

*EVELYN F. MCKNIGHT CENTER FOR AGE RELATED MEMORY LOSS*

January 14, 2010

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Trustees, The Evelyn F. McKnight Brain Research Foundation, Inc.  
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Dear Trustees,

Please find enclosed a copy of the Evelyn F. McKnight Center for Age Related Memory Loss Progress Report for 2009. As you will see we have made substantial strides through establishment of seminars, meetings and research projects. Also, in 2009 we created systems that will insure the growth of the Center. An Advisory committee is being formed and the Bernard and Alexandria Schoninger Neuropsychology Program and Clinic became fully operational in June, 2009.

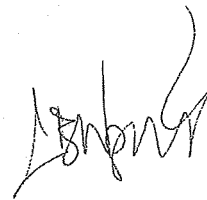
There are many other exciting milestones explained in our report and we look forward to seeing you at our 3<sup>rd</sup> Annual Symposium.

Wishing you a happy and healthy 2010. Should you have any questions please feel free to contact Dr. Sacco at 305-243-7519 or Dr. Wright at 305-243-1664.

Yours sincerely,



Ralph L. Sacco, M.D., M.S.  
Executive Director  
Evelyn F. McKnight for Age  
Related Memory Loss



Clinton Wright, M.D.  
Scientific Director  
Evelyn F. McKnight for Age  
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RLS/CW/SFR/bd

cc: Marsha Kegley  
Hank Raatama  
Susan Fox Rosellini

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## 01. Summary of Scientific Achievements since Last Report

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Scientifically, the Evelyn F. McKnight Center for Age-Related Memory Loss, herein after called the "Center", has moved forward with recruitment, grant applications, and both scientific and public outreach. Dr. Clinton Wright, the Center's scientific director, established a monthly research seminar series to allow scientists, from both the University of Miami Coral Gables and medical campuses, to come together to discuss topics that relate to the scientific mission of the Center. The seminars expose faculty and trainees within the University to a broad spectrum of topics, which alternate between clinical and basic research, with the ultimate goal of inciting collaborations and stimulating translational work.

In addition to the seminar series, McKnight Center collaborator Dr. Fatta B. Nahab organized a neuroimaging workshop, sponsored by the Center, on May 30, 2009. The workshop, which was attended by 50 faculty, students, and trainees, was designed to raise awareness of the neuroimaging infrastructure at the University and encourage collaborations that further the mission of the Center.

The Center also participated in several meetings well known to the McKnight Brain Research Foundation (MBRF), including the annual MBRF Inter-Institutional Meeting at the University of Alabama at Birmingham (UAB), the Society for Neuroscience MBRF Poster Session, and the Cognitive Aging Summit II Planning Meeting. In addition, Center representatives presented data at important national and international meetings, including the American Academy of Neurology, the International Stroke Conference of the American Heart Association, and the American Neurological Association.

Research highlights include the continued work on neuroimaging within the Northern Manhattan Study (NOMAS) focusing on the role of brain structure and vascular damage in cognitive decline. The Genome Wide Association Study of more than one thousand participants in the Northern Manhattan Study continued as well. Initiation of collaboration between Dr. Wright and Dr. Gene Alexander of the Evelyn F. McKnight Brain Institute at the University of Arizona is moving forward using voxel-based morphometry to study regional differences in brain volume relevant to age-related cognitive changes.

The Center has also sponsored the collection of brain MRI scans in a group of older adults with healthy cognitive aging to support a grant application to the National Institute on Aging (NIA) to examine the structural, functional, and metabolic changes associated with age-related cognitive changes. Jessica Loring, an M.D.-Ph.D. candidate under the mentorship of Dr. Wright, is doing her dissertation research on the role of vascular disease in successful cognitive aging.

### Administrative Achievements

During 2009, we have begun to establish organizational tools to set a system in place that nourishes the growth of the Center. An advisory committee is being formed that includes senior investigators from departments and institutes across the Coral Gables and medical campuses. Dr. Ralph Sacco, executive director of the McKnight Center for Age-Related

Memory Loss, and Dr. Wright chose each member with the overarching goal of developing a team of advisors that would be in a position to guide translational programs to meet the directive of the McKnight Brain Research Foundation in its gift to the University of Miami. The following is a list of current advisory committee members as of the current date:

1. W. Dalton Dietrich, Ph.D. (The Miami Project)
2. John R. Guy, M.D. (Bascom Palmer Eye Institute)
3. Phil McCabe, Ph.D. (Neurosciences)
4. Ewald Horvath, M.D., M.S., FAPA (Psychiatry)

The Center will continue to work toward developing a comprehensive advisory committee to include areas not represented by the members. In addition, the executive committee of center members and collaborators is working together on specific programs.

1. Noam Alperin, Ph.D. (Radiology)
2. Sara Czaja, Ph.D. (Center on Aging)
3. Richard Isaacson, M.D. (Neurology)
4. Bonnie Levin, Ph.D. (Neurology)
5. Carlos Moraes, Ph.D. (Neurology)
6. Ralph Sacco, M.D., M.S. (Neurology)
7. Clinton Wright, M.D., M.S. (Neurology)

The Schoninger Neuropsychology Program was established this year, and the Schoninger Clinic became fully operational in June, 2009. The Clinic will work in tandem with the McKnight-sponsored Neurobehavioral Clinic and Healthy Aging Program, a collaborative effort between the University of Miami Department of Neurology, the Department of Psychiatry, and the Center on Aging. The Clinic is dedicated to carrying out comprehensive cognitive evaluations on individuals experiencing memory loss and other forms of mental status change. Each patient being evaluated will be consented to participate in the ongoing research registry that is being set up by the Center.

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## 2. Selected Publications by Center Members and Collaborators (Peer Reviewed)

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Abete P, Cacciatore F, Galizia G, **Della Morte D**, Cacciatore F, and Rengo F. PUFA for Human Health: Diet or Supplementation? *Current Pharmaceutical Design* 2009 (*in press*).

Abete P, Cacciatore F, Testa G, **Della Morte D**, Galizia G, de Santis D, Calabrese C, Cioppa A, Ferrara N, Rengo F. Ischemic preconditioning in the aging heart: From bench to bedside. *Ageing Res Rev* 2009.

Bacman SR, Williams SL, and **Moraes CT**. Intra- and inter-molecular recombination of mitochondrial DNA after in vivo induction of multiple double-strand breaks *Nucl. Acid Res* 2009 (*In Press*).

Boden-Albala B, Elkind MS, White H, Szumski A, Paik MC, **Sacco RL**. Dietary total fat intake and ischemic stroke risk: the Northern Manhattan Study. *Neuroepidemiology* 2009;32:296-301. PubMed PMID: 19246935.

Chiang W, Takoudis C, Lee HS, McNulty AW, Glick R, **Alperin N**. Relationship between Ventricular Morphology and Aqueductal CSF Flow in Healthy and Communicating Hydrocephalus. *Invest Radiol.* 2009;44:192-9.

**Czaja SJ**, Gitlin LN, Schulz R, Zhang S, Burgio D, Stevens AB., Nichols LO, Gallagher-Thompson D. Development of the risk appraisal measure (RAM): A brief screen to identify risk areas and guide interventions for dementia caregivers. *J Am Geriatr Soc.* 2009;57:1064-1072.

**Czaja SJ**, Gregor P, Hanson VL. Introduction to the special Issue on aging and information technology. *ACM Transactions on Accessible Computing* 2009;2:Article 1.

**Czaja SJ**, Sharit J. The aging of the population: Opportunities and challenges for human factors engineering. *The Bridge* 2009;39:34-40.

**Czaja SJ**, Gregor P, Hanson VL. Introduction to the Special Issue on Aging and Information Technology. *ACM Transactions on Accessible Computing* 2009;2:Article 1.

**Della Morte D**, Dave KR, DeFazio RA, Bao YC, Raval AP, Perez-Pinzon MA. Resveratrol pretreatment protects rat brain from cerebral ischemic damage via a SIRT1-UCP2 pathway. *Neuroscience* 2009;159:993-1002.

Dhamoon MS, Moon YP, Paik MC, Boden-Albala B, **Rundek T**, **Sacco RL**, Elkind MS. Long-term functional recovery after first ischemic stroke: the Northern Manhattan Study. *Stroke* 2009;40:2805-11. PubMed PMID: 19556535.

**Dong C**, Wong ML, Licinio J. Sequence variations of ABCB1, SLC6A2, SLC6A3, SLC6A4, CREB1, CRHR1 and NTRK2: association with major depression and antidepressant response in Mexican-Americans. *Mol Psychiatry* 2009;14:1105-18.

Elkind MS, Ramakrishnan P, Moon YP, Boden-Albala B, Liu KM, Spitalnik SL, **Rundek T**, **Sacco RL**, Paik MC. Infectious Burden and Risk of Stroke: The Northern Manhattan Study. *Arch Neurol.* 2009; PubMed PMID: 19901154.

Fukui H and **Moraes CT**. Mechanisms of formation and accumulation of mitochondrial DNA deletions in aging neurons *Human Molecular Genetics* 2009;18:1028-36.

Gilman SE, **Gardener H**, Buka SL. Maternal smoking during pregnancy and children's cognitive and physical development: A causal risk factor? *American Journal of Epidemiology* 2008;168:522-531.



Govind V, Gold S, Kaliannan K, Saigal G, Falcone S, Arheart, K, Harris, L, Jagid J, **Maudsley AA**. Whole-brain Proton MR Spectroscopic Imaging of Mild-to-Moderate Traumatic Brain Injury and Correlation with Neuropsychological Deficits. *Neurotrauma (In Press)*

Hahn S, Letvak S, Powell K, Christianson C, Wallace D, Speer M, Lietz P, **Blanton S**, Vance J, Pericak-Vance M, Henrich V. A Community's Awareness and Perceptions of Genomic Medicine. *Public Health Genomics* 2009.

Holland D, Brewer JB, Hagler DJ, et al, (**Isaacson RS**). Subregional neuroanatomical change as a biomarker for Alzheimer's disease *Proc Natl Acad Sci U S A* 2009;106:20954-20959.

Hore P, Hall LO, Goldgof DB, Gu Y, **Maudsley AA**, Darkazanli A. A scalable framework for segmenting magnetic resonance images. *J. Sign. Process* 2009;54:183-203.

**Hsu JJ**, Glover GH, and Zaharchuk G. Optimizing saturation-recovery measurements of the longitudinal relaxation rate under time constraints, *Magnetic Resonance in Medicine* 2009;62:1202-1210. DOI:10.1002/mrm.22111.

**Hsu JJ**, Glover GH, and Zaharchuk G. Rapid methods for concurrent measurement of the RF-pulse flip angle and the longitudinal relaxation time, *Magnetic Resonance in Medicine* 2009;61:1319-1325. DOI:10.1002/mrm.21900.

Jack CR Jr, Lowe VJ, Weigand SD, Wiste HJ, Senjem ML, Knopman DS, Shiung MM, Gunter JL, Boeve BF, Kemp BJ, Weiner M, Petersen RC (**Isaacson R**). Alzheimer's Disease Neuroimaging Initiative. Serial PIB and MRI in normal, mild cognitive impairment and Alzheimer's disease: implications for sequence of pathological events in Alzheimer's disease. *Brain* 2009;132:1355-65.

Jones DW, Peterson ED, Bonow RO, Gibbons RJ, Franklin BA, **Sacco RL**, Faxon DP, Bufalino VJ, Redberg RF, Metzler NM, Solis P, Gircus M, Rogers K, Wayte P, Gardner TJ; American Heart Association. Partnering to reduce risks and improve cardiovascular outcomes: American Heart Association initiatives in action for consumers and patients. *Circulation*. 2009;119:340-50.

Khatri M, Nickolas T, Moon YP, Paik MC, **Rundek T**, Elkind MS, **Sacco RL**, **Wright CB**. CKD Associates with Cognitive Decline. *J Am Soc Nephrol* 2009;20:2427-32. PubMed PMID: 19729443.

Kornak J, Young K, Soher BJ, **Maudsley AA**. Bayesian k-Space-Time Reconstruction of MR Spectroscopic Imaging for Enhanced Resolution. *IEEE Trans. Med. Imag* 2009 (*In Press*).

Lantz ER, Lavine SD, Festa JR, Connolly ES, **Wright CB**, Lazar RM. Acute Confusional Syndrome from a Dural Arteriovenous Fistula. *Neurosurgery* 2009;65:E208-E209.

Licinio J, **Dong C**, Wong M-L. Novel sequence variations in the brain-derived neurotrophic factor gene and association with major depression and antidepressant treatment response. *Arch Gen Psychiatry* 2009;66:488-97.

Luo HR, Wu GS, **Dong C**, Arcos-Burgos M, Ribeiro L, Licinio J, Wong ML. PDE11A global haplotype: Association with major depression and antidepressant response. *Neuropsychiatric Disease and Treatment*. *Neuropsychiatric Disease and Treatment* 2009;5:163-170.

Lynne J, Ali I, Newman-Toker D, **Isaacson RS**. Annual Review of Medical Education Articles in Neurology 2007-2008. *Teaching and Learning in Medicine* 2009;21:351-354.

**Maudsley AA**, Domenig C, Govindaraju V, Darkazanli A, Studholme C, Arheart C, Bloomer C. Mapping of brain metabolite distributions by volumetric proton MRSI. *Magn. Reson. Med* 2009;61:548-559.

**Maudsley AA**, Domenig C, Sheriff S. Reproducibility of serial whole-brain MR spectroscopic imaging. *NMR in Biomed (In Press)*.

Mazzella F, Cacciatore F, Galizia G, **Della Morte D**, Rossetti M, Abbruzzese R, Langellotto A, Avolio D, Russo S, Ferrara N, Rengo F, Abete P. Social Support and Long-term Mortality in the Elderly: Role of Comorbidity. *Arch Gerontol Geriatr (In Press)*.

Mormino EC, Kluth JT, Madison CM, Rabinovici GD, Baker SL, Miller BL, Koeppe RA, Mathis CA, Weiner MW, Jagust WJ (**Isaacson R**); Alzheimer's Disease Neuroimaging Initiative. Episodic memory loss is related to hippocampal-mediated beta-amyloid deposition in elderly subjects. *Brain* 2009;132:1310-23.

**Nahab FB**, Hattori N, Saad ZS, Hallett M. Contagious yawning and the frontal lobe: An fMRI study. *Human Brain Mapping* 2009;30:1744-1751.

**Nahab FB**, Kundu P, Gallea C, Kakareka J, Pursley R, Pohida T, Milletta N, Friedman J, Hallett M. The neural processes underlying self-agency. *Cerebral Cortex (In Press)*.

Nation DA, **Katzen HL**, Scanlon BK, Papapetropoulos S, **Levin BE**. Defining Subthreshold Depression in Parkinson's Disease. *International Journal of Geriatric Psychiatry* 2009;24:937-943.

Noble JM, Borrell LN, Papapanou PN, Elkind MSV, Scarmeas N, **Wright CB**. Periodontitis is associated with cognitive impairment among older adults: analysis of NHANES-III. *Journal of Neurology, Neurosurgery and Psychiatry* 2009;80:1206-11.

Ramos A, Wohlgemuth WK, **Gardener H**, Lorenzo D, Dib S, Wallace D, Nolan B, Boden-Albala B, Elkind MSV, **Sacco RL**, **Rundek T**. Snoring and insomnia are not associated with subclinical atherosclerosis in the Northern Manhattan Study (NOMAS). *International Journal of Stroke (In Press)*.

Rebello A, Williams SL, and **Moraes CT**. In vivo methylation of mtDNA reveals the dynamics of protein-mtDNA interactions Nucl. Acid Res 2009;37:6701-6715.

Rincon F, **Sacco RL**, Kranwinkel G, Xu Q, Paik MC, Boden-Albala B, Elkind MS. Incidence and risk factors of intracranial atherosclerotic stroke: the Northern Manhattan Stroke Study. Cerebrovasc Dis 2009;28:65-71. PMID: 19468217.

Russo C, Jin Z, **Rundek T**, Homma S, Sacco RL, Di Tullio MR. Atherosclerotic disease of the proximal aorta and the risk of vascular events in a population-based cohort: the Aortic Plaques and Risk of Ischemic Stroke (APRIS) study. Stroke. 2009;40:2313-8. PubMed PMID: 19498195.

**Sacco RL**, Blanton SH, Slifer S, Beecham A, Glover K, Gardener H, Wang L, Sabala E, Juo SH, **Rundek T**. Heritability and linkage analysis for carotid intima-media thickness: the family study of stroke risk and carotid atherosclerosis. Stroke 2009;40:2307-12. Epub 2009 Jun 4. PubMed PMID: 19498180.

**Sacco RL**, Khatri M, Rundek T, Xu Q, Gardener H, Boden-Albala B, Di Tullio M, Homma S, Elkind MSV, Paik MC. Improving global vascular risk prediction with behavioral and anthropometric factors: the multi-ethnic Northern Manhattan Cohort Study. Journal of the American College of Cardiology 2009;54:2303-2311.

Schulz R, Zdaniuk B, Belle S, **Czaja SJ**, Zbrozek S, Arrighi M. Baseline differences and Trajectories of change for Deceased, Placed, and Community residing Alzheimer's Disease Patients". Alzheimer Disease & Associated Disorders 2009.

Sharit J, **Czaja SJ**, Hernandez AM, Nair SN. The employability of older workers as teleworkers: An appraisal of issues and an empirical study. Human Factors and Ergonomics in Manufacturing Engineering 2009;19:457-477.

Sharit J, Hernandez M, **Czaja SJ**, Pirolli P. Investigating the roles of knowledge and cognitive abilities in older adult information seeking on the Web. ACM Trans Comput Hum Interact 2009;15:article 3.

Siedlecki KL, Stern Y, Reuben A, **Sacco RL**, Elkind MS, **Wright CB**. Construct validity of cognitive reserve in a multiethnic cohort: The Northern Manhattan Study. J Int Neuropsychol Soc. 2009;15:558-69. PubMed PMID: 19573274.

Suzuki K, Elkind MS, Boden-Albala B, Jin Z, Berry G, Di Tullio MR, **Sacco RL**, Homma S. Moderate alcohol consumption is associated with better endothelial function: a cross sectional study. BMC Cardiovasc Disord. 2009;9:8. PubMed PMID: 19228434; PubMed Central PMCID: PMC2653471.

Taha J, Sharit J, **Czaja SJ**. Use of and Satisfaction with Sources of Health Information Among Older Internet Users and Non-Users. The Gerontologist 2009;49:663-673.

Tain RW, Alperin N. Noninvasive Intracranial Compliance From MRI-Based Measurements of Transcranial Blood and CSF Flows: Indirect vs. Direct Approach. *IEEE Trans Biomed Eng* 2009;56:544-51.

Tain RW, Ertl-Wagner B, Alperin N. Influence of the compliance of the neck arteries and veins on the measurement of intracranial volume change by phase-contrast MRI. *J Magn Reson Imaging* 2009;30:878-83.

Takei Y, Di Tullio MR, Homma S, Boden-Albala B, **Rundek T**, **Sacco RL**, Berry G, Liu R, Jin Z, Eguchi K, Elkind MS. Soluble Tumor Necrosis Factor Receptor 1 Level Is Associated With Left Ventricular Hypertrophy: The Northern Manhattan Study. *Am J Hypertens* 2009;22:763-9. PubMed PMID: 19390513.

Tsakanikas D, **Katzen HL**, Ravdin LD, & Relkin NR (2009). Upper extremity motor measures of Tap Test response in Normal Pressure Hydrocephalus. Upper extremity motor measures of Tap. *Clin Neurol Neurosurg* 2009;DOI 10.1016.

Vempati UD, Han X, **Moraes CT**. Lack of cytochrome c in mouse fibroblasts disrupts assembly/stability of respiratory complexes and IV. *Journal of Biological Chemistry* 2009;284:4383-91.

Wang L, Beecham A, Di Tullio MR, Slifer S, **Blanton SH**, **Rundek T**, **Sacco RL**. Novel quantitative trait locus is mapped to chromosome 12p11 for left ventricular mass in Dominican families: the Family Study of Stroke Risk and Carotid Atherosclerosis. *BMC Med Genet* 2009; 23;10:74. PubMed PMID: 19627612; PubMed Central PMCID: PMC2724377.

Wenz T, Diaz F, Hernandez D, **Moraes CT**. Endurance Exercise is Protective for Mice with Mitochondrial Myopathy. *J Appl Physiol* 2009;106:1712-1719.

Wenz T, Luca C, Torraco A, and **Moraes CT**. MTERF2 regulates oxidative phosphorylation by modulating mtDNA transcription. *Cell Metabolism* 2009;9:499-511.

Willey JZ, Moon YP, Paik MC, Boden-Albala B, **Sacco RL**, Elkind MS. Physical activity and risk of ischemic stroke in the Northern Manhattan Study. *Neurology* 2009;73:1774-9. PubMed PMID: 19933979.

Willey JZ, Xu Q, Boden-Albala B, Paik MC, Moon YP, **Sacco RL**, Elkind MS. Lipid profile components and risk of ischemic stroke: the Northern Manhattan Study (NOMAS). *Arch Neurol.* 2009;66:1400-6. PubMed PMID: 19901173.

**Wright CB**, Moon Y, Paik MC, Brown TR, Rabbani L, Yoshita M, Decarli C, **Sacco R**, Elkind MS. Inflammatory Biomarkers of Vascular Risk as Correlates of Leukoariosis. *Stroke* 2009;40:3466-71. PubMed PMID: 19696417.

Young K, Govind V, Sharma K, Studholme C, **Maudsley AA**, Schuff N. Multivariate statistical mapping of spectroscopic imaging data. *Magn. Reson. (In Press)*.

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### 3. Publications (Other)

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**Czaja SJ**, & Sharit J. (Eds.). *Aging and Work: Issues and Implications in a Changing Landscape*. Johns Hopkins University Press 2009.

**Czaja SJ**, & Ownby R. *Aging, Cognition and Technology in Jeste, D.V. and Depp, C.A. (Eds.) Handbook of Successful Cognitive and Emotional Aging*. American Psychiatric Publishing, Inc. 2009.

**Czaja SJ**, & Sharit J. (2009). *Preparing Organizations and Older Workers for Current and Future Employment: Training and Retraining Issues*. In S.J. Czaja & J. Sharit (Eds.), *Aging and Work: Issues and Implications in a Changing Landscape*. The Johns Hopkins Press.

Fisk AD, Rogers W, Charness N, **Czaja SJ**, & Sharit J. *Designing for Older Adults: Principles and Creative Human Factors Approach* (2nd. Ed). London: CRC Associates 2009.

**Levin B**. Behavioral/Neuropsychological Outcomes and Quality of Life Endpoints. In Woodbury-Harris KM, Coull BM (eds): *Clinical Trials in Neuroscience*. Front Neurol Neurosci. Basel, Karger, 2009.

**Nahab FB** and Hallett M. In: Yousry T, ed. *Neuroimaging Clinics of North America*. The role of fMRI in the diagnosis of movement disorders. (*In Press*).

**Nahab FB**. Exploring Yawning with Neuroimaging. In: Walusinski O, ed. *The Mystery of Yawning in Physiology and Disease*. *Frontiers Of Neurology And Neuroscience*. (*In press*).  
**Nahab FB**, Levin BE. Characterizing the Spectrum of Volition in Psychogenic Movement Disorders (*In Press*).

Perez-Pinzon MA, Dave K, DeFazio R, Raval AP, Kim EJ, **Della Morte D**. "Neuroprotection: Endogenous mechanisms." *The New Encyclopaedia of Neuroscience*, edited by Larry Squire et al, Elsevier 2009.

Ravdin, LD & **Katzen H**. *Idiopathic Normal Pressure Hydrocephalus* (in press). *Casebook of Clinical Neuropsychology*. Oxford University Press.

Sharit J & **Czaja SJ**. *Telework and the Older Worker*. In S.J. Czaja & J. Sharit (Eds.), *Aging and Work: Issues and Implications in a Changing Landscape*, The Johns Hopkins University Press 2009.

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### 4. Presentations at Scientific Meetings

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**Alperin N**, **Bagci M**, Lee SH, Eftimov L, Ertl-Wagner B. Comparison between Total CBF Values Measured by ASL and Phase Contrast Over Increased Range of CBF Values. Proceedings submitted to the Int soc of Magnetic Res in Med.

Assuras S, Katzen H, Ravdin, Relkin N. Proteomic Analysis of Cerebrospinal Fluid in Idiopathic Normal Pressure Hydrocephalus (INPH). Oral presentation at the annual Hydrocephalus meeting (selected as TOP 10 paper), Baltimore, MD. October 2009.

Assuras S, Katzen H, Ravdin, Relkin N. Proteomic Analysis of Cerebrospinal Fluid in Idiopathic Normal Pressure Hydrocephalus (INPH). Oral presentation at the annual Hydrocephalus meeting (selected as TOP 10 paper), Baltimore, MD. October 2009.

Christianson CA, Powell KP, Hahn SE, Blanton SH, Pericak-Vance, M, Henrich VC. Evaluation of low literacy patient education materials. Poster presentation at The National Society of Genetic Counselors, 28<sup>th</sup> Annual Education Conference, Atlanta, Ga. November 12-15, 2009.

Dave KR, Della-Morte D, Saul I, Perez-Pinzon MA. Ventricular fibrillation induced cardiac arrest in the rat as a model of global cerebral ischemia. Brain 2009 (24<sup>th</sup> International symposium on Cerebral blood flow, metabolism and function) Conference, Chicago, IL. June 29 – July 3, 2009.

Dave KR, Raval AP, DeFazio RA, Lin HW, Dezfulian C, Saul I, Bhattacharya SK, Perez-Pinzon MA. Identification of mitochondrial targets for protein kinase c delta following cardiac arrest. Society for Neuroscience Conference, Chicago, IL. October 2009.

Dave KR, Saul I, Defazio RA, Raval AP, Perez-Pinzon MA, and Pileggi A. Synaptic dysfunction following recurrent hypoglycemia in diabetic rats may contribute to increased ischemic damage. Brain 2009 (24<sup>th</sup> International symposium on Cerebral blood flow, metabolism and function) Conference held at Chicago, IL. June 29 – July 3, 2009.

Dong C, Yoshita M, DeCarli C, Gervasi-Franklin P, Rundek T, Elkind MS, Sacco RL, Wright CB. Sex difference in the relationship between waist-hip ratio and silent brain infarction in a multiethnic cohort from the Northern Manhattan study (NOMAS). World Hypertension Congress, Beijing, China. October 29-November 1, 2009.

Garbayo E, Curtis K, D'Ippolito G, Montero-Menei CN, Schiller P, Perez-Pinzon MA, Raval AP. (2009) Marrow-isolated Adult Multilineage Inducible Cells Prevent Neuronal Death In Hippocampal CA1 After Oxygen-glucose Deprivation. Stroke 2009;40:P450. International Stroke Conference, American Heart Association, San Diego, CA. February 2009.

Gardener H, Scarmeas N, Gu Y, Disla N, Elkind MSV, Sacco RL, Boden-Albala B, Wright CB. Mediterranean Diet and Vascular Events: The Northern Manhattan Study. Poster presented at the 134<sup>th</sup> American Neurological Association (ANA), Baltimore, Maryland. October 11-14, 2009.

Hirsch N, Saul I, Dave KR, Defazio RA, Bramlett H, M. Perez-Pinzon and Raval AP. (2009) Cyclic pattern of 17 $\beta$ -estradiol pretreatment protects the hippocampal CA1 region against cerebral ischemia. Society for Neuroscience, Chicago, IL. 2009.

**Hsu JJ**, Glover GH, Accelerated three-dimensional z-shimming for fMRI, under review for presentation in the 18<sup>th</sup> Scientific Meeting, International Society for Magnetic Resonance in Medicine, Stockholm, Sweden. May 1–7, 2010, (submitted November, 2009).

**Hsu JJ**, Glover GH, Zaharchuk G. General formulas for optimizing two-point saturation-recovery measurements, under review for presentation in the 18<sup>th</sup> Scientific Meeting, International Society for Magnetic Resonance in Medicine, Stockholm, Sweden. May 1–7, 2010, (submitted November, 2009).

**Hsu JJ**, Glover GH, Zaharchuk G. Optimizing Saturation-Recovery Measurements of the Longitudinal Relaxation Rate Under Time Constraints, In: Proceedings of the 17<sup>th</sup> Scientific Meeting, International Society for Magnetic Resonance in Medicine, Honolulu, Hawaii. April 18–24, 2009.

**Isaacson R**. Visiting Professor of Neurologic Education, University of Rochester, Topic covered “Education research in age-related memory loss” and “Recent advances in the management of cognitive impairment” at Neurology for the Primary Care Provider,– University of Rochester. Rochester, N.Y. 2009.

**Katzen H**, Assuras S, Ravdin L, Strybing K, Heros R, Schwartz T, Fink M, Kaplitt M, **Levin B**, Relkin N. Improvement in Gait and Cognition Following Shunt Placement in Idiopathic Normal Pressure Hydrocephalus. Oral presentation at the annual Hydrocephalus meeting, Baltimore, MD, October 2009.

**Loring J**, Yoshita M, Marquez C, Elkind MSV, **Sacco RL**, DeCarli C, **Wright CB**. White Matter Hyperintensity Volume is Associated with Depressive Symptoms: the Northern Manhattan Study. Poster presented at the 134<sup>th</sup> Annual Meeting for the American Neurological Association. Baltimore, MD. October 2009.

**Marcus J**, **Gardener H**, Yoshita M, Guzman J, Elkind MSV, **Sacco RL**, DeCarli C, **Wright CB**. Diastolic and not systolic blood pressure is associated with subclinical cerebrovascular damage: the Northern Manhattan Study. Presented at the American Academy of Neurology (AAN) for the annual meeting. Seattle, WA. April 2009.

Marion IB, **Katzen HL**, **Myerson CE**, Rodriguez K, Gallo BV, **Levin BE**. Neuropsychological outcome following unilateral STN DBS: A comparison of English-speakers and Spanish-speakers. Poster accepted for presentation at the XVIII World Federation of Neurology World Congress on Parkinson’s Disease and Related Disorders, Miami Beach, FL. December 2009.

**Myerson CE**, **Katzen HL**, Ledon J, Mittel A, McClendon M, **Nahab FB**, Gallo BV, **Levin BE**. Cardio-metabolic comorbidities and cognitive decline in Parkinson’s disease. Poster accepted for presentation at the National Academy of Neuropsychology, 29<sup>th</sup> Annual Conference, New Orleans, LA. November 2009.

Myerson CE, Katzen HL, Marion IB, Mittel AM, Nahab FB, Gallo BV, Levin BE. Profiles of apathy and depression in Parkinson's disease. XVIII World Federation of Neurology World Congress on Parkinson's Disease and Related Disorders, Miami Beach, FL. December 2009.

Myerson CE, Katzen HL, Nahab FB, Levin BE. Refining the link between apathy and cognition in Parkinson's disease. Poster accepted for presentation at the International Neuropsychological Society, 38<sup>th</sup> Annual Meeting, Acapulco, Mexico. February 2010.

Myerson CE, Katzen HL, Papapetropoulos S, Ledon J, Nahab FB, Gallo BV, Levin BE. Multi-modal hallucinations and cognitive function in Parkinson's disease. Poster presented at the American Neurological Association 134<sup>th</sup> Annual Meeting. Baltimore, MD. October 2009.

Raval AP, Bhatt A, Saul I, Perez-Pinzon MA. Nicotine exposure inhibits 17 $\beta$ -estradiol-mediated protection of the hippocampal ca1 region against cerebral ischemia in female rats. Abstract # 975; Ixth International Conference on Quantification of Brain Function with PET, Chicago, IL. June 29<sup>th</sup> to July 3<sup>rd</sup>, 2009.

Raval AP. A single estradiol-17 beta bolus activates CREB and protects ca1 neurons against global cerebral ischemia Women's Health Research Day, University of Miami, Miami, FL. May 2009.

Wright CB, Gardener H, Yoshita M, Santiago M, Rundek T, Elkind MSV, Sacco RL, Boden-Albala B, DeCarli C, Scarmeas N. Adherence to a Mediterranean Diet is inversely associated with White matter Hyperintensity Volume: The Northern Manhattan Study at the 6<sup>th</sup> International Congress of Vascular Dementia, Barcelona, Spain. October 2009.

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#### 5. Presentations at Public (Non-Scientific) Meetings or Events

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Isaacson R. Grand Rounds, University of Miami Miller School of Medicine, on different occasions, the Departments of Family Medicine, Department of Medicine, and jointly to Neurology and Psychiatry: "Recent advances in the management of cognitive impairment".

Isaacson R. Integrative Medicine Symposium and Expo, University of Miami Miller School of Medicine, Department of Integrative and Complementary Medicine.

Isaacson R. Cognitive aging lecture to the Adolph and Rose Levis Jewish Community Center members (see Section #12, Educational Programs section).

