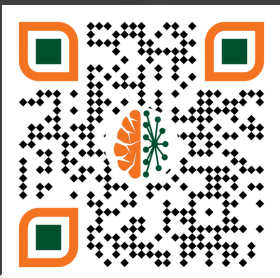


REPORT APPENDICES



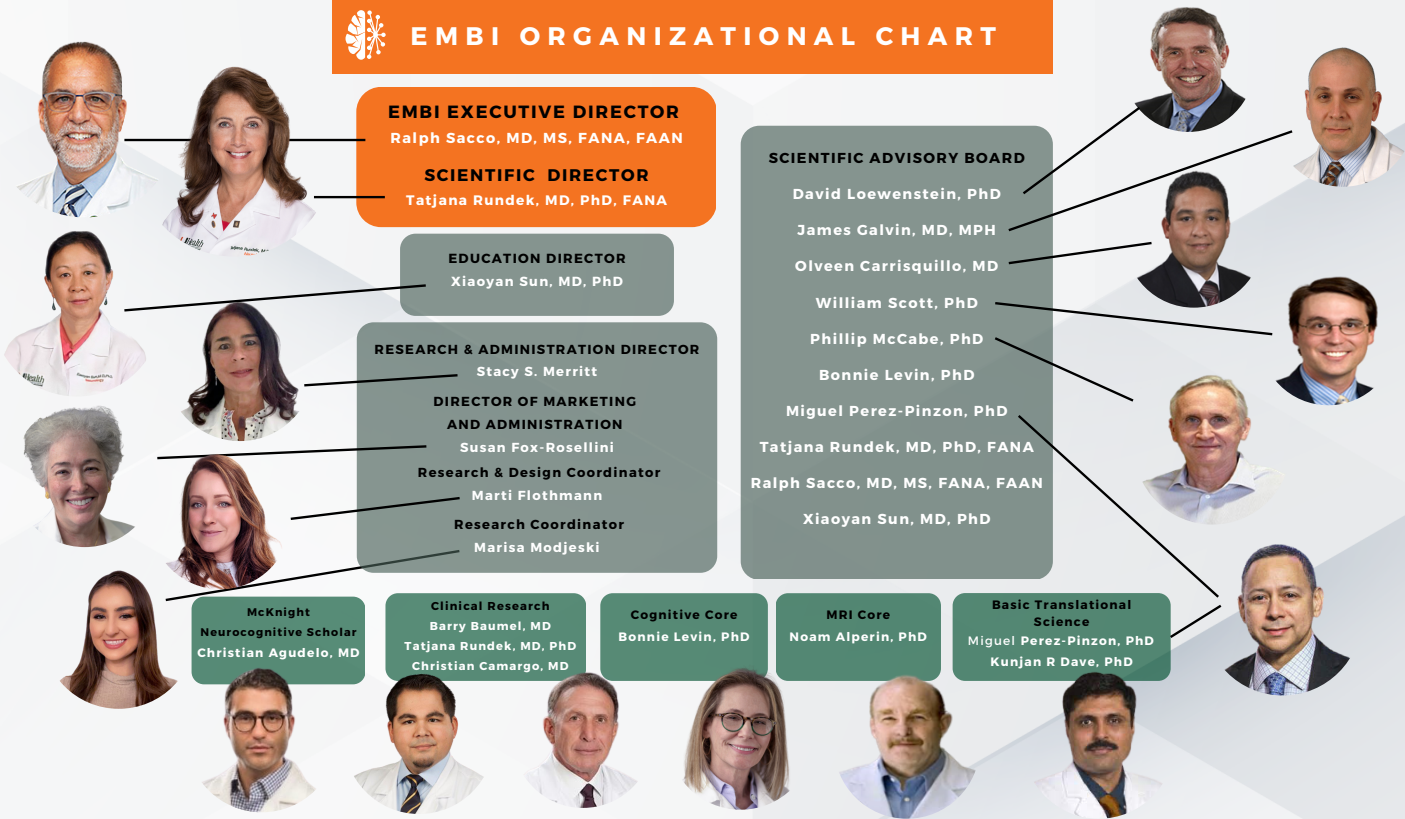
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UNIVERSITY OF MIAMI EMBI ORGANIZATIONAL CHART AND MCKNIGHT AFFILIATE FACULTY AND TRAINEES

EMBI ORGANIZATIONAL CHART



FACULTY (LEADERSHIP & MEMBERS)

Name (in alphabetical order)	Institute Role	Area of Expertise
Noam Alperin, PhD	Neuroimaging Core Director	Radiology, Physics (MRI)
Christian Camargo, MD	Member	Neurology
Kunjan R. Dave, PhD	Member	Neurobiology, Basic Science
David Della-Morte, MD, PhD	Member	Neurology
Joyce Gomes-Osman, PT, PhD	Member	Physical Therapy, Neurology
Hong Jiang, MD, PhD	Member	Neuro-ophthalmology, Neurology
Bonnie Levin, PhD	Cognitive Core Director & Scientific Advisory Board	Neuropsychology
Miguel Perez-Pinzon, PhD	Member & Scientific Advisory Board	Neuroscience
Tatjana Rundek, MD, PhD	Scientific Director & Scientific Advisory Board	Neurology, Epidemiology
Ralph L. Sacco, MD, MS	Executive Director & Scientific Advisory Board	Neurology, Epidemiology, Genetics
Xiaoyan Sun, MD, PhD	Educational Director & Scientific Advisory Board	Neuroscience, Biochemistry

