertens P. Partial cortical resection in an infant with symptomatic intractable frontal lobe epilepsy. J Child Neurol. 2012 Jul;27(7):962.

Loomba A, Maertens P. A 12 year old female with measles-induced Guillain Barré Syndrome. J Investig Med. 2012 Feb;59(2):383. Abstract no 42.

Loomba A, Maertens P. Autonomic dysfunction as presenting sign and symptom of syringomyelia in a pediatric patient. J Investig Med. 2012 Jan;60(1):368. Abstract no 208.

Loomba A, Maertens P, Martinez J. Chromosomal defects as a cause of infantile spasm: what can we learn? J Child Neurol. 2012 Jul;27(7):961.

Loomba A, Maertens P. Pediatric idiopathic intracranial hypertension due to albuminocytologic dissociation and autoimmune disorder. J Investig Med. 2012 Jan;60(1):417-8. Abstract no 388.

Saidha S, Ratchford J, Sotirchos E, Eckstein C, Oakley J, Durbin M, Meyer S, Syc S, Seigo M, Newsome S, Balcer L, Frohman E, Calabresi P. Clinical and radiological disease activity is associated with accelerated rates of retinal ganglion cell layer degeneration in multiple sclerosis. American Academy of Neurology Annual Meeting; 2012 Apr 21-28; New Orleans, LA. Abstract no. S10.002. Available from: http://www.neurology.org/cgi/content/meeting_abstract/78/1_MeetingAbstracts/S10.002

Saidha S, Syc S, Eckstein C, Durbin M, Stankiewicz A, Seigo M, Ford E, Oakley J, Meyer S, Newsome S, Frohman E, Ratchford J, Calabresi P. Longitudinal retinal neuronal thinning occurs in multiple sclerosis and is associated with visual loss and disability progression. ECTRIMS; 2011 Oct 19-22; Amsterdam, The Netherlands.

Saidha S, Syc S, Eckstein C, Seigo M, Stankiewicz A, Ford E, Durbin M, Oakley J, Meyer S, Newsome S, Ratchford J, Frohman E, Calabresi P. Primary retinal neuronal mechanisms of pathology in multiple sclerosis: challenging a paradigm. ECTRIMS; 2011 Oct 19-22; Amsterdam, The Netherlands.

Sanghera MK, Darbin O, Alam M, Krauss JK, Friehs G, Jankovic J, Simpson RK, Grossman RG. Entropy measurements in pallidal neurons in dystonia and Parkinson's disease. 16th International Congress of Parkinson's Disease and Movement Disorders; 2012 Jun 17-21; Dublin, Ireland. Abstract no. 656. Available from: http://www.mdsabstracts.com/abstract.asp?MeetingID=787&id=99738

Sotirchos E, Seigo M, Babiarz A, Eckstein C, Syc S, Ford E, Newsome S, Ratchford J, Balcer L, Frohman E, Calabresi P, Saidha S. In-vivo assessment of retinal neuronal layers in multiple sclerosis with manual and automated optical coherence tomography segmentation techniques. American Academy of Neurology Annual Meeting; 2012 Apr 21-28; New Orleans, LA. Abstract no. S10.003. Available from: www.neurology.org/cgi/content/meeting_abstract/78/1_MeetingAbstracts/S10.003

Varela GP, Maertens P, Lee V. Incidence of congenital vascular malformations in neonates: a power doppler imaging prospective study. J Neuroimaging. 2012 Jan;22(1):104. Abstract no 51.

III. PUBLISHED BOOKS

IV. INVITED PRESENTATIONS

Bassam BA. Invited speaker. Neuromuscular weakness in the intensive care unit. American University of Beirut, Neurology Grand Rounds; 2011 Oct 12; Beirut, Lebanon.

Bassam BA. Invited speaker. Hereditary neuropathy update. Ochsner and LSU Neurology Grand Rounds; 2011 Nov 3; New Orleans, LA.

Bassam BA. Invited speaker. Approach to the patient with hereditary neuropathy. San Diego Neurological Society Meeting; 2012 Jun 21; San Diego, CA.

Cordina SM. Invited speaker. Induced hypertension in post thrombolytic patients. International Congress of Interventional Neurology; 2011 Oct 7; Minneapolis, MN.

Cordina SM. Invited speaker. Update on stroke treatment. 1st Annual Stroke Care Symposium; 2012 May 25; Biloxi, MS.

Cordina SM. Invited speaker. Women and stroke. University of South Alabama and American Heart Association: Go Red for Women Symposium; 2012 Feb 14; Mobile, AL.

Cordina SM. Invited speaker. Starting an endovascular practice in an academic setting. 2nd Annual International Congress of Interventional Neurology; 2012 Sep 7; Minneapolis, MN.

Naritoku D. Invited speaker. Grand Rounds, LSU Oschner; 2011 Oct 6; Baton Rouge, LA.