Wright C. Remarks at the Alzheimer Association Press Conference – October, 20, 2009.

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#### 6. Awards

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Connie Myerson won the National Academy of Neuropsychology (NAN) 2009 Student Poster Award. Connie presented "Cardio-metabolic Co-morbidities and Cognitive Decline in Parkinson's Disease". This award is made at the annual NAN conference for the best student



poster. The Program Committee rates each poster and grants awards to the most meritorious posters.

Dr. Richard Isaacson won the American Academy of Neurology (AAN) A.B. Baker Teacher Recognition Award, a national award, for his contributions to improving neurology. Dr. Isaacson's platform presentation was selected in the area of "Scientific Highlights".

Dr. Isaacson was also selected by the neurology residents to receive the University of Miami Department of Neurology Chairman's Award for Teaching Excellence.

Dr. Isaacson also received an education research grant from the American Academy of Neurology for a project entitled "Evaluating the Effectiveness of Continuum: Dementia as a Teaching Tool for Medical Students: A Randomized, Multi-Center Trial - \$10,000, January 2008 - June 2009.

Justin Marcus received the J. K. Robertson Travel Award from the University of Miami to cover travel expenses to the American Academy of Neurology (AAN) meeting in April, 2009 in Seattle, Washington.

Jessica Loring received the J.K. Robertson Travel Award to cover the travel expenses of the American Neurological Association Meeting which took place in October, 2009 in Baltimore, Maryland.

Dr. Ami P. Raval's poster entitled, "A single estradiol 17  $\beta$  bolus activates creb and protects cal neurons against global cerebral ischemia" won Best Poster Award at the 2009 Women's Health Research Day.

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## 7. Faculty

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Faculty is divided between those receiving direct support from the Center (Members) and those with whom the Center is collaborating within the University of Miami (Collaborators)

Name	Center Role	Area of Expertise
Susan Blanton, Ph.D.	Member	Genetics
Chuanhui Dong, Ph.D.	Member	Biostatistics
Jung Jiin "Jason" Hsu, Ph.D.	Member	Physics
Richard Isaacson, M.D.	Education Director	Education, neurology, cognition
Heather Katzen, Ph.D.	Member	Neuropsychology
Bonnie Levin, Ph.D.	Schoninger Professor	Neuropsychology
Tatjana Rundek, M.D., Ph.D.	Member	Epidemiology, neurology
Ralph Sacco, M.D., M.S.	Executive Director	Neurology, epidemiology
Clinton Wright, M.D., M.S.	Scientific Director	Neurology, epidemiology, cognition

Name	Center Role	Area of Expertise
Noam Alperin Ph.D.	Collaborator	Physics
Sara Czaja, Ph.D.	Collaborator	Aging, psychology, engineering
Andrew Maudsley, Ph.D.	Collaborator	Radiology
Carlos Moraes, Ph.D.	Collaborator	Neuroscience
Fattah Nahab, M.D.	Collaborator	Neurology, functional MRI

## 8. Trainees

Name	Center Role	Area of Expertise
Ahmet "Murat" Bagci	Post-doctoral trainee	Bio-engineering
David Della Morte	Post-doctoral trainee	Epidemiology, molecular biology
Marytery Fajardo	Medical Student	Education research
Hanna Gardner	Sc.D.	Epidemiology, cognition
Sergio Lanata	Medical Student	Education research
Jessica Loring	M.D.-Ph.D. student	Epidemiology, imaging, cognition
Justin Marcus	Medical student	Epidemiology, imaging, cognition
Matthew Markert	M.D.-Ph.D. student	Epidemiology, imaging, cognition
Connie Myerson	Ph.D. student	Psychology
Adam Naj, Ph.D.	Post-doctoral fellow	Genetics

## 9. Clinical/Translational Programs

### New Programs

We have developed a neurobehavioral disorders clinic registry with collaboration from the University of Miami Department of Neurology, Department of Psychiatry, and the Center on Aging. The registry will collect data on sociodemographics, cognition, and imaging to allow research on age-related memory loss and other cognitive syndromes and cognitive complaints of patients being seen or treated at the University of Miami. The registry will also provide pilot data for grant applications that support the objectives of the Center.

We also initiated a study of age-related cognitive changes using a cohort of older participants with healthy cognitive aging. The purpose of the grant is to capitalize on a strength that the Center has fostered at the University using MRI to measure structural, functional, and metabolic changes in the brain associated with age-related changes in cognition. The Center sponsored pilot imaging data to support this application.

NIH AHRQ (R03 Submission): "Automated discharge overviews/practice guidelines: Optimizing transitions in care". Summary: Using health information technology to optimize education on a variety of neurologic conditions including age-related memory loss. We are developing software that automates evidence-based teaching curricula for neurology residents using data stored in the Electronic Medical Record and based on the number and type of cases seen. Data regarding patients treated at the University of Miami with specific neurologic

conditions, including age-related memory loss and other cognitive disorders, will lead to a proportionate increase in related items in the curriculum.

### **Update on Existing Clinical Studies**

Genome-wide association study of the Northern Manhattan Study (NOMAS) imaging sample initiated by Dr. Wright, Dr. Sacco, and Dr. Margaret Pericak-Vance of the John P. Hussman Institute for Human Genomics. The objective of this work is to examine genetic associations with neuropsychological and imaging biomarkers of cognitive aging in 1,300 participants from the NOMAS sample. Preliminary data were presented at the 2009 McKnight Inter-Institutional Meeting. We continue to focus on genes related to white matter damage and age-related memory loss.

Analysis of over 1,000 brain MRI scans from NOMAS continues. With the help of Center collaborator Dr. Noam Alperin and Center post-doctoral fellow Ahmet Bagci, we have continued to develop techniques to examine the effect of regional brain volume and white matter changes on cognitive function as it relates to age-related changes in memory and other cognitive domains. We are also refining methods for relating blood flow and brain metabolites to cognitive function using MR spectroscopy and arterial spin labeling, data that has been collected.

Neuropsychological data continue to be collected as part of NOMAS. The cognitive assessment done by telephone annually has been collected since 2001 and provides a measure of cognitive decline. The more extensive neuropsychological test battery is now being collected for the second time and will allow a more sensitive evaluation of cognitive decline that will be domain specific. Data from this sample will be available for preliminary analysis in late 2010.

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### **10. Technology transfer**

- Patents applications  
No patents have been applied for or received
- Revenue generated from technology  
Not applicable

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### **11. Budget update**

- Status of matching funds (see attached).  
We received a payment from the Schoninger Foundation of \$152,093.00 in November 2009, which was added to the endowment and is a payment toward their \$3.5M pledge.
- Existing budget (see attached).
- Projected budget for coming year (see attached).

#### Extramural funding:

- National Scientist Development Grant  
Source: American Heart Association (0735387N)  
Principal Investigator: Clinton Wright, MD MS  
2009 budget: \$130,000
- Independent Scientist Award  
Source: NINDS (K02NS059729)  
Principal Investigator: Clinton Wright, MD MS  
2009 budget: \$360,396
- Stroke Incidence and Risk Factors in a Tri-ethnic Region  
Source: NIH, NINDS (NS 029993-14)  
Principal Investigator: Ralph Sacco MD MS  
2009 budget: \$1,607,015

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## 12. Educational programs focusing on age related memory loss

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### Scientific

#### Evelyn F. McKnight Center for Age Related Memory Loss Research Seminar

Tina Wenz, Ph.D., Research Associate in the Department of Neurology, presented “Increased PGC-1 $\alpha$  expression protects muscle in disease and aging” – 10/8/09

Dr. Scott Brown, Ph.D., Research Assistant Professor in the Department of Epidemiology, presented “Built Environment and Hispanic Elders’ Health and Mental Health” – 11/18/09.

Dr. Colleen Atkins, Ph.D., Assistant Professor in the Department of Neurological Surgery, “Memory Loss after Brain Trauma: Searching for Therapeutic Targets” –12/9/09.

#### “Introduction to Neuroimaging Workshop” – sponsored by the Evelyn F. McKnight Center for Age Related Memory Loss

##### PROGRAM SUMMARY

- Introduction to MR physics – Fred Pattany, Ph.D. / Kyle Padgett, Ph.D.
- Introduction to Functional MRI – Jason Hsu Ph.D. / Fatta Nahab, M.D.
- Introduction to Magnetic Resonance Spectroscopy (MRS) – Andrew Maudsley, Ph.D.
- Diffusion Imaging – Fred Pattany, Ph.D.
- Intracranial physiology using CSF and blood flow dynamics – Noam Alperin, Ph.D.
- Structural Imaging – Prantik Kundu
- Nuclear Medicine Brain Imaging – George N. Sfakianakis, M.D.

## Cognitive Aging Curriculum for Medical Students and Resident Physicians

Dr. Richard Isaacson completed the study entitled: "Evaluating the Effectiveness of a Cognitive Aging Curriculum for Medical Students and Residents" due to the paucity of research on how to best teach healthcare providers (e.g. medical students, residents) about cognitive aging. Considering all of these factors, it was our goal to develop and test an evidence-based cognitive aging curriculum. In order to determine the effectiveness of this new curriculum, we used the practice-pattern-based curriculum development model and implemented it to medical students, Internal Medicine Residents and Neurology Residents (n=104) at the University of Miami Miller School of Medicine/Jackson Memorial Hospital.

### **Public**

Educational Outreach Program on Cognitive Aging for Community Elders. Dr. Isaacson moderated several forums on aging at the Miami Jewish Home for the Aged in Miami, Florida and the Adolph and Rose Levis Jewish Community Center in Boca Raton, Florida. During his presentation, Dr. Isaacson spoke with a large group of community elders and allied health professionals about cognitive aging and age-related memory loss. After the presentation, Dr. Isaacson answered questions from the audience and highlighted some of the ongoing research of his team and the Evelyn F. McKnight Center for Age Related Memory Loss at the University of Miami.

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### **13. Collaborative Programs with other McKnight Institutes, Institutions, and Research programs**

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Dr. Gene Alexander of the Evelyn F. McKnight Brain Institute at the University of Arizona is working with our Center to use voxel-based morphometry to examine regional differences in brain volume related to age, exposure to vascular risk factors, and cognitive function.

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### **14. Collaborative Program with non-McKnight Institutes, Institutions, and Research Programs.**

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Dr. Wright and Dr. Slifer from the John P. Hussman Institute for Human Genomics collaborated with the Florida Alzheimer Disease Research Center (FADRC), submitting a genetics project. The proposal focused on the genetic underpinnings of mild cognitive impairment, examining endophenotypes that included both clinical and imaging markers of cognitive decline. Genes identified within the genome wide association study of the Northern Manhattan Study (NOMAS) would then be replicated in the Florida ADRC sample.

Our collaboration with Columbia University allows the Northern Manhattan Study (NOMAS) to continue to follow its stroke-free cohort for vascular events and deaths. In addition, the sub sample of 1,290 participants that underwent neuropsychological testing continues to come in for the second evaluation (see Section 9 – Update).

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**15. Briefly Describe Plans for Future Research and/or Clinical Initiatives**

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- Dr. Levin and other investigators are interested in examining the role of vascular risk factors in cognitive function. For this study, we will select a cohort of people with cardio-metabolic syndrome who do not have cognitive impairment.
- Dr. Alperin and Dr. Wright are also interested in initiating a study that will investigate cerebrospinal fluid flow and blood flow in the brain to help us examine the changes associated with cognitive function in normal aging.
- We are also interested in starting an ancillary study in the Northern Manhattan Study (NOMAS) sample that will examine markers of diabetes and insulin resistance in relation to brain imaging white matter hyperintensity volume and subclinical infarction.
- Effect of Dietary Caprylic Triglyceride (Axona®) on Quality of Life and Cognitive Function in Patients with Age-Related Memory Loss and Alzheimer's Disease (submitted to Accera Pharmaceuticals Investigator Initiated Research Committee November 2009). This investigator-initiated trial (PI: Isaacson) involves testing the approved nutritional supplement Axona (AC-1202, a proprietary blend of caprylic triglyceride and a variety of nutrients) for the treatment of age-related memory loss, mild cognitive impairment, and dementia. Patients will receive Axona or placebo to examine change in quality of life and cognitive function.
- Age-Related Memory Loss and Alzheimer's disease Web-based Educational Intervention in Patient Waiting Rooms (PI: Isaacson). The purpose of this study is to educate patients and their families about age related memory loss, Alzheimer's disease, and other cognitive disorders while they are waiting for to see the physician. Data gathered is being used to assess the effectiveness of an interactive, web-based waiting room educational intervention in helping patients and caregivers understand age-related memory loss and Alzheimer's disease and the various therapies that may either treat or slow the progression of the disease.

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**16. Endowment Investment Results**

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Please see attached report.

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**17. Were any funds used for a Prohibited Purpose during the report period?**

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No funds were used for prohibited purposes. See attached report.

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**18. Do you recommend any modification to the Gift Agreement?**

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We do not request any modifications to the Purpose of the Gift Agreement.

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**19. Did all activities during the report period further the Purpose?**

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All activities during the report period furthered the purpose of the Gift.

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**20. Please describe any negative events (loss of personnel, space, budget, etc.) that occurred during the report period and the possible impact on carrying out the Gift Agreement?**

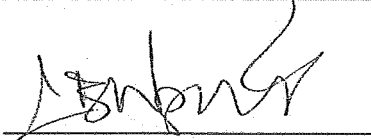
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The recession has impacted revenue from the corpus of the Gift. However, as we are a new center, adjustments to the budget were possible and operations are running smoothly.

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**21. Signature, date, and title of person submitting the report.**

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Clinton Wright, M.D. M.S.  
Scientific Director

January 8, 2010

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Market Value Analysis & Budget Summary  
Evelyn F. McKnight Center for Age-Related Memory Loss  
November 30, 2009

McKnight Contribution	\$5,000,000
UM Match	1,822,785 See appendix A
Transfers from Other University Funds	553,949 See appendix B
Investment Return	690,166 See appendix C
Distributions for Spending	(1,486,437) See appendix D
11/30/09 Endowment Balance	<u>\$6,580,464</u>
Unmatched Balance	\$3,177,215
Book Value	\$6,949,702 See appendix E
FY 2010 Balance at Year End	627,284 See appendix F
FY 2011 Balance at Year End	491,492 See appendix G



McKnight  
 UM Match- Appendix A

7

<u>Description</u>	<u>Date</u>	<u>262080</u>	<u>262293</u>	<u>Total</u>
Folke Peterson endowment	2/21/2008		1,150,913.25	—
Applebaum Foundation	9/9/2008	300,000.00		
Bernard Schoeninger	9/26/2008	57,599.00		
Bernard Schoeninger	9/30/2008	62,180.00		
Wolfson transfer	12/31/2008	100,000.00		
Bernard Schoeninger	11/23/2009	152,093.00		
<b>Cumulative total - UM Match</b>		<b>671,872.00</b>	<b>1,150,913.25</b>	<b>1,822,785.25</b>

# McKnight

## Transfers from Other University Funds-Appendix B

<u>Description</u>	<u>Date</u>	<u>262080</u>
Transfer required - McKnight Foundation*	12/31/2008	352,800.00
Transfer required - McKnight Foundation*	8/4/2009	201,149.00

**Cumulative total - Transfers** **553,949.00**

\* The amount that would have been distributable per the UM Endowment Spending Policy on the Unmatched Balance or, if greater, the average actual rate of return earned by the Growth Pool for the 3 years ended the prior fiscal year and then added to the Endowment Balance.

McKnight  
Investment Return - Appendix C

<u>Fiscal Year Ended</u>	<u>262080</u>		<u>262293</u>		<u>Total</u>	
	<u>Realized</u>	<u>Unrealized</u>	<u>Realized</u>	<u>Unrealized</u>	<u>Realized</u>	<u>Unrealized</u>
May 31, 2004	110,702.00	114,675.00			110,702.00	114,675.00
May 31, 2005	182,453.00	-4,070.00			182,453.00	-4,070.00
May 31, 2006	252,873.00	195,763.00			252,873.00	195,763.00
May 31, 2007	312,401.00	669,788.00			312,401.00	669,788.00
May 31, 2008	369,508.92	-479,810.92	10,438.66	26,207.00	379,947.58	-453,603.92
May 31, 2009	-460,173.92	-1,132,552.92	-77,193.77	-221,048.24	-537,367.69	-1,353,601.16
May 31, 2010 - (through 11/30/09)		705,544.86		114,661.63	0.00	820,206.49
<b>Cumulative total - Investment Return</b>	<b>767,764.00</b>	<b>69,337.02</b>	<b>-66,755.11</b>	<b>-80,179.61</b>	<b>701,008.89</b>	<b>-10,842.59</b>
<b>Grand Total</b>	<b>837,101.02</b>		<b>-146,934.72</b>		<b>690,166.30</b>	

**McKnight**  
**Distributions for Spending - Appendix D**

Description  
 Distributable amount for previous fiscal  
 years distributed in FYE 08-09:  
 FYE May 31, 2005  
 FYE May 31, 2006  
 FYE May 31, 2007  
 FYE May 31, 2008  
 FYE May 31, 2009  
 FYE May 31, 2010

Date

	<u>262080</u>	<u>262293</u>	<u>Total</u>
	111,111.53		111,111.53
	157,543.11		157,543.11
	211,927.00		211,927.00
	277,199.68		277,199.68
	314,691.84	55,567.69	370,259.53
	308,022.74	50,373.21	358,395.95
<b>Cumulative total - Spending Distr.</b>	<b>1,380,495.90</b>	<b>105,940.90</b>	<b>1,486,436.80</b>

# McKnight

## Book Value Analysis - Appendix E

	Book/Realized		Total
	<u>262080</u>	<u>262293</u>	
McKnight Contribution	\$5,000,000		\$5,000,000
UM Match	671,872	1,150,913	1,822,785
Transfers from Other University Funds	553,949		553,949
Investment Return	767,764	(66,755)	701,009
Distributions for Spending	(1,380,496)	(105,941)	(1,486,437)
Adj mid-year report for spdg*	308,023	50,373	358,396
11/30/09 Endowment Balance	<u>\$5,921,112</u>	<u>\$1,028,590</u>	<u>\$6,949,702</u>

\*book not adjusted until fye.

# McKnight

## Budget for the period of June 1, 2009 - May 31, 2010 - Appendix F

<u>Revenue</u>				<u>Budget</u>	<u>Actual at 12/31/2010</u>	<u>Projected at Yr End</u>
Income				545,000.00	358,000.00	358,000.00
<b>McKnight Project</b>						
<b><u>Clinical and Clinical Research Program</u></b>						
<b>Subtotal Faculty Salary</b>				<b>339,928.45</b>	<b>171,008.00</b>	<b>342,016.00</b>
<b><u>Faculty</u></b>	<b><u>Role in Project</u></b>	<b><u>Effort</u></b>	<b><u>CFB Rate</u></b>			
Clinton Wright, MD	Scientific Director	29.00%	19.80%			
Ralph Sacco, MD	Executive Director	10.00%	19.80%			
Tanja Rundek, MD	Co-investigator	10.00%	26.80%			
Bonnie Levin, MD	Neuropsychology	35.00%	26.80%			
Heather Katzen	Neuropsychology	5.00%	26.80%			
Susan H. Blanton	Genetics	8.00%	26.80%			
Jason Hsu	Radiology	30.00%	26.80%			
Richard Isaacson	Educational Director	20.00%	19.80%			
Chuanhui Dong	Statistics	5.00%	26.80%			
<b>Subtotal Staff Salary and CFB</b>				<b>111,135.55</b>	<b>57,777.00</b>	<b>137,554.00</b>
<b><u>Staff</u></b>	<b><u>Role in Project</u></b>	<b><u>Effort</u></b>	<b><u>CFB Rate</u></b>			
Ahmet Bagci	Radiology	75%	35.30%			
Edison Sabala	Administrative Support	10%	35.30%			
Mario Perez	Statistics	10%	35.30%			
Jessica Loring	Educational	30%	35.30%			
Jessica Suarez	Administrative Support	10%	35.30%			
Khushnuma Unwalla	Administrative Support	10%	35.30%			
James West	Accounting	10%	35.30%			
Subtotal Salary						
<b><u>Program Non Personnel Expenses</u></b>						
GWAS 1290 Nomias Subjects				40,000.00	1,434.00	10,000.00
Supplies				2,000.00	382.00	1,000.00
Domestic Travel				-	287.00	5,000.00
Honorarium				-	-	-
Communcations				-	900.00	2,500.00
Miscellaneous Expenses				51,936.00	219.00	2,000.00
Grand Total Expenses				<b>545,000.00</b>	<b>232,007.00</b>	<b>500,070.00</b>
Project Balance at Year End				<b>0.00</b>	<b>125,993.00</b>	<b>(142,070.00)</b>
Carryover balance from FY2009						769,353.66
Ending Balance						627,283.66

McKnight  
Budget for the period of June 1, 2010 - May 31, 2011 - Appendix G

				Budget FY11
<u>Revenue</u>				
Income				500,000.00
 <b>McKnight Project</b> <b>Clinical and Clinical Research Program</b>				
 <b>Subtotal Faculty Salary</b>				<b>373,361.23</b>
<b>Faculty</b>	<b>Role in Project</b>	<b>Effort</b>	<b>CFB Rate</b>	
Clinton Wright, MD	Scientific Director	29.00%	21.30%	
Ralph Sacco, MD	Executive Director	10.00%	21.30%	
Tanja Rundek, MD	Co-investigator	10.00%	27.60%	
Bonnie Levin, MD	Neuropsychology	35.00%	27.60%	
Heather Katzen	Neuropsychology	5.00%	27.60%	
Susan H. Blanton	Genetics	8.00%	27.60%	
Jason Hsu	Radiology	30.00%	27.60%	
Richard Isaacson, MD	Educational Director	20.00%	21.30%	
Fatta Nahab, MD	Neurology	5.00%	21.30%	
Noam Alperin	Radiology	10.00%	27.60%	
Chuanhui Dong	Statistics	5.00%	27.60%	
 <b>Subtotal Staff Salary and CFB</b>				<b>236,430.84</b>
<b>Staff</b>	<b>Role in Project</b>	<b>Effort</b>	<b>CFB Rate</b>	
David De la Morte	Trainee	50%	41.50%	
Connie Myserson	Trainee	100%	41.50%	
Immet Bagci	Radiology	75%	41.50%	
Edison Sabala	Administrative Support	10%	41.50%	
Hannah Gardner PhD	Statistics	5%	41.50%	
Mario Perez	Statistics	10%	41.50%	
Jessica Loring	Educational	30%	41.50%	
Jessica Suarez	Administrative Support	10%	41.50%	
Khushnuma Unwalla	Administrative Support	10%	41.50%	
James West	Accounting	10%	41.50%	
TBA Residency & Clinical Trial Coordinator (45K)	Educational	100%	41.50%	
TBA McKnight Office Manager (45K)	Administrative Support	50%	41.50%	
Subtotal Salary				
<b>Program Non Personnel Expenses</b>				
Supplies				2,000.00
Domestic Travel				6,000.00
Copy Machines/Printing				1,000.00
Phones/Long Distance				3,000.00
Licenses and Registrations				2,000.00
Memberships				1,000.00
Miscellaneous Expenses				5,000.00
<b>Grand Total Expenses</b>				<b>635,792.08</b>
Project Balance at Year End				(135,792.08)
Carryover balance from FY 2010				627,283.66
<b>Ending Balance</b>				<b>491,491.59</b>

## **Faculty**

Susan Blanton, Ph.D.

Chuanhui Dong, Ph.D.

Jung Jiin "Jason" Hsu, Ph.D.

Richard Isaacson, M.D.

Heather Katzen, Ph.D.

Bonnie Levin, Ph.D.

Tatjana Rundek, M.D., Ph.D.

Ralph Sacco, M.D., M.S.

Clinton Wright, M.D., M.S.



**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Blanton, Susan Halloran		POSITION TITLE Associate Professor	
eRA COMMONS USER NAME Shblanton			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Virginia Commonwealth University, Richmond VA	B.S.	1980	Biology
Virginia Commonwealth University, Richmond VA	Ph.D.	1985	Human Genetics
University of Pittsburgh, Pennsylvania	(Post-Doc)	1986	Biostatistics
Fox Chase Cancer Center, Philadelphia PA	(Post-Doc)	1988	Population Oncology

**A. Positions and Honors****Positions and Employment**

1980-1983 Graduate Asst, Dept of Human Genetics, VCU, Richmond  
 1983-1985 Graduate Asst, Div of Human Genetics, Univ of Maryland at Baltimore  
 1985-1986 Research Assoc, Dept of Biostatistics, U of Pittsburgh, Pittsburgh, PA  
 1987-1988 Postdoc, Population Oncology, Fox Chase Cancer Ctr, Philadelphia PA  
 1988-1989 Instructor, Dept of Pediatrics, U of Conn Health Center, Farmington  
 1989-1991 Asst Professor-Research, Medical Genetics Center, U of TX, Houston  
 1991-1996 Asst Professor of Research, Dept of Pediatrics, UVA, Charlottesville  
 1996-2006 Assoc Professor of Research, Dept of Pediatrics, UVA, Charlottesville  
 1997-present Assoc Professor, Collateral Faculty, Dept of Human Genetics, VCU, Richmond, VA  
 2006 Assoc Research Professor, Center for Human Genetics, Duke, Durham, NC  
 2007-present Assoc Professor, Dr. John T. Macdonald Foundation Department of Human Genetics, University of Miami Leonard M. Miller School of Medicine, Miami, Florida

**Other Experience and Professional Memberships**

1990-1995 Member, Tuberos Sclerosis Advisory Board  
 1995-1998 Research Proposal Reviewer, MD Anderson Cancer Center  
 1995-2000 Research Proposal Reviewer, Wellcome Trust, England  
 1997 Ad Hoc, NIDDK NIH study section  
 2001-2003 Ad Hoc, NINDS NIH study section NSD-C  
 2002/2005 Research Proposal Reviewer, Alzheimer's Association  
 2003-2005 Member, NINDS NIH study section NSD-C  
 2005/2006 Special emphasis panel, NINDS  
 2005-2007 Ad Hoc, NINDS study section NST  
 2007-2011 Member, NINDS study section NST  
 2008-present Editor, Journal of Biomedicine and Biotechnology

**Honors**

1980 Phi Kappa Phi, Virginia Commonwealth University  
 1980 Biology Award to Outstanding Senior, Virginia Commonwealth University, Dept. of Biology  
 1980-1983 NIH Pre-Doctoral Fellowship, Medical College of Virginia  
 1982 Alpha Sigma Chi, Virginia Commonwealth University  
 1983-present Sigma Zi  
 1994 IBM Shared University Resource Award

**B. Selected peer-reviewed publications (in chronological order)** (Selected from 108 peer-reviewed publications)

- Blanton SH, Hogue D, Wagner M, Wells D, Young ID, Hecht JT. Hereditary multiple exostoses: Confirmation of linkage to chromosomes 8 and 11. Am J Med Genet 62:150-159, 1996.
- Blanton SH, Crowder E, Malcolm S, Winter R, Gasser DL, et al. Exclusion of linkage between cleft lip with or without cleft palate and markers on chromosomes 4 and 6. Am J Hum Genet 58:239-241, 1996.

3. Hecht JT, Hogue D, Wnag Y, **Blanton SH**, et al. Hereditary multiple exostoses (EXT): Mutational studies of familial EXT1 cases and EXT-associated malignancies. *Am J Hum Genet* 60:80-86, 1997.
4. Yuzbasiyan-Gurkan V, **Blanton SH**, Cao Y, Ferguson P, Li J, Venta PJ, Brewer GJ. Linkage of a microsatellite marker to the canine copper toxicosis locus in Bedlington Terriers. *Am J Vet Res*, 58:23-27, 1997.
5. Destefan A, Cupples L, Arnos K, Ahser J, Baldwin C, **Blanton S**, et al. Correlation between Waardenburg syndrome phenotype and genotype in a population of individuals with identified PAX3 mutations. *Hum Gen* 102:499-506, 1998.
6. **Blanton SH**, Pandya A, Landa BL, Javaheri R, et al. Fine Mapping of the Human Biotinidase Gene and Haplotype Analysis of Five Common Mutations. *Human Heredity*. 50(2):102-111, 2000.
7. Liu XZ, Xia XJ, Xu LR, Pandya A, Liang CY, **Blanton SH**, et al. Mutations in Connexin31 underlie recessive as well as dominant non-syndromic hearing loss. *Human Molecular Genetics*. 9(1):63-67, 2000.
8. Ferguson PJ, **Blanton SH**, Saulsbury FT, McDuffie MJ, et al. Manifestations and linkage analysis in X-linked autoimmunity-immunodeficiency syndrome. *J of Medical Genetics*. 90(5):390-397, 2000.
9. Vaughn SP, Broussard SH, Scott A, **Blanton SH**, Hecht JT. Confirmation of the mapping of the Camurati-Englemann locus to 19q13.2 and refinement to a 3.2 cM region. *Genomics* 66:119-21, 2000.
10. **Blanton SH**, Kollé BS, Mulliken JB, Martin ER, Hecht JT. No evidence that MTHFR is a risk factor in the development of familial NSCLP. *Am J Med Genet*, 92:370-1, 2000.
11. Volcik KA, **Blanton SH**, et al. Methylenetetrahydrofolate reductase and spina bifida: evaluation of level of defect and maternal genotypic risk in Hispanics. *Am J Med Genet*. Nov 6;95(1):21-7, 2000.
12. Hecht JT, **Blanton SH**, Broussard S, Scott A, Rhoades Hall C, Milunsky JM. Evidence for locus heterogeneity in the Camurati-Engelmann (DPD1) Syndrome. *Clin Genet Mar*;59(3):198-200, 2001.
13. Tekin M, Akar N, Cin S, **Blanton SH**, et al. Connexin 26 (GJB2) mutations in the Turkish population: implications for the origin and high frequency of the 35delG mutation in Caucasians. *Hum Genet* 108:385-9, 2001.
14. Bonafe L, **Blanton SH**, Scott A, Broussard S, Superti-Furga A, Hecht JT. DTDST mutations are not a frequent cause of Idiopathic Talipes Equinovarus (clubfoot). *J Med Genetics* 39(4):e20, 2002.
15. Bowne SJ, Sullivan LS, **Blanton SH** et al. Mutations in the inosine monophosphate dehydrogenase 1 gene (IMPDH1) cause the RP10 form of autosomal dominant retinitis pigmentosa. *Hum Mol Genet* 11:559-68, 2002.
16. **Blanton SH**, Liang Cy, Cai MW, Pandya A, Du LL et al. A novel locus for autosomal dominant non-syndromic deafness (DFNA41) maps to chromosome 12q24-qter. *J Med Genet* 39:567-70, 2002.
17. Volcik KA, **Blanton SH**, Kruzel MC, et al. Testing for genetic associations with the PAX gene family in a spina bifida population. *Am J of Med Genet* 110:195-202, 2002.
18. Volcik KA, **Blanton SH**, et al. Testing for genetic associations in a spina bifida population: Analysis of the HOX gene family and human candidate gene regions implicated by mouse models of NTDs. *Am J of Med Genet* 110:203-07, 2002.
19. Hecht JT, Mulliken JB, **Blanton SH**. Evidence for a Cleft Palate Only Locus on chromosome 4 near MSX1. *Am J Med Genet* 110:406-407, 2002.
20. Hecht JT, Patel S, Mulliken JB, **Blanton SH**. MTHFR is not a risk factor for the development of isolated NSCLP. *Am J Med Genet* 110:404-405, 2002.
21. Pandya A, Arnos KS, Xia XJ, Welch KO, **Blanton SH**, et al. Frequency and distribution of GJB2 (connexin 26) and GJB6 (connexin 30) mutations in a large North American repository of deaf probands. *Genetics in Medicine* 5:295-303, 2003.
22. Welch KO, Tekin M, Nance WE, **Blanton SH**, Arnos KS, Pandya A. Chudley-McCullough syndrome: Expanded phenotype and review of the literature. *Am J Med Genet* 119:71-76, 2003.
23. **Blanton SH**, Bertin T, Patel S, Stal S, Mulliken JB, Hecht JT. Nonsyndromic cleft lip and palate: Four chromosomal regions of interest. *Am J Med Genet* 125:28-37, 2004.
24. **Blanton SH**, Bertin T, Serna ME, et al. Association of chromosomal regions 3p21.2, 10p13, and 16p13.3 with nonsyndromic cleft lip and palate. *Am J Med Genet* 125:23-7, 2004.
25. Kumar A. **Blanton SH**. Babu M. Markandaya M. Girimaji SC. Genetic analysis of primary microcephaly in Indian families: novel ASPM mutations. *Clinical Genetics*. 66(4):341-8, 2004.
26. Kumar A. Shetty J. Kumar B. **Blanton SH**. Confirmation of linkage and refinement of the RP28 locus for autosomal recessive retinitis pigmentosa on chromosome 2p14-p15 in an Indian family. *Molecular Vision*. 10:399-402, 2004.
27. Heck AL. Bray MS. Scott A. **Blanton SH**. Hecht JT. Variation in CASP10 gene is associated with idiopathic talipes equinovarus. *Journal of Pediatric Orthopedics*. 25(5):598-602, 2005 Sep-Oct.
28. **Blanton SH**, Cortez A, Stal S, Mulliken JB, Finnell RH, and Hecht JT. Variation in IRF6 Contributes to Nonsyndromic Cleft Lip and Palate. *Am J Med Genet*. 137(3):259-262, 2005.
29. Au KS, Northrup H, Kirkpatrick TJ, Volcik KA, Fletcher JM, Townsend IT, **Blanton SH**, Tyerman GH, Villarreal G, King TM. Promotor genotype of the platelet-derived growth factor receptor-alpha gene shows population stratification but not association with spina bifida meningocele. *American Journal of Medical Genetics Part A* 139:194-198, 2005.