FACULTY (COLLABORATORS)

Name (in alphabetical order)	Institute Role	Area of Expertise
Lilah Besser, PhD, MSPH	Collaborator	Neurology
Susan Blanton, PhD	Collaborator	Genetics
Oliver Bracko, PhD	Collaborator	Neuroscience
Scott Brown, PhD	Collaborator	Public Health
Elizabeth Crocco, MD	Collaborator	Psychiatry
Chuanhui Dong, PhD	Collaborator	Epidemiology, Biostatistics
James Galvin, MD, MPH	Collaborator & Scientific Advisory Board	Neurology
Sarah Getz, PhD	Collaborator	Neuropsychology
Ihtsham Haq, MD	Collaborator	Neurology
Girard Jean-Louis, PhD	Collaborator	Psychiatry, Neurology

FACULTY (COLLABORATORS CONT.)

Name (in alphabetical order)	Institute Role	Area of Expertise
David Loewenstein, PhD	Collaborator & Scientific Advisory Board	Neuropsychology
Michelle Marrero, MD	Collaborator	Neurology
Katalina McInerney, PhD	Collaborator	Neuropsychology
Roger McIntosh, PhD	Collaborator	Psychology
Milena Pinto, PhD	Collaborator	Neuroscience
Alberto Ramos, MD	Collaborator	Neurology, Sleep Medicine
Ami Raval, PhD	Collaborator	Neuroscience, Epidemiology
Magdalena Tolea, PhD	Collaborator	Neurology
Regina Vontell, PhD, MA	Collaborator	Neurology
Jianhua Wang, MD, PhD	Collaborator	Neuro-ophthalmology, Neurology

TRAINEES

Name (in alphabetical order)	Institute Role	Area of Expertise	Mentor
Christian Agudelo, MD	McKnight Cognitive Scholar	Neurology	Tatjana Rundek, MD, PhD Xiaoyan Sun, MD, PhD Alberto Ramos, MD
Abdulrahman Allaf	MD Student	Neuro-ophthalmology	Hong Jiang, MD, PhD Jinhua Wang, MD, PhD
Botagoz Aimagambetova, MD	Post-Doctoral Fellow	Neurology	Tatjana Rundek, MD, PhD
Ayham Alkhachroum, MD	Assistant Professor	Neurology	Tatjana Rundek, MD, PhD
Taylor Ariko, BS	PhD Student	Biomedical Engineering	Tatjana Rundek, MD, PhD
Nikhil S. Banerjee, PhD	Post-Doctoral Fellow	Neuropsychology	Bonnie Levin, PhD
Zoe Bassett	Undergrad Trainee	Neuroscience	Ami Raval, PhD
Sharvan Chabria, BS	Practicum Student	Neuropsychology	Bonnie Levin, PhD
Supriya Chakraborty	PhD Student	Biology	Oliver Bracko, PhD
Kaitlyn Chang	Graduate Trainee	Neuroscience	Ami Raval, PhD
Jack Cipolla	MD Student	Neurology	Hong Jiang, MD, PhD Jinhua Wang, MD, PhD
Estefany Saez Clark, MA	Practicum Student	Neuropsychology	Bonnie Levin, PhD
Ileana Pacheco-Colon	Post-Doctoral Fellow	Neuropsychology	Bonnie Levin, PhD
E. Valerie Daniel, PhD	Post-Doctoral Fellow	Public Health	James Galvin, MD, MPH
Katie Dillon, MA	Graduate Trainee	Neuroscience, Psychology	Roger McIntosh, PhD
Alexander Douma	Undergrad Student	Neuroscience	Ami Raval, PhD
Emma Ducca, PhD	Post-Doctoral Fellow	Neuropsychology	Bonnie Levin, PhD
Iris Escobar	PhD Student	Neurology	Miguel Perez-Pinzon, PhD
Eric Fagerli	PhD Student	Neuroscience	Miguel Perez-Pinzon, PhD
Alferado Fernandez	Undergrad Student	Neuroscience	Ami Raval, PhD
Elizabeth Gabrielli, MD	Post-Doctoral Fellow	Anesthesiology	Alberto Ramos, MD