Naritoku D. Invited speaker. Epilepsy Education Program Mini Fellowship. Wake Forest University; 2011 Oct 17-20; Winston-Salem, NC.

V. NATIONAL PROFESSIONAL RECOGNITION

Bassam A. Bassam: Neuromuscular update committee member, American Association of Neuromuscular and Electrodiagnostic Medicine; Committee member and national board examination supervisor, American Board of Electrodiagnostic Medicine Examination; Member and Reviewer Network Subcommittee member, American Academy of Neurology Guidelines Reviewers; Ad Hoc Reviewer, *Muscle and Nerve Journal*, *Clinical Neuromuscular Journal* and *Headache Journal*; Grant reviewer panel member, FDA/Office of Orphan Products Development; Member at Large, Alabama Quality Assurance Foundation.

Steve M. Cordina: Member, American Heart Association; Member, American Stroke Association; Member, American Academy of Neurology; member, Society of Neurointerventional Surgery; Member, Society of Vascular and Interventional Neurology; Member, Neurocritical Care Society; Member, Medical Association of Malta.

Daniel D. Dees: Member, American Academy of Neurology; Member, Movement Disorders Society.

Christopher Eckstein: Member, American Academy of Neurology; Member, National Multiple Sclerosis Society; Member, Clinical Advisory Team Committee, National Multiple Sclerosis Society.

Paul Maertens: Editorial Board Member, *Journal of Neuroimaging*; Member, Examination Committee of the Society of Neuroimaging; Member, ASN Program Committee; Member, American Society of Neuroimaging; Member, Membership Committee, American Epilepsy Society; President, Southern Pediatric Neurology Society.

Dean K. Naritoku: Scientific Committee, American Epilepsy Society; Task Force on Brain Stimulation, American Epilepsy Society; Board Member, American Board of Clinical Pharmacology; Board Member, J. Kiffin Penry Minifellowship Program; Member, American Academy of Neurology, American Epilepsy Society, American Society of Clinical Pharmacology and Therapeutics. Best Doctors in America® 2007-2012; Editorial Board Member, *Neurology Research.*

Juan G Ochoa: Editorial Board Member, *Pediatric Neurology*; Epilepsy section member, American Academy of Neurology.

VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS

The Department of Neurology continued its growth during FY '12, with improved performance in education, research and clinical care. With the addition of two faculty members in July 2011, and another in July 2012, the Department now has tertiary programs in nearly every subspecialty in neurology.

The department continues its tradition of multidisciplinary program development, both in research and clinical areas, and has added several adjunct appointments in related neuroscience areas that both recognize and foster the adjunct appointments' contributions.

In the area of education, the 3rd year clerkship has been modified to bring direct interactivity between students and subspecialty cares. Students are directly involved in evaluation and observation of epilepsy patients in our monitoring unit, observe intracranial interventions for stroke, intracerebral aneurysms and AVMs, and participate in our subspecialty clinics for movement disorders and multiple sclerosis. Formal recognition of teaching excellence by the medical students is evidenced by two of our 6 faculty receiving the "Red Sash" award from the 2012 graduating class and both resident and faculty awards for Humanitarianism awarded to a neurology resident (Gore) and faculty (Eckstein). Enthusiasm for the clerkship is reflected in seven students in the rising senior class who have declared their interest in Neurology Residency training. A recent abstract on team based learning in neurology residency training was presented last spring at the American Academy of Neurology.

Over the last year, the Department of Neurology has launched and developed a Neuroscience Research Group at USA which has recruited several faculties from clinical and basic neurosciences. The research group meets monthly, and involves presentations by faculty and fosters interdisciplinary collaborations and research projects. These efforts have already resulted in the generation of several protocols that have generated modest internal funding. One protocol (Liu, Eckstein and Martino) involves collaboration between the USA Gait Lab, Neurosurgery and our multiple sclerosis program and will examine gait changes in persons with MS. This project has received funding from USACOM for a summer student to work on this project. Another protocol (Evans and Ochoa) involves collaboration between USA Speech Pathology and our epilepsy group, which will formally evaluate language disability before and after epilepsy surgery. This project has received a small interdisciplinary research award from USA. A major project is underway to examine nonlinear neuronal activity recorded from deep brain in patients with Parkinson's disease (Darbin). This is a multicenter study with collaboration from UAB and Scott and White University in Temple, TX.

It is anticipated that the information generated will provide important preliminary data for NIH funding, and will dovetail into our new DBS center that is expected to be online during FY 2013. Grants have been submitted for external funding to the American Heart Association, National MS Society and to NINDS but have not yet been funded.

The department has sharply increased the number of peer-reviewed original publications (see listings by individuals).