30. Yan D, Ke X, **Blanton SH**, Ouyang XM, Pandya A, Du LL, Nance WE, Liu XZ. A novel locus for autosomal dominant non-syndromic deafness, DFNA53, maps to chromosome 14q11.2-q12. *Journal of Medical Genetics* 43:170-174, 2006.
31. Mellersh CS, Bournsnell MEG, Pettitt L, Ryder EJ, Holmes NG, Grafham D, Forman OP, Sampson J, Barnett KC, **Blanton S**, Binns M, Vaudin M. Canine RPGRIP1 mutation establishes cone-rod dystrophy in miniature longhaired dachshunds as a homologue of human Leber congenital amaurosis. *Genomics*. 88(3):293-301, 2006.
32. Burton SK, **Blanton SH**, Culpepper B, White KR, Pandya A, Nance WE, Arnos KS. Education in the Genetics of Hearing Loss: A Survey of Early Hearing Detection and Intervention Programs. *Genet Med*. 2006 Aug;8(8):510-517.
33. Sullivan LS, Bowne SJ, Seaman CR, **Blanton SH**, Lewis RA, Heckenlively JR, Birch DG, Hughbanks-Wheaton D, Daiger SP. Genomic rearrangements of the PRPF31 gene account for 2.5% of autosomal dominant retinitis pigmentosa. *Investigative Ophthalmology & Visual Science*. 47(10):4579-88, 2006.
34. Ester AR, Tyerman G, Wise CA, **Blanton SH**, Hecht JT. Apoptotic Gene Analysis in Idiopathic Talipes Equinovarus (Clubfoot). *Clin Orthop Relat Res*. 462:32-37, 2007.
35. Chiquet BT, Lidral AC, Stal S, Mulliken JB, Moreno LM, Arco-Burgos M, Valencia-Ramirez C, **Blanton SH**, Hecht JT. CRISPLD2: A Novel NSCLP Candidate Gene. *Hum Mol Genet* 16(18):2241-8, 2007.
36. Hecht JT, Ester A, Scott A, Wise CA, Iovannisci DM, Lammer EJ, Langlois PH, **Blanton SH**. NAT2 variation and idiopathic talipes equinovarus (clubfoot). *American Journal of Medical Genetics. Part A*. 143(19):2285-91, 2007.
37. Chiquet BT, **Blanton SH**, Burt A, Ma D, Stal S, Mulliken JB, Hecht JT. Variation in WNT Genes is Associated with Nonsyndromic Cleft Lip with or without Cleft Palate. *Hum Mol Genet*, 15;17(14):2212-8, Jul 2008
38. Arnos KS, Welch KO, Tekin M, Norris VW, **Blanton SH**, Pandya A, Nance WE. A comparative analysis of the genetic epidemiology of deafness in the United States in two sets of pedigrees collected more than a century apart. *Am J Hum Genet*, 83(2):200-7, Aug 2008.
39. Chiquet BT, Hashmi SS, Henry R, Burt A, Mulliken JB, Stal S, Bray M, **Blanton SH**, Hecht JT. Genomic screening identifies novel linkages and provides further evidence for a role of MYH9 in nonsyndromic cleft lip and palate. *Eur J Hum Genet*. 17(2):195-204, Feb 2009.
40. Kumar A, Girimaji SC, Duvvari MR, **Blanton SH**. Mutations in *STIL*, encoding a pericentriolar and centrosomal protein, cause primary microcephaly. *Am J Hum Genet*. 84(2):286-90, Feb 2009.
41. Hahn S, Letvak S, Powell K, Christianson C, Wallace D, Speer M, Lietz P, **Blanton S**, Vance J, Pericak-Vance M, Henrich V. A Community's Awareness and Perceptions of Genomic Medicine. *Public Health Genomics* 2009 May 13. [Epub ahead of print]
42. Sacco RL, **Blanton SH**, Slifer S, Beecham A, Glover K, Gardener H, Wang L, Sabala E, Hank Juo SH, Rundek T. Heritability and Linkage Analysis for Carotid Intima-Media Thickness. *The Family Study of Stroke Risk and Carotid Atherosclerosis*. *Stroke*. 2009 Jul;40(7):2307-12.
43. Wang L, Beecham A, Di Tullio MR, Slifer S, **Blanton SH**, Rundek T, Sacco RL. "Novel Quantitative trait locus is mapped to Chromosome 12p11 for Left Ventricular Mass in Dominican Families: The Family Study of Stroke Risk and Carotid Atherosclerosis. *BMC Med Genet*. 2009 Jul 23;10(1):74.
44. **Blanton SH**, Nance WE, Norris VW, Welch KO, Burt A, Pandya A, Arnos KS. Fitness among individuals with early childhood deafness: studies in alumni families from Gallaudet University: *Studies in Alumni from Gallaudet University*. *Ann Hum Genet*. 2009 Nov 20. [Epub ahead of print].
45. Ester AR, Weymouth KS, Burt A, Wise C, Scott A, Gurnett CA, Dobbs MB, **Blanton SH**, Hecht JT. Altered transmission of *HOX* and Apoptotic SNPs identify a potential common pathway for clubfoot. *Am J Med Genet A*. 2009 Dec;149A(12):2745-52.

### C. Research Support

#### Ongoing Research Support

5R01DE011931-10 (Hecht) PI – University of Texas 04/01/99-03/31/12

3R01DE011931-10S1 (Hecht) PI – University of Texas 09/22/09-07/31/11

NIH

*"Mapping nonsyndromic cleft lip and palate genetic loci"*

To map the genes for non-syndromic cleft lip/palate

Role: PI on Subcontract

5R01HD043342-04 (Hecht) PI – University of Texas 09/29/06-07/31/11

R01HD043342-04 (Hecht) PI – University of Texas (Admin Supp) 08/01/09-07/31/10

NIH-NICHHD

*"Genetic Studies of Clubfoot"* (ITEV)

*"Genetic Studies of Clubfoot Administrative Support"* (ITEV)

To map the genes for clubfoot

Role: PI on Subcontract

**No number** (Hecht) – UTHSC

01/01/07-12/31/09

Shriners' Hospital for Crippled Children

*"Gene Studies in Idiopathic Talipes Equinovarus (ITEV) (Clubfoot)"*

The purpose of this grant is to evaluate the role of genes in candidate pathways in the development of club foot.

Role: Consultant

**5R01NS047655-06** (Rundek) PI – University of Miami

01/01/04-03/31/13

*"Genetic Determinants of Subclinical Carotid Disease"*

The main goal of this research is to study the genetic polymorphisms associated with carotid IMT and distensibility in the three race/ethnic groups (whites, blacks and Hispanics) from the Northern Manhattan Study (NOMAS) cohort.

Role: Co-Investigator

**5R01HD051804-04** (Werler)

08/01/06-05/31/11

NIH-NICHHD

*"Maternal Vasoactive Exposures and Rise of Clubfoot"*

The purpose of this grant is to confirm previously reported linkages in clubfoot.

Role: PI on subcontract

**2R01EY007142-12A2** (Daiger) - UTHSC

09/15/08-08/31/12

NIH-NEI

*"DNA Linkage Studies of Degenerative Retinal Diseases"*

The purpose of this grant is to identify the genes and mutations causing autosomal dominant retinitis pigmentosa.

Role: PI on subcontract

**2R01NS040807** (Sacco, Ralph)

07/01/09-04/30/10

**7R01NS040807-06** (Sacco, Ralph)

10/01/09-09/30/11

NINDS

*"Family Study of Stroke Risk and Carotid Atherosclerosis Administrative Supplement"*

*"Family Study of Stroke Risk and Carotid Atherosclerosis"*

The purpose of this grant is to identify QTLs for stroke risk factors.

Role: Co-investigator

**1U54NS0657-12-01** (Shy, ME)

08/01/09-07/31/14

NIH/RDCRC/WSU

*"Inherited Neuropathies Consortium"* - Project 2: Inherited neuropathies; an integrated approach leading to therapy. The proposed CMT consortium will deliver high quality clinical data and collect a large number of CMT families/patients; apply innovative study designs using the latest technology to tackle some of the most pressing genetic issues in CMT that will ultimately pave the way for new therapeutic approaches.

Role: Senior Statistical Geneticist and Epidemiologist

Completed Research Support (last three years)

**7R01NS040807-06** (Ralph Sacco)

05/01/02-04/30/09

NINDS

*"Family Study of Stroke Risk and Carotid Atherosclerosis"*

The purpose of this grant is to identify QTLs for stroke risk factors.

Role: Co-investigator

**W81XWH-05-1-0383** (Pericak-Vance) PI – University of Miami

04/15/05-04/14/09

Department of Defense/Moses Cone Health System

*"Guilford Genomic Medicine Initiative: Developing Models for Medical Practice"*

The purpose of the Guilford County Genomic Medicine Initiative (GGMI) is to identify the specific challenges in "reengineering" an existing medical system to be genomic medicine ready, and to create solutions that can be used as the basis for other medical systems such as the extensive military medical care system.

Role: Project Director

**5R01DC006707-05** (Arnos) PI – Gallaudet University

04/14/04-02/28/09

NIDCD

*"Genetic Deafness in the Alumni of Gallaudet University"*

Identifying genes for deafness in the alumni of Gallaudet University

Role: PI on Subcontract

**5R01DC005831-04** (Pandya) PI - VCU

09/01/03-08/31/08

NIDCD

*"Potential Societal Impact of Advances in Genetic Deafness"*

Study the attitudes and concerns of deaf adults and hearing parents of deaf children towards issues related to genetic testing and technological advances in management of the deaf.

Role: Significant Contributor

**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Dong, Chuanhui		POSITION TITLE	
eRA COMMONS USER NAME CHDONG07		Research Assistant Professor	
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Tongji Medical University, Wuhan, China	M.D.	1984	Preventive Medicine
Hubei Medical University, Wuhan, China	M.A.	1989	Epidemiology
Shanghai Medical University, Shanghai, China	Ph.D.	1998	Molecular Epidemiology
Karolinska Institute, Stockholm, Sweden	Post-Doc	2000	Genetic Epidemiology
University of Pennsylvania, Philadelphia	Post-Doc	2003	Statistical Genetics

**A. Positions and Honors.****Positions and Employment**

1984-1986 Teaching Assistant, Dept. of Epidemiology, Hubei Medical University, Wuhan, China  
 1989-1995 Instructor, Dept. of Epidemiology, Hubei Medical University, Wuhan, China  
 1998-2000 Research Fellow, Dept. of Biosciences, Karolinska Institute, Stockholm, Sweden  
 2001-2003 Postdoctoral Researcher, Dept. of Psychiatry, University of Pennsylvania, PA  
 2003-2006 Research Associate, Dept. of Psychiatry, University of Pennsylvania, PA  
 2006-2007 Research Biostatistician, Clinical Research, American College of Radiology, PA  
 2007-Pres. Research Assistant Professor, Dept. of Psychiatry & Behavioral Sci., University of Miami, FL  
 2009-Pres. Research Assistant Professor, Dept. of Neurology, University of Miami, FL

**Professional Membership**

2008-Pres. Member, American Statistical Association  
 2008-Pres. Member, International Genetic Epidemiology Society  
 2002-Pres. Member, American Association of Human Genetics  
 2002-2006. Member, International Epidemiological Association  
 2002-2006. Member, American Association for Cancer Research  
 2006-2007 Statistical Design and Analysis Committee for QRRO, American College of Radiology

**Honors**

1987 Science and Technology Progress Prize awarded by Government of Hubei Province  
 1998 Excellent Article Prize awarded by Chinese Journal of Public Health  
 1998 Tang Zhao-You Prize for Liver Cancer Research awarded by Shanghai Medical University

**B. Selected peer-reviewed publications (in chronological order).**

- Hemminki K and **Dong C**, Vaittinen P. Familial risks in cervical cancer: is there a hereditary component? Int J Cancer. 1999; 82(6):775-81.
- Hemminki K, Vaittinen P and Dong C. Endometrial cancer in the family-cancer database. Cancer Epidemiol Biomarkers Prev. 1999; 8(11):1005-10.
- Hemminki K and **Dong C**. Familial relationships in squamous cell carcinoma of the skin. Epidemiology. 2000; 11(3):309-14.
- Hemminki K and **Dong C**. Familial relationships in thyroid cancer by histo-pathological type. Int J Cancer. 2000; 85(2):201-5.
- Hemminki K and **Dong C**. Familial prostate cancer from the family-cancer database. Eur J Cancer. 2000; 36(2):229-34.

6. Hemminki K, Li X, Vaittinen P and **Dong C**. Cancers in the first-degree relatives of children with brain tumours. *Br J Cancer*. 2000; 83(3):407-11.
7. Shugart YY, Hemminki K, Vaittinen P, Kingman A and **Dong C**. A genetic study of Hodgkin's lymphoma: an estimate of heritability and anticipation based on the familial cancer database in Sweden. *Hum Genet*. 2000; 106(5):553-6.
8. Hemminki K and **Dong C**, Vaittinen P. Second primary cancer after in situ and invasive cervical cancer *Epidemiology*. 2000; 11(4):457-61.
9. Hemminki K and **Dong C**. Lifestyle and cancer: protection from a cancer-free spouse. *Int J Cancer*. 2000; 87(2):308-9.
10. Hemminki K and **Dong C**. Subsequent cancers after in situ and invasive squamous cell carcinoma of the skin. *Arch Dermatol*. 2000; 136(5):647-51.
11. Hemminki K and **Dong C**. Cancer in husbands of cervical cancer patients. *Epidemiology*. 2000; 11(3):347-9.
12. Hemminki K and **Dong C**, Frisch M. Tonsillar and other upper aerodigestive tract cancers among cervical cancer patients and their husbands. *Eur J Cancer Prev*. 2000; 9(6):433-7.
13. Hemminki K and **Dong C**. Primary cancers following squamous cell carcinoma of the skin suggest involvement of Epstein-Barr virus. *Epidemiology*. 2000; 11(1):94.
14. Hemminki K, **Dong C** and Vaittinen P. Cancer risks to spouses and offspring in the family-cancer database. *Genet Epidemiol*. 2001; 20(2):247-257.
15. Hemminki K, Vaittinen P, **Dong C**, Easton D. Sibling risks in cancer: clues to recessive or X-linked genes? *Br J Cancer*. 2001; 84(3):388-391.
16. **Dong C** and Hemminki K. Modification of cancer risks in offspring by sibling and parental cancers from 2112616 nuclear families. *Int J Cancer*, 2001; 92(1):144-150.
17. **Dong C** and Hemminki K. Multiple primary cancers at colon, breast and skin (melanoma) as models for polygenic cancers. *Int J Cancer*, 2001; 92(6):883-887.
18. Hemminki K and **Dong C**. Population-based study of familial medullary cancer. *Familial Cancer*, 2001; 1(1):45-49.
19. **Dong C** and Hemminki K. Risk of multiple primary cancers in nasal cancer patients. *Epidemiology*, 2001; 12(5):367-369.
20. **Dong C** and Hemminki K. Second primary neoplasms in 633964 cancer patients in Sweden, 1958-1996. *Int J Cancer*, 2001; 93(2):155-161.
21. **Dong C** and Hemminki K. Second primary breast cancer in males. *Breast Cancer Res Treat*, 2001; 66(2):171-172.
22. Hemminki K, Jiang Y and **Dong C**. Second primary cancers after anogenital, skin, oral and rectal cancers: etiological links? *Int J Cancer*, 2001;93(2):294-298.
23. Hemminki K, Li X and **Dong C**. Second primary cancers after sporadic and familial colorectal cancer. *Cancer Epidemiol Biomarkers Prev*, 2001; 10(7):793-798.
24. **Dong C**, Storwall I and Hemminki K. Familial testicular cancer and second primary cancers in testicular cancer patients by histologic types. *Eur J Cancer*, 2001; 37(15):1878-1885.
25. **Dong C** and Hemminki K. Second primary neoplasms among 53,159 hematolympholiferative malignancy patients in Sweden, 1958-1996: a search for common mechanisms. *Br J Cancer*, 2001; 85(7): 997-1005.
26. **Dong C**, Wang S, Li WD, Zhao H, Price RA. Interacting genetic loci in chromosome regions 20q and 10q influence extreme human obesity. *Am J of Hum Genet*, 2003; 72(1): 115-124, 2003
27. Li WD, **Dong C**, Li D, Zhao H, Price RA. An obesity-related locus in chromosome region 12q23-24. *Diabetes*, 53(3): 812-820, 2004
28. **Dong C**, Sanchez LE, Price RA. Relationship of obesity to depression: a family-based study. *Int J of Obesity*. 28(6): 790-795. 2004
29. Li WD, **Dong C**, Li D, Garrigan C, Price RA. A quantitative trait locus influencing fasting plasma glucose in chromosome region 18q22-23. *Diabetes*. 53(9): 2487-2491, 2004
30. **Dong C**, Li WD, Li D, Zhao H, Price RA. Interaction between obesity-susceptibility loci in chromosome regions 2p25-p24 and 13q13-q21. *Eur J of Hum Genet*. 13(1): 102-108, 2005
31. **Dong C**, Li WD, Geller F, Lei L, Li D, Gorlova OY, Hebebrand J, Amos CI, Nicholls RD, Price RA. Possible Genomic Imprinting of Three Human Obesity-Related Genetic Loci. *Am J Hum Genet*. 76(3): 427-437, 2005
32. Li WD, **Dong C**, Li D, Garrigan C, Price RA. A genome scan for serum triglyceride in obese nuclear families. *J Lipid Res*. 46(3): 432-438, 2005
33. **Dong C**, Li WD, Li D, Price RA. Extreme obesity is associated with attempted suicides: results from a family study. *Int J of Obesity*. 30(2): 388-390, 2006



Principal Investigator/Program Director (Last, First, Middle):

34. Wong ML, **Dong C**, Maestre-Mesa J, Licinio J. Polymorphisms in inflammation-related genes are associated with susceptibility to major depression and antidepressant response. *Mol Psychiatry*. 13(8):800-12, 2008
35. Wong M-L, **Dong C**, Esposito K, Thakur S, Liu W, Elashoff RM, Licinio J. Elevated stress-hemoconcentration in major depression is normalized by antidepressant treatment: relevance to cardiovascular disease risk. *PLoS One* 3(7): e2350. 2008
36. Paz-Filho G, Esposito K, Hurwitz BE, Sharma A, **Dong C**, Andreev VP, Delibasi T, Erol H, Ayala A, Wong ML, Licinio J. Changes in insulin sensitivity during leptin replacement therapy in leptin-deficient patients. *Am J Physiol Endocrinol Metab*. 295(6):E1401-E1408, 2008
37. Luo HR, Wu GS, **Dong C**, Arcos-Burgos M, Ribeiro L, Licinio J, Wong ML. PDE11A global haplotype: Association with major depression and antidepressant response. *Neuropsychiatric Disease and Treatment*. *Neuropsychiatric Disease and Treatment* 5:163-170, 2009
38. Licinio J, **Dong C**, Wong M-L. Novel sequence variations in the brain-derived neurotrophic factor gene and association with major depression and antidepressant treatment response. *Arch Gen Psychiatry*. 66(5):488-97, 2009
39. **Dong C**, Wong ML, Licinio J. Sequence variations of ABCB1, SLC6A2, SLC6A3, SLC6A4, CREB1, CRHR1 and NTRK2: association with major depression and antidepressant response in Mexican-Americans. *Mol Psychiatry*. 14(12):1105-18, 2009
40. **Dong C**, Beecham A, Blanton S, Slifer S, Rundek T, Sacco R. Genome-Wide Linkage Scan for Metabolic Syndrome Related Quantitative Traits in Dominican Families. The 59th American Society of Human Genetics Annual Meeting, Oct. 20-24, 2009, Honolulu, Hawaii
41. **Dong C**, Yoshita M, DeCarli C, Gervasi-Franklin P, Rundek T, Elkind MS, Sacco RL, Wright CB. Sex difference in the relationship between waist-hip ratio and silent brain infarction in a multiethnic cohort from the northern Manhattan study (NOMAS). World Hypertension Congress 2009, Oct. 29-Nov.1, 2009, Beijing, China
42. **Dong C**, Flores DL, Whelan F, Wong ML, Licinio J. Clinical outcomes of double-blind antidepressant treatment with fluoxetine or desipramine in Mexican-Americans. *American Journal of Psychiatry*. 2009 (Submitted)
43. Della-Morte D, **Dong C**, McClendon MS, Beecham A, Wang L, Blanton SH, Sacco RL, Rundek T. Sirtuin and mitochondrial uncoupling protein polymorphisms in subclinical carotid atherosclerosis (submitted to AAN, April 10-17, 2010)
44. Loring J, **Dong C**, Disla N, Rundek T, Elkind MS, Sacco RL, Stern Y, Wright CB. The northern Manhattan study global vascular risk score is associated with cognitive performance (submitted to AAN, April 10-17, 2010)
45. Wright CB, **Dong C**, Elkind MS, Rundek T, DeCarli C, Sacco RL. The Northern Manhattan study global vascular risk score is associated with leukoaraiosis (submitted to AAN, April 10-17, 2010)

## Research Support

### Current Research Support:

NIH/NINDS

R37 NS 029993 Ralph Sacco (PI)

02/01/2003-03/31/2013

Stroke Incidence and Risk Factors in a Tri-Ethnic Region

To determine the effects of risk factors for stroke, MI, and vascular death, as well as evaluate predictors of cognitive impairment and the importance of subclinical MRI findings in a prospective cohort study of 3 race-ethnic groups from Northern Manhattan.

Role: Investigator

NIH/NINDS

1K02NS059729-01A1 Clinton Wright (PI)

09/01/2008-08/31/2013

Vascular Risk and Cognition in a Multi-ethnic Cohort

To examine vascular risk factors for cognitive dysfunction in a stroke-free multi-ethnic sample.

Role: Investigator

NIH/NINDS

2R01NS040807 Ralph Sacco (PI)

09/01/2009-08/31/2011

Family study of stroke risk and carotid atherosclerosis

To investigate genes influencing carotid atherosclerosis through linkage and association studies.

Role: Investigator

NIH/NIDDK

R01DK063240 Ma-Li Wong (PI)

09/30/2002-08/31/2010

Depression/Metabolic Syndrome in Mexican-American Women

To test insulin resistance and hyperglycemic trends parallel plasma cortisol levels in major depressive disorder.

Role: Investigator

K24RR017365 Ma-Li Wong (PI)

07/01/2003-05/31/2010

NIH/NCRR ,

Pharmacogenetics of Antidepressant Drugs

To identify genetic variants associated with antidepressant response.

Role: Investigator

5R01DA018066 Drenna G Waldrop-Valverde (PI)

08/01/2005-07/31/2010

NIH/NIDA

HIV+Drug Users: Neurocognitive Aspects of ARV Adherence

To identify contributors to poor treatment adherence in HIV+Drug Users.

Role: Biostatistician

**Completed Research Support:**

R01DK44073 R. Arlen Price (PI)

06/01/1991-01/31/2009

NIH/NIDDK

Genetic Studies of Obesity

To investigate genes for human obesity through linkage and association studies.

Role: Investigator

R01DK56210 R. Arlen Price (PI)

03/01/2000-02/28/2006

NIH/NIDDK

Fine localization of genes for human obesity

To perform fine mapping of genes influencing human obesity through family-based studies of linkage disequilibrium.

Role: Investigator

NHLBI Mammalian Genotyping R. Arlen Price (PI)

2002-2003

NIH/NHLBI

A Genome Linkage Scan for Obesity Related Traits

To identify the genetic loci influencing human obesity through family-based studies of genome-wide linkage study.

Role: Investigator

R01CA065435 Jesse F. Wilson (PI)

10/01/1994-04/30/2010

NIH/NCI

Quality Research in Radiation Oncology: ACR PCS

To assess the quality of care for radiation oncology patients through nation-wide survey.

Role: Investigator



**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Hsu, Jung-Jiin (Jason)		POSITION TITLE Research Assistant Professor	
eRA COMMONS USER NAME SCIQEI			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Tung-hai University, Taichung, Taiwan	B.S.	1988	Physics
National Taiwan University, Taipei, Taiwan	M.S.	1991	Physics
University of Pittsburgh, Pittsburgh, Pennsylvania	Ph.D.	2002	Physics
Stanford University, California	Postdoctoral	2007	Medical Imaging

**A. Positions and Honors.****Positions and Employment**

1995-1998 Teaching Fellow, Dept. of Physics and Astronomy, University of Pittsburgh  
 1998-2002 Graduate Student Researcher, Dept. of Physics and Astronomy, University of Pittsburgh  
 2000-2002 Consultant, NMR-on-a-Chip Project, Carnegie Mellon University  
 2002-2007 Postdoctoral Research Fellow, Lucas Center for Imaging, Stanford University  
 2007-2008 Research Associate, Lucas Center for Imaging, Stanford University  
 2009- Research Assistant Professor, Dept. of Radiology, University of Miami School of Medicine

**Professional Memberships**

1997- American Association for the Advancement of Science (AAAS)  
 1998- Society of Magnetic Resonance in Medicine (ISMRM)

**Awards and Honors**

Physics Student Representative, the Class of 1988, Tunghai University.  
 Outstanding Poster Presentation, Faculty of Arts and Sciences Grad Expo 2001, University of Pittsburgh

**B. Peer-reviewed publications (in chronological order).****In Scholarly Journals (Peer-Reviewed)**

1. J.-J. Hsu, K.-T. Chung, and K.-N. Huang, *Term values of  $1s2s2p^4P^o$  for lithiumlike ions*, Physical Review A **44**, 5485-5491 (1991). DOI:10.1103/PhysRevA.44.5485
2. J.-J. Hsu, K.-T. Chung, and K.-N. Huang,  *$^4P^o$  series of lithium*, Physical Review A **49**, 4466-4472 (1994). DOI:10.1103/PhysRevA.49.4466
3. J.-J. Hsu and K.-T. Chung, *Electron affinities of  $1s^22s2p^3P^o$  and  $1s^22p^2^3P$  of beryllium*, Physical Review A **52**, R898-R901 (1995). DOI:10.1103/PhysRevA.52.R898
4. J.-J. Hsu and K.-T. Chung, *Binding energy and Auger electron energies of  $1s2s2p^3^6S^o$  of the beryllium anion*, Journal of Physics B **28**, L649-L653 (1995). DOI:10.1088/0953-4075/28/21/001
5. J.-J. Hsu and I. J. Lowe, *Signal recovery in free induction decay imaging using a stimulated spin echo*, Magnetic Resonance in Medicine **48**, 409-414 (2002). DOI:10.1002/mrm.10057

6. H. Yun, M. E. Patton, J. H. Garrett, Jr., G. K. Fedder, K. M. Frederick, J.-J. Hsu, I. J. Lowe, I. J. Oppenheim, and P. J. Sides, *Detection of free chloride in concrete by NMR*, *Cement and Concrete Research* **34**, 379–390 (2004). DOI:10.1016/j.cemconres.2003.08.020
7. J.-J. Hsu and I. J. Lowe, *Spin-lattice relaxation and a fast  $T_1$ -map acquisition method in MRI with transient-state magnetization*, *Journal of Magnetic Resonance* **169**, 270–278 (2004). DOI:10.1016/j.jmr.2004.05.001
8. J.-J. Hsu and G. H. Glover, *Mitigation of susceptibility-induced signal loss in neuroimaging using localized shim coils*, *Magnetic Resonance in Medicine* **53**, 243–248 (2005). DOI:10.1002/mrm.20365
9. J.-J. Hsu and G. H. Glover, *Rapid MRI method for mapping the longitudinal relaxation time*, *Journal of Magnetic Resonance* **181**, 98–106 (2006). DOI:10.1016/j.jmr.2006.03.014
10. J.-J. Hsu and I. J. Lowe, *Encoding to the longitudinal magnetization for MR imaging and flow velocity mapping*, *Journal of Magnetic Resonance* **183**, 41–49 (2006). DOI:10.1016/j.jmr.2006.07.01
11. J.-J. Hsu, G. Zaharchuk, and G. H. Glover, *Rapid methods for concurrent measurement of the RF-pulse flip angle and the longitudinal relaxation time*, *Magnetic Resonance in Medicine* **61**, 1319–1325 (2009). DOI:10.1002/mrm.21900
12. J.-J. Hsu, G. H. Glover and G. Zaharchuk, *Optimizing saturation–recovery measurements of the longitudinal relaxation rate under time constraints*, *Magnetic Resonance in Medicine* **62**, 1202–1210 (2009). DOI:10.1002/mrm.22111
13. J. P. Hamilton, G. H. Glover, J.-J. Hsu, R. F. Johnson, I. H. Gotlib, *Modulation of subgenual anterior cingulate cortex activity with real-time neurofeedback*, (submitted October, 2009; under review).

#### Conference Presentations/Abstracts (Peer-Reviewed)

1. M. Gach, J.-J. Hsu, I. J. Lowe, *Imaging the rat thorax using RUFIS*, 39th Experimental Nuclear Magnetic Resonance Conference, March 23–27, 1998, Asilomar Conference Center, Pacific Grove, California.
2. M. Gach, J.-J. Hsu, I. J. Lowe, *Analysis of curved flow using RUFIS*, 39th Experimental Nuclear Magnetic Resonance Conference, March 23–27, 1998, Asilomar Conference Center, Pacific Grove, California.
3. J.-J. Hsu, I. J. Lowe, *Spatial three dimensional imaging using RUFIS*, In: Proceedings of 8th Scientific Meeting and Exhibition, International Society for Magnetic Resonance in Medicine, April 1–7, 2000, Denver, Colorado, USA. p 680.
4. J.-J. Hsu, I. J. Lowe, *The time origin of RUFIS using a stimulated spin echo*, In: Proceedings of 8th Scientific Meeting and Exhibition, International Society for Magnetic Resonance in Medicine, April 1–7, 2000, Denver, Colorado, USA. p 1502.
5. J.-J. Hsu, I. J. Lowe, *Flow velocity measurement using magnetic resonance imaging*, Faculty of Arts and Sciences, Grad Expo 2001, University of Pittsburgh, September 13, 2001.
6. K. M. Frederick, J. H. Garrett, Jr., J.-J. Hsu, W. Lin, I. J. Lowe, I. J. Oppenheim, M. E. Patton, P. Sides, H. A. Yun, G. K. Fedder, *Scaling of induction-detection and force-detection NMR for chlorine*, ISMRM Workshop on Limits of Detection in Nuclear Magnetic Resonance, 23–26 June 2001, University of California at Berkeley, USA.
7. J.-J. Hsu, I. J. Lowe, *Time-saving  $T_1$ -map imaging*, 43rd Experimental Nuclear Magnetic Resonance Conference, April 14–19, 2002, Asilomar Conference Center, Pacific Grove, California.
8. H. Yun, G. K. Fedder, K. M. Frederick, J.-J. Hsu, I. J. Lowe, I. J. Oppenheim, M. E. Patton, P. Sides, J. H. Garrett, Jr., *Developments in chlorine detection in concrete using NMR*, SPIE's 9th Annual International Symposium on Smart Structures and Materials, March 17–21, 2002, San Diego, California.

[Full paper published in S.-C. Liu and D. J. Pines, Editors, Proceedings of SPIE 4696, 310–321 (2002). DOI:10.1117/12.472568]

9. J.-J. Hsu, G. H. Glover, *Mitigation of susceptibility-induced signal loss in neuroimaging using localized shim coils*, In: Proceedings of 11th Scientific Meeting, International Society for Magnetic Resonance in Medicine, July 10–16, 2003, Toronto, Ontario, Canada. p 734.
10. J.-J. Hsu, G. H. Glover, *Localized active shimming for fMRI signal recovery*, In: Proceedings of 12th Scientific Meeting, International Society for Magnetic Resonance in Medicine, May 15–21, 2004, Kyoto, Japan. p 994.
11. J.-J. Hsu, G. H. Glover, *Rapid method for mapping the longitudinal relaxation time*, In: Proceedings of the 13th Scientific Meeting, International Society for Magnetic Resonance in Medicine, May 7–13, 2005, Miami Beach, Florida, USA. p 2391.
12. J.-J. Hsu, G. H. Glover, *Towards dynamic shimming for fMRI*, In: Proceedings of the 13th Scientific Meeting, International Society for Magnetic Resonance in Medicine, May 7–13, 2005, Miami Beach, Florida, USA. p 1535.
13. J.-J. Hsu, G. H. Glover, *Local dynamic shimming for slice-wise image acquisition*, In: Proceedings of the 14th Scientific Meeting, International Society for Magnetic Resonance in Medicine, May 6–12, 2006, Seattle, Washington, USA. p 2837.
14. J.-J. Hsu, G. H. Glover, *Rapid time-series mapping of the longitudinal relaxation time of the brain during neuronal activity*, In: Proceedings of the 14th Scientific Meeting, International Society for Magnetic Resonance in Medicine, May 6–12, 2006, Seattle, Washington, USA. p 661.
15. J.-J. Hsu, G. H. Glover, *Quantitative analysis of brain functional hemodynamics with time-series T1 mapping*, In: Proceedings of the 15th Scientific Meeting, International Society for Magnetic Resonance in Medicine, May 19–25, 2007, Berlin, Germany. p 1952.
16. G. Zaharchuk, J.-J. Hsu, G. Rosenthal, R. F. Busse, G. H. Glover, *Quantitative oxygen partial pressure MR imaging of CSF and brain*, In ASNR 45th Annual Meeting, June 9–14, 2007, Chicago, Illinois.
17. J.-J. Hsu, G. Zaharchuk, G. H. Glover, *Fast simultaneous measurement of the RF flip angle and the longitudinal relaxation time for quantitative MRI*, In: Proceedings of the 16th Scientific Meeting, International Society for Magnetic Resonance in Medicine, May 3–9, 2008, Toronto, Canada. p 360.
18. J.-J. Hsu, G. H. Glover and G. Zaharchuk, *Optimizing Saturation-Recovery Measurements of the Longitudinal Relaxation Rate Under Time Constraints*, In: Proceedings of the 17th Scientific Meeting, International Society for Magnetic Resonance in Medicine, April 18–24, 2009, Honolulu, Hawaii. p 2637.
19. J.-J. Hsu, G. H. Glover and G. Zaharchuk, *General formulas for optimizing two-point saturation-recovery measurements*, under review for presentation in the 18th Scientific Meeting, International Society for Magnetic Resonance in Medicine, May 1–7, 2010, Stockholm, Sweden. (submitted November, 2009).
20. J.-J. Hsu, G. H. Glover, *Accelerated three-dimensional z-shimming for fMRI*, under review for presentation in the 18th Scientific Meeting, International Society for Magnetic Resonance in Medicine, May 1–7, 2010, Stockholm, Sweden. (submitted November, 2009).

**NIH BIOGRAPHICAL SKETCH**  
DO NOT EXCEED FIVE PAGES

NAME Isaacson, Richard Scott		POSITION TITLE Assistant Professor of Neurology and Medicine University of Miami – Miller School of Medicine	
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Missouri–Kansas City Kansas City, MO	B.A.	1995-1997	Liberal Arts
University of Missouri–Kansas City School of Medicine Kansas City, MO	M.D.	1997-2001	Medicine
Mount Sinai Medical Center, University of Miami	Internship	2001-2002	Internal Medicine
Beth Israel Deaconess Med Ctr, Harvard Med School	Residency	2002-2005	Neurology

**NOTE: The Biographical Sketch may not exceed five pages. Follow the formats and instructions on the attached sample.**

**A. Positions and Honors.** List in chronological order previous positions, concluding with your present position. List any honors. Include present membership on any Federal Government public advisory committee.

**Positions and Employment**

- 2004-2005 Chief Resident (Neurology), Harvard Medical School, Beth Israel Deaconess Medical Center
- 2002-2005 Clinical Fellow in Neurology, Harvard Medical School
- 2005-2007 Associate Medical Director, Wien Center for Alzheimer’s Disease and Memory Disorders, MSMC
- 2005-2007 Director, Research Unit in Medical Education, Mount Sinai Medical Center
- 2005-2007 Attending Neurologist, Mount Sinai Medical Center
- 2005- pres American Academy of Neurology, Undergraduate Education Subcommittee
- 2005- pres Assistant Professor of Medicine, University of Miami Miller School of Medicine
- 2007- pres Assistant Professor of Neurology, University of Miami Miller School of Medicine
- 2007- pres Director, Neurology Residency Training Program, University of Miami Miller School of Medicine
- 2008- pres Associate Chair of Education, Department of Neurology, U. Miami Miller School of Medicine
- 2008- pres Consortium of Neurology Clerkship Directors Task Force, ED-2/Core Curriculum for Medical Students
  
- 1997, 1999 (summer) Laboratory of Central Nervous System Studies, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD; Mentor: Dr. Clarence J. Gibbs

**Other Experience and Professional Memberships**

- 2001- pres American Academy of Neurology
- 2004 Harvard Academy Medical Education Symposium, Workshops in Medical Education
- 2004 Laboratory teaching assistant, Harvard Medical School, Human Nervous System and Behavior course
- 2005- 2007 Graduate Medical Education/Academic Affairs Committee, Mount Sinai Medical Center
- 2006- 2007 Vice-Chair, Continuing Medical Education Committee, Mount Sinai Medical Center
- 2007- pres Association of University Professors of Neurology
- 2008- pres Graduate Medical Education Committee (Voting member), U. Miami/Jackson Memorial Hospital
- 2008- pres Associate Member, Educational Development Office, U. Miami Miller School of Medicine
- 2008- pres Board of Directors, Florida Society of Neurology

## Honors

- 2003 Congressional Representative for the American Academy of Neurology, Neurology on the Hill  
2005 Teacher of the Year/Attending of the Year, Internal Medicine Residency Training Program, Mount Sinai Medical Center  
2006 Invited Course Director/Speaker, ACGME Annual Educational Conference, March 2007, Orlando, FL; Topic: "Practice-Pattern-based Curriculum Development"  
2006 Florida International University – Distinguished Lecture Series  
Topic: "Alzheimer's Disease – Unraveling the Mystery"  
2006 Alumni of Distinction Award, Commack High School, Commack, NY  
2008 Invited Speaker, American Academy of Neurology 2008 Annual Meeting  
Topic: "Measuring Educational Outcomes in Neurology"; Clerkship and Program Directors Conference  
2008 Invited Speaker, Association of University Professors of Neurology – Clerkship Directors Boot Camp  
Topic: "Education Research Methods in Dementia"  
2008 American Academy of Neurology Leadership Development Program  
2008 Congressional Representative for the American Academy of Neurology, Neurology on the Hill  
2008 Chairman's Award for Teaching Excellence, Dept of Neurology, U. Miami Miller School of Medicine  
2009 Scientific Highlights Session (Top 5% of program)/Platform presentation, American Academy of Neurology Annual Meeting, AAN Education Research Grant  
2009 American Academy of Neurology, A.B. Baker Teacher Recognition Award  
2009 Visiting Professor of Neurologic Education, University of Rochester  
Topic: "Measuring Educational Outcomes in Neurology"

## B. Selected peer-reviewed publications (in chronological order). Do not include publications submitted or in preparation.

1. Lynne J, Ali I, Newman-Toker D, Isaacson RS. Annual Review of Medical Education Articles in Neurology 2007-2008. *Teaching and Learning in Medicine*, 2009; 21(4), 351-354.
2. Jack CR Jr, Lowe VJ, Weigand SD, Wiste HJ, Senjem ML, Knopman DS, Shiung MM, Gunter JL, Boeve BF, Kemp BJ, Weiner M, Petersen RC; Alzheimer's Disease Neuroimaging Initiative (Isaacson R). Serial PIB and MRI in normal, mild cognitive impairment and Alzheimer's disease: implications for sequence of pathological events in Alzheimer's disease. *Brain*. 2009 May;132(Pt 5):1355-65.
3. Mormino EC, Kluth JT, Madison CM, Rabinovici GD, Baker SL, Miller BL, Koeppe RA, Mathis CA, Weiner MW, Jagust WJ; Alzheimer's Disease Neuroimaging Initiative (Isaacson R). Episodic memory loss is related to hippocampal-mediated beta-amyloid deposition in elderly subjects. *Brain*. 2009 May;132(Pt 5):1310-23.
4. Silberstein S, Isaacson RS. Clinical course in migraine-conceptualizing migraine transformation. *Neurology* Podcast: Headache. American Academy of Neurology, September 8, 2008. <http://www.aan.com/rss/?event=feed&channel=1>.
5. Isaacson RS, Utey B, Cheng N, Portnoy K. Advice to Medical Students: Neurology. American Academy of Neurology website, August 2008. Published in print and on-line at <http://www.aan.com/go/education/students/medical/advice>, refereed by the Undergraduate Education Subcommittee.
6. Robens J, Isaacson RS, Poppiti R, Robinson M. Does a practice-pattern and evidence-based autopsy curriculum improve outcomes? *ACGME-Bulletin*, pg 14-15. May 2007. Published in print and on-line at [https://www.acgme.org/acWebsite/bulletin-e/e-bulletin05\\_07.pdf](https://www.acgme.org/acWebsite/bulletin-e/e-bulletin05_07.pdf).
7. Loewenstein DA, Acevedo A, Ownby R, Agron J, Barker WW, Isaacson R, Strauman S, Duara R. Using Different Memory Cutoffs to Assess Mild Cognitive Impairment. *Am J Geriatr Psychiatry* 2006; 14(11):911-919.

8. Chediak A, Esparis B, Isaacson R, De la Cruz L, Ramirez J, Rodriquez JF, Abreu A. How many polysomnograms must sleep fellows score before becoming proficient at scoring sleep? *J Clin Sleep Med*, 2006; 2(4):427-430.
9. Isaacson RS. Practice-Pattern Based Curriculum Development. *ACGME Bulletin*, pg. 15-19. April 2006. Published in print and on-line at [https://www.acgme.org/acWebsite/bulletin/bulletin04\\_06.pdf](https://www.acgme.org/acWebsite/bulletin/bulletin04_06.pdf).
10. Loewenstein DA, Acevedo A, Agron A, Isaacson R (sic), Strauman S, Crocco E, Duara R. Cognitive Profiles in Alzheimer's Disease and in Mild Cognitive Impairment of Different Etiologies. *Dement Geriatr Cogn Disord*, 2006; 21:309-315.
11. Isaacson RS, Gelb DJ. Advice to Medical Students: Neurology. American Academy of Neurology website, August 2005. Published in print and on-line at <http://www.aan.com/go/education/students/medical/advice>.
12. Duara R, Loewenstein DA, Barker WW, Isaacson RS, Greig-Custo, M. A Clinical Perspective of Mild Cognitive Impairment: What the Radiologist Should Know. *Neuroimaging Clin N Am*, 2005 Nov; 15(4): 779-788.

Abstracts:

1. Isaacson RS, Ochner C, Safdieh J. Evaluating the Effectiveness of Continuum as a Teaching Tool for Medical Students: A Randomized, Multi-Center Trial. *Neurology*. 2009; 71 (suppl).
2. Isaacson RS. Evaluating the Effectiveness of Continuum as a Teaching Tool for Residents and Medical Students: A Pilot Study. *Neurology*. 2008; 70 (suppl): A13.
3. Duara R, Loewenstein DA, Greig MT, Lifschitz K, Gomez Z, Isaacson RS, Agron J, Acevedo A, Barker WW. Does Neuroimaging Contribute to a Diagnosis of Prodromal AD among Subjects with Amnesic Mild Cognitive Impairment (aMCI)? *Neurology* 2007; 68 (suppl): A236.
4. Isaacson RS. Should there be a required Neurology clerkship during medical school? A pilot study. *Neurology*. 2007; 68 (suppl): A75.
5. Cardozo E, Alonso Y, Isaacson RS. Attitudes toward Neurology in Undergraduate Students who will be applying to medical school. *Neurology*. 2007; 68 (suppl): A76-77.
6. Steiner SD, Barker WW, Isaacson R. Implementation of the 2006 AAN Parkinson Disease Practice Guidelines as a teaching curriculum improves medical student and resident evidence-based knowledge. *Neurology*. 2007; 68 (suppl): A76.
7. Robens J, Isaacson RS, Poppiti R, Robinson M. Does a practice-pattern and evidence-based autopsy curriculum improve outcomes? Abstract accepted for oral and poster presentation at the 2007 *ACGME Education Conference*, Orlando, FL.
8. Penhall BD, Habibnejad S, Weinberg GB, Young A, Isaacson RS. Do resident documentation practices improve after web-based focused teaching intervention? Abstract presented at the 2007 *ACGME Education Conference*, Orlando, FL.
9. Maldonado C, Tolentino A, Isaacson RS. Practice-pattern and evidence-based curriculum development in cardiology: Does a web based educational tool for Internal Medicine residents improve outcomes? Abstract presented for presentation at the 2007 *ACGME Education Conference*, Orlando, FL.
10. Steiner SD, Barker WW, Isaacson RS. Implementation of the 2006 American Academy of Neurology Parkinson Disease Practice Guidelines as a teaching curriculum improves medical student and resident evidence-based knowledge. *Movement Disorders*. 2006; 21 (suppl) 15:S458.
11. Steiner SD, Barker WW, Isaacson SH, Isaacson RS. Perspectives on movement disorders among medical students and

residents. *Movement Disorders*. 2006; 21 (suppl) 15:S427.

12. Isaacson RS, Steiner SD, Krasnow RE, Helfner BE, Barker WW, Khan AK. Attitudes of Allopathic and Osteopathic medical students toward adult Neurology. *Neurology*. 2006; 66 (suppl): A18.

13. Isaacson RS, Ronthal M, Schussler E, Edlow JA. Focused Teaching Intervention Improves Diagnosis, Management and Neuroimaging Utilization in Emergency Department Patients with Back and Neck complaints. *Neurology*. 2006; 66 (suppl): A18.

14. Isaacson RS, Schussler E, Ronthal M, Edlow J. Diagnosis and management of Neck and Back complaints in the ER: Does focused teaching intervention improve clinical practice? Abstract presented at the ACGME/ ABMS sponsored "Practice-based Learning and Improvement" conference, September 21, 2005, Chicago, IL and published on-line at [http://www.acgme.org/outcome/conferences/pbli\\_abstractP14.pdf](http://www.acgme.org/outcome/conferences/pbli_abstractP14.pdf).

15. Isaacson RS, Young DA, Weinberg G. Educational Innovations Project Pilot Project: Developing a core and rotating Internal Medicine Curriculum. Abstract presented at the ACGME/ ABMS sponsored "Practice-based Learning and Improvement" conference, September 21, 2005, Chicago, IL and published on-line at [http://www.acgme.org/outcome/conferences/pbli\\_abstractP13.pdf](http://www.acgme.org/outcome/conferences/pbli_abstractP13.pdf).

16. Cano-Gomez A, Isaacson RS, Weinberg G. Standardizing healthcare delivery of surgical patients. Abstract presented at the ACGME/ ABMS sponsored "Practice-based Learning and Improvement" conference, September 21, 2005, Chicago, IL and published on-line at [http://www.acgme.org/outcome/conferences/pbli\\_abstractP4.pdf](http://www.acgme.org/outcome/conferences/pbli_abstractP4.pdf).

17. Lichtenberger A, Isaacson RS. Isolated acute ophthalmoparesis: A variant of the Miller-Fisher syndrome? Case report, presented at the American College of Physicians Annual Meeting, Florida region, September 16-17, 2005.

18. Isaacson RS, Schussler E, Edlow J. Developing a Neurology Curriculum for Emergency Medicine Residents. *Neurology*. 2005; 64 (suppl):A9.

19. Isaacson SH, Isaacson RS, Kreitzman D. Dopamine agonist treatment of Parkinson's disease in the elderly. *Neurology*. 2005; 64 (suppl): A107.

20. Isaacson RS, Nadel N, Isaacson SH. Improvement of dystonia with topamax. *Movement Disorders*, 2002. 7th International Congress of Parkinson's Disease and Movement Disorders, Miami, 2002.

**C. Research Support.** List selected ongoing or completed (during the last three years) research projects (federal and non-federal support). Begin with the projects that are most relevant to the research proposed in this application. Briefly indicate the overall goals of the projects and your role (e.g. PI, Co-Investigator, Consultant) in the research project. Do not list award amounts or percent effort in projects.

Ongoing Projects:

Optimizing healthcare delivery via an integrated electronic medical record-outcomes assessment and database tool  
Principal Investigator: Richard S. Isaacson, MD; Mentor: Ralph L. Sacco, MD, MS, FAAN, FAHA  
National Institutes of Health – Clinical Research LRP  
Role: Principal Investigator

Cyanobacterial toxin (BMAA) in brain and hair tissue of Alzheimer's disease patients  
Principal Investigator: Richard S. Isaacson, MD  
Alzheimer's Association  
Role: Principal Investigator



Principal Investigator/Program Director (Last, First, Middle): Isaacson

Evaluating the Effectiveness of *Continuum* as a Teaching Tool for Medical Students

Principal Investigator: Richard S. Isaacson, MD

American Academy of Neurology

Role: Principal Investigator

Completed Projects:

Cognitive-Cardiovascular Screening and Educational Intervention Program for Hispanics and Non-Hispanics

Principal Investigators: Richard S. Isaacson, MD (Education), Ranjan Duara, MD (Clinical)

Mount Sinai Medical Center Foundation

Role: Co-Principal Investigator

Alzheimer's Disease Neuroimaging Initiative (ADNI)

Principal Investigator (MSMC Site): Ranjan Duara, MD

National Institutes of Health

Role: Co-Investigator/Study Physician (MSMC site)

A Randomized Double-Blind Placebo-Controlled Trial of the Effects of Docosahexaenoic Acid (DHA) in Slowing the Progression of Alzheimer's Disease

Principal Investigator (MSMC Site): Ranjan Duara, MD

National Institute on Aging, Alzheimer's Disease Cooperative Study (ADCS)

Role: Co-Investigator/Study Physician (MSMC site)

A Multi-center, Randomized, Double-blind, Placebo-controlled trial of Simvastatin to slow the progression of Alzheimer's Disease

Principal Investigator (MSMC Site): Ranjan Duara, MD

National Institute on Aging, Alzheimer's Disease Cooperative Study (ADCS)

Role: Co-Investigator/Study Physician (MSMC site)

A Randomized, Double-blind, Placebo-controlled trial of Valproate to Attenuate the Progression of Alzheimer's Disease

Principal Investigator (MSMC Site): Ranjan Duara, MD

National Institute on Aging, Alzheimer's Disease Cooperative Study (ADCS)

Role: Co-Investigator/Study Physician (MSMC site)

A One Year, Multicenter, Randomized, Double-blind, Placebo-controlled Evaluation of the Efficacy and Safety of Donepezil Hydrochloride (E2020) in subjects with Mild Cognitive Impairment

Principal Investigator (MSMC Site): Ranjan Duara, MD

Pfizer Inc./Eisai Inc

Role: Co-Investigator/Study Physician (MSMC site)

A Multi-centered, Randomized, Double Blind, Placebo-controlled Trial of Estrogen to Prevent Alzheimer's Disease and loss of memory in women

Principal Investigator (MSMC Site): Ranjan Duara, MD

National Institute on Aging, Alzheimer's Disease Cooperative Study (ADCS)

Role: Co-Investigator/Study Physician (MSMC site)



**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Heather L. Katzen, Ph.D.		POSITION TITLE Research Assistant Professor	
eRA COMMONS USER NAME HLKATZEN			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Emory University, Atlanta, GA	BS	1993	Psychology
University of Miami, Coral Gables, FL	MS	1996	Neuropsychology
University of Miami, Coral Gables, FL	PhD	2000	Neuropsychology

**Research and Professional Experience****Employment**

1993-1994 Teaching Assistant, Department of Psychology, University of Miami, Coral Gables, FL  
 1993-1997 Research Assistant, Department of Neurology, Division of Neuropsychology, University of Miami School of Medicine, Miami, FL  
 1996 Course Instructor, Abnormal Psychology, University of Miami, Coral Gables, FL.  
 1996-1997 Supervisor of Undergraduate Independent Research, Department of Psychology, University of Miami, Coral Gables, FL  
 1997-1998 Neuropsychology Intern, Long Island Jewish Medical Center/Hillside Hospital, Glen Oaks, NY  
 1998-2000 Predoctoral Fellow in Neuropsychology, Department of Neurology, University of Miami School of Medicine, Miami, FL  
 2000-2002 Postdoctoral Fellow, Neuropsychology in Neurology, Weill Cornell Medical College-New York Presbyterian Hospital, New York, NY  
 2002-2003 Instructor of Neuropsychology in Neurology, Weill Cornell Medical College  
 2002-2003 Assistant Attending Neuropsychologist, New York Presbyterian Hospital  
 2003-2006 Neuroscience Scientific Liaison, Medical Affairs, Ortho-McNeil Janssen, Johnson & Johnson  
 2006- Assistant Research Professor, Department of Neurology, University of Miami Miller School of Medicine  
 2006- Adjunct Research Assistant Professor, Neuropsychology in Neurology, Department of Neurology and Neuroscience, Weill Medical College of Cornell University

**Honors**

1990-1993 Dean's List, Emory University  
 1993-1994 Graduate School Scholarship and Teaching Assistantship: Department of Psychology  
 1994-1996 Graduate School Scholarship and Research Assistantship: Department of Neurology and the National Parkinson Foundation  
 1996-1997 Graduate School Scholarship and Research Assistantship: Department of Neurology and the Dade County Juvenile Court System  
 1996-1997 Letters of Commendation, University of Miami, Department of Psychology

**Licensure and Professional Societies**

2001- Licensed Psychologist, State of New York, October 2001; Registration #014973  
 2006- Licensed Psychologist, State of Florida, June 2006; License #7371  
 1994- Member, American Psychological Association: Division 40  
 1998- Member, International Neuropsychological Society

**Peer-reviewed publications****Journal Articles:**

**Katzen, H., Levin, B. & Llabre, M. (1998).** Age of disease onset influences cognition in Parkinson's disease. Journal of the International Neuropsychological Society, 4, 285-290.

Levin, B.E., **Katzen, H.L.**, Klein, B.K. & Llabre, M.M. (2000). Ascertainment Bias in Longitudinal Studies of Patients with Parkinson's Disease, Journal of Clinical and Experimental Neuropsychology, 22(5): 580-586.

Roberts, J.S, LaRusse, S.A, Katzen, H.L., Whitehouse, P.J., Barber, M, Post, S. Relkin, N., Quaid, K., Pietrzak, R.A., Cupples, L.A., Farrer, L.A., Brown, T.A., Green, R.C. (2003). Reasons for Seeking Genetic Susceptibility Testing Among First-Degree Relatives of People with Alzheimer Disease. Alzheimer Disease & Associated Disorders.

Ravdin & **Katzen**. (2003) Verbal Fluency Performance in Normal Aging: Effect of Mild Depression and Age Stratified Norms, The Clinical Neuropsychologist, 17 (2); 195-202.

Grossman, A. Levin, B., **Katzen, H.**, and Lechner (2004). PTSD Symptoms and Onset of Neurologic Disease in Elderly Trauma Survivors, Journal of Clinical and Experimental Neuropsychology, 26 (5); 698-705.

LaRusse S, Roberts JS, Marteau TM, **Katzen H**, Linnenbringer EL, Barber M, Whitehouse P, Quaid K, Brown T, Green RC, Relkin NR (2005). Genetic susceptibility testing versus family history-based risk assessment: Impact on perceived risk of Alzheimer disease. Genet Med. Jan;7(1):48-53.

**Katzen, H.L.**, Levin, B.E., Weiner, W. (2006). Side and Type of Motor Symptom Influence Cognition in Parkinson's Disease. Movement Disorders, 21 (11); 1947-1953.

LaRusse, S., **Katzen, H.**, Brown, T. Barber, M., Whitehouse, P., Green, R., Ravdin, L., Roberts, S. Cupples, L.A. and Relkin, N. (2006). Recall of disclosed apolipoprotein E (APOE) genotype and lifetime risk estimates for Alzheimer's disease: The REVEAL Study. Med. Dec; 8(12); 746-751.

Ravdin L.D., & **Katzen, H.** (2007). Taking Stock of Cognitive Reserve: Factors affecting the brain's vulnerability to disease and trauma. Journal of Clinical and Experimental Neuropsychology, 1-2.

Ravdin L.D. & **Katzen, H.**, Relkin, N.R. (2008). Features of Gait Most responsive to Tap Test in Normal Pressure Hydrocephalus. Clinical Neurology and Neurosurgery, 110(5):455-61.

Scanlon, B. K., **Katzen, H. L.**, Levin, B. E., Singer, C., & Papapetropoulos, S. (2008). A formula for the conversion of UPDRS-III scores to Hoehn and Yahr stage. Parkinsonism & Related Disorders, 14(4), 379-380.

Papapetropoulos, S., **Katzen, H.**, Schrag, A., Singer, C., Scanlon, B. K., Nation, D., Guevara, A., & Levin, B. (2008). A questionnaire-based (UM-PDHD) study of hallucinations in Parkinson's disease. BMC Neurology, 8(21).

Nation, D. A., **Katzen, H. L.**, Scanlon, B. K., Papapetropoulos, S., & Levin, B. E. (2009). Defining Subthreshold Depression in Parkinson's Disease. International Journal of Geriatric Psychiatry, Feb 11. ; 24(9): 937-943. [Epub ahead of print].

Tsakanikas, D. **Katzen, H.L.**, Ravdin, L.D., & Relkin, N.R. (2009). Upper extremity motor measures of Tap Test response in Normal Pressure Hydrocephalus. Upper extremity motor measures of Tap. Clin Neurol Neurosurg (2009), doi:10.1016/j.clineuro.2009.07.017

**Katzen, H.** Myerson, C., Papapetropoulos, C., Nahab, F., Gallo, B.V. & Levin, B.E. Multi-modal hallucinations and cognitive function in Parkinson's disease. Dementia and Geriatric Cognitive Disorders (accepted with revisions).

#### Book Chapters:

Levin, B. E. & **Katzen H. L.** (1995). Early cognitive changes and nondementing abnormalities in Parkinson's disease. In: W. J. Weiner & A. E. Lang (Eds.), Advances in Neurology. (pp.85-95). New York: Raven Press.\*

Levin, B. E. & **Katzen H. L.** (2005). Early cognitive changes and nondementing abnormalities in Parkinson's disease. In: W. J. Weiner & A. E. Lang (Eds.), Behavioral Neurology and Movement Disorders, Advances in Neurology. (pp.85-95). New York: Raven Press.

**Katzen, H.** & Relkin, NR (2008). Normal Pressure Hydrocephalus: A Review. In: David Geldmacher (Ed.), Other Dementias. (pp. 69-93). Florida: Carma Publishing.

Ravdin, L.D. & **Katzen, H.** Idiopathic Normal Pressure Hydrocephalus (in press). Casebook of Clinical Neuropsychology. Oxford University Press.

**Selected Refereed Abstracts:**

Levin, B. E., Katzen, H. L., Brown, S. L., Weiner, W. J., & Rey, G. (1995). Enduring effects of left motor symptom onset in Parkinson's disease. Paper presented at the American Neurological Association Convention.

Katzen, H., Levin, B., Niebler, N., Ginart, H., Llabre, M., & McCabe, P. (1997, February). Age of disease onset influences cognition in Parkinson's disease. Paper presented at the International Neuropsychological Society Conference, Orlando, Florida.

Katzen, H., Levin, B. & Klein, B. (1998, February). The Influence of Predominant Motor Symptoms on Memory Performance in Parkinson's Disease. Poster presented at the International Neuropsychological Society Conference, Honolulu, Hawaii.

Katzen H, Levin B E, Llabre M .M., Rey G, Winters, P McCabe, P.M. Lateralization of tremor at disease exerts an effect on cognitive in Parkinson's disease. Society for Neuroscience, 2000, 26, 748.

Grossman A, Levin, B, Katzen H, Kuttler A, Koller W, Weiner W. (2001). A prospective study of lateralized tremor and its relationship to cognitive decline in Parkinson's disease. Annals of Neurology, 50 (3), (Suppl. 1), p.S22.

Ravdin, L., Katzen, H. Agrawal, P., & Relkin, N. (2001, February). Mild Depression and Verbal Fluency Performance in Older Adults. Poster presented at The International Neuropsychological Society. Chicago, Illinois.

Katzen, H., Levin, B., Llabre, M. (2001, February). Lateralization and Symptom Type at Disease Onset Affect Cognition in Parkinson's Disease. Paper presented at The International Neuropsychological Society. Chicago, Illinois.

Katzen, H., Levin, B., Grossman, A. (2001, March). Age of Onset and Cognitive Decline in Parkinson's Disease. Poster presented at Cognitive Neuroscience Society New York, New York.

T. Brown, S. LaRusse, M. Barber, N. Relkin, P. Whitehouse, L. Farrer, L. Cupples, S. Post, L. Ravdin, D. Cisewski, H. Katzen, S. Sami, A. Sadovnick, J. Davis, K. Quaid, J. Woodard, R.C. Green (October, 2001). Preliminary Findings from the REVEAL Study: Genetic Risk Assessment and Counseling for Alzheimer's Disease. Poster Presented at the American Society of Human Genetics, San Diego, California.

S. LaRusse, H. Katzen, S. Roberts, M. Barber, T. Brown, P. Whitehouse, R. Green, L. Ravdin, L. Cupples, N. Relkin. Genetic Test Results Alter Perception of Risk of Alzheimer's Disease: Preliminary Results of the REVEAL Study. Paper presented at the 2002 NSGC Annual Education Conference.

S. LaRusse, H. Katzen, T. Brown, M. Barber, P. Whitehouse, R.Green, L. Ravdin, S. Roberts, L. A. Cupples, N. Relkin (2002, August). Participant Recall of Apolipoprotein E (APOE) Genotype and Risk Estimate After Six Weeks: Results from the REVEAL Study. Poster Presented at the World Alzheimer's Congress, Stockholm, Sweden.

Papapetropoulos, S., Scanlon, B., Singer, C., Sengun, C., Schrag, A., Katzen, H., & Levin, B. E. (2007). A rating instrument for hallucinations in Parkinson's disease: The University of Miami hallucinations Questionnaire (UMHQ.v2). Parkinsonism & Related Disorders, 13, S54-S54.

Papapetropoulos, S., Sengun, C., Singer, C., Schrag, A., Scanlon, B., Ledon, J., Katzen, H. K., & Levin, B. E. (2007). A rating instrument for hallucinations in Parkinson's disease: The University of Miami hallucinations questionnaire (UMHQ.v1). Movement Disorders, 22, X-XI.

Levin, B. E., Katzen, H. L., Nation, D. A., Scanlon, B. K., Wilensky, D., Papapetropoulos, S., Singer, C., Sengun, C., & Rodriguez, R. A. (2007, October). Diagnosing depression in Parkinson's disease: BDI screening versus DSM-IV-TR criteria. Poster presented at the Annual Symposium on Etiology, Pathogenesis, and Treatment of Parkinson's Disease and Other Movement Disorders, Chicago, IL.

Principal Investigator/Program Director (Last, First, Middle): **Katzen, Heather L**

Nation, D. A., Katzen, H. L., Rodriguez, R. A., Ledon, J. A., Capano, A., Papapetropoulos, S., Gallo, B. V., Jagid, J. R., & Levin, B. E. (2007). Defining features of subsyndromal depression in Parkinson's disease. *Movement Disorders*, 22, S105-S105.

Scanlon, B. K., Katzen, H. L., Nation, D. A., Rodriguez, R. A., Papapetropoulos, S., Ledon, J. A., Capano, A., Wilensky, D., Zitser, J., Singer, C., Gallo, B. V., Jagid, J. A., & Levin, B. E. (2007). Side and symptom of disease onset is related to lifespan in Parkinson's disease. *Movement Disorders*, 22, S171-S171.

Nation, D. A., Scanlon, B. K., Katzen, H., Rodriguez, R., Ledon, J., Capano, A. M., Papapetropoulos, S., Singer, C., Jagid, J. R., Russell, A., & Levin, B. (2007). Defining features of subsyndromal depression in Parkinson's disease. *Neurology*, 68(12), A35-A35.

Scanlon, B. K., Katzen, H. L., Nation, D. A., Rodriguez, R. A., Papapetropoulos, S., Singer, C., Gallo, B. V., & Levin, B. E. (2007, February). Neuropsychological predictors of all-cause mortality in Parkinson's disease. *Journal of the International Neuropsychological Society*, 13(Supplement S1), 96-97.

Assuras, S., Katzen, H.L., Ravdin, L.D., Tsakanikas, D., & Relkin, N.R. Gait and Neuropsychological Response to Shunt in Patients with Normal Pressure Hydrocephalus. Presented at the annual meeting of the American Academy of Clinical Neuropsychology, Boston, MA, June 2008.

Assuras, S., Choe, L., Katzen, H. Lee, K., & Relkin, N.R. Proteomic Analysis of Cerebrospinal Fluid in Idiopathic Normal Pressure Hydrocephalus (INPH). Oral presentation at the annual Hydrocephalus meeting, Hannover, Germany, September 2008.

Katzen, H, Assuras, S., Ravdin, L., Strybing, K., Heros, R., Schwartz, T., Fink, M., Kaplitt, M., Levin, B., Relkin, N. Improvement in Gait and Cognition Following Shunt Placement in Idiopathic Normal Pressure Hydrocephalus. Oral presentation at the annual Hydrocephalus meeting, Baltimore, MD, October 2009.

Assuras, S., Katzen, H, Ravdin, Relkin, N. Proteomic Analysis of Cerebrospinal Fluid in Idiopathic Normal Pressure Hydrocephalus (INPH). Oral presentation at the annual Hydrocephalus meeting (selected as TOP 10 paper), Baltimore, MD, October 2009.

## Research Support

Name of Individual:	Katzen, Heather (100% effort)
Active/Pending:	Active
Source:	NIH/NINDS-K award
Title of Project (and/or Subproject):	Recovery of Neuropsychological Functions Following Surgical Treatment of Normal Pressure Hydrocephalus
Dates of Approved/Proposed Project:	5/10/06-5/08/12
Overlap (summarized for each individual):	None

The major goal of this project is to examine outcome in NPH following placement of programmable shunts. A second goal is to determine whether shunting parameters contribute to cognitive outcome in NPH.

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Bonnie E. Levin, Ph.D.		POSITION TITLE Associate Professor of Neurology and Psychology	
eRA COMMONS USER NAME bonnie_levin			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Georgetown University	BS	1974	Psychology
Temple University	Ph.D.	1983	Psychology

### A. PROFESSIONAL EXPERIENCE

#### EMPLOYMENT:

1979-1980 Fellow in Psychology, Department of Psychiatry, Harvard Medical School, Boston, MA  
1979-1980 Intern, Clinical Pediatric Neuropsychology, Children's Hospital Center, Boston, MA.  
1980 Extern, Boston Veteran's Administration Hospital, Boston, MA  
1981-1982 Instructor, Department of Neurology, University of Miami  
1981 Director, Division of Neuropsychology, Department of Neurology, University of Miami  
1986-1992 Assistant Professor, Department of Neurology, University of Miami  
1992- Associate Professor, Department of Neurology, University of Miami

#### AWARDS AND OTHER PROFESSIONAL EXPERIENCE:

1974-Cum Laude, Georgetown University; Psi Chi Honor Society  
Fellow, Mahoney Residential College  
International Neuropsychology Society (INS) Program Chair-1997  
INS Board of Governors 1998-2001  
NINDS Study Section Member NSD-K, 2001-2005  
NINDS AD hoc Reviewer-NSD-A 2001, 2002  
NINDS Special Emphasis Panels 7/1998, 8/1999, 12/1999, 5/2000, 8/2000, 10/2000, 12/2001, 6/2001,  
10/2001, 8/2002, 12/2002, 1/2004, 8/2004, 12/2004, 2/2005, 1/2006, 10/2006, 11/2006, 11/2006, 6/2007,  
(6/24 & 6/29) 3/2008, 4/2008.  
NINDS Ad hoc reviewer, NSD-K, 2006 - 2008  
Alzheimer Association Medical and Scientific Council Reviewer, 1999, 2002  
Consultant: University of Miami Brain Endowment Bank, Department of Neurology; Clinical Neuroscience  
Unit, UM Department of Neurology  
Member, NABIS: H II Date Safety of Monitoring Board  
Pediatrics; UM Sleep Center, Department of Neurology.  
Professional Advisory Board: Epilepsy Foundation of South Florida  
Editorial Boards: Neuropsychology, Journal of the International Neuropsychological Society (JINS), Aging,  
Neuropsychology and Cognition, Journal of Clinical & Experimental, Neuropsychology (JCEN)

#### B. SELECTED PUBLICATIONS:

Levin, B.E., Weiner, W.J.: Psychosocial Aspects of Parkinson's disease. In:W.C. Koller, (Ed), Handbook of Parkinson's Disease. In:M. Decker, Inc., New York, 1987; 465-474.  
Levin, B.E., Llabre, M.M., Weiner, W.J.: Parkinson's disease and depression:Psychometric properties of the Beck Depression Inventory. Journal of Neurology, Neurosurgery, and Psychiatry, 1988;51:1401-4.  
Levin, B.E., Llabre, M.M., Weiner, W.J.:Cognitive impairments associated with early Parkinson's disease. Neurology, 1989,39:557-561.  
Kramer, J.H., Levin, B.E., Brandt, J., Delis, D.C.:Differential verbal learning impairments in Alzheimer's, Huntington's and Parkinson's disease. Neuropsychology, 1989;3:111-120.  
Levin, B.E..:Organizational deficits in dyslexia: Possible frontal lobe dysfunction. Developmental Neuropsychology, 1990;6(2):95-110.  
Levin, B.E., Llabre, M.M., Ansley, J., Brown, M.C., Weiner, W.J., Sanchez-Ramos, J.: Visuospatial Impairments in Parkinson's disease. In: M. Streifler, A. Korczyn (Eds). Parkinson's Disease: Anatomy, Pathology, and Therapy. Advances in Neurology, 1990; 53:624-629.

- Levin, B.E., :Spatial cognition in Parkinson's disease. *Alzheimer Disease and Associated Disorders*, 1990;4:161-170.
- Levin, B.E., Llabre, M.M., Weiner, W.J., Brown, M.C.:Visuospatial decline in Parkinson's disease. *Neurology*, 1991;41:365-369.
- Levin, B.E., Feldman, E., Duchowny, M.S., Brown, M.C.:Neuropsychological assessment of children with epilepsy. *International Journal of Pediatrics*, 1991;6:214-219.
- Levin, B.E., Llabre, M.M., Reisman, S., Weiner, W.J., Brown, M.C.:A retrospective study of the effects of anticholinergic medication on memory performance in Parkinson's disease. *Journal of Neuropsychiatry and Clinical Neurosciences*, 1991;3:412-416.
- Levin, B.E.; Duchowny, M.S. Childhood obsessive compulsive disorder and cingulate epilepsy. *Biological Psychiatry*, 1991;30:1049-1055.
- Brown, M.C., Levin, B.E., Ramsay, R.E., Katz, D.A., Duchowny, M.S.:Characteristics of patients with non-epileptic seizures. *Journal of Epilepsy*, 1991;4:225-229.
- Levin, B.E., Tomer, R., Rey, G.J.: Clinical Correlates of Cognitive Impairments in Parkinson's disease. In: S.J. Huber and J.L. Cummings (Eds), *Parkinson's Disease: Behavioral and Neuropsychological Aspects*: New York: Oxford University Press. 1992; 97-106.
- Post, J.M., Levin, B.E., Berger, J.R., Duncan, R., Quencer, R., Calar, G.:Prospective reevaluation by cranial MR of both asymptomatic and neurologically symptomatic HIV + subjects. *American Journal of Neuroradiology*, 1992, 13:359-370.
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- Levin, B.E., Tomer,R.: Cognitive Function in Parkinson's disease. In: J. Cedarbaum and S. Gancher (Eds), *Neurologic Clinics of North America:Issue on Parkinson's Disease*. 1992; 10:471-485.
- Levin, B.E., Berger, J.R., Didona, T., Duncan, R.:Cognition in asymptomatic HIV infection. *Neuropsychology*, 1992;6:303-313.
- Tomer, R., Levin, B.E., Weiner, W.J.:Obsessive compulsive symptoms and motor asymmetries in Parkinson's disease. *Neuropsychiatry, Neuropsychology and Behavioral Neurology*, 1993;6:26-30.
- Feldman, E., Levin, B.E., Lubs, H.L., Rabin, M., Lubs, M.L., Jallad, B., Kusch, A.: Adult dyslexia: A retrospective developmental and psychosocial profile. *Journal of Neuropsychiatry and Clinical Neurosciences*, 1993;5:195-199.
- Tomer, R., Levin, B.E.: Differential affects of aging in two verbal fluency tasks. *Perceptual and Motor Skills*, 1993;76:465-466.
- Kelley, R.E., Chang, J.Y., Suzuki, S., Levin, B.E., Reyes-Iglesia, Y.:Selective increase in transcranial doppler velocity during a cognitive task. *Cortex*, 1993;29:45-52.
- Brown, M.C., Levin, B.E., Ramsay, R.E., Landy, H.J.:Comprehensive evaluation of left hemisphere Type 1 schizencephaly. *Archives of Neurology*, 1993;50:667-669.
- Tomer, R., Levin, B.E., Weiner, W.J.:Side of motor onset influences cognition in Parkinson's disease. *Annals of Neurology*, 1993;34:579-584.
- Rey, G., Levin, B.E., Rodas, R., Bowen, B., Nedd, K.:A longitudinal examination of crossed aphasia. *Archives of Neurology*, 1994;51:95-100.
- Duchowny, M., Levin, B.E., Jayakar, P., Resnick, T.: Neurobiologic factors and the selection of children for epilepsy surgery. *Journal of Child Neurology*, 1994(2);2S42-2S49
- Rey, G., Tomer, R., Levin, B.E., Sanchez-Ramos, J., Bowen, B., Bruce, J.H.: Psychiatric symptoms, atypical dementia and left-visual field inattention in cortico-basal ganglionic degeneration. *Movement Disorders*, 1995;10(1):106-110.
- Levin, B.E., Katzen, H.: Early Cognitive Changes in Parkinson's Disease. In: W. Weiner and A. E. Lang. *Behavioral Neurology of Movement Disorders. Advances in Neurology*, 1995;65:85-89.
- Feldman, E., Levin, B.E., Fleischmann, J., Jallad, B., Kushch, A., Gross-Glenn, K., Rabin, M., & Lubs., H.A.:Gender differences in the severity of adult familial dyslexia. *Reading and Writing*, 1995;7:155-161.
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- Duchonwy, M., Jayakar, P., Harvey, S., Resnick, T., Alvarez, L., Dean P. Levin, B.E.:Language cortex representation: Effects of developmental versus acquired pathology. *Annals of Neurology*, 1996,40:31-38.
- Shulman, L.M., Singer, C., Levin, B.E., Weiner, W.J.:Diagnostic testing for dementia patients with Parkinson's disease. *Journal of the American Gerontological Society*, 1996, 44(2) 214-215.
- Katzen, H., Levin, B.E., Llabre, M.:Age of onset influences dementia in Parkinson's disease. *Journal of International Neuropsychological Society*, 1998, 4, 285-290.

Rey, G.J., Feldman, E., Levin, B.E., Rivas-Vazquez, R., Benton, A.L.: Current trends and future of neuropsychological research with Hispanics. *Archives of Clinical Neuropsychology*, 1999; 14(7), 593-601.

Levin, B.E., Katzen, H.L., Klein, B., Llabre, M. Cognitive decline affects subject attrition in longitudinal research. *Journal of Clinical and Experimental Neuropsychology*. 22 (5), 580-586.

Klein, B., Levin, B.E., Duchowny, M.S., Llabre, M.: Cognitive outcome of children with epilepsy and malformations of cortical development. *Neurology* 2000,55,230-235.

Weiner, WJ, Rabinstein, A, Levin, B.E., Weiner, C. Shulman, LM Cocaine-induced persistent dyskinesias, *Neurology*2001;564 964-965.

Arena, P., Levin, B., Fleming, L, Friedman, M., Blythe, D. A pilot study of the cognitive and psychological correlates of chronic ciguatera poisoning. *Harmful Algae* 3 (2004) 51-60.

Grossman, AB, Levin, BE, Katzen, HL., Lechner, S. PTSD symptoms and onset of neurologic disease in elderly trauma survivors. *Journal of Clinical and Experimental Neuropsychology*, 2004, 26(5), 698-705.

Friedman, MA, Levin, BE. Neuropsychological effects of harmful algal bloom (HAB) toxins. *Journal of International Neurological Society* (2005) 11(3):331-8.

Levin, BE, Katzen, H. Early cognitive changes and nondementing behavioral abnormalities in Parkinson's disease. In: W. Weiner and A. E. Lang. *Behavioral Neurology of Movement Disorders*. Advances in Neurology, 2005.

Grossman, A. B., Levin, B. E., & Bradley, W. G. (2006). Premorbid personality characteristics of patients with ALS. *Amyotroph Lateral Scler*, 7(1), 27-31.

Katzen, H. L., Levin, B. E., & Weiner, W. (2006). Side and type of motor symptom influence cognition in Parkinson's disease. *Mov Disord*, 21(11), 1947-1953.

Scanlon, B. K., Katzen, H. L., Levin, B. E., Singer, C., & Papapetropoulos, S. (2008). A formula for the conversion of UPDRS-III scores to Hoehn and Yahr stage. *Parkinsonism & Related Disorders*, 14(4), 379-380.

Papapetropoulos, S. Katzen, H., Schrag, A., Singer, C., Scanlon, B. K., Nation, D. Guevara, A. & Levin, B.E.(in press) A questionnaire-based (UM-PDHQ) study of hallucinations in Parkinson's disease. *BMC Neurology*.

Nation, DA, Katzen, HL, Scanlon, B.E., Papapetropolis, S, Duncan R, Rodriguez, RA, Singer, C, Levin, BE. Defining subthreshold depression in Parkinson's disease, *International Journal of Geriatric Neuropsychiatry*, 2009, 24 (9) 937-943.

Levin, BE. Behavioral/Neuropsychological outcomes and quality of life endpoints, Woodbury KM, Coull BM (eds) *Clinical Trials in Neurosciences*. Frontiers of Neurology and Neuroscience. Basel, Karger, 2009 (25) ; 78-92

#### Relevant Refereed Abstracts

Levin, B. E. (2007). Neuropsychological predictors of all-cause mortality in Parkinson's disease. *Journal of the International Neuropsychological Society*, 13(Supplement S1), 96-97.

Nation, D. A., Scanlon, B. K., Katzen, H., Rodriguez, R., Ledon, J., Capano, A. M., Papapetropoulos, S., Singer, C., Jagid, J. R., Russell, A., & Levin, B. (2007). Defining features of subsyndromal depression in Parkinson's disease. *Neurology*, 68(12), A35-A35.

Scanlon, B. K., Katzen, H. L., Nation, D. A., Rodriguez, R. A., Papapetropoulos, S., Ledon, J. A., Capano, A., Wilensky, D., Zitsler, J., Singer, C., Gallo, B. V., Jagid, J. A., & Levin, B. E. (2007). Side and symptom of disease onset is related to lifespan in Parkinson's disease. *Movement Disorders*, 22, S171-S171.

Nation, D. A., Katzen, H. L., Rodriguez, R. A., Ledon, J. A., Capano, A., Papapetropoulos, S., Gallo, B. V., Jagid, J. R., & Levin, B. E. (2007). Defining features of subsyndromal depression in Parkinson's disease. *Movement Disorders*, 22, S105-S105.

Papapetropoulos, S., Scanlon, B., Singer, C., Sengun, C., Schrag, A., Katzen, H., & Levin, B. E. (2007). A rating instrument for hallucinations in Parkinson's disease: The University of Miami Hallucinations Questionnaire (UMHQ.v2). *Parkinsonism & Related Disorders*, 13, S54-S54.

Papapetropoulos, S., Sengun, C., Singer, C., Schrag, A., Scanlon, B., Ledon, J., Katzen, H. K., & Levin, B. E. (2007). A rating instrument for hallucinations in Parkinson's disease: The University of Miami Hallucinations Questionnaire (UMHQ.v1). *Movement Disorders*, 22, X-XI.

Levin, B. E., Katzen, H., Nation, D., Scanlon, B., Wilensky, D., Papapetropoulos, S., Singer, C., Sengun, C., & Rodriguez, R. (2007). Diagnosing depression in Parkinson's disease: BDI screening versus DSM-IV-TR criteria. *Movement Disorders*, 22, IX-X.

#### RESEARCH SUPPORT

ACTIVE:

2U01NS38529-07A1 (Benavente/ Romano, site PI)

02/01/2008-6/30/2011 3%



NIH/NINDS \$306,8000  
Secondary Prevention of Small, Subcortical Strokes (SPS3)

This project and compares aspirin versus Plavix in prevention of secondary strokes and cognitive decline examines standard of care in high blood pressure management.

1 UO1 NS052478-01A2 (Adelson) 7/30/07 – 6/30/2013  
NINDS \$1,627,822 (Site Neuropsychologist) 4.80 Calendar months  
Pediatric Traumatic Brain Injury Consortium: Hypothermia

This is a multicenter clinical trial to determine the efficacy of early induced moderate hypothermia after severe TBI in a pediatric sample. Subject mortality at 3 months is the primary measure of outcome. Secondary outcome measures included functional assessment and performance based neuropsychological measures. Role: Study Principal Investigator of the Outcome Center.

**Grant/Contract Number:** R01 NS055107-04  
**Supporting Agency:** NIH/NINDS  
**Title of Project:** Volumetric MRSI Evaluation of Traumatic Brain Injury  
**PI:** Andrew Maudsley  
**Project Period:** 6/01/06-12/31/12  
**Budget Period:** 1/15/09-12/31/09  
**% of Time Committed:** 5%  
**Level of Funding:** \$333,850 (current budget period)  
**Grant Specialist:** Yvonne C.Talley  
Phone: 301-496-7432  
Email: [talleyv@mail.nih.gov](mailto:talleyv@mail.nih.gov)

**Project Goals:** The goals of this project are to evaluate advanced metabolic imaging methods for injury assessment and prognosis following mild and moderate traumatic brain injury.

**Grant/Contract Number:** R01 NS060874-02  
**Supporting Agency:** NIH/NINDS  
**Title of Project:** Brain Metabolic Imaging in Amyotrophic Lateral Sclerosis  
**PI:** Varan Govind  
**Project Period:** 9/30/08-8/31/12  
**Budget Period:** 9/01/09-8/31/10  
**% of Time Committed:** 5%  
**Level of Funding:** \$301,219 (current budget period)  
**Grant Specialist:** Nicole Williams  
Phone: 301-496-8084  
Email: [williamsni@mail.nih.gov](mailto:williamsni@mail.nih.gov)

**Project Goals:** The aim of this project is to map the neurochemicals N-acetyl aspartate, e  
COMPLETED:

A Pilot Study of Moderate Hypothermia for Severe Traumatic Brain Injury in Children, N.I.H., P. Davis Adelson (PI) Univ. of Pittsburgh.  
This study examined the impact of hypothermia treatment on outcome in children following severe TBI.  
Role: Site Neuropsychologist.

Cognitive and Psychological Correlates of Acute and Chronic Ciguatera Poisoning: A Pilot Study. NIEHS Marine and Freshwater Biomedical Services Center.  
This project examined the neurobehavioral sequelae of Ciguatera Poisoning.  
Role: Consultant/Site Neuropsychologist



## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME <b>Tatjana Rundek</b>	POSITION TITLE <b>Associate Professor of Neurology Miller School of Medicine University of Miami, Miami, FL</b>		
eRA COMMONS USER NAME <b>TR89XX</b>			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Zagreb, College of Mathematics, Croatia	B.S.	1979-1983	Applied Mathematics
Medical School University of Zagreb, Croatia	M.D.	1984-1989	Medicine
Medical School University of Zagreb, Croatia	M.S.	1989-1991	Epidemiology/Bioinformatics
Ludwig-Maximilian University, Munich, Germany	Ph.D.	1991-1995	Neuroscience
Medical School University of Zagreb, Croatia	Residency	1991-1994	Neurology
Grossharden Spital Munich, Germany			
Columbia University, New York, NY	Fellowship	1998-2000	Stroke/Neuroepidemiology

### A. POSITIONS AND HONORS POSITIONS AND EMPLOYMENT

#### Traineeship:

1990-91 Medicine Internship	Clinical Hospital for Pulmonary Diseases, Zagreb, Croatia
1991-94 Neurology Residency	Grossharden Spital Munich, Germany
1995-96 Neurosonology Post-Doctoral Fellow	Neurosonology Laboratory University of Ulm, Germany
1998-00 Stroke Fellow (Epidemiology)	Columbia University, New York, NY

#### Academic Appointments:

1994-96 Assistant Professor of Neurology	Department of Neurology, University of Zagreb, Croatia
1996-98 Associate Professor of Neurology	Department of Neurology, University of Zagreb, Croatia
2000-02 Associate Research Scientist	Columbia University, New York, NY
2002-07 Director, Neurosonology Laboratory	Columbia University, New York, NY
2002-07 Assistant Professor of Neurology	Columbia University, New York, NY
2007- Associate Professor of Neurology	Miller School of Medicine, University of Miami, Miami, FL

#### Hospital Appointments:

1994-98 Stroke Attending	Department of Neurology, University of Zagreb, Croatia
1995-98 Director, Neurosonology Laboratory	Department of Neurology, University of Zagreb, Croatia
2002-07 Director, Neurosonology Laboratory	Columbia University, New York, NY
2007- Director, Clinical Translational Research Division in Neurology	Department of Neurology, Miller School of Medicine, University of Miami, Miami, FL

### OTHER EXPERIENCE AND PROFESSIONAL MEMBERSHIPS

Editorial Board Member of the Professional Journals: Stroke, Neurology, Journal of CardioMetabolic Syndrome

Ad Hoc Reviewer for the Professional Journals: Stroke, Neurology, Neuroepidemiology, Cerebrovascular Diseases, Scandinavian Journal of Rheumatology, Circulation, American Journal of Ultrasound in Medicine, Headache

#### Memberships:

- 1997- American Academy of Neurology
- 1997- American Heart Association
- 1997- European Federation of Neurological Societies - Dementia Panel Delegate
- 1994- American Institute of Ultrasound in Medicine
- 1994- European Society of Neurosonology and Cerebral Hemodynamics

### HONORS

- 1997 Fulbright Award and Scholarship, Neurological Institute, Columbia University, New York, NY
- 1996 George Soros Scholarship, Neurology Seminars, University of Krems, Austria
- 1995 Humbolt Award, Neurosonology Laboratory, University of Ulm, Germany
- 2006 Nassau Women Physicians Foundation Award for Stroke Research in Women; Long Island, NY
- 2009 President, Neurosonology Community Practices of the American Institute of Ultrasound in Medicine

**B. SELECTED PEER-REVIEW PUBLICATIONS published in 2009**

(from 11 book chapters, 19 invited articles, 98 peer-reviewed articles)

1. Sacco RL, Khatri M, **Rundek T**, Xu Q, Gardener H, Boden-Albala B, Di Tullio MR, Homma S, Elkind MS, Paik MC. Improving Global Vascular Risk Prediction With Behavioral and Anthropometric Factors The Multiethnic NOMAS (Northern Manhattan Cohort Study). *J Am Coll Cardiol*. 2009;54(24):2303-11.
2. Elkind MS, Ramakrishnan P, Moon YP, Boden-Albala B, Liu KM, Spitalnik SL, **Rundek T**, Sacco RL, Paik MC. Infectious Burden and Risk of Stroke: The Northern Manhattan Study. *Arch Neurol*. 2009 Nov 9. [Epub ahead of print] PMID: 19901154
3. Gutierrez J, Hossain A, Lazarezc R, Kay E, **Rundek T**. Effect of beta blockers on sepsis outcome. *Med Sci Monit*. 2009;15(10):CR499-503.
4. Walker MD, Fleischer J, **Rundek T**, McMahon DJ, Homma S, Sacco R, Silverberg SJ. Carotid vascular abnormalities in primary hyperparathyroidism. *J Clin Endocrinol Metab*. 2009;94(10):3849-56. 5.
5. Khatri M, Nickolas T, Moon YP, Paik MC, **Rundek T**, Elkind MS, Sacco RL, Wright CB. CKD associates with cognitive decline. *J Am Soc Nephrol*. 2009;20(11):2427-32.
6. Koch S, Nelson D, **Rundek T**, Mandrekar J, Rabinstein A. Race-ethnic variation in carotid bifurcation geometry. *J Stroke Cerebrovasc Dis*. 2009;18(5):349-53.
7. Wang L, Beecham A, Di Tullio MR, Slifer S, Blanton SH, Rundek T, Sacco RL. Novel quantitative trait locus is mapped to chromosome 12p11 for left ventricular mass in Dominican families: the Family Study of Stroke Risk and Carotid Atherosclerosis. *BMC Med Genet*. 2009;10:74.
8. Dharmoon MS, Moon YP, Paik MC, Boden-Albala B, **Rundek T**, Sacco RL, Elkind MS. Long-term functional recovery after first ischemic stroke: the Northern Manhattan Study. *Stroke*. 2009;40(8):2805-11.
9. Russo C, Jin Z, **Rundek T**, Homma S, Sacco RL, Di Tullio MR. Atherosclerotic disease of the proximal aorta and the risk of vascular events in a population-based cohort: the Aortic Plaques and Risk of Ischemic Stroke (APRIS) study. *Stroke*. 2009;40(8):2805-11.
10. Sacco RL, Blanton SH, Slifer S, Beecham A, Glover K, Gardener H, Wang L, Sabala E, Juo SH, **Rundek T**. Heritability and linkage analysis for carotid intima-media thickness: the family study of stroke risk and carotid atherosclerosis. *Stroke*. 2009;40(7):2313-8.

**C. RESEARCH SUPPORT**

Ongoing Research Support

**Genetic Determinants of Subclinical Carotid Disease**

R01 NS 047655

NIH/NINDS

PI: T. Rundek

01.01.04-12.31.10.

This is a cross-sectional study evaluating potential candidate genes related to carotid IMT and distensibility in the Northern Manhattan Study cohort.

**Genetic Determinants of Extreme Phenotypes of Subclinical Atherosclerosis**

K24 NS 062737

NIH/NINDS

PI: T. Rundek

09.30.09-08.31.14

This is a mid career award to train young investigators in patient-oriented research, perform research on genetic factors of extreme phenotypes of subclinical atherosclerosis, and enhance career development in genetic epidemiology.

**Primary Hyperparathyroidism: Non-Classical Manifestations**

R01 DK 66329

NIH

PI: S. Silverberg; T. Rundek, Co-Investigator

7.01.05-06.30.10

The main objective of this study is to determine whether there is structural and functional evidence of increased vascular stiffness or cardiovascular calcification in patients with mild asymptomatic PHPT and to determine the reversibility of these manifestations after parathyroidectomy in a randomized controlled clinical trial.

**Aortic, cardiovascular disease and silent brain infarcts, Columbia University, NY**

R01 NS 36286

Program Director/Principal Investigator (Last, First, Middle):

**NIH/NINDS**

**PI: M. Di Tullio; T. Rundek: Co-Investigator** 7.01.05-06.30.10

The objective of this study was to investigate cardiac sources of silent brain infarcts and cerebral white matter disease.

**Stroke Incidence and Risk Factors in a Tri-Ethnic Region**

**R37 NS 029993-11**

**NIH/NINDS**

**PI: R.L. Sacco; T. Rundek, Co-Investigator** 02.01.03-01.31.15

The major goals of this project are to determine the effect of risk factors for stroke, MI, and vascular death, as well as evaluate predictors of cognitive impairment and the importance of subclinical MRI findings in a prospective cohort study of 3,300 persons from 3 race-ethnic groups from Northern Manhattan.

**Family Study of Stroke Risk and Carotid Atherosclerosis**

**1 R01 NS 40807**

**NIH/NINDS**

**PI: R.L. Sacco; T. Rundek, Co-Investigator** 05.01.02-09.30.11

The major goal of this study is to evaluate heritability and genetic linkage of new vascular risk factors (homocysteine, carotid intima-media thickness, carotid distensibility, brachial endothelial reactivity and left ventricular mass) among the families of high-risk Caribbean Hispanics.

**Oral Infections, Carotid Atherosclerosis and Stroke (INVEST)**

**1 R01 DE 13094**

**NIH/NIDCR**

**PI: M. Desvarieux; T. Rundek, Co-Investigator** 06.15.06-05.31.11

This cohort study will examine the effect of chronic periodontal disease and inflammation as a risk factor for stroke and carotid atheroma progression.

**MESA (Multi-Ethnic Subclinical Atherosclerosis**

**NIH/NHLBI-HC**

**CU PI: S. Shea; T. Rundek, Collaborator** 06.15.02-05.31.10

The objective of this large NIH contract is to examine traditional and novel risk factors and markers of subclinical atherosclerosis in a large sample of individuals from multi-ethnic communities.

**Prior Research Support**

**A Multicenter, Randomized, Double-Blind Placebo-Controlled Study to test the Safety and Efficacy of Lipitor (atorvastatin) in Reducing the Progression of Carotid IMT in Early Childhood SLE", The Atherosclerosis Prevention in Pediatric Lupus Erythematosus (APPLE) Study**

**NIH/NIAMS BAA-02**

**PI: L.E. Schanberg, Duke; T. Rundek, Site Co-I** 06.15.04-05.31.08

The objective of this study is to assess the efficacy of atorvastatin in reducing carotid IMT in children with systemic lupus erythematosus.

**Clopidogrel versus Aspirin Carotid Ultrasound Stroke Study (CASS)**

**Sanofi-Aventis/BM**

**PI: T. Rundek** 7.01.05-12.30.08.

This is a 3-year single center clinical trial aimed to test the hypothesis that clopidogrel is superior in improving carotid artery wall properties over aspirin in the patients with non-disabling stroke from a multi-ethnic community.

**STARR (The Study of Atherosclerosis with Ramipril and Rosiglitazone)**

**Canadian Institutes of Health Research, Aventis Pharma, King Pharmaceuticals and GlaxoSmithKline**

**PI: Eva Lonn, Mcaster University, Hamilton, Canada**

**T. Rundek, CU Site PI** 01.01.02-12.31.07

STARR is a multi-centre, international, randomized controlled clinical trial aimed to evaluate the effects of ramipril and of rosiglitazone on atherosclerosis progression, as determined by B-mode carotid ultrasound. It is a substudy of DREAM (Diabetes REduction Assessment with Ramipril and Rosiglitazone Medication) trial.

**Carotid Artery Distensibility and Risk of Stroke**

**The Gilbert Baum Memorial Grant and the American Institute of Ultrasound in Medicine Award**

**PI: T. Rundek** 7.01.04-06.30.05

Program Director/Principal Investigator (Last, First, Middle):

The objective of this case-control study was to determine whether impaired carotid distensibility assessed by ultrasound is associated with an increased risk of stroke. The specific aims of this study were to determine whether the stroke risk associated with carotid distensibility varies among different stroke types and different age, gender and race-ethnic groups at various levels of carotid intima-media thickness (IMT) and carotid plaque.

**The Hazel K. Goddess Fund for Stroke Research in Women**

*The Hazel K. Goddess Fund*

PI: T. Rundek

7.01.01-06.30.04

The major goals of this project was to determine the effects of structural and functional carotid artery wall properties on the risk of stroke, MI or death in a prospective cohort study of 360 postmenopausal women over age 55 from 3 race-ethnic groups from northern Manhattan.

**The Effect of Atorvastatin on Carotid Plaque Morphology Assessed by Gray Scale Ultrasound Densitometry**

*Pfizer, Inc.*

PI: T. Rundek

7.01.05-06.30.06

This was a 1-year single center study clinical trial aimed to assess the potential effect of atorvastatin on carotid artery plaque density within 30 days of treatment with a single dose of atorvastatin among individuals with hypercholesterolemia.

**A Pilot Study to Evaluate Potential Screening Factors for Atherosclerosis in Survivors of Childhood and Young Adult Hodgkin's Disease**

*The Columbia Cancer Institute*

PI: K. Kelly, Co-Investigator: T. Rundek

7.01.05-06.30.06

To main objective of this study was to obtain pilot data to evaluate the prevalence and severity of asymptomatic carotid artery disease in a cohort of survivors of childhood or young adult Hodgkin's disease who had remained in a continuous complete remission for at least 5 years after the completion of all therapy in comparison to their unaffected siblings.

**The PACTS-HOPE Project: Premature Atherosclerosis and Cardiovascular Risk in Children: Carotid Ultrasound Sub-study**

CDC

PI: E. Abrams, T. Rundek: Co-Investigator

7.01.05-06.30.06

The objective of this substudy was to examine the presence of subclinical atherosclerosis in HIV positive children and its associations with increased risk of CVD in children on the AZT medication.

**BIOGRAPHICAL SKETCH**Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. DO NOT EXCEED FOUR PAGES.

NAME <b>Ralph Lewis Sacco</b>		POSITION TITLE <b>Chairman and Professor of Neurology, Epidemiology, and Human Genetics</b>	
eRA COMMONS USER NAME <b>SACCORL</b>			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Cornell University, College of Engineering	B.S. distinction	1975-79	BioElectrical Engineering
Boston University, School of Medicine	M.D. cum laude	1979-83	Medicine
Columbia University, School of Public Health	M.S.	1987-89	Epidemiology
Neurological Institute, Presbyterian Hospital	Residency	1984-87	Neurology
Columbia College of Physicians & Surgeons	Fellow	1987-89	Cerebrovascular Disease

**A. Positions**

- 1989-97 Asst Professor of Neurology & Public Health (Epidemiology) in the Sergievsky Center  
 1997-02 Assoc Professor of Neurology & Public Health (Epidemiology) in the Sergievsky Center (with tenure)  
 2003-07 Professor of Neurology & Epidemiology, Columbia University, College of Physicians and Surgeons, Mailman School of Public Health, and the Sergievsky Center (with tenure)  
 2007- Olemberg Family Chair in Neurological Disorders, Miller Professor of Neurology, Epidemiology and Human Genetics (with tenure) and Chairman of Neurology, Miller School of Medicine, University of Miami

**Honors**

- 1982 Alpha Omega Alpha  
 1998 American Neurological Association  
 2006 AHA/ASA William Feinberg Award  
 2008 NINDS Jacob Javits Award in the Neurosciences  
 2001 Fellow of the American Heart Association  
 2004 Fellow of the American Academy of Neurology  
 2007 AHA Chairman's Award  
 2008 American Association of Physicians

**Other Professional Experience**

- 1999-05 American Academy of Neurology - Clinical Research Subcommittee, Chair  
 1997-03 NINDS, Performance Safety & Monitoring Committee, VISP Trial  
 2004-06 NINDS Neurosciences Training Grant Review Group, Member  
 2002-03 Center for Scientific Review, EDC-3  
 2003-07 FDA, Peripheral and Central Nervous System Drug Advisory Panel  
 2005-08 AHA, National Board of Directors  
 2005-08 ASA, Chair Stroke Advisory Committee  
 2005-09 American Academy of Neurology, Board of Directors  
 2009-10 President-elect, American Heart Association, National Board of Directors

**B. Selected Peer-Reviewed Publications 2009**

- Ratchford EV, Jin Z, Tullio MR, Salameh MJ, Homma S, Gan R, Boden-Albala B, Sacco RL, Rundek T. Carotid bruit for detection of hemodynamically significant carotid stenosis: the Northern Manhattan Study. **Neurol Res.** 2009 Jan 7. PMID: 19133168
- Weimar C, Ziegler A, Sacco RL, Diener HC, König IR; on behalf of the VISTA investigators\*. Predicting recovery after intracerebral hemorrhage - An external validation in patients from controlled clinical trials. **J Neurol.** 2009 Mar 18. PubMed PMID: 19308308.
- Boden-Albala B, Elkind MS, White H, Szumski A, Paik MC, Sacco RL. Dietary total fat intake and ischemic stroke risk: the Northern Manhattan Study. **Neuroepidemiology.** 2009;32(4):296-301. PubMed PMID: 19246935.
- Ali M, Lyden P, Sacco RL, Shuaib A, Lees KR; for the VISTA investigators. Natural history of complications after intracerebral haemorrhage. **Eur J Neurol.** 2009 Feb 19. PubMed PMID: 19236462.
- Suzuki K, Elkind MS, Boden-Albala B, Jin Z, Berry G, Di Tullio MR, Sacco RL, Homma S. Moderate alcohol consumption is associated with better endothelial function: a cross sectional study. **BMC Cardiovasc Disord.** 2009 Feb 20;9:8. PubMed PMID: 19228434; PubMed Central PMCID: PMC2653471.
- Easton JD, Saver JL, Albers GW, Alberts MJ, Chaturvedi S, Feldmann E, Hatsukami TS, Higashida RT, Johnston SC, Kidwell CS, Lutsep HL, Miller E, Sacco RL. Definition and Evaluation of Transient Ischemic Attack. A Scientific Statement for Healthcare Professionals From the American Heart Association/American Stroke Association Stroke Council; Council on Cardiovascular Surgery and Anesthesia; Council on Cardiovascular Radiology and Intervention;

Principal Investigator/Program Director (Last, first, middle): Sacco, Ralph L.

Council on Cardiovascular Nursing; and the Interdisciplinary Council on Peripheral Vascular Disease. **Stroke**. 2009;40(6):2276-93. PubMed PMID: 19423857.

7. Takei Y, Di Tullio MR, Homma S, Boden-Albala B, Rundek T, Sacco RL, Berry G, Liu R, Jin Z, Eguchi K, Elkind MS. Soluble Tumor Necrosis Factor Receptor 1 Level Is Associated With Left Ventricular Hypertrophy: The Northern Manhattan Study. **Am J Hypertens**. 2009 Jul;22(7):763-9. PubMed PMID: 19390513.

8. Di Tullio MR, Russo C, Jin Z, Sacco RL, Mohr JP, Homma S; Patent Foramen Ovale in Cryptogenic Stroke Study Investigators. Aortic arch plaques and risk of recurrent stroke and death. **Circulation**. 2009 May 5;119(17):2376-82. Epub 2009 Apr 20. PubMed PMID: 19380621.

9. Rincon F, Sacco RL, Kranwinkel G, Xu Q, Paik MC, Boden-Albala B, Elkind MS. Incidence and risk factors of intracranial atherosclerotic stroke: the Northern Manhattan Stroke Study. **Cerebrovasc Dis**. 2009;28(1):65-71. Epub 2009 May 20. PubMed PMID: 19468217.

10. Saver JL, Albers GW, Dunn B, Johnston KC, Fisher M; STAIR VI Consortium. Stroke Therapy Academic Industry Roundtable (STAIR) recommendations for extended window acute stroke therapy trials. **Stroke**. 2009 Jul;40(7):2594-600. Epub 2009 May 28. PubMed PMID: 19478212.

11. Fisher M, Feuerstein G, Howells DW, Hurn PD, Kent TA, Savitz SI, Lo EH; STAIR Group. Update of the stroke therapy academic industry roundtable preclinical recommendations. **Stroke**. 2009 Jun;40(6):2244-50. Epub 2009 Feb 26. Review. PubMed PMID: 19246690.

12. Lloyd-Jones D, Adams R, Carnethon M, De Simone G, Ferguson TB, Flegal K, Ford E, Furie K, Go A, Greenlund K, Haase N, Hailpern S, Ho M, Howard V, Kissela B, Kittner S, Lackland D, Lisabeth L, Marelli A, McDermott M, Meigs J, Mozaffarian D, Nichol G, O'Donnell C, Roger V, Rosamond W, Sacco R, Sorlie P, Stafford R, Steinberger J, Thom T, Wasserthiel-Smoller S, Wong N, Wylie-Rosett J, Hong Y; American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics--2009 update: a report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. **Circulation**. 2009 Jan 27;119(3):480-6.

13. Woo D, Hornung R, Sauerbeck L, Brown R, Meissner I, Huston J, Foroud T, Broderick J; FIA Investigators. Age at intracranial aneurysm rupture among generations: Familial Intracranial Aneurysm Study. **Neurology**. 2009 Feb 24;72(8):695-8. PubMed PMID: 19237697; PubMed Central PMCID: PMC2662520.

14. Broderick JP, Brown RD Jr, Sauerbeck L, Hornung R, Huston J 3rd, Woo D, Anderson C, Rouleau G, Kleindorfer D, Flaherty ML, Meissner I, Foroud T, Moomaw EC, Connolly ES; FIA Study Investigators. Greater rupture risk for familial as compared to sporadic unruptured intracranial aneurysms. **Stroke**. 2009 Jun;40(6):1952-7. Epub 2009 Feb 19. PubMed PMID: 19228834; PubMed Central PMCID: PMC2693304.

15. Sacco RL, Blanton SH, Slifer S, Beecham A, Glover K, Gardener H, Wang L, Sabala E, Juo SH, Rundek T. Heritability and linkage analysis for carotid intima-media thickness: the family study of stroke risk and carotid atherosclerosis. **Stroke**. 2009 Jul;40(7):2307-12. Epub 2009 Jun 4. PubMed PMID: 19498180; PubMed Central PMCID: PMC2737512.

16. Russo C, Jin Z, Rundek T, Homma S, Sacco RL, Di Tullio MR. Atherosclerotic disease of the proximal aorta and the risk of vascular events in a population-based cohort: the Aortic Plaques and Risk of Ischemic Stroke (APRIS) study. **Stroke**. 2009 Jul;40(7):2313-8. Epub 2009 Jun 4. PubMed PMID: 19498195; PubMed Central PMCID: PMC2746828.

17. Rajamani K, Chaturvedi S, Jin Z, Homma S, Brey RL, Tilley BC, Sacco RL, Thompson JL, Mohr JP, Levine SR; PICSS-APASS Investigators. Patent foramen ovale, cardiac valve thickening, and antiphospholipid antibodies as risk factors for subsequent vascular events: the PICSS-APASS study. **Stroke**. 2009 Jul;40(7):2337-42. Epub 2009 Jun 4. PubMed PMID: 19498198.

18. Dhamoon MS, Moon YP, Paik MC, Boden-Albala B, Rundek T, Sacco RL, Elkind MS. Long-term functional recovery after first ischemic stroke: the Northern Manhattan Study. **Stroke**. 2009 Aug;40(8):2805-11. Epub 2009 Jun 25. PubMed PMID: 19556535.

19. Siedlecki KL, Stern Y, Reuben A, Sacco RL, Elkind MS, Wright CB. Construct validity of cognitive reserve in a multiethnic cohort: The Northern Manhattan Study. **J Int Neuropsychol Soc**. 2009 Jul;15(4):558-69. PubMed PMID: 19573274.

20. Elkind MS, Sacco RL, Macarthur RB, Peerschke E, Neils G, Andrews H, Stillman J, Corporan T, Leifer D, Liu R, Cheung K. High-dose lovastatin for acute ischemic stroke: results of the phase I dose escalation neuroprotection with statin therapy for acute recovery trial (NeuSTART). **Cerebrovasc Dis**. 2009;28(3):266-75. Epub 2009 Jul 16. PubMed PMID: 19609078.

21. Wang L, Beecham A, Di Tullio MR, Slifer S, Blanton SH, Rundek T, Sacco RL. Novel quantitative trait locus is mapped to chromosome 12p11 for left ventricular mass in Dominican families: the Family Study of Stroke Risk and Carotid Atherosclerosis. **BMC Med Genet**. 2009 Jul 23;10:74. PubMed PMID: 19627612; PubMed Central PMCID: PMC2724377.

22. Wright CB, Moon Y, Paik MC, Brown TR, Rabbani L, Yoshita M, Decarli C, Sacco R, Elkind MS. Inflammatory Biomarkers of Vascular Risk as Correlates of Leukoariosis. **Stroke**. 2009 Nov;40(11):3466-71. Aug 20. [Epub ahead of print] PubMed PMID: 19696417.



Principal Investigator/Program Director (Last, first, middle): Sacco, Ralph L.

23. Saini M, Saqqur M, Kamruzzaman A, Lees KR, Shuaib A; VISTA Investigators. Effect of hyperthermia on prognosis after acute ischemic stroke. **Stroke**. 2009 Sep;40(9):3051-9. Epub 2009 Jul 30. PubMed PMID: 19644066.
24. Elkind MS, Leon V, Moon YP, Paik MC, Sacco RL. High-sensitivity C-reactive protein and lipoprotein-associated phospholipase A2 stability before and after stroke and myocardial infarction. **Stroke**. 2009 Oct;40(10):3233-7. Epub 2009 Jul 30. PubMed PMID: 19644070.
25. Khatri M, Nickolas T, Moon YP, Paik MC, Rundek T, Elkind MS, Sacco RL, Wright CB. CKD Associates with Cognitive Decline. **J Am Soc Nephrol**. 2009 Nov;20(11):2427-32. Sep 3. [Epub ahead of print] PubMed PMID: 19729443.
26. Bath PM, Martin RH, Palesch Y, Cotton D, Yusuf S, Sacco R, Diener HC, Toni D, Estol C, Roberts R; for the PROFESS Study Group. Effect of Telmisartan on Functional Outcome, Recurrence, and Blood Pressure in Patients With Acute Mild Ischemic Stroke. A PROFESS Subgroup Analysis. **Stroke**. 2009 Nov;40(11):3541-6. Sep 24. [Epub ahead of print] PubMed PMID: 19797187.
27. Walker MD, Fleischer J, Rundek T, McMahon DJ, Homma S, Sacco R, Silverberg SJ. Carotid Vascular Abnormalities in Primary Hyperparathyroidism. **J Clin Endocrinol Metab**. 2009 Oct;94(10):3849-56. Sep 15. [Epub ahead of print] PubMed PMID: 19755478.
28. Teal P, Davis S, Hacke W, Kaste M, Lyden PD; Modified Randomized Exposure Controlled Trial Study Investigators, Fierus M; Bayer HealthCare AG. A randomized, double-blind, placebo-controlled trial to evaluate the efficacy, safety, tolerability, and pharmacokinetic/pharmacodynamic effects of a targeted exposure of intravenous repinotan in patients with acute ischemic stroke: modified Randomized Exposure Controlled Trial (mRECT). **Stroke** 2009 Nov;40(11):3518-25. Epub 2009 Sep 10. PubMed PMID: 19745176.
29. Elkind MS, Luna JM, Moon YP, Liu KM, Spitalnik SL, Paik MC, Sacco RL. High-sensitivity C-reactive protein predicts mortality but not stroke: the Northern Manhattan Study. **Neurology**. 2009 Oct 20;73(16):1300-7. PubMed PMID: 19841382; PubMed Central PMCID: PMC2764412.
30. Elkind MS, Ramakrishnan P, Moon YP, Boden-Albala B, Liu KM, Spitalnik SL, Rundek T, Sacco RL, Paik MC. Infectious Burden and Risk of Stroke: The Northern Manhattan Study. **Arch Neurol**. 2009 Nov 9. [Epub ahead of print] PubMed PMID: 19901154
31. Willey JZ, Xu Q, Boden-Albala B, Paik MC, Moon YP, Sacco RL, Elkind MS. Lipid profile components and risk of ischemic stroke: the Northern Manhattan Study (NOMAS). **Arch Neurol**. 2009 Nov;66(11):1400-6. PubMed PMID: 19901173.
32. Ali M, Sacco RL, Lees KR; VISTA investigators. Primary end-point times, functional outcome and adverse event profile after acute ischaemic stroke. **Int J Stroke**. 2009 Dec;4(6):432-42. PubMed PMID: 19930052.
33. Willey JZ, Moon YP, Paik MC, Boden-Albala B, Sacco RL, Elkind MS. Physical activity and risk of ischemic stroke in the Northern Manhattan Study. **Neurology**. 2009 Nov 24;73(21):1774-9. PubMed PMID: 19933979.
34. Sacco RL, Khatri M, Rundek T, Xu Q PhD, Gardener H, Boden-Albala B, Di Tullio M, Homma S, Elkind MSV, Paik MC. Improving Global Vascular Risk Prediction with Behavioral and Anthropometric Factors: The Multi-ethnic Northern Manhattan Cohort Study. **J Am Coll Cardiol** 2009 Dec 8;54(24):2303-11 PMID: 19958966

### **C. Ongoing Research Support**

#### **Stroke Incidence and Risk Factors in a Tri-Ethnic Region**

Role: PI; Agency: NIH/NINDS; Type: R37 (formerly 2R01) (NS 29993); Period: 01.01.93-03.31.15

Aims: To determine the effects of risk factors including subclinical carotid and brain disease on the risk of stroke, MI, and vascular death in a prospective cohort of 3299 stroke-free community subjects from Northern Manhattan.

#### **Family Study of Stroke Risk and Carotid Atherosclerosis**

Role: PI; Agency: NIH/NINDS; Type: 1R01 (NS 240807); Period: 05.01.02-04.30.11

Aims: The major goals of this project are to determine the genetic determinants of carotid IMT and plaque among high-risk Caribbean Hispanic families of the NOMAS.

#### **Genetic Determinants of Subclinical Carotid Disease**

Role: Co-I; PI: Tanja Rundek; Agency: NIH/NINDS; Type: R01 (NS 047655); Period: 01.01.04-12.31.09

Aims: This is a cross-sectional study evaluating potential candidate genes related to carotid IMT and distensibility in the Northern Manhattan Study cohort.

#### **Oral Infections, Carotid Atherosclerosis and Stroke**

Role: Co-PI; PI: Desvarieux; Agency: NIH/NIDCR; Type: 1R01 (DE 13094); Period: 07.01.00-12.31.10

Aims: To determine the effect of chronic periodontal disease and inflammation as a risk factor for stroke and carotid atheroma progression.

#### **Aortic, Cardiovascular Disease and Silent Brain Infarcts**

Role: Co-I; PI: Di Tullio; Agency: NIH/NINDS; Type: 1R01 (NS 36286); Period: 06.01.97-05.31.10

Principal Investigator/Program Director (Last, first, middle): Sacco, Ralph L.

Aims: To determine whether aortic arch plaques and cardiovascular exposures are risk factors for silent infarcts and vascular outcomes within a prospective cohort study.

#### **Primary Hyperparathyroidism - non-classical Manifestations**

Role: Co-I; PI: Silverberg; Agency: NIH/NIDK; Type: R01 (DK 066329); Period: 4.15.05-03.31.10

Aims: This is a prospective study to evaluate the effects of hyperparathyroidism on carotid disease and other cardiovascular outcomes.

#### **Subclinical Cardiovascular Disease Study: MESA Field Center**

Role: Adjudicator; Agency: NIH/NHLBI; Type: Contract (NHLBI-HC-98-08); Period: 03.01.99 - 08.31.10

Aims: To identify subclinical predictors of atherosclerotic disease in a multi-center prospective cohort study.

#### **Subclinical Cardiovascular Disease Study: MESA Air**

Role: Adjudicator; Agency: NIH/NHLBI; Type: Subcontract (NHLBI-HC-83169701); Period: 04.01.07-02.14.10;

Aims: The prospective study of atherosclerosis, clinical cardiovascular disease and long term exposure to ambient particulate matter and other air pollutants in a multiethnic cohort.

#### **Hispanic Community Health Study/Study on Latinos: Miami Field Center**

Role: Co-I; PI: Schneiderman; Agency: NIH/NHLBI; Type: Contract; Period: 10.01.07-10.01.12

Aims: To determine the role of acculturation in the prevalence and development of disease, and to identify risk factors playing a protective or harmful role in Hispanics/Latinos.

#### **Prior Research Support in last 3 years**

##### **New York Columbia Collaborative SPOTRIAS (Specialized Program on Translational Research in Acute Stroke)**

Role: PI; Agency: NIH/NINDS; Type: P50 (NS 049060); Period: 09.30.04-05.31.09

Aims: The major goals of this program project are to perform three innovative acute stroke projects: (1) a dose escalation safety trial of high-dose statins in acute stroke; (2) determine the functional significance of contralateral fMRI activity in acute stroke; and (3) develop and test the efficacy of an innovative behavioral modification intervention to train people how to react if they are having stroke warning symptoms.

##### **Inflammation and Infection as Risk Factors in Stroke**

Role: Mentor; PI: Elkind; Agency: NIH/NINDS; Type: K23 (NS 42912); Period: 01.15.02-12.31.06

Aims: This K23 award is a nested case-control study to evaluate inflammation and other infection exposures as a risk factor for ischemic stroke in the Northern Manhattan Study.

##### **Inflammation, Leukocyte activation and Stroke Risk**

Role: Co-I; PI: M Elkind; Agency: AHA/Grant-In-Aid (0355596T); Period: 07.01.03-06.30.06

Aims: This is a study to evaluate inflammatory markers as risk factors for vascular outcomes within NOMAS.

##### **Inflammatory and Infectious Burden and Risk of Stroke**

Role: Co-I; PI: Elkind; Agency: NIH/NINDS; Type: R01 (NS 048134); Period: 03.01.04-02.28.09

Aims: This is a prospective analysis of inflammatory markers and infectious markers as risk factors for vascular outcomes within the Northern Manhattan Study cohort

##### **Vascular predictors of cognitive impairment and decline in a tri-ethnic community**

Role: Mentor; PI: Clinton Wright; Agency: NIH/NCRR; Type: K12 RR017648; Period: 08.01.03-07.31.06.

Aims: To identify vascular risk factors that contribute to cognitive abnormalities.

##### **Familial Intracranial Aneurysm Study**

Role: Co-I; PI: Broderick; Agency: NIH/NINDS; Type: R01 (NS 39512); Period: 07.01.02-06.30.07

Aims: This is a multicenter epidemiological family study to investigate the genetic determinants of familial intracranial aneurysms through linkage analysis.

##### **Neuroepidemiology Training Program**

Role: Co-PI; PI: Hauser; Agency: NIH/NINDS; Type: T32 (NS 07153); Period: 07.01.04-06.30.09

Aims: To train neurologists in epidemiology.



## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME: <b>Clinton Burnet Wright</b>	POSITION TITLE Associate Professor of Neurology (pending)		
eRA COMMONS USER NAME: WRIGHTCL			
EDUCATION/TRAINING ( <i>Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.</i> )			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
George Washington University; Washington DC	B.A.	1990	Psychology
Columbia University College of P&S; New York, NY	M.D.	1997	Medicine
Columbia University, Mailman School of PH; New York, NY	M.S.	2003	Epidemiology

### A. Positions and Honors.

#### Positions and Employment

1997-1998 Intern, Internal Medicine.  
 1998-2001 Resident, Neurology, New York Presbyterian Hospital; New York, NY  
 2001-2003 Fellowship in Cerebrovascular Disease, Columbia University College of Physicians and Surgeons, New York, NY  
 2001-2008 Assistant Attending in Neurology, New York Presbyterian Hospital, New York, NY  
 2003-2008 Assistant Professor of Neurology, Columbia University, New York, NY  
 2008-present Adjunct Professor of Neurology, Columbia University, New York, NY (pending)  
 2008-present Associate Professor of Neurology, University of Miami, Miami, FL (pending)

#### Other Experience and Professional Memberships

1998-present American Academy of Neurology  
 2001-present American Heart Association, Council on Epidemiology and Prevention

### B. Selected peer-reviewed publications (in chronological order).

1. Chen G, Manji HK, Hawver DB, **Wright CB**, Potter WZ. Chronic sodium valproate selectively decreases protein kinase C alpha and epsilon in vitro. *Journal of Neurochemistry*. 1994;63:2361-4.
2. Arnold LE, Stoff DM, Cook Jr E, Cohen DJ, Kruesi M, **Wright C**, Hattab J, Graham P, Zametkin A, Castellanos FX, McMahon W, Leckman JF. Ethics of Biological Psychiatric Research with Children and Adolescents. *Journal of the Academy of Child and Adolescent Psychiatry*. 1995;34:929-39.
3. Chen G, Pan B, Hawver DB, **Wright CB**, Potter WZ, Manji HK. Attenuation of cyclic AMP production by carbamazepine. *Journal of Neurochemistry*. 1996;67:2079-86.
4. Chen G, Manji HK, **Wright CB**, Hawver DB, Potter WZ. Effects of Valproic Acid on Beta-adrenergic Receptors, G-proteins, and Adenylyl Cyclase in Rat C6 Glioma Cells. *Neuropsychopharmacology*. 1996;15:271-80.
5. **Wright CB**, Lee HS, Paik M, Stabler SP, Allen RH, Sacco RL. Plasma homocysteine and cognition in a tri-ethnic community: the Northern Manhattan Study. *Neurology*. 2004;63:254-60.
6. White H, Boden-Albala B, Wang C, Elkind MSV, Rundek T, **Wright CB**, Sacco RL. Ischemic Stroke Subtype Incidence among Whites, Blacks and Hispanics: The Northern Manhattan Study. *Circulation* 2005; 111:1327-1331.
7. Flint AC, Liberato B, Anziska A, Schantz-Dunn J, **Wright CB**. Meningovascular syphilis as a cause of basilar artery stenosis. *Neurology* 2005; 64:391-2.
8. Gerstner E, Liberato B, **Wright CB**. Bi-hemispheric anterior cerebral artery with drop attacks and limb shaking TIAs. *Neurology* 2005; 65:174.
9. **Wright CB**, Paik, Brown TR, Stabler SP, Allen RH, Sacco RL, Decarli C. Total Homocysteine is Associated with White Matter Hyperintensity Volume: the Northern Manhattan Study. *Stroke* 2005; 36:1207-1211.
10. **Wright CB**, Sacco RL, Rundek TR, Delman JB, Rabbani, Elkind MSV. Interleukin-6 is associated with cognitive function: the Northern Manhattan Study. *J Stroke Cerebrovasc Dis* 2006; 15(1):34-38.
11. Flint AC, Naley MC, **Wright CB**. Ataxic hemiparesis from strategic frontal white matter infarction with crossed cerebellar diaschisis. *Stroke* 2006; 37(1): e1-2.

12. **Wright CB**, Vonsattel J-PG, Bell K, Honig LS. Dementia with Cerebrovascular Disease: A case study. *Sci. Aging Knowl. Environ* 2006, (10), dn1. [DOI: 10.1126/sageke.2006.10.dn1].
13. Prabhakaran S, Khandji A, **Wright CB**. Extracranial internal carotid artery dissection with unusual gadolinium enhancement. *Neurology* 2006; 67(3):536-7.
14. Wright CB, Rundek T, Paik MC, Elkind MSV, and Sacco RL. Alcohol intake, subclinical carotid atherosclerosis, and cognitive performance. *Stroke* 2006; 37:1160-1164.
15. **Wright CB**, Luo X, Paik MC, Sacco RL. A prospective study of alcohol consumption and cognition: the Northern Manhattan Study. *Neuroepidemiology* 2006; 27:201-7.
16. Sommerville RB; Noble JM; Vonsattel JP; Delapaz R; **Wright CB**. Eosinophilic Vasculitis in an Isolated CNS Distribution. *Journal of Neurology Neurosurgery and Psychiatry* 2007; 78:85-88.
17. **Wright CB**. Do poststroke MRI findings predict the type of a subsequent stroke? *Nature Clinical Practice Neurology* 2007; 3:20-21.
18. Gerard E, Frontera JA, **Wright CB**. Vasospasm and cerebral infarction following isolated intraventricular hemorrhage. *Neurocritical Care* 2007; DOI:10.1007/s12028-007-0057-1.
19. Khatri M, **Wright CB**, Nickolas TL, Paik MC, Sacco RL, DeCarli C. Chronic Kidney Disease is associated with White Matter Hyperintensity Volume: The Northern Manhattan Study (NOMAS). *Stroke* 2007;38:3121.
20. Prabhakaran S, **Wright CB**, Yoshita M, Delapaz R, Brown T, Decarli C, Sacco RL. The prevalence and determinants of subclinical brain infarction: The Northern Manhattan Study. *Neurology* 2007;doi:10.1212/01.wnl.0000277521.66947.e5.
21. **Wright CB**, Festa J, Paik MC, Schmiedigen AP, Brown TR, Yoshita M, DeCarli C, Sacco RL, Stern Y. White Matter Hyperintensities and Subclinical Infarction: Associations with Psychomotor Speed and Cognitive Flexibility. *Stroke* 2008;39:800-805.
22. Boden-Albala B, Sacco RL, Lee H-S, Grahame-Clarke C, Rundek T, Elkind MV, **Wright CB**, Giardina EV, DiTullio MR, Homma S, Paik MC. Metabolic Syndrome and Ischemic Stroke Risk: Northern Manhattan Study. *Stroke* 2008;39:30-35.
23. Boden-Albala B, Cammack S, Chong J, Wang C, **Wright CB**, Rundek T, Elkind MSV, Paik MC, Sacco RL. Diabetes, Fasting Glucose Levels, and Risk of Ischemic Stroke and Vascular Events: Findings from the Northern Manhattan Study (NOMAS). *Diabetes Care* 2008;31:1-6.
24. Asllani I, Borogovac A, **Wright CB**, Sacco RL, Brown TR, Zarahn E. An investigation of statistical power for continuous arterial spin labeling imaging at 1.5 T. *NeuroImage* 2008;39:1246-56.
25. Noble, James M, Borrell, Luisa N, Papapanou, Panos N, Elkind, Mitchell S.V, Scarmeas, Nikolaos **Wright, Clinton B**. Periodontitis is associated with cognitive impairment among older adults: analysis of NHANES-III. *Journal of Neurology, Neurosurgery and Psychiatry J. Neurol. Neurosurg. Psychiatry* published online 5 May 2009.
26. Siedlecki, Karen L., Stern, Yaakov, Reuben, Aaron, Sacco, Ralph L, Elkind, Mitchell S.V., **Wright, CB.**, Construct Validity of Cognitive Reserve in a Multi-Ethnic Cohort: the Northern Manhattan Study. *The Journal of the International Neuropsychological Society* 2009 Jul;15(4):558-69.
27. Emily LR, Lavine SD, Festa JR, Connolly ES, **Wright CB**, Lazar RM. Acute Confusional Syndrome from a Dural Arteriovenous Fistula. *Neurosurgery* 2009 Jul;65(1):E208-E209.
28. **Wright CB**, Moon Y, Paik MC, Brown TR, Rabbani L, Yoshita M, Decarli C, Sacco R, Elkind MS. Inflammatory Biomarkers of Vascular Risk as Correlates of Leukoariosis. *Stroke* 2009 Aug DOI: 10.1161/STROKEAHA.109.559567 [Epub ahead of print]
29. Khatri M, Nickolas T, Moon Y, Paik MC, Rundek T, Elkind MSV, Sacco RL, **Wright CB**. Chronic Kidney Disease is Associated with Cognitive Decline: The Northern Manhattan Study. *Journal of the American Society of Nephrology* 2009 Sep; doi:10.1681/ASN.2008101090 [Epub ahead of print]

#### Abstracts

1. **Wright CB**, Scarmeas N, Perera GM, Lazar RM, Fitzimmons B-F M, Labovitz D, Stapf C, Benson R, Robinson JV, Marshall RS. Cognitive Function Measures Added to the NIH Stroke Scale Improves Correlation with Acute Stroke Volume. *Neurology* 56, April 2001 (Suppl 3): A436.
2. **Wright CB**, Rundek T, Pittman JG, Boden-Albala B, Kaplan ED, Sacco RL. A Cross-sectional Analysis of Vascular Risk Factors and Cognitive Status in a Multiethnic Elderly Population. *Neurology* 58, April 2002 (Suppl 3): 113.
3. **Wright CB**, Elkind MSV, Lee H-S, Sacco RL. Interleukin 6 is Associated with Cognitive Impairment in the Northern Manhattan Study (NOMAS). Presented on 29 August 2003 at the International Society for Vascular Behavioral and Cognitive Disorders (VAS-COG) conference in Goteburg Sweden.
4. **Wright CB**, Lee H-S, Boden-Albala B, Paik M, Sacco RL. Factors associated with Decreased Cognition in a Multiethnic Cohort: The Northern Manhattan Study (NOMAS). *Neurology* March 2003 (Suppl 1):A53.

5. **Wright CB**, Rundek T, Huang S, Lee H-S, Boden-Albala B, Sacco RL. Homocysteine is associated with cognitive impairment: the Northern Manhattan Study. *Stroke* January 2003; 34(1): 293.
6. Rundek T, Sciacca R, Perez-Apaga N, Juo S-HH, **Wright CB**, Elkind MS, Boden-Albala B, Rodriguez CJ, Di Tullio MR, Homma S, Sacco RL. Apolipoprotein E (APOE) Polymorphism and Carotid Atherosclerosis: The Northern Manhattan Study. *Stroke* January 2003; 34(1): 91.
7. **Wright CB**, Lee H-S, Boden-Albala B, Chong JY, Sacco RL. Depressed Mood Predicts Mortality and Disability 6 and 12 Months Post-Stroke: the Northern Manhattan Study. *Stroke*. 2004;35:321.
8. **Wright CB**, Stern Y, Sacco RL, Decarli C. Motor performance is associated with white matter hyperintensity volume: the Northern Manhattan Study. Presented at the *International Society for Vascular Behavioral and Cognitive Disorders (VAS-COG)* conference on 12 June 2005 in Florence, Italy.
9. **Wright CB**, Decarli C, Paik MC, Stabler SP, Allen RH, Sacco RL. Elevated Homocysteine is Associated with White Matter Disease: the Northern Manhattan Study. *Stroke* 2005;36(2):501.
10. **Wright CB**, Guzman J, Stern Y, Sacco RL, DeCarli C. Delayed Memory and Motor Function are Associated with White Matter Hyperintensities. *Stroke* 2006;37:619-646.
11. Birnbaum L, **Wright CB**, Rundek T, Huang L, Li L, Yoshita M, DeCarli C, Sacco R. Carotid Intima-media Thickness is Associated with Subclinical Cerebral Infarcts: The Northern Manhattan Study. *Stroke* 2007;38:453.
12. **Wright CB**, Sacco RL, Yoshita M, Li L, Cordonnier C, DeCarli C. Brain microbleeds in a community-based sample: the Northern Manhattan Study. *Journal of the Neurological Sciences* (in press).
13. **Wright CB**, Sacco RL, Paik MC, Stern Y. Education and physical activity are associated with less cognitive decline. *Journal of the Neurological Sciences* (in press).
14. **Wright CB**, Sacco RL, Yoshita M, DeCarli C, Stern Y. Subclinical Infarct Location Determines Performance on a List Learning Task. *Stroke* 2008;39:682.
15. Evensen LA, Doyle M, Perez T, Moats HL, **Wright CB**, Stillman J, Sacco RL, Klein CD, Boden-Albala B. Stroke In The Young And Social Resources: The Swift Study. *Stroke* 2008;39:627.
16. **Wright CB**, Brickman AM, Doyle M, Perez T, Stern Y, Boden-Albala B. Cognitive Function in Stroke and TIA patients is Associated with Health Knowledge and Competence. International Stroke Conference 2008, February 20-22, New Orleans, LA.
17. **Wright CB**, Moon Y, Santiago M, Rabbani LE, Sacco R, Elkind M. Interleukin 6 Is Associated with Cognitive Decline: The Northern Manhattan Study. *Neurology* 2008;70:A399.
18. Noble J, Borrell LN, Papapanou PN, Elkind M, Scarmeas N, **Wright CB**. Association of the Periodontitis Pathogen *Porphyromonas gingivalis* with Poor Memory: Analysis of the Third National Health and Nutrition Examination Survey (NHANES-III). *Neurology* 2008;70:A191.
19. Marcus J; Gardener H, Yoshita, M, Guzman J, Elkind MSV, Sacco RL., DeCarli C, **Wright CB**. Diastolic and not systolic blood pressure is associated with subclinical cerebrovascular damage: the Northern Manhattan Study. Presented at the American Academy of Neurology (AAN) for the annual meeting in April 2009, Seattle, WA
20. Loring J, Yoshita M, Marquez C, Elkind MSV, Sacco RL, DeCarli C, **Wright CB**. White Matter Hyperintensity Volume is Associated with Depressive Symptoms: the Northern Manhattan Study. Poster presented at the 134th Annual Meeting for the American Neurological Association (ANA), Baltimore, Maryland in October, 2009, and the 24th Annual National MD/PhD Conference in June, 2009.
21. Gardener H, scarmeas N, Gu Y, Disla N, Elkind, MSV, Sacco, RL Boden- Albala B, **Wright CB**. Mediterranean Diet and Vascular Events: The Northern Manhattan Study. Poster presented at the 134<sup>th</sup> American Neurological Association (ANA), Baltimore, Maryland, 11-14 October, 2009
22. **Wright CB**, Gardener H, Yoshita M, Santiago M, Rundek T, Elkind MSV, Sacco RL, Boden-Albala B, DeCarli C, Scarmeas N. Adherence to a Mediterranean Diet is inversely associated with White matter Hyperintensity Volume: The Northern Manhattan Study at the 6<sup>th</sup> International Congress of Vascular Dementia, Barcelona, Spain 19-22 November, 2009
23. Barry HI, Mon, YP, Kalea AZ, Khatri M, Marquez C, Schmidt AM, Paik MC, Sacco RL, DeCarli C, **Wright CB**, Elkind MSV. Serum levels of soluble Receptor for Advanced Glycation End-products are associated with subclinical cerebrovascular disease among Hispanics and blacks. 62<sup>nd</sup> Annual meeting of the American Academy of Neurology, Toronto, Canada. (In Press)

### C. Research Support

#### Ongoing Research Support

1K02NS059729-01A1 (Wright)

09/01/2008 - 08/31/13

NIH/NINDS

*Vascular Risk and Cognition in a Multi-ethnic Cohort*

The purpose of this grant is to examine vascular risk factors for cognitive dysfunction in a stroke-free multi-ethnic sample. Aims will focus on identification of traditional and novel vascular risk factors for cognitive dysfunction as well as the role of brain imaging markers of vascular damage.

**AHA 0735387N (Wright)**

07/01/2008- 06/302011

AHA

*Vascular Risk and Cognition in a Tri- Ethnic Community*

The purpose of this grant is to examine vascular risk factors as correlates of cognitive dysfunction in a stroke-free multi-ethnic sample. Aims will focus on the role of both traditional and novel vascular risk factors.

**R37 NS029993 Sacco (PI) 01/07/93 - 03/31/15**

NIH/NINDS: Subcontract to Columbia University

*Stroke Incidence and Risk Factors in a Tri- Ethnic Region*

This prospective cohort study (Northern Manhattan Study, NOMAS) investigates risk factors for stroke and other vascular outcomes in a multi-ethnic, urban population. In addition, the study seeks to understand the relationships between these risks factors and cognition and MRI-defined cerebrovascular disease.

Role: Co-investigator

Pending Research Support

**1R01AG037728-01 (Wright)**

07/01/10- 06/30/15

NIH/NINDS

*Imaging markers of functional performance and age-related cognitive changes*

This project uses structural, functional, and metabolic brain imaging measurements to understand the factors underlying individual variability in performance on technology-based everyday tasks.

Completed Research Support

**NS 049060-03 Marshall (PI)**

09/30/04 - 07/14/08

NIH/NINDS

*New York Columbia Collaborative Specialized Program of Translational Research in Acute Stroke (SPOTRIAS: Project 1)*

The major goals of this program project are to perform three innovative acute stroke projects: (1) a dose escalation safety trial of high-dose statins in acute stroke; (2) determine the functional significance of contralateral fMRI activity in acute stroke; and (3) develop and test the efficacy of an innovative behavioral modification intervention to train people how to react if they are having stroke warning symptoms.

**NS 049060-03 Marshall (PI)**

09/30/04 - 07/14/08

NIH/NINDS

*New York Columbia Collaborative Specialized Program of Translational Research in Acute Stroke (SPOTRIAS: Project 3)*

The major goals of this program project are to perform three innovative acute stroke projects: (1) a dose escalation safety trial of high-dose statins in acute stroke; (2) determine the functional significance of contralateral fMRI activity in acute stroke; and (3) develop and test the efficacy of an innovative behavioral modification intervention to train people how to react if they are having stroke warning symptoms.

**NS 049060-03 Marshall (PI)**

09/30/04 - 07/14/08

NIH/NINDS

*New York Columbia Collaborative Specialized Program of Translational Research in Acute Stroke (SPOTRIAS: Core C)*

The major goals of this program project are to perform three innovative acute stroke projects: (1) a dose escalation safety trial of high-dose statins in acute stroke; (2) determine the functional significance of contralateral fMRI activity in acute stroke; and (3) develop and test the efficacy of an innovative behavioral modification intervention to train people how to react if they are having stroke warning symptoms.

## **Collaborators**

Noam Alperin Ph.D.

Sara Czaja, Ph.D.

Andrew Maudsley, Ph.D

Carlos Moraes, Ph.D.

Fattah Nahab, M.D.

**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME <b>Noam Alperin, Ph.D.</b>		POSITION TITLE <b>Professor of Radiology (rank pending)</b>	
eRA COMMONS USER NAME nalperin			
EDUCATION/TRAINING ( <i>Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.</i> )			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Tel-Aviv University, Israel	B. S.	1977-1980	Physics
Hebrew University, Jerusalem		1981-1983	Medicine
University of Chicago, Chicago, IL	PhD	1988-1992	Medical Physics
University of Chicago, Chicago, IL	PDF	1992-1994	MRI

**POSITIONS:**

- 2009-current Professor (rank pending), Department of Radiology, Uni. of Miami  
 2001-2009 Associate Professor, Departments of Radiology and Bioengineering, Uni. of Illinois, Chicago  
 1995-2001 Assistant Professor, Departments of Radiology and Bioengineering, Uni. of Illinois, Chicago  
 1994-1995 MRI Application Scientist, SMIS Inc.  
 1989-1994 Research Associate, MRI Center, University of Chicago  
 1987-1988 Product Manager, Mennen Medical, Inc.  
 1985-1987 Physicist, Elscint Medical Imaging, Inc.

**PUBLICATIONS:****Patents (2 of 3)**

1. Alperin N. Method for measurement of intracranial pressure. US patent 5,993,398, 1999.
2. Alperin N. Improved method for measurement of intracranial pressure. US patent 6,245,027, 2001.

**Book Chapters and Review Articles (4 of 5)**

Alperin N. MR-Intracranial Compliance and Pressure: A Method for Noninvasive Measurement of Important Neurophysiologic Parameters. *Methods in Enzymology*. Imaging in Biological Research, Vol. 386. Elsevier Academic Press, 2004

Alperin N, Lichtor T, Mazda M, Lee SH. From Cerebrospinal Fluid Pulsation to Noninvasive Intracranial Compliance and Pressure Measured by MRI Flow Studies. *Current Medical Imaging Reviews*, 2006, 2, 117-129

Sood S, Eklund A, Alperin N. Hydrocephalus, Tools for diagnosis and treatment of, In Encyclopedia of Medical Devices and Instrumentations 2ed edition (ed: J Webster), Vol. 4:1-18. A John Wiley & Sons, Publications, 2006

Eklund A, Smielewski P, Chambers I, Alperin N, Malm J, Czornyka M, Marmarou A. Assessment of Cerebrospinal Fluid Outflow Resistance. *Medical & Biological Engineering & Computing*. 2007 Aug;45(8):719-35.

**Selected Peer-reviewed Journal Articles (31 of 39)**

Alperin N, Levin DN, and Pelizzari CA. Retrospective registration of x-ray angiograms with MR images by using vessels as intrinsic landmarks. *J Mag Reson Imag* 1994; 4:139-144.

Towle VL, Cohen S, Alperin N, Hoffmann K, Cogen P, Milton, J, Grzesczuk R, Pelizzari C, Syed I and Spire J-P. Displaying electrocorticographic findings on gyral anatomy. *Electroencephalography and Clinical Neurophysiology* 1995; 94: 221-228.

Alperin N, Vikingstad EM, Gomez-Anson B, and Levin DN. Hemodynamically-independent analysis of CSF and brain motion observed with dynamic phase-contrast MRI. *Magn Reson Med* 1996; 35:741-754.

Dujovny M, Fernandez P, Alperin N, Betz W, Misra M, and Mafee M. Post-Cranioplasty CSF hydrodynamic changes: MRI quantitative analysis. *Neurological Research* 1997; 19:311-316.

Chu D, Levin DN, and Alperin N. Assessment of the biomechanical state of intracranial tissue by dynamic MRI of Cerebrospinal fluid pulsations: a phantom study. *Magn. Reson. Imaging* 1998; 16:(9)1043-1048.

Osnis RB, McCarthy JG, Aizenstien RI, Mafee MM, and **Alperin, N.** Anatomy and Imaging of the Supraorbital Region. *Int. Jour. of Neuroradiology* 1998; 4:4:243-252.

Sychra JJ, Blend MJ, **Alperin N**, Brint S. Monte Carlo probabilities of cluster formation by image noise. *The World Wide Web Journal of Biology* 1999; Vol. 4

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Sabnis E, Mafee M.F., and **Alperin N.** Normal MRI of the Temporal Bone. *Topics in Magnetic Resonance Imaging* 2000; Vol. 11, No 1, 2-9.

Zhao M., Charbel F.T., **Alperin N.**, Loth F, and Clark ME. Improved phase-contrast flow quantification by three-dimensional vessel localization. *Mag. Res. Imaging*. 2000; 18:(6); 697-706.

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**Alperin N**, Lee SH, Loth F, Raksin P, Lichtor T. MR-Intracranial Pressure (ICP): A method for noninvasive measurement of intracranial pressure and elastance. Baboon and Human Study. *Radiology*. 2000; 217 (3); 877-885.

**Alperin N**, Kulkarni K, Loth F, Roitberg B, Lichtor T. Analysis of MRI-Based Blood and CSF Flow Measurements in Patients with Chiari I Malformations: A System Approach. *Neurosurgical Focus*. 2001 Vol 11 (1) 1-10.

Ettema SE, Kuehn DP, Perlamm AL, **Alperin N.** MRI of the LVP during speech. *Cleft Palate-Craniofacial Jour*, March 2002; 39:2;130:144.

Roitberg B, Khan N, Tuccar E, Kompoliti K, Chu Y, **Alperin N**, Kordower JH, Emborg ME. Chronic ischemia stroke model in cynomolgus monkeys: Behavioral, neuroimaging and anatomical study. *Neurol Res*. 2003 Jan;25(1):68-78.

**Alperin N**, Lee SH. PUBS: Pulsatility based segmentation of lumens conducting nonsteady flow. *Magnetic Resonance in Medicine* 49:934-944 (2003)

Raksin P, **Alperin N**, Surapaneni S, Lichtor T. Noninvasive Intracranial Compliance and Pressure from Dynamic MR Imaging of Blood and CSF Flows: Review of Principles, Implementation, and Other Noninvasive Approaches. *Neurosurg. Focus*. 2003; 14 (4);1:8.

Cebral JR, Castro MA, Soto O, Löhner R, **Alperin N.** Blood-flow models of the circle of Willis from magnetic resonance data. *Jour. of Engineering Mathematic*. Volume 47 (2003)

Sivaramakrishnan A, **Alperin N**, Surapaneni S, Lichtor T. Evaluating the Effect of Decompression Surgery on CSF Flow and Intracranial Compliance in Patients with Chiari Malformation Using MRI Flow Studies. *Neurosurgery*. 2004 Dec;55(6):1344-50; discussion 1350-1.

Ford MD, **Alperin N**, Lee SH, Holdsworth DW, Steinman DA. Characterization of volumetric flow rate waveforms in the normal internal carotid and vertebral arteries. *Physiol Meas*. 2005 Aug;26(4):477-88.

Lichtor T, Egofske P, **Alperin N.** Noncommunicating cysts and cerebrospinal fluid flow dynamics in a patient with a Chiari I malformation and syringomyelia. *Spine*. 2005 Jun 15;30(12):1466-72

**Alperin N**, Sivaramakrishnan A, Lichtor T. Magnetic resonance imaging-based measurements of cerebrospinal fluid and blood flow as indicators of intracranial compliance in patients with Chiari malformation. *J Neurosurg*. 2005 Jul;103(1):46-52.

**Alperin N**, Lee SH, Mazda M, Hushek SG, Roitberg B, Goodwin J. Evidence of the importance of extracranial venous flow in patients with Idiopathic Intracranial Hypertension (IIH). *Acta Neurochir*. 2005 Suppl 95: 129-132



**Alperin N, Lee SH, Sivaramakrishnan A, Lichtor T.** Relationship between total cerebral blood flow and ICP measured noninvasively with dynamic MRI technique in healthy subjects. *Acta Neurochir.* 2005 Suppl 95: 191–193

**Alperin N, Lee S, Sivaramakrishnan A, Hushek S.** Quantifying the Effect of Posture on Intracranial Physiology in Humans by MRI Flow Studies. *Magn Reson Imaging.* 2005 Nov;22(5):591-6

**Glick RP, Niebruegge J, Lee SH, Egibor O, Lichtor T, Alperin N.** Early experience from the application of a noninvasive MRI-Based measurement of Intracranial Pressure in Hydrocephalus. *Neurosurgery* Nov 2006 vol. 59:1052-1061

**Ha S, Kuehn DP, Cohen M, Alperin N.** Magnetic resonance imaging of the levator veli palatini muscle in speakers with repaired cleft palate. *Cleft Palate Craniofac J.* 2007 Sep;44(5):494-505.

**Tain and RW, Alperin N.** Noninvasive Intracranial Compliance From MRI-Based Measurements of Transcranial Blood and CSF Flows: Indirect vs. Direct Approach. *IEEE Trans Biomed Eng.* 2009 Mar;56(3):544-51.

**Chiang W, Takoudis C, Lee HS, McNulty AW, Glick R, Alperin N.** Relationship between Ventricular Morphology and Aqueductal CSF Flow in Healthy and Communicating Hydrocephalus. *Invest Radiol.* 2009 Apr;44(4):192-9.

**Tain RW, Ertl-Wagner B, Alperin N.** Influence of the compliance of the neck arteries and veins on the measurement of intracranial volume change by phase-contrast MRI. *J Magn Reson Imaging.* 2009 Oct;30(4):878-83

#### **Selected Relevant Conference Proceedings (5 of 34)**

**Dhoondia H, Alperin N.** Improved MR-Intracranial Pressure (MR-ICP) Measurement using a new Data Acquisition Technique. *Intl. Soc. Mag. Reson. Med.* (2003)

**Alperin N.** Using MRI to quantify the effect of increased airway pressure on intracranial compliance and pressure. *Proc. Intl. Soc. Mag. Reson. Med.* (2003)

**Yallapragada N., Alperin N.** Patient-Specific Modeling of the Spinal Canal Hydrodynamics using Bond Graph Technique and Magnetic Resonance Imaging. *Proc. SPIE Medical Imaging: Physiology and Function: Methods, Systems, and Applications, Vol. 5031, San Diego, February, 2003.*

**Jiang H, Alperin N.** A New Automatic Skeletonization Algorithm for 3D Vascular Volumes. 26th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 1 - 4 September 2004, San Francisco, California.

**N. Alperin, S. H. Lee.** Improving the Sensitivity of Total Cerebral Blood Flow Measurement by Cine Phase Contrast MRI. *Proc. Intl. Soc. Mag. Reson. Med.* 14 (2006)

#### **Active Research Support**

NIH R01 NS052122

Development and Early Clinical Evaluation of Noninvasive MRI Measurement of ICP

**Bioengineering research partnership, Role: PI**

This proposal aims to implement an MRI-based measurement of intracranial compliance and pressure (MR-ICP) in the clinical setup of Arnold Chiari Malformations and evaluate the role of intracranial compliance in the pathophysiology of this relatively common but poorly understood neurological problem.

#### **Completed Research Support**

NIH R41 NS46185

Title: Noninvasive ICP: Reduction to practice

This proposal aims to make the MR-ICP method more widely available for use in Radiology by developing a user friendly software tool for MRI technologists. Role: PI

NIH R21 RR14242-01

Non-Invasive Measurements of Intracranial Pressure

The goal of the project was to test the feasibility of an MRI-based method for intracranial pressure measurement using a non-human primate model and a flow phantom. Role: PI

Dana Foundation

Cerebral vascular compliance measurements by dynamic MRI: A potential new diagnostic test for mild traumatic brain injury and for explaining fMRI related variability of hemodynamic response. Role: PI



## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Sara J. Czaja, Ph.D. <hr/> eRA COMMONS USER NAME (credential, e.g., agency login) sczaja	POSITION TITLE Professor		
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
State University of NY College at Buffalo, NY	B.S.	1975	Psychology
State University of NY at Buffalo, NY	M.S.	1976	Industrial Engineering
State University of NY at Buffalo, NY	Ph.D.	1980	Human Factors/Industrial Engineering

### A. Positions and Honors.

- 1980-1982 Senior Research Associate, Buffalo Organization for Social and Technological Innovation, Inc
- 1984-1988 Assistant Professor, Department of Industrial Engineering, SUNY at Buffalo
- 1988-1991 Associate Professor, Tenured, Department of Industrial Engineering, SUNY at Buffalo
- 1989-1990 Research Associate, Professor, Department of Industrial Engineering, University of Miami
- 1988-1993 Research Director, Stein Gerontological Institute, Miami, FL
- 1991-1994 Associate Professor, Department of Industrial Engineering, University of Miami
- 1993-1999 Director, Center on Human Factors & Aging Research, University of Miami School of Medicine
- 1994-present Professor, Dept. of Psychiatry and Behavioral Sciences, University of Miami School of Medicine
- 1994-present Professor, Department of Industrial Engineering, University of Miami, Coral Gables, FL
- 1999-present Director, Center on Aging and Technology Research, University of Miami School of Medicine
- 2002-present Co-Director, Center on Aging, University of Miami, Miami, FL

### Other Experience and Professional Memberships

- Member, The National Academies, Committee on the Role of Human Factors in Home Healthcare, March 2009-June 2011
- Member, Technical Expert Panel, Evidence Based Practice Center, Johns Hopkins University, March 2008-present
- Member, Board of International Society for Gerontechnology, June 2008
- Member, Advisory Committee, National Alliance for Caregiving, Spring 2008
- Member, Program Committee for the International Association of Science and Technology for Development (IASTED), June 2007 – June 2008
- Member, Subcommittee, Ely Award, Human Factors and Ergonomics Society, 2007 - present
- Faculty Affiliate, Department of Biomedical Informatics, Columbia University, April 2008 – present
- Member, Program Committee for the International Association of Science and Technology for Development (IASTED), June 2007–June 2008
- Member, Subcommittee, Ely Award, Human Factors and Ergonomics Society, 2007
- Member, Program Committee Ninth International ACM SIGACCESS Conference of Computers and Accessibility, 2007-2008

### Honors

- IBM, University Cooperative Research Award, 2007-2009.
- IBM Faculty Award, 2006
- Provost's Scholarly Activity Award, 1998.
- Researcher of the Year, College of Engineering, University of Miami, 1995.

### **B. Selected peer-reviewed publications (in chronological order).**

1. Mitrani VB, Feaster, DJ, McCabe BE, **Czaja SJ**, Szapocznik J. Adapting the structural family systems rating to assess the patterns of interacting in families of dementia caregivers. *Gerontologist* 2005; 45: 445-455.
2. Mitrani VB, Lewis J, Feaster DJ, **Czaja SJ**, Eisdorfer CE, Schulz R, Szapocznik J. The role of family functioning in the stress process of dementia of caregivers: A Structural family framework. *Gerontologist* 2006; 46: 97-105.
3. Bank A, Arguelles S, Rubert M, Eisdorfer C, **Czaja SJ**. The value of telephone support groups among ethnically diverse caregivers of persons with dementia. *Gerontologist* 2006; 46(1): 134-138.
4. **Czaja SJ**, Schulz R, Belle SH, Burgio L, Armstrong N, Gitlin LN, Coon DW, Martindale-Adams J, Stahl S. Data safety monitoring in social behavioral trials: The REACH II experience. *Clin Trials* 2006; 3: 107-118.
5. Sharit J, **Czaja SJ**, Augenstein JS, Balasubramanian G, Schell V. Assessing the information environment in intensive care units. *Behavior and Information Technology*, Vol. 25, No.3 – May-June 2006, 207-220.
6. **Czaja SJ**, Charness N, Fisk AD, Hertzog C, Nair S, Rogers W, Sharit J. Factors predicting the use of technology: findings from the Center on Research and Aging and Technology Enhancement (CREATE). *Psychol Aging* 2006; 21(2): 333-352.
7. **Czaja SJ**, Schulz R. Technology innovations and aging: Introduction. *Generations*, 2006; Summer, 6-9
8. **Czaja SJ**. (contributing author). Enhancing the quality of life of Hispanic/Latino, Black/African American, and White/Caucasian dementia caregivers: The REACH II randomized controlled trial REACH II investigators. *Ann Intern Med*. 2006; 145: 727-738.
9. Keates S, Adams R, Bodine C, **Czaja SJ**, Gordon W, Gregor P et al. Cognitive and learning difficulties and how they affect access to IT systems. *Univ Access Inf Soc*. 2007; 5: 329-339.
10. **Czaja SJ**, Lee CC. The impact of aging on access to technology. *Univ Access Inf Soc*. 2007; 5:341-349.
11. Schulz R, Hebert RS, Dew MA, Brown SL, Scheier MF, Beach SR, **Czaja SJ**, Martire LM, Coon D, Langa KM, Gitlin LN, Stevens AB, Nichols L. Patient suffering and caregiver compassion: New opportunities for research, practice, and policy. *Gerontologist* 2007; 47(1): 4-13.
12. Finkel SI, **Czaja SJ**, Schulz R, Martinovich Z, Harris C, Pezzuto D. E-Care: A telecommunications technology intervention for family caregivers of dementia patients. *Am J Geriatr Psychiatry* 2007; 15:443-448
13. Nair S, **Czaja SJ**, Sharit J. A multilevel modeling approach to examining individual differences in skill acquisition for a computer-based task. *J Gerontol B Psychol Sci Soc Sci*. 2007; 62B: 85-96.
14. Nichols LO, Chang C, Lummus A, Burns R, Martindale-Adams J, Graney MJ, Coon DW, **Czaja SJ**. The cost effectiveness of a behavior intervention with caregivers of Alzheimer's patients. *J Am Geriatr Soc*. 2008; 56(3): 389-592.
15. Ownby R, **Czaja SJ**, Loewenstein D, Rubert M. Cognitive abilities that predict success in a computer-based training program. *Gerontologist* 2008; 48(2): 170-180.
16. Pak R, **Czaja SJ**, Sharit J, Rogers WA, Fisk AD. The Role of Spatial Abilities and age in Performance in an Auditory Computer Navigation Task. *Comput Human Behav* 2008; 24: 3045-3051.
17. **Czaja SJ**, Sharit J, Nair SN. Usability of the medicare health website. *JAMA* 2008; 300 (7): 790-792.
18. Schulz R, McGinnis KA, Zhang S, Martire LM, Hebert RS, Beach SR, Zdaniuk B, **Czaja SJ**, Belle SH. Dementia patient suffering and caregiver depression. *Alzheimer Dis Assoc Disord*. 2008; 22(2): 170-186.
19. Lee CC, **Czaja SJ**, Sharit J. Training older workers for a technology-based jobs. *Educ Gerontol*. 2009; 35: 15-3
20. Schulz R, **Czaja SJ**, Lustig A, Zdaniuk B, Martire LM, Perdomo D. Improving the quality of life of caregivers of persons with spinal cord injury: A randomized controlled trial. *Rehabil Psychol*. 2009; 54(1): 1-15
21. Sharit J, Hernandez M, **Czaja SJ**, Pirulli P. Investigating the roles of knowledge and cognitive abilities in older adult information seeking on the Web. *ACM Trans Comput Hum Interact* 2009; 15(1): Article 3
22. **Czaja SJ**, Sharit J. The aging of the population: Opportunities and challenges for human factors engineering. *The Bridge* 2009; 39(1): 34-40.
23. **Czaja SJ**, Gitlin LN, Schulz R, Zhang S, Burgio D, Stevens AB., Nichols LO, Gallagher-Thompson D. Development of the risk appraisal measure (RAM): A brief screen to identify risk areas and guide interventions for dementia caregivers. *J Am Geriatr Soc*. 2009; 57:1064-1072.
24. **Czaja SJ**, Gregor P, Hanson VL. Introduction to the special Issue on aging and information technology. *ACM Transactions on Accessible Computing* 2009; Vol. 2, No.1, Article 1.

25. Sharit J, Czaja SJ, Hernandez AM, Nair SN. The employability of older workers as teleworkers: An appraisal of issues and an empirical study. *Human Factors and Ergonomics in Manufacturing Engineering* 2009; 19(5): 457-477.
26. Taha, J., Sharit, J., Czaja, S.J.. Use of and Satisfaction with Sources of Health Information Among Older Internet Users and Non-Users. *The Gerontologist* 2009, Vol. 49, No. 5, 663-673

### C. Research Support.

#### On going research:

2 PO1 AG017211-11 Czaja (PI) 08/1/09 – 07/31/14  
National Institute on Aging/National Institutes on Health

#### **Center on Research and Education for Aging and Technology Enhancement (CREATE III)**

The Center on Research and Education for Aging and Technology Enhancement (CREATE) conducts multidisciplinary research aimed at understanding how age-related changes in function impact on older person's ability to interact successfully with technical systems. The Center also disseminates research findings in a wide variety of settings such as design guidelines for the design of technical systems.

Retirement Research Foundation Czaja (PI) 10/01/08 – 09/31/10

#### **A Psychosocial Intervention Program for Working Caregivers**

To implement and test the effectiveness of a multi-component psycho-social technology-based intervention aimed at reducing the risk for adverse health outcomes and enhancing work performance and quality of life of working caregivers of older adults; and to refine and package the intervention program for working caregivers so that it can be implemented in a wide variety of work settings.

The OASIS Institute Czaja (PI) 02/01/09 – 07/31/10

#### **Oasis Connections Effectiveness Study**

Evaluate the effectiveness of the OASIS Connections curriculum in teaching older adults basic computer and Internet skills so that they are able to successfully adapt to today's technology environment.

1 R01 NS055672-01 Antoni (PI) 10/01/06 – 09/30/10

#### **Cognitive Behavioral Stress Management for Chronic Fatigue Syndrome**

4-year study that uses a 10-week telephone based cognitive behavioral stress management intervention (T-CBSM) to illuminate neuroimmune mechanisms underlying the effects of stress and stress management on physical health and immune regulation in individuals with chronic fatigue syndrome (CFS) relative to participants receiving a health promotion telephone (T-HP) intervention.

National Institute of Health. Czaja (PI) 08/01/07 – 07/31/09

#### **Research Support to Promote Diversity in Health Related Research - Supplement**

The project will focus on examining the effect of varying e-learning formats on the ability of older adults to use Internet-based problem solving applications such as benefits or health insurance eligibility programs (e.g., Medicare, Social Security).

5P50AG025711-04 Loewenstein (PI) 04/1/08 – 03/31/09

#### **Cognitive Rehabilitation in Alzheimer's Disease, Project II**

The proposed study compares the effectiveness of a cognitive and a functional intervention in their capacity to improve cognitive and functional abilities in older adults, including those of Hispanic and African American background. In addition to improving functional autonomy, independence, and quality of life, these interventions could ultimately decrease the challenges, resulting from the growing number of older adults, to social services and to the national public health system.

**Completed research:**

2 PO1 AG017211-10 Czaja (PI) 08/1/04 – 07/31/09  
National Institute on Aging/National Institutes on Health  
**Center on Research and Education for Aging and Technology Enhancement (CREATE)**  
The Center on Research and Education for Aging and Technology Enhancement (CREATE) conducts multidisciplinary research aimed at understanding how age-related changes in function impact on older person's ability to interact successfully with technical systems. The Center also disseminates research findings in a wide variety of settings such as design guidelines for the design of technical systems.

5 R01 AA 014850-04 Czaja (PI) 03/01/07 – 08/31/08  
**Modality Supplement Analytic Project**  
HMC- Health Maintenance Consortium Resource Center. Subcontract from University of Pennsylvania.

NIOSH Czaja (PI) 07/01/06 – 08/31/07  
**Understanding the Training Needs of Lower SES Older Workers**  
The objectives of this study are to gather information regarding the: 1) training needs of older adults wishing to return to work; 2) barriers that prevent older adults from participating in worker retraining programs (individual—e.g., anxiety; organizational—e.g., job availability); and 3) learning formats that are most suited for older learners. The emphasis will be on ethnically diverse lower SES older adults.

Langeloth Foundation Czaja (PI) 07/1/06 – 06/30/08  
**A Computer Integrated Telephone System for Caregivers**  
The goal of the project is to evaluate a technology based psycho-educational intervention for minority family caregivers of patients with dementia. The intervention will be delivered via video phone technology and is intended to enhance the quality of life for caregivers and patients and reduce caregiver distress.

1-R21-CA102761-01A2 Penedo (PI) 04/1/05 – 04/30/07  
NIH-NCI  
**CBSAM Effects in Men with Advanced Prostate Cancer**  
The purpose of this study is to examine the effects of relaxation and coping techniques on quality of life, distress, depression, coping, and physical health in men diagnosed with advanced prostate cancer.

R RO1 NR008272-02 Czaja (PI) 12/01/02 – 11/30/07  
National Institute of Nursing Research  
**Caregiver Intervention for Caregivers of SCI Patients**  
The specific aim of this project is to test the efficacy of an innovative multi-component psychosocial/technology intervention aimed at reducing the risk for adverse health outcomes among family caregivers of older survivors with spinal cord injury and to improve the well-being of the spinal cord injured survivor.

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME <b>ANDREW A. MAUDSLEY, PH.D.</b>		POSITION TITLE Professor	
eRA COMMONS USER NAME Maudsley			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Nottingham University, England	B.Sc.	1973	Physics
Nottingham University, England	Ph.D.	1976	Physics

### A. Personal Statement

The proposed research will apply volumetric MR Spectroscopic Imaging methods to the study of metabolic alterations with brain cancer and radiation treatment, and will include correlation with imaging measures obtained from DWI/DTI and cognitive measures. The MRSI methods have been developed in my laboratory over the last decade and have been evaluated for several neuroimaging studies. With a background in imaging physics and in the development of data processing methods, and experience conducting clinical research studies, I have directed this research development towards providing high-quality MRS information over a large volume of the brain in a robust manner that can be routinely implemented in the clinical research setting. I have also directed development of a software package (the MIDAS package) that includes comprehensive and automated MRSI reconstruction and analysis methods. Ongoing developments include multiparametric analysis, specifically combining measures from structural imaging, DWI/DTI, and MRSI. The volumetric MRSI methods and co-analysis with MRI offer considerable potential in the area of brain cancer imaging. In addition to providing the information necessary to achieve the specific aims, this study will evaluate the volumetric MRSI+MRI imaging protocol for an important area of diagnostic radiology. I am therefore strongly motivated to support Dr. Poptani in the implementation of our acquisition and processing methods.

### B. Positions and Employment

1977-1978 Postdoctoral Fellowship, with Professor R. R. Ernst, E.T.H., Zurich, Switzerland  
1978-1979 Research Scientist, Siemens Medical, Erlangen, Germany  
1979-1983 Assistant Professor, Columbia University, College of Physicians and Surgeons, New York  
1983-1985 Vice-President, Advanced NMR Systems, Inc., Woburn, MA  
1986-1987 Assistant Professor, Columbia University, New York  
1987-1994 Associate Professor of Radiology in Residence, University of California San Francisco  
1988-1994 Adjunct Associate Professor, Pharmaceutical Chemistry, UCSF  
1994-2002 Professor of Radiology in Residence, University of California San Francisco  
6/2002- Professor of Radiology, University of Miami School of Medicine

### Honors, Other Experience, and Other Professional Activities:

Gold Medal Award of the ISMRM, 2005. Fellow of the ISMRM, 1999.  
Member, Medical Imaging Study Section, National Institutes of Health. 6/2004-2008.  
1993-1996, Board of Trustees, International Society for Magnetic Resonance in Medicine  
Editorial Board: Magnetic Resonance Imaging; Magnetic Resonance in Medicine; MAGMA.

### C. Selected Peer-reviewed Publications (Selected from 127 peer-reviewed publications)

Most relevant to the current application:

1. A.A. Maudsley, A. Darkazanli, J.R. Alger, et.al. Comprehensive processing, display, and analysis for in vivo MR spectroscopic imaging. *NMR Biomed.* 19: 492-503 (2006).
2. A.A. Maudsley, C. Domenig, V. Govindaraju, A. Darkazanli, C. Studholme, K. Arheart, and C. Bloomer. Mapping of brain metabolite distributions by volumetric proton MRSI. *Magn. Reson. Med.* 61: 548-559 (2009).

3. A.A. Maudsley, C. Domenig, and S. Sheriff. Reproducibility of serial whole-brain MR spectroscopic imaging. In Press, NMR in Biomed, (2009).
4. A.A. Maudsley, C. Domenig, R. E. Ramsay, and B. C. Bowen. Application of volumetric MR spectroscopic imaging for localization of neocortical epilepsy. *Epilepsy Research*, In Press (2009).
5. K. Young, V. Govind, K. Sharma, C. Studholme, A.A. Maudsley, and N. Schuff. Multivariate statistical mapping of spectroscopic imaging data. *Magn. Reson. Med.* In Press, (2009).
6. V. Govind, S. Gold, K. Kaliannan, G. Saigal, S. Falcone, K. Arheart, L. Harris, J. Jagid, and A.A. Maudsley. Whole-brain Proton MR Spectroscopic Imaging of Mild-to-Moderate Traumatic Brain Injury and Correlation with Neuropsychological Deficits. *Neurotrauma*. Accepted for Publication, (2009).

Additional recent publications of importance to the field:

7. Young K., Govindaraju V., and Maudsley A.A. Automated spectral analysis I: Formation of a priori information by spectral simulation. *Magn. Reson. Med.* 40: 816-821, 1998.
8. Young K., Soher B., and Maudsley A.A. Automated spectral analysis II: Application of wavelet shrinkage for characterization of non-parameterized signals. *Magn. Reson. Med.* 40: 822-831, 1998.
9. Soher B., Young K., and Maudsley A.A. Automated spectral analysis III: Application to proton MR spectroscopic imaging. *Magn. Reson. Med.* 40: 832-839, 1998.
10. V. Govindaraju, K. Young, A. A. Maudsley, Proton NMR chemical shifts and coupling constants for brain metabolites. *NMR Biomed.* 13: 129-153 (2000).
11. A. Ebel, B.J. Soher, and A.A. Maudsley. Assessment of 3D proton MR echo-planar spectroscopic imaging using automated spectral analysis. *Magn. Reson. Med.* 46: 1072-1078 (2001).
12. V. Govindaraju, G. Gauger, G. Manley, A. Ebel, M. Meeker, and A.A. Maudsley. Volumetric proton spectroscopic imaging of mild traumatic brain injury. *Am. J. Neuroradiol.* 25: 730-737 (2004).
13. B.J. Soher, K. Young, A. Bernstein, Z. Aygula, A.A. Maudsley. GAVA: Spectral Simulation for In Vivo MRS Applications. *J. Magn. Reson.* 185: 291-299 (2007).
14. P. Hore, L. O. Hall, D. B. Goldgof, Y. Gu, A. A. Maudsley, A. Darkazanli. A scalable framework for segmenting magnetic resonance images. *J. Sign. Process. Syst.* 54, 183-203 (2009).
15. J. Kornak, K. Young, B. J. Soher and A. A. Maudsley. Bayesian k-Space-Time Reconstruction of MR Spectroscopic Imaging for Enhanced Resolution. *IEEE Trans. Med. Imag.* Accepted for Publication. (2009).

#### D. Research Support

##### Ongoing Research Support

NIH/NINDS R01 NS055107 (Maudsley) 6/1/2006 – 12/31/2012

Volumetric MRSI Evaluation of Traumatic Brain Injury

Goals are to evaluate advanced metabolic imaging methods for injury assessment and prognosis following mild and moderate traumatic brain injury.

NIH/ NIBIB R01 EB00822 (Maudsley) 7/01/2002 – 3/31/2013

Partnership for MR Spectroscopic Imaging Data Processing

This is Bioengineering Research Partnership aimed at developing data processing tools for MR Spectroscopic Imaging; generation of a database of normal brain metabolite distributions; and mapping of regional alterations with neurological diseases.

NIH/NINDS R01 NS060874 (Govind) 1/1/2009 – 8/31/2012

Brain Metabolic Imaging in Amyotrophic Lateral Sclerosis

The major goal of this project is to examine the efficacy of whole-brain proton MRSI and DTI methods for evaluating cerebral pathological changes in ALS.

NIH/ NIBIB R01 EB00822-07S1 (Maudsley) 9/1/2009 – 8/31/2011  
Partnership for MR Spectroscopic Imaging Data Processing  
Administrative supplement for redevelopment of the MIDAS package in Python.

### **Pending Research Support**

NIH/NINDS 1R01AG037728-01 (Wright) 07/01/10 – 06/30/15  
Imaging markers of functional performance and age-related cognitive changes.  
This project uses structural, functional, and metabolic brain imaging measurements to understand the factors underlying individual variability in performance on technology-based everyday tasks.

### **Completed Research Support**

R01 EB000730 (Maudsley)	10/1/02-9/30/07	Volumetric MR Molecular Imaging of Brain
R01 NS41946 (Maudsley)	8/15/01-7/31/06	Proton MR Spectroscopic Imaging of Epilepsy
R21 MH075658-01 (Goodkin)	12/1/05-8/31/07	Novel MRS Methods to Characterize MCMD



## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME <b>Carlos T. Moraes</b>	POSITION TITLE <b>Professor</b>		
eRA COMMONS USER NAME <b>cmoraes</b>			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Escola Paulista de Medicina, Sao Paulo, Brazil	B.Sc.	1983	Biomedical Sciences
Escola Paulista de Medicina, Sao Paulo, Brazil	M.Sc.	1987	Molecular Biology
Department of Genetics and Development, Columbia University	M.A.	1991	Genetics & Development
Department of Genetics and Development, Columbia University	Ph.D.	1993	Genetics & Development

### A. Positions and Honors.

#### PROFESSIONAL APPOINTMENTS

2005 - Professor (Tenured). Dept. of Neurology, University of Miami, Miami, FL.  
 1998 – 2005 Associate Professor (Tenured). Dept. of Neurology, University of Miami, Miami, FL.  
 1993 – 1998 Assistant Professor. Dept. of Neurology, University of Miami, Miami, FL.  
 1992 – 1993 Postdoctoral Research Fellow. Dept. of Neurology, Columbia University, New York, NY.

#### AWARDS AND OTHER PROFESSIONAL ACTIVITIES:

2005 Provost Award for Scholarly Activity, University of Miami  
 2002 - 2006 NIH Scientific Review Panel Member (Genetics of Health and Disease Review Group)  
 2007 - Present Scientific Advisory Committee member, Muscular Dystrophy Association  
 1999 - 2004 Scientific Advisory Committee member, Muscular Dystrophy Association  
 2005- Present Scientific Advisory Committee member, United Mitochondrial Disease Foundation  
 1995 - 1999 PEW Scholar in the Biomedical Sciences  
 1997 National Eye Institute Committee on "Development of a National Plan for Vision Research  
 1997 National Heart, Lung, and Blood Institute Scientific Review Committee for RFA: HL-96-013  
 1998 Chemistry and Related Sciences Special Emphasis Review Panel (NIH).  
 1998 Molecular Cytology Special Emphasis Panel (NIH).

### B. Selected peer-reviewed publications (in chronological order).

#### SELECTED PEER-REVIEWED PUBLICATIONS

Mitochondrial DNA deletions in progressive external ophthalmoplegia and Kearns-Sayre syndrome. Moraes. C.T., DiMauro, S., Zeviani, M., Lombes, A., Shanske, S., Miranda, A. F et al. *New England Journal of Medicine*, 320: 1 293- 1299 (1989).  
 A direct repeat is a "hot spot" for mitochondrial DNA deletions in humans. Schon, E.A., Rizzuto, R., Moraes. C.T., Nakase. H., Zeviani, M. & DiMauro, S. *Science*, 244: 346-349 (1989).  
 Mitochondrial DNA depletion with variable tissue expression: A novel genetic abnormality in mitochondrial diseases. Moraes. C.T., Shanske, S., Trishler H-J., Aprille, J.R., Andreetta, F., Bonilla, E., Schon, E.A. and DiMauro, S. *American Journal of Human Genetics*, 48: 492-501 (1991).  
 Depletion of mitochondrial DNA in AIDS patients with zidovudine-induced myopathy. Arnaudo, E., Dalakas, M., Shanske, S., Moraes. C.T., DiMauro, S. and Schon. E.A. *The Lancet*, 337: 508-510 (1991)



- Replication-competent human mitochondrial DNA lacking the heavy-strand promoter region. Moraes. C.T., Andreetta, F., Bonilla, E., Shanske, S., DiMauro, S., and Schon, E.A. *Molecular and Cellular Biology*, 11: 1631-1637 (1991)
- Molecular analysis of the muscle pathology associated with mitochondrial DNA deletions. Moraes. C. T., Ricci E, Petruzzella, V., Shanske, S., DiMauro, S., Schon, E and Bonilla, E. *Nature Genetics* 1: 359-367 (1992).
- A mitochondrial tRNA anticodon swap associated with a muscle disease. Moraes. C.T., Ciacci, F., Bonilla, E., Ionascescu, V., Schon, E.A., and DiMauro, S. *Nature Genetics*, 4:284-287 (1993).
- Two novel pathogenic mitochondrial DNA mutations affecting organelle number and protein synthesis: is the tRNA gene an etiologic hot spot ? Moraes. C.T., Ciacci, F., Bonilla, E., Jansen, C., Hirano, M., Rao, N., Lovelace, R.E., Rowland, L.P., Schon, E.A., and DiMauro, S. *Journal of Clinical Investigations*, 92:2906-2915 (1993)
- Cellular distribution of deleted and wild-type mtDNA in normal and respiration-deficient muscle fibers from patients with mitochondrial myopathy. Siacco, M., Bonilla, E., Schon, E.A., DiMauro, S., and Moraes. C.T. *Human Molecular Genetics*, 3:13-19 (1994)
- Functional and Molecular Mitochondrial Abnormalities Associated with a C - T Transition at Position 3256 of the Human Mitochondrial Genome. Huiling Hao and Carlos T. Moraes *The Journal of Biological Chemistry*, 271 :2347-2352 (1996).
- Expanding the functional human mitochondrial DNA database by the establishment of primate xenomitochondrial cybrids. Lesley Kenyon and Carlos T. Moraes. *Proceedings of the National Academy of Sciences USA* 94:9131-9135 (1997).
- A Disease-Associated G5703A Mutation in the Human Mitochondrial DNA Causes a Conformational Change and a Marked Decrease in Steady-State Levels of the Mitochondrial tRNA<sup>Asn</sup>. H. Hao and C.T. Moraes *Molecular and Cellular Biology* 17:6831-6837 (1997).
- Suppression of a Mitochondrial tRNA Gene Mutation Phenotype Associated with Changes in the Nuclear Background. H. Hao, L. E. Morrison, and C. T. Moraes. *Human Molecular Genetics*. 8:1117-1194 (1999).
- Titration of the Effects of Mitochondrial Complex I Impairment in the Cell Physiology. Antoni Barrientos and Carlos T. Moraes. *Journal of Biological Chemistry*. 274:16188-16197 (1999)
- Mechanisms of human mitochondrial DNA maintenance: the determining role of primary sequence and length over function. Moraes, C. T., Kenyon, L. and Hao, H. *Molecular Biology of the Cell*, 10:3345-56 (1999).
- Lack of Oxidative Phosphorylation and Low Mitochondrial Membrane Potential Decrease Susceptibility to Apoptosis and Do not Modulate the Protective Effect of Bcl-x<sub>L</sub> in Osteosarcoma Cells  
Runu Dey and Carlos T. Moraes. *J. Biol. Chem.* 275:7087-7094 (2000)
- Functional Constraints of Nuclear - Mitochondrial DNA Interactions in Xenomitochondrial Rodent Cell Lines  
Runu Dey, Antoni Barrientos, and Carlos T. Moraes. *J Biol Chem*, 275: 31520-31527 (2000).
- An out of Frame Cytochrome *b* Gene Deletion from a Patient with Parkinsonism is Associated with Impaired Complex III Assembly and Increase in Free Radicals Production. Michele Rana, Irenaeus de Co, Francisca Diaz, Hubert Smeets, and Carlos T. Moraes. *Annals of Neurology*;48:774-781 (2000).
- Manipulating Mitochondrial DNA Heteroplasmy by a Mitochondrially Targeted Restriction Endonuclease  
Srivastava, S. and Moraes, C.T. *Hum Mol Genet* 10: 3093-3099 (2001)
- Human mitochondrial DNA with large deletions repopulates organelles faster than full-length genomes under relaxed copy number control. Diaz F, Bayona-Bafaluy MP, Rana M, Mora M, Hao H, Moraes CT. *Nucleic Acids Res* 30:4626-33 (2002)
- Generation of histocompatible tissues using nuclear transplantation. Lanza RP, Chung HY, Yoo JJ, Wettstein PJ, Blackwell C, Borson N, Hofmeister E, Schuch G, Soker S, Moraes CT, West MD, Atala A (2002). *Nature Biotechnol* 20:689-96
- Pattern of organization of human mitochondrial pseudogenes in the nuclear genome.  
Woischnik M, Moraes CT. *Genome Res* 12:885-93 (2002).
- Bcl-2 Modulates Adenine Nucleotides influx into Mitochondria and improves Oxidative Phosphorylation Dysfunction Caused by Mitochondrial tRNA Gene Mutations. Giovanni Manfredi, Jennifer Q. Kwong, Jose A. Oca-Cossio, Markus Woischenick, Katherine Martushova, Marilena D'Aurelio, Carl D. Gajewsky, Carlos T. Moraes *J. Biol. Chem.*;278:5639-5645 (2003).
- Limitations of Allotopic Expression of Mitochondrial Genes in Mammalian Cells. Jose Oca-Cossio, Lesley Kenyon, Huiling Hao and Carlos T. Moraes. *Genetics*. 165:100-114 (2003)

- A Chemical Enucleation Method for the Transfer of Mitochondrial DNA to rho Cells. Maria Pilar Bayona-Bafaluy, Giovanni Manfredi and Carlos T. Moraes. *Nucleic Acids Research*. 31, e98:4626-4633 (2003)
- An ALS mouse model with a permeable blood-brain barrier benefits from systemic cyclosporine A treatment. Kirkinezos IG, Hernandez D, Bradley WG, Moraes CT. *J Neurochem*. 88:821-826. (2004)
- Respiratory complex III is required to maintain complex I in mammalian mitochondria  
R. Acín-Pérez, M. P Bayona-Bafaluy, P. Fernández-Silva, R. M-Loshuertos, A. Pérez-Martos, C. Bruno, C. T. Moraes and J. A. Enríquez. *Molecular Cell* 13:805-815 (2004)
- Heterologous mitochondrial DNA recombination in human cells. D'Aurelio M, Gajewski CD, Lin M, Mauck W, Shao L, Lenaz G, Moraes CT, Manfredi G. *Hum Mol Genet*. 13:3171-3179 (2004)
- Cytochrome c Association with the Mitochondrial Inner Membrane is Impaired in the Central Nervous System of G93A-SOD1 Mice. Ilias G. Kirkinezos, Sandra R. Bacman, Dayami Hernandez, Jose Oca-Cossio, Laura J. Arias, Miguel A. Perez-Pinzon, Walter G. Bradley, and Carlos T. Moraes. *J. Neurosci*. 25:164-172 (2005)
- Aberrant  $\delta$ PKC Activation in Spinal Cord of Wobbler Mouse: A Model of Motor Neuron Disease  
Kunjan R. Dave, Ami P. Raval, Jesús Purroy, Ilias G. Kirkinezos, Carlos T. Moraes, Walter G. Bradley and Miguel A. Pérez-Pinzón. *Neurobiology of Disease* 18:126-33 (2005)
- Fast Adaptive Co-evolution of Nuclear and Mitochondrial Subunits of ATP Synthetase in Orangutan  
Maria Pilar Bayona-Bafaluy, Stefan Müller, Carlos T. Moraes *Mol. Biol. Evol.* 22:716-724 (2005)
- Double-Strand Breaks of Mouse Muscle mtDNA Promote Large-Deletions Similar to mtDNA Multiple Deletions in Humans. Sarika Srivastava and Carlos T. Moraes. *Hum. Mol. Genet.* 14:893-902 (2005)
- Mice lacking COX10 in skeletal muscle recapitulate the phenotype of progressive mitochondrial myopathies associated with cytochrome c oxidase deficiency. Francisca Diaz, Christine K. Thomas, Sofia Garcia1, Dayami Hernandez and Carlos T. Moraes. *Hum. Mol. Genet.* 14: 2737-2748 (2005)
- Rapid Directional Shift of Mitochondrial DNA Heteroplasmy in Animal Tissues by a Mitochondrially-Targeted Restriction Endonuclease. Maria Pilar Bayona-Bafaluy, Bas Blits, Brendan Battersby, Eric A. Shoubridge, and Carlos T. Moraes. *Proc. Natl. Acad. Sci. USA* 102: 14392-14397 (2005)
- Oxidative phosphorylation dysfunction modulates expression of extracellular matrix-remodeling genes and invasion. Corina van Waveren, Yubo Sun, Herman S. Cheung and Carlos T. Moraes. *Carcinogenesis* 27:409-18 (2006)
- Cytochrome c Oxidase is Required for the Assembly/Stability of Respiratory Complex I in Mouse Fibroblasts  
Francisca Diaz, Hirokazu Fukui, Sofia Garcia and Carlos T. Moraes. *Mol. Cell. Biol.* 26:4872-4881 (2006)
- Loss of Mcl-1 protein and inhibition of electron transport chain together induce anoxic cell death. Brunelle JK, Shroff EH, Perlman H, Strasser A, Moraes CT, Flavell RA, Danial NN, Keith B, Thompson CB, Chandel NS. *Mol Cell Biol.* 27:1222-35 (2007)
- The Role of Cytochrome c in Apoptosis: Increased Sensitivity to TNF- $\alpha$  is Associated with Respiratory Defects But Not with Lack of Cytochrome c Release. Uma D. Vempati, Francisca Diaz, Antoni Barrientos, Sonoko Narisawa, Abdul M. Mian, José Luis Millán, Lawrence H. Boise and Carlos T. Moraes *Mol Cell Biol.* 27:1771-1783 (2007)
- Extended polyglutamine repeats trigger a feedback loop involving the mitochondrial complex III, the proteasome, and huntingtin aggregates. Hirokazu Fukui and Carlos T. Moraes. *Human Molecular Genetics* 16(7):783-97 (2007)
- PGC-1 $\alpha/\beta$  Upregulation is Associated with Improved Oxidative Phosphorylation in Cells Harboring Nonsense mtDNA Mutations. Sarika Srivastava, John N. Barrett, and Carlos T. Moraes *Human Molecular Genetics* 16:993-1005 (2007)
- The Qo site of the mitochondrial complex III is required for the transduction of hypoxic signaling via reactive oxygen species production. Bell EL, Klimova TA, Eisenbart J, Moraes CT, Murphy MP, Budinger GR, Chandel NS. *J Cell Biol.* 177(6):1029-1036 (2007)
- Modulating mtDNA heteroplasmy by mitochondria-targeted restriction endonucleases in a 'differential multiple cleavage-site' model. Bacman SR, Williams SL, Hernandez D, Moraes CT. *Gene Ther.* (2007) Jun 28; [Epub ahead of print]
- Cytochrome c Oxidase Deficiency in Neurons Decreases both Oxidative Stress and Amyloid Formation in a Mouse Model of Alzheimer's Disease. Hirokazu Fukui, Francisca Diaz, Sofia Garcia, Carlos T. Moraes. *Proc Natl. Acad. Sci. USA* 104:14163-14168 (2007)
- Pathophysiology and Fate of Hepatocytes in a Mouse Model of Mitochondrial Hepatopathies.

Francisca Diaz, Sofia Garcia, Dayami Hernandez, Arie Regev, Adriana Rebelo, Jose Oca-Cossio and Carlos T. Moraes. *GUT* 57:232-242 (2008)

The mitochondrial impairment, oxidative stress and neurodegeneration connection: reality or just an attractive hypothesis? Hirokazu Fukui and Carlos T. Moraes\*. *Trends in Neurosciences* 31: 251-256 (2008)

Activation of the PPAR/PGC-1 $\alpha$  pathway prevents a bioenergetic deficit and effectively improves a mitochondrial myopathy phenotype.

T. Wenz, F. Diaz, B. M. Spiegelman and C. T. Moraes\* *Cell Metabolism* 8:249-56. (2008)

Mechanisms of formation and accumulation of mitochondrial DNA deletions in aging neurons

Hirokazu Fukui and Carlos T. Moraes\*. *Human Molecular Genetics* 18:1028-36 (2009)

Lack of cytochrome c in mouse fibroblasts disrupts assembly/stability of respiratory complexes I and IV

Uma D. Vempati, Xianlin Han, Carlos T. Moraes\* *Journal of Biological Chemistry* 284:4383-91 (2009)

Endurance Exercise is Protective for Mice with Mitochondrial Myopathy.

Wenz T, Diaz F, Hernandez D, Moraes CT\*. *J Appl Physiol.* 106:1712-1719 (2009)

PGC-1 $\alpha$ / $\beta$  induced expression partially compensates for respiratory chain defects in cells from patients with mitochondrial disorders. Sarika Srivastava, Francisca Diaz, Luisa Iommarini, Karine Aure, Anne Lombes and Carlos T. Moraes\*. *Human Molecular Genetics* 18:1805-12. (2009)

Intra- and inter-molecular recombination of mitochondrial DNA after in vivo induction of multiple double-strand breaks. Sandra R. Bacman, Sion L. Williams and Carlos T. Moraes\*. *Nucl. Acid Res.* in press (2009)

MTERF2 regulates oxidative phosphorylation by modulating mtDNA transcription. Tina Wenz, Corneliu Luca, Alessandra Torracco and Carlos T. Moraes\* *Cell Metabolism* 9:499-511 (2009)

In vivo methylation of mtDNA reveals the dynamics of protein-mtDNA interactions

Adriana Rebelo, Sion L. Williams and Carlos T. Moraes\*

*Nucl. Acid Res.* 37:6701-6715 (2009)

Increased muscle PGC-1 $\alpha$  expression protects from sarcopenia and metabolic disease during aging

Tina Wenz, Susana G. Rossi, Richard L. Rotundo, Bruce Spiegelman and Carlos T. Moraes\*

*Proc. Natl. Acad. Sci. USA* 106:20405-20410 (2009)

### C. Research Support.

5R01EY010804-11 Moraes 12/01/94-7/31/12

NIH/NEI

*"Setting the stage for the replacement of mitochondrial genes"*

The objective of this project is to develop genetic approaches to compensate for the deleterious effects of mtDNA mutations.

Role: PI

5R01NS041777-06 Moraes 6/1/01-5/31/10

NIH/NINDS

*"Creating Animal Models with Oxidative Phosphorylation Defects in the CNS" (the project we are requesting to extend in this proposal)*

The objective of this project is to create and characterize mice with defects in the mitochondrial complexes I and IV in the adult CNS.

Role: PI

5R01CA085700-05 Moraes 1/15/01-12/31/10

NIH/NCI

*"The Role of Oxidative Phosphorylation in Cell Growth and Death"*

The objective of this project is to investigate the role of mitochondrial DNA variations in apoptosis and in certain cancers

Role: PI

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Nahab, Fatta B.		POSITION TITLE Assistant Professor of Neurology University of Miami Miller School of Medicine	
eRA COMMONS USER NAME (credential, e.g., agency login) FNAHAB			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
La Sierra University (Riverside, CA)	B.S.	1992-1996	Biology
Loma Linda University (Loma Linda, CA)	M.D.	1996-2000	Medicine
Loma Linda University Medical Center (Loma Linda, CA)	Internship Residency Chief Resident	2000-2001 2001-2004 2003-2004	Internal Medicine/Psychiatry Neurology
Human Motor Control section, NINDS National Institutes of Health, Bethesda, MD	Fellowship	2004-2008	Movement Disorders and Functional MRI

### A. Positions and Honors

#### Professional Experience:

2004-2008 Neurology Consultant, NIH Clinical Center, Bethesda, MD  
 2005-2008 Director, NIH Botulinum Toxin Clinic, Bethesda, MD  
 2005-2007 General Medical Hospitalist, Shady Grove Adventist Hospital, Rockville, MD  
 2007-2008 Assistant Clinical Investigator, NINDS, NIH, Bethesda, MD  
 2008-present Assistant Professor of Neurology, University of Miami, Miami, FL  
 2008-present Director of Research, Section of Movement Disorders, Dept. of Neurology, University of Miami

Scientific Reviewer: Clinical Neurophysiology, Human Brain Mapping Conference, Journal of Psychiatric Research, Movement Disorders, Brain

#### Professional Memberships:

2001-present American Academy of Neurology  
 2004-present Movement Disorder Society

#### Honors and Awards (selected):

1997 Summer Research Scholarship, MacPherson Society  
 1998 Excellence in Research Award, Western Medical Student Research Forum  
 1998 Outstanding Service Award, Iacono Movement Disorder and Neuroscience Group  
 2002-2004 Academic Development Award, Loma Linda University Dept of Neurology  
 2004 Resident Scholarship, American Academy of Neurology  
 2004 Alpha Omega Alpha  
 2008 J. Stephen Fink, MD PhD American Society for Experimental NeuroTherapeutics (ASENT) Fellow  
 2009 Best Doctors in America  
 2009 Who's Who in Medicine

### B. Publications (in chronological order):

#### PEER-REVIEWED

- Iacono RP, Nahab FB, Nahab FH. Serotonergic decompensation in the akinetic expression of Parkinson's disease. *Int J Neurosci*, 2000, 101(1-4) p57-63.
- Nahab FB, Worrell GA, Weinschenker BG. 25-year-old man with recurring headache and confusion. *Mayo Clin Proc*, Jan 2001, 76(1) p75-8.

3. Eible R, the Tremor Research Group and Conference Attendees (Nahab FB). Report from a US consensus conference on essential tremor. *Movement Disorders, October 2006*.
4. Nahab FB, Peckham E, Hallett M. Essential tremor: deceptively simple... *Pract Neurol* 2007; 7(4): 222-233.
5. Nahab FB, Peckham E, Hallett M. Pilot study of botulinum toxin type A for the treatment of refractory restless legs Syndrome. *Neurology* 2008; 71 (12): 950-.
6. Nahab FB, Hattori N, Saad ZS, Hallett M. Contagious yawning and the frontal lobe: An fMRI study. *Human Brain Mapping* 2009 (30): 1744-1751.
7. Nahab FB, Kundu P, Gallea C, Kakareka J, Pursley R, Pohida T, Milletta N, Friedman J, Hallett M. The neural processes underlying self-agency. *Cerebral Cortex* (Accepted, pending revisions).

#### REFERENCE TEXTBOOKS/CHAPTERS

1. Nahab FB. Multiple sclerosis. In: Siddighi S, Hardesty JS, eds. *Urogynecology and female pelvic reconstructive surgery*. New York. McGraw Hill Publishing, 2006.
2. Nahab FB and Hallett M. In: Yousry T, ed. *Neuroimaging Clinics of North America*. The role of fMRI in the diagnosis of movement disorders. (In press)
3. Nahab FB. Exploring Yawning with Neuroimaging. In: Walusinski O, ed. *The Mystery of Yawning in Physiology and Disease*. *Frontiers Of Neurology And Neuroscience*. (In press)

### **C. Research Support**

#### Ongoing Research Support

International Essential Tremor Foundation Nahab (PI) 7/08-6/10  
Identification of the neural generator(s) in essential tremor using functional magnetic resonance imaging.  
This study will identify the neural network responsible for generating essential tremor.  
Role: PI

NIH 5P50NS039764-10 Vance (PI) 9/30/2009 - 5/31/2010  
Genetics of Parkinsonism  
This study is a Udall Center grant intended to study the genetics of Parkinsonisms.  
Role: Co-Investigator on Core B (0.16 cal mo)  
Total Cost: \$947,606

#### Completed Research Support

Intramural NIH 07-N-0160 Nahab (PI) 2007-2008  
NINDS/NIH  
Pilot study of botulinum toxin, type A for the treatment of restless legs syndrome  
This study assessed the utility of botulinum toxin for the treatment of restless legs syndrome in a randomized, double-blind, placebo control design.  
Role: PI

Intramural NIH 07-N-0117 Nahab (PI) 2006-2008  
NINDS/NIH  
BOLD-fMRI of the Perception of Volition in Functional Movement Disorders  
This study utilized fMRI to determine whether patients with functional movement disorders had volitional control over their movements.  
Role: PI

Intramural NIH 06-N-0243 Hallett (PI) 2006-2008  
NINDS/NIH  
Brain Connectivity between visual input and motor output.  
The neural networks recruited for visually guided vs. unguided movements were studied with fMRI.  
Role: Associate Investigator

Program Director/Principal Investigator (Last, First, Middle):

Intramural NIH 06-N-0139 Peckham (PI) 2006-2008

NINDS/NIH

Treatment for Psychogenic Movement Disorders.

This pilot treatment trial of psychogenic movement disorders studied the use of biofeedback.

Role: Associate Investigator

Intramural NIH 06-N-0128 Hallett (PI) 2006-2008

NINDS/NIH

fMRI studies of task specificity in Focal Hand Dystonia.

This fMRI study identified the writing motor program in healthy controls and compared this region in patients with focal hand dystonia.

Role: Associate Investigator

Intramural NIH 06-N-0084 Hallett (PI) 2006-2008

NINDS/NIH

Brain Networks Responsible for Sense of Agency: An EEG study.

This study followed a similar study I designed using fMRI to study the sense of self-agency.

Role: Associate Investigator

Intramural NIH 06-N-0023 Nahab (PI) 2005-2008

NINDS/NIH

Brain networks responsible for self-agency: An fMRI study.

This fMRI study identified the neural network associated with the perception of voluntary/involuntary control in healthy controls and compared these findings with the networks in patients with functional movement disorders.

Role: PI

Intramural NIH 05-N-0092 Nahab (PI) 2004-2008

NINDS/NIH

Clinical Trial Characterizing the Bioavailability of 1-Octanol in Adults with Ethanol-responsive Essential Tremor. 1-octanol pharmacokinetics, efficacy, and safety were assessed in this phase I/II IND study in patients with ET.

Role: PI

Intramural NIH 05-N-0032 Nahab (PI) 2004-2006

NINDS/NIH

Functional MRI Study of Brain Activation with Observation of Facial Expressions.

This fMRI protocol studied the neural correlates of non-pathologic contagious motor programs (yawning) to determine whether similar networks were involved in tic disorders.

Role: PI

Intramural NIH 04-N-0153 Piro Richardson (PI) 2004-2006

NINDS/NIH

Timing of Voluntary Movement in Patients with Tourette Syndrome and Chronic Tic Disorder Using EEG and Surface EMG.

This study measured the timing of tic onset using a Libet-type paradigm.

Role: Associate Investigator

Intramural NIH 04-N-0151 Piro Richardson (PI) 2004-2006

NINDS/NIH

Timing of Voluntary Movement in Patients with Schizophrenia Using EEG and Surface EMG.

This study measured the timing of tic onset using a Libet-type paradigm.

Role: Associate Investigator