Name (in alphabetical order)	Institute Role	Area of Expertise	Mentor
Nakisa Ghannad, MS	Practicum Student	Neuropsychology	Bonnie Levin, PhD
Ryan Gober, BS	PhD Candidate	Neuroscience	Regina Vontell, PhD
Eugenia Victoria Gomez	Undergraduate Student	Neuroscience	Milena Pinto, PhD
Christian Gonzalez, PhD	Post-Doctoral Fellow	Neuropsychology	David Loewenstein, PhD
Zachary Goodman	Practicum Student	Neuropsychology	Bonnie Levin, PhD
Emmanuel Gorrin	Graduate Trainee	Neuroscience	Ami Raval, PhD
Scott Harcourt	Post-Doctoral Fellow	Neuropsychology	Bonnie Levin, PhD
Diana Hipcamples, PhD	Post-Doctoral Fellow	Neuropsychology	David Loewenstein, PhD
Kia Howard, BS	Pre-Doctoral Trainee	Neuroscience	Roger McIntosh, PhD
Charlie Jackson	Graduate Student	Neuroscience	Miguel Perez-Pinzon, PhD
Karlon Johnson, PhD	Pre-Doctoral Trainee	Public Health	Tatjana Rundek, MD, PhD
Nathan Johnson	PhD Candidate	Neurology	Xiaoyan Sun, MD, PhD
Sonya Kaur, PhD	Instructor	Neuropsychology	Bonnie Levin, PhD Tatjana Rundek, MD, PhD Alberto Ramos, MD
Michael Kleiman, PhD	Data Scientist	Experimental Psychology	James Galvin, MD, MPH
Kayla Kotalik, BS	Practicum Student	Neuropsychology	Bonnie Levin, PhD
Nastajjia Krementz, MD	Stroke-Net Fellow	Neurology, Stroke	Ralph Sacco, MD, MS
Eduardo Leal, PhD	Post-Doctoral Fellow	Neuropsychology	David Loewenstein, PhD
Che Liu	Graduate Student	Neuroradiology	Noam Alperin, PhD
Rosario Pintos Lobo	Practicum Student	Neuropsychology	Bonnie Levin, PhD
Berk Mankaliye	Undergrad Trainee	Neuroscience	Ami Raval, PhD
Jacquelyn Moffit, MA	Practicum Student	Neuropsychology	Bonnie Levin, PhD
Emily Cecilia Morales	Graduate Student	Biochemistry	Ami Raval, PhD

Name (in alphabetical order)	Institute Role	Area of Expertise	Mentor
Amanda Neves	Post-Doctoral Trainee	Basic Science Neurology	Milena Pinto, PhD
Stephanie Novotny, MS	Pre-Doctoral Trainee	Neuropsychology	Bonnie Levin, PhD
Alexandra Ortega	Post-Doctoral Fellow	Neuropsychology	David Loewenstein, PhD
Deirdre O'Shea	Post-Doctoral Fellow	Neurology	James Galvin, MD, MPH
Nidhi H. Patel, MD	Graduate Trainee	Neurology, Stroke	Ralph Sacco, MD, MS
Sonya Patel	Undergrad Student	Neuroscience	Ami Raval, PhD
Gina Perez	Undergrad Student	Neuroscience	Ami Raval, PhD
Jahanett Ramirez, MD, MPH	Post-Doctoral Trainee	Neurology	Alberto Ramos, MD
Varun Reddy	Student	Neuroscience	Ami Raval, PhD
Ashish Rehni, PhD	Post-Doctoral Fellow	Neuroscience	Kunjan Dave, PhD
Dayana Rodriguez	Post-Doctoral Fellow	Neuropsychology	Bonnie Levin, PhD
Anita Seixas Dias Saporta, MD	McKnight Fellow	Neurology, Imaging	Tatjana Rundek, MD, PhD Ralph Sacco, MD, MS
Ratanpriya Sharma, MA	Graduate Trainee	Neuroscience, Psychology	Roger McIntosh, PhD
Hossein Shayestehyekta, MD	Post-Doctoral Trainee	Neurology	Hong Jiang, MD, PhD Jinhua Wang, MD, PhD
Jonathan Siegel	Graduate Student	Biochemistry	Ami Raval, PhD
Ava Simms, MD	Post-Doctoral Trainee	Neurology	Hong Jiang, MD, PhD Jinhua Wang, MD, PhD
Christina Stutts	Graduate Student	Music Therapy	Xiaoyan Sun, MD, PhD
Nicole B. Sur, MD	Assistant Professor	Neurology, Stroke	Tatjana Rundek, MD, PhD
Thomas Tsai, MS	Practicum Student	Neuropsychology	Bonnie Levin, PhD
Sebastian Vargas-George	Undergrad Trainee	Neuroscience	Ami Raval, PhD
Chiara Villa	Post-Doctoral Trainee	Neurology	Milena Pinto, PhD
Megan Wurtz	Undergrad Trainee	Neuroscience	Ami Raval, PhD



TOP 20 PUBLICATIONS FROM FY22

Rundek T, Del Brutto VJ, Goryawala M, Dong C, **Agudelo C**, **Saporta AS**, **Merritt S**, **Camargo C**, **Ariko T**, **Loewenstein DA**, Duara R, **Haq I**. Associations Between Vascular Risk Factors and Perivascular Spaces in Adults with Intact Cognition, Mild Cognitive Impairment, and Dementia. *J Alzheimers Dis.* 2022;89(2):437-448.

Rundek T, **Tolea M**, **Ariko T**, Fagerli EA, **Camargo CJ**. Vascular Cognitive Impairment (VCI). *Neurotherapeutics.* 2022 Jan;19(1):68-88.

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Mishra A, Malik R, Hachiya T, Jürgenson T, Namba S, Posner DC, Kamanu FK, Koido M, Le Grand Q, Shi M, et al. Stroke genetics informs drug discovery and risk prediction across ancestries. *Nature.* 2022;611(7934):115-123.

***Drs. Sacco** and **Rundek** were involved in this large international publication.

Feigin VL, Brainin M, Norrving B, Martins S, **Sacco RL**, Hacke W, Fisher M, Pandian J, Lindsay P. World Stroke Organization (WSO): Global Stroke Fact Sheet 2022. *Int J Stroke.* 2022 Jan;17(1):18-29. doi: 10.1177/17474930211065917. Erratum in: *Int J Stroke.* 2022 Apr;17(4):478.

Beaman C, Kozii K, Hilal S, Liu M, Spagnolo-Allende AJ, Polanco-Serra G, Chen C, Cheng CY, Zambrano D, Arkan B, Del Brutto VJ, Wright C, Flowers XE, Leskinen SP, **Rundek T**, Mitchell A, Vonsattel JP, Cortes E, Teich AF, **Sacco RL**, Elkind MSV, Roh D, Gutierrez J; Alzheimer's Disease Neuroimaging Initiative. Cerebral Microbleeds, Cerebral Amyloid Angiopathy, and Their Relationships to Quantitative Markers of Neurodegeneration. *Neurology.* 2022 Apr 19;98(16).

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Adjoian Mezzaca T, Dodds LV, **Rundek T**, Al Hazzouri Z, Caunca MR, Gomes-Osman J, **Loewenstein DA**, Schneiderman N, Elfassy T. Associations Between Cognitive Functioning and Mortality in a Population-Based Sample of Older United States Adults: Differences by Sex and Education. *Journal of Aging and Health*. 2022 Oct;34(6-8):905-915.

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Liu C, Lee SH, **Loewenstein DA**, **Galvin JE**, **Camargo CJ**, **Alperin N**. Poor sleep accelerates hippocampal and posterior cingulate volume loss in cognitively normal healthy older adults. *J Sleep Res*. 2022 Aug;31(4):e13538.

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Book Chapters

Rundek T. Neurovascular ultrasound (Chapter 24). In: Merritt's Neurology, 14th Edition, Louis ED, Mayer SA, Rowland JP (Eds); Wolters Kluwer, 2022; 208-216.

Rundek T, Yang D, Simonetto ML, Campo N, Cabral D. Intracerebral Venous System: Monitoring by Transcranial Color Coded Duplex Sonography (Chapter 28). In: Neurosonology in Critical Care. Rodriguez, Baracchini (Eds); Springer Nature Switzerland AG 2022; 483-494.

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Srshadri S, Caunca M, **Rundek T**. Vascular Dementia and Cognitive Impairment (Chapter 18). In: Stroke- Pathophysiology, Diagnosis, and Management. Mohr JP, Grotta, Alberts GW, Broderick JP, Asner SE, Lo EH, Mendelow D, Sacco RL, Wong LKS (Eds); Seventh edition, Elsevier Inc., 2022; 221-236.

Semple PF, **Sacco RL**. An Atlas of Stroke (The Encyclopedia of Visual Medicine Series) London Espinel Z, **Crocco EA**, Mental status in the moment. In: Geriatric Psychiatry (What Do I Do Now Psychiatry), ME Agronin, IV Vahia (Eds); Oxford University Press: NY, Chapter 3, 2022.

Rueda-Lara M, **Crocco EA**, I'm always afraid. In: Geriatric Psychiatry (What Do I Do Now Psychiatry), ME Agronin, IV Vahia, (Eds); Oxford University Press: NY, Chapter 13, 2022.

Luca L, **Crocco EA**, It's just a nightcap. In: Geriatric Psychiatry (What Do I Do Now Psychiatry), ME Agronin, IV Vahia, (Eds); Oxford University Press: NY, Chapter 28, 2022.



PRESENTATIONS AT SCIENTIFIC OR PUBLIC MEETINGS

ALZHEIMER'S  ASSOCIATION®

AAIC > 22

This year's Alzheimer's Association International Conference took place in San Diego and five EMBI TRAINEES from our EMBI presented their work. Three of the presenters are trainees being mentored by our EMBI cognition scientists and one presentation was a collaborative effort with the UF MBI.

AAIC Presentations Given by our EMBI Trainees

Taylor Ariko, Hannah Gardener, Bonnie Levin, Xiaoyan Sun, Stacy Merritt, Weizhao Zhao, Consuelo Mora-McLaughlin, Jose Gutierrez, Mitchell S.V. Elkind, Ralph Sacco, Noam Alperin, Tatjana Rundek. *Impacts of Cerebral Small Vessel Disease on Global and Domain-Specific Cognition*. AAIC 2022. Poster Presentation, PRESENTER.

Lilah Besser, Marcia Pescador Jimenez, Oanh L. Meyer, Kristen M. George, Paris AJ Adkins-Jackson, Diana Mitsova, James E. Galvin. *Neighborhood Greenspace as a Social Determinant of Health and How Associations with Brain Health Outcomes May Differ by Race/Ethnicity*. AAIC 2022. Poster Presentation, PRESENTER.

Julian Dallmeier, **Regina Vontell**, David Davis, Ryan Gober, Ayled Barreda, Xiaoyan Sun, Connor Wander, Todd Cohen, William K. Scott. *Correlation of Corporaamyloacea and pTau in Postmortem Hippocampal Human Brain Tissue*. AAIC 2022. Poster Presentation, PRESENTER.

E. Valerie Daniel, Lisa Ann Kirk Wiese, James Galvin. *Cognitive Screening among Older Afro-Caribbean Adults in Rural Areas of South Florida*. AAIC 2022. Poster Presentation, [PRESENTER](#).

Michael Kleiman, *Two-stage Cost-sensitive Clinical Decision Support System for Detecting Alzheimer's Disease*. AAIC 2022. Poster Presentation, [PRESENTER](#).

Regina T. Vontell, David A. Davis, Julian Dallmeier, Ayled Barreda, Kaj Blennow, Henrik Zetterberg, Hlin Kvartsberg, Sakir Humayun Gultekin, Steven T. DeKosky, Tatjana Rundek, William K. Scott, Xiaoyan Sun. *Region Specific Reduction of Neurogranin immunostaining in the Hippocampus of Alzheimer's Disease Brains*. *This is a multi-MBI collaboration with Dr. DeKosky from the University of Florida MBI. AAIC 2022. Poster Presentation, [PRESENTER](#).

AAIC Presentations Involving EMBI Cognitive Clinicians and Scientists

Tatjana Rundek, Victor Del Brutto, Mohammed Goryawala, Anita Seixas Dias Saporta, Stacy S. Merritt, Christian Camargo, Christian Agudelo, Taylor Ariko, Chuanhui Dong, , Ranjan Duara, Ihtsham U. Haq. *Determinants of enlarged perivascular spaces (ePVS) on MRI: The Florida Vascular Imaging Phenotypes (FL-VIP) Study of AD risk*. AAIC 2022. Poster Presentation.

Christian Camargo, Katalina McInerney, Stacy S. Merritt, Marisa Modjeski, Danielle Counotte, Tatjana Rundek. *Reducing the Effects of Aging on Cognition with Therapeutic Intervention of an Oral multi-Nutrient combination (REACTION): Study Design and Baseline Results*. AAIC 2022. Poster Presentation.

Elizabeth Mahanna-Gabrielli, Sayaka Kuwayama, Wassim Tarraf, Delia Cabrera DeBuc, Jianwen Cai, Martha L Daviglius, Charlotte Joslin, David J Lee, Carlos Mendoza-Santiesteban, Ariana M Stickel, Diane Zheng, Hector M González, **Alberto Ramos**. *Sleep, self-reported ocular health, and cognition in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) and SOL-Investigation of Neurocognitive Aging (SOL-INCA)*. AAIC 2022. Poster Presentation.

Delia Cabrera DeBuc, **Alberto R. Ramos**, Anat Galor, Rishav Sapahia, Ardita Hasalami, Javier De Jesus Fernandez, Ranya Habash. *Kernel Flow and the Eye- Brain Connectome: Towards a more robust technique to identify high-risk individuals before cognitive decline*. AAIC 2022. Poster Presentation.

Hong Jiang, Ava Gaye Yanique Simms, Bernard Baumel, Tatjana Rundek, Jinhua Wang. *Impaired retinal capillary function in patients with clinical Alzheimer's disease*. AAIC 2022. Poster Presentation.

James Galvin [chaired](#) the "Neuropsychology: Measurement and markers of AD and non-AD dementias" session.

James Galvin. *The Brain Health Platform: Combining Resilience, Vulnerability and Performance to Assess Brain Health and Risk of Alzheimer's Disease and Related Disorders.* AAIC 2022. Presentation.

James Galvin, Michael J. Kleiman, Lun-Ching Chang. *The Brain Health Platform: Combining Resilience, Vulnerability and Performance to assess brain health and risk of Alzheimer's disease and related disorders.* AAIC 2022.

Da Ma, Cédric Beaulac, Sieun Lee, Karteek Popuri, Hyunwoo Lee, Jiguo Cao, Lei Wang, **James E. Galvin,** Mirza Faisal Beg. *Predicting Alzheimer's disease progression in healthy and MCI subjects using multi-modal deep learning approach.* AAIC 2022. Poster Presentation.

Naomi S. Chaytor, Elson S. Floyd, Yunusa M Olufadi, Dedra Buchwald, **James E. Galvin,** Maureen Schmitter-Edgecombe, Asrid M Suchy-Dicey. *Intraindividual variability of cognitive performance and associations with magnetic resonance imaging in aging American Indians: Data from the Strong Heart Study.* AAIC 2022. Poster Presentation.

Ghazal Mirabnahrazam, Da Ma, Cédric Beaulac, Sieun Lee, Karteek Popuri, Hyunwoo Lee, Jiguo Cao, Lei Wang, **James E Galvin,** Mirza Faisal Beg. *Predicting Alzheimer's Disease Progression in Healthy and MCI Subjects Using Multi-modal Deep Learning Approach.* AAIC 2022. Poster Presentation.

Dr. Bracko organized the workshop *Microvascular dysfunction in VCID: From bench to bedside.* AAIC 2022.



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NEUROSCIENCE**

Gober R, **Davis D,** Barreda A, Duque L, Garamszegi SP, **Sun X,** Scott WK, **Vontell R.** *Inflammasome assembly as a potential mechanism of microglial activation and neuroinflammation in schizophrenia.* Society for Neuroscience Annual Meeting 2022. San Diego, CA.

Dallmeier J, **Vontell R,** Davis D, Gober R, Barreda A, **Sun X,** Wander C, Cohen T, Scott WK. *Regional population differences of Corpora amyloacea in postmortem hippocampal human brain tissue.* Society for Neuroscience Annual Meeting 2022. San Diego, CA.

Ashish K. Rehni, Sunjoo Cho, **Kunjan R. Dave.** *Insulin-treated diabetic rats exhibit enhanced stroke risk for at least 7 days post-recurrent hypoglycemia exposure.* Society for Neuroscience Annual Meeting 2022. San Diego, CA.

Sunjoo Cho, **Ashish K. Rehni,** **Kunjan R. Dave.** *Chronic nicotine exposure increases blood-brain barrier permeability by decreasing tight junction protein levels and increases inflammation in aged male rats.* Society for Neuroscience Annual Meeting 2022. San Diego, CA.

Oliver Bracko. *The role of neutrophils in brain blood flow reductions in Alzheimer's.* Speaker at Mini Symposium at the Society for Neuroscience Annual Meeting 2022. San Diego, CA.

Oliver Bracko was Chair for the "Microvessel, Big Problem?: A Brain Journey From Health to Disease" session. Symposium at the Society for Neuroscience Annual Meeting 2022. San Diego, CA.

Milena Pinto. *Human Nmnat1 promotes autophagic clearance of amyloid plaques in a model of Alzheimer's Disease.* Society for Neuroscience Annual Meeting 2022. San Diego, CA.

Nathan d'Adesky, Shahil H. Patel, Nicole Manelis and Ami P. Raval. *Sex difference in the cerebral metabolism of amino acid in rats after electronic cigarette derived nicotine exposure.* Society for Neuroscience Annual Meeting 2022. San Diego, CA.

Hari Pradhyumnan, Berk Mankaliye, Shahil H. Patel, Helen Bramlett and **Ami P. Raval** *Effects of electronic cigarette vaping on histamine metabolism in rats of both sexes.* Society for Neuroscience Annual Meeting 2022. San Diego, CA.

Shahil H. Patel, **Isabel Saul, Kunjan R. Dave, Miguel A. Perez-Pinzon and Ami P. Raval.** *Nicotine withdrawal and stroke outcome in female rats.* Society for Neuroscience Annual Meeting 2022. San Diego, CA.



Akgun B, Rajabli F, Adams L, Starks T, Laux R, Whitehead-Gay P, Kunkle B, Caban-Holt A, **McInerney K**, Cuccaro M, Vance J, Haines J, Smith Byrd G, Beecham G, Pericak-Vance M, & Seixas A. *The relationship of Alzheimer disease, genetic risk, and education in individuals of African Ancestry.* Annual Meeting of the American Society of Human Genetics. October 2022. Los Angeles, CA.

Nicole Dueker. *Epigenetic Age Acceleration is Suggestively Associated with Stroke Precursor Phenotypes.* American Society of Human Genetics. Poster session and Poster talk at ASHG 2022 in Los Angeles.

M. Muniz Moreno, K. Celis, F. RAJABLI, P. Whitehead, K. Hamilton-Nelson, G. Beecham, D. Dykxhoorn, K. Nuytemans, L. Wang, O.Gardner, D. Dorfsman, E. Bigio, M. Mesulam, D. Bennett, T. Schuck, S. Weintraub, C. Geula, M. Gearin, C. Alba, C. Dalgard, **D. Davis**, W. Scott, J. L. Haines, M. Pericak-Vance, A. Griswold2, J. Young, J. Vance. *Increased mitochondrial expression is associated with increased APOE e4 expression and affected by ancestry and sex.* Annual Meeting of the American Society of Human Genetics. October 2022. Los Angeles, CA.

Two junior faculty in Dr. Galvin's Comprehensive Center for Brain Health (CCBH) presented at the Gerontological Society of America.



Magdalena Tolea, Iris Cohen, James Galvin. *Mindfulness and Caregiving Experience in ADRD.* Gerontological Society of America Annual Scientific Meeting, Nov 2022.

Lilah Besser. *Cognition in Context: Investigating the Role of Built, Social, and Natural Environments in Cognitive Aging.* Gerontological Society of America Annual Scientific Meeting, Nov 2022.

Garamszegi SP, Banack SA, Cox PA, Bradley WA, Brand LE, Tischbein M, Stommel EJ, and **Davis DA.** *Detection of the Cyanobacterial Toxin BMAA in the Olfactory Pathway of Postmortem Human Brains.* 2022 Society of Toxicology Annual Meeting San Diego, CA.

Our Basic and Translational Science Researchers gave several important presentations in 2022.



Ashish K. Rehni, Allen Liu, Sunjoo Cho, **Kunjan R. Dave.** *Insulin-treated diabetic rats demonstrate increased stroke risk when exposed to recurrent hypoglycemia.* Brain & Pet 2022 (Glasgow).

Sunjoo Cho, **Ashish K. Rehni**, **Kunjan R. Dave.** *TNF- α inhibition attenuates nicotine-induced BBB impairment and hematoma expansion in collagenase-induced ICH in rats.* Brain & Pet 2022 (Glasgow).



American Heart Association.

Professional Heart Daily

Ashish K. Rehni, Sunjoo Cho, Ami P. Raval, Miguel A. Perez-Pinzon, Wenche Jy, Kunjan R. Dave. *The therapeutic window of red cell microparticles in limiting intracerebral hemorrhage-induced hematoma growth in nicotine-exposed rats.* International Stroke Conference 2022.

Kerr N, Sanchez J, Moreno WJ, Furones-Alonso OE, Dietrich WD, Bramlett HB and **Raval AP.** *Irisin, elicited by low frequency whole body vibration or exogenously, improves post-stroke cognition and reduces infarct volume in middle-aged rats.* International Stroke Conference March 2022-Held In-person and Virtual at New Orleans February 8-11 2022 (Refereed).

Drs. Jiang and Wang's work was presented at the three important conferences this year.



Association for Research in Vision and Ophthalmology Conference.

Wang, Simms, Sadaghiani, Jiang, Morgan, Aguirre, Pattany, Detre, Jiang. *Multi-center repeatability of macular capillary perfusion density using optical coherence tomography angiography.* ARVO 2022 conference poster presentation.



North American Neuro Ophthalmology Society Conference.

Jiang, Signorile, Wang. *Improvement of retinal capillary function after high-speed circuit resistance training in healthy older adults.* NANOS 2022 conference, featured poster.



American Academy of Ophthalmology Conference.

Jiang, Signorile, Wang. *Improvement of retinal capillary function after high-speed circuit resistance training in healthy older adults.* AAO 2022 conference, invited talk.

Katalina McInerney. *Global Harmonization and Clinical Testing for AD/ADRD.* Peru Alzheimer's Disease Initiative (PeADI) scientific meeting in Lima, November 7, 2022.

Katalina McInerney. *Practical Aspects of Study Collaboration.* Peru Alzheimer's Disease Initiative (PeADI) scientific meeting in Cusco, November 8-12, 2022.



HIGHLIGHTS OF WEBSITE DEVELOPMENT, MEDIA COVERAGE AND/OR SOCIAL MEDIA AUDIENCE DEVELOPMENT

South Florida Hospital News[®] and HEALTHCARE REPORT

THE REGION'S MONTHLY NEWSPAPER FOR HEALTHCARE PROFESSIONALS & PHYSICIANS

University of Miami Researchers on the Forefront of Alzheimer's and Dementia Research



The Evelyn F. McKnight Brain Institute and the Comprehensive Center for Brain Health were featured in the South Florida Hospital News and Healthcare Report.

ALZHEIMER'S ASSOCIATION
AAIC>22

Drs. Galvin, Ramos, Camargo and Vontell were interviewed by various media teams at AAIC on their featured presentations.



 **INVENTUM**

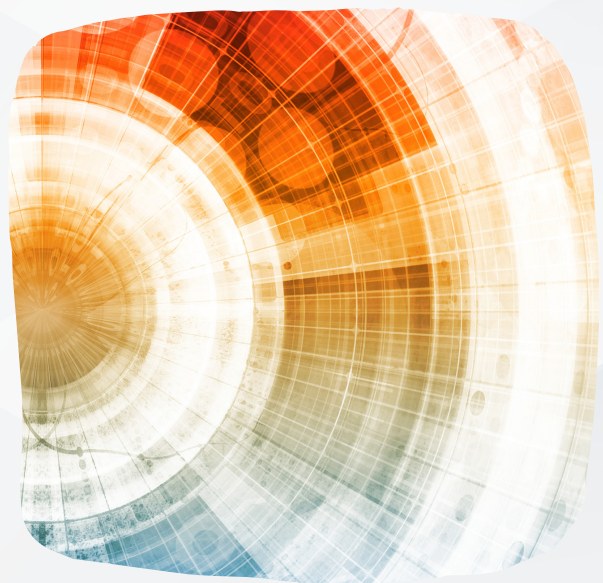
RESEARCH, EDUCATION & MEDICAL NEWS

Miller School Researchers Present High-impact Findings at World's Largest Dementia Research Conference

By Lisette Hilton

Alzheimer's and dementia experts with the University of Miami Miller School of Medicine presented on impactful research, including unique tools for early detection of cognitive decline and dementia, Alzheimer's Disease genetic sequencing and much more at the recent 2022 Alzheimer's Association International Conference (AAIC) in San Diego. Miller School researchers contributed over 2 dozen presentations on a broad spectrum of topics at 2022 AAIC, the world's largest and most influential dementia research conference.

An article published in the University of Miami **INVENTUM** and Research, Education & Medical News highlighted our **EMBI researchers**. Segments from the article are included below.



Tatjana Rundek, M.D., Ph.D., professor of neurology, and scientific director of the Miller School's Evelyn F. McKnight Brain Institute, and her Miller School team presented on the role of combined neuroimaging markers in cognitive decline and dementia. "We have shown that MRI markers of white matter disease and ultrasound markers of atherosclerotic plaque in the carotid arteries are important predictors of cognitive decline beyond traditional vascular risk factors such as hypertension, diabetes, and hyperlipidemia," Dr. Rundek said. "Their effect was consistent across different racial and ethnic groups." Future research on these markers' impact on could lead to interventions aimed at reducing the risk of future cognitive decline.

James Galvin, M.D., M.P.H., director of the Comprehensive Center for Brain Health and professor of neurology at the Miller School, presented research focused on early detection of cognitive impairment and understanding how risk and resilience factors explain differences in vulnerability to developing AD and related disorders across racial, ethnic and cultural groups. "While all physicians can diagnose mild cognitive impairment and AD and related disorders, the fact is that in the U.S. most diagnoses are not made until later stages of disease," Dr. Galvin said. A key challenge with Alzheimer's disease, he said, is that it's difficult to assess a person's brain health at the first visit and determine who is at risk and in need of a more extensive evaluation.

William Keith Scott, Ph.D., executive director of the University of Miami Brain Endowment Bank, said his students presented two posters on their Ph.D. research projects. One was research showing that the number of corpora amylacea (a circular structure that contains various waste products from cells) is associated with specific brain changes in people with AD. Another poster highlighted work showing that inherited genetic variation in the mitochondrial genome may be associated with risk of dementia in Amish communities in Indiana and Ohio, and that this risk might be different in men and women. "The volume of research being conducted on biomarkers, early detection, and longitudinal follow-up of cognitive impairment was overwhelming, and an indicator of how quickly that part of the field is developing," Dr. Scott said.

Regina Vontell, Ph.D., assistant professor of neurology and associate director of the University of Miami Brain Endowment Bank, presented research focused on early detection of neurodegenerative changes seen in AD. "Our presentation investigated an important biomarker, neurogranin, which is detected in individuals with AD cognitive disorder. Our research shows that this protein is lost in specific regions in the brain's hippocampus as the disease progresses. We also show that there are structural changes to the neurons and the surrounding white matter in specific hippocampal regions," Dr. Vontell said.

Lilah M. Besser, Ph.D., M.S.P.H., research assistant professor at the Comprehensive Center for Brain Health at the Miller School, said her team presented a literature review of published articles looking at associations between neighborhood greenspace exposure and AD and related dementia outcomes. "Our goal as scientists was to determine the extent that studies included diverse racial/ethnic groups, the diversity of the studies' geographic locations, and whether evidence suggests differences in associations depending on racial/ethnic group," Dr. Besser said. The Miller school researchers found that nearly three-quarters of studies found at least one positive association, such that individuals living in neighborhoods with more greenspace demonstrated better brain health outcomes.

Nutritional Intervention Studied in Cognitively Healthy Older Adults

August 27, 2022



Christian Camargo, MD, discussed the design and feasibility of a fully virtual study testing the potential effects of Souvenaid – a once-daily multi-nutrient drink – on cognition in healthy aging adults in an exclusive MedPage Today interview.

[Visual Impairment in Hispanic/Latinx People May Be Associated With Worse Measures of Cognition:](#)

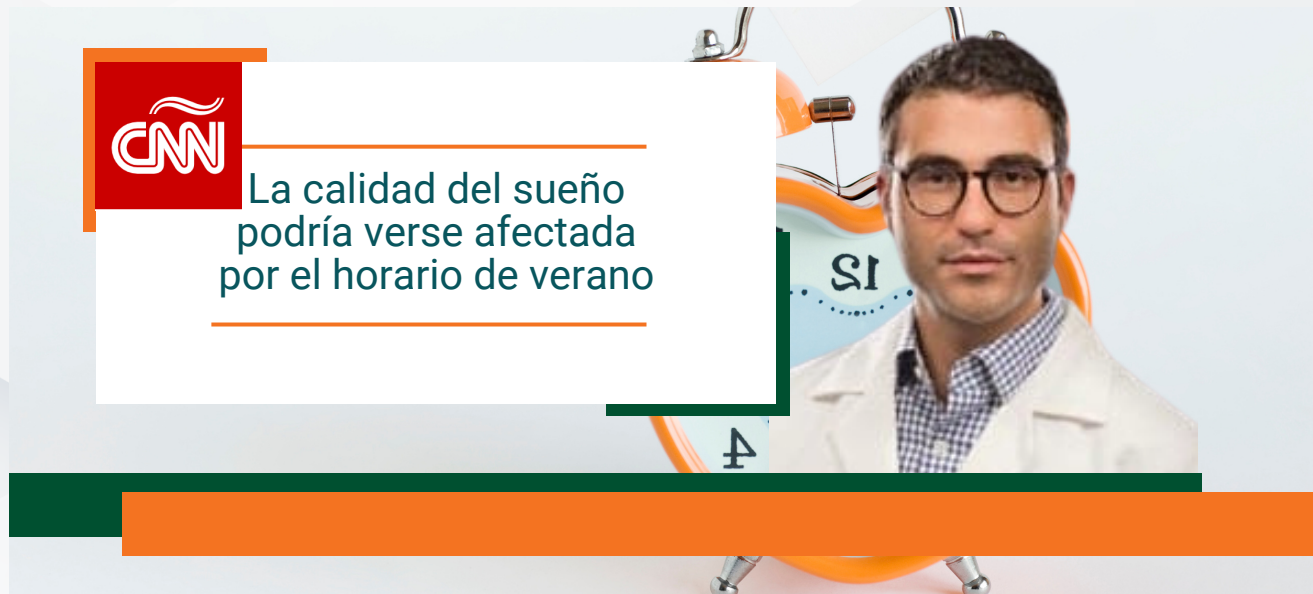
[Understanding Brain Differences in MRI Markers, Sleep-Disordered Breathing of Latino Individuals: Dr. Alberto Ramos, MD, MSPH, FAASM:](#)

[Dr. Alberto Ramos discusses some of his research with the Hispanic Community Health Study/Study of Latinos \(HCHS/SOL\), cerebrovascular risk factors and