There has been a large expansion of clinical programs offered by the USA Department of Neurology, which directly support our educational and research missions. Two new faculty members have joined the department and bring new expertise to the Gulf Region. Dr. Eckstein is a neuroimmunologist who recently completed a two-year fellowship in MS and neuroimmunology at Johns Hopkins University. He has built a highly sought program for persons with intractable MS, neurosarcoid and other neuroimmunological disorders. Dr. Cordina is the first specialist in interventional neurology in the Gulf Region. He completed a two year fellowship in Endovascular Surgical Neuroradiology at the University of Minnesota, Minneapolis. He serves at the Director of the Stroke Program at USA and has already performed many thrombus retrievals for stroke, coiling of aneurysms and occlusions of arterial venous malformations at the USA Medical Center. Dr. Dees, who is a specialist in Parkinson Disease and Movement Disorders has started in July, 2012 and will be building a deep brain stimulation program for patients with intractable tremor and end-stage Parkinson Disease. These programs will directly intertwine with our basic research programs. In conjunction with the Department of Neurosurgery, we have launched our epilepsy surgery program and have performed 9 epilepsy surgeries over the first year.

Facility improvements include a relocation of the Neurology Clinics to Knollwood MedPark 4, which provide a larger, much more comfortable environment for our patients. The department continues its support of outreach clinics for children with neurologic disorders through the Children's Rehabilitation Services (CRS) of Alabama. An evoked potentials acquisition system has been recently purchased and will provide visual, somatosensory and brainstem auditory evoked potentials.

For FY 2013, the department has redesigned its senior elective rotation to allow students to choose detailed experiences in several subspecialty areas of neurology. We anticipate the successful recruitment of our first clinical neurophysiology fellow, which will broaden our academic training. We are acquiring an Ocular Coherence Tomography unit that will assess subtle declines in myelinated fibers in the eye. This will provide sensitive detection of demyelination in MS and other brain disorders, such as traumatic brain injury, and will be a useful tool in the clinic and for research projects. The Department anticipates a large expansion of its Movement Disorders program and the initiation of a deep brain stimulation program, as outlined above.

2011-2012
Summary of Scholarly Activities
Department of Neurosurgery

I. PUBLISHED JOURNAL ARTICLES, BOOK CHAPTERS, AND PATENTS

II. PUBLISHED ABSTRACTS

III. PUBLISHED BOOKS

IV. INVITED PRESENTATIONS

Martino AM. Invited speaker. Expandable cages: vertebral body replacement in thoraco-lumbar fractures. 28th Annual Meeting of the American Association of Neurological Surgeons/Congress of Neurological Surgeons Section on Disorders of the Spine and Peripheral Nerves; 2012 Mar 9; Orlando, FL.

V. NATIONAL PROFESSIONAL RECOGNITION

VI. BRIEF SUMMARY OF ACTIVITIES AND PROGRESS

The Department of Neurosurgery has undergone a transition in leadership this year as Dr. Eugene Quindlen has stepped down as Chair after more than 25 years of service. Dr. Anthony Martino has transitioned to the role of Chair as of April 2012. Dr. Quindlen remains clinically involved, participating in daily rounds and performing elective surgeries. The department continues to increase the number of patient visits and surgical procedures performed. As the department has grown, the need has developed to address manpower issues. This has led to the hire of a new mid-level provider. We currently have two colleagues that function as assistants in surgery and provide call support. We continue to co-sponsor the weekly Neuroradiology Conference, as an excellent collaborative effort with neurology and neuroradiology. This year, in conjunction with the Department of Neurology, the department opened the neuromonitoring unit at the USA Medical Center. We have added a recent USA College of Medicine graduate in the role of pre-residency fellowship for the next year.

The neuro-oncology clinic at the Mitchell Cancer Center remains active with the Cyberknife program. We have started to perform radiosurgical procedures on pediatric patients for the first time. Along with teaching responsibilities for the second, third and fourth year medical students we are supporting a Ph.D. nursing student (Ashley Manass) for her research project for the next 24 months.

Dr. Anthony Martino continues the department's participation in Children's Rehabilitative Services for the State of Alabama. He is active in the local area chapters of the Spina Bifida Association and Think First Head Injury Prevention. As an extension of the work with head injury prevention he has given lectures in concussion awareness.

This year the concussion program, with support from Dick's Sporting Goods, all middle and high school athletes in Baldwin County have been given baseline neurocognitive testing. We currently have a Monday morning concussion clinic to assess all athletes with concussions from the previous week.

Dr. Martino served as Co-Course Director with Dr. J. Ronald Russell for the Oncology Outlook Conference held at The Marriott Point Clear March 16-17, 2012.

In conjunction with the Department of Neurology, Dr. Daniel Dees and Dr. Oliver Darbin, we are initiating a deep brain stimulation program.

We have initiated a collaborative clinical research effort with the Department of Surgery, Division of Trauma. Currently we are participating in an investigational research project.

Dr. W. George Rusyniak, Jr. has continued the epilepsy surgery program this year. As a result, seizures have been controlled in all patients operated on. He has given multiple lectures to medical students at all levels and residents on neuroanatomy and neurosurgical case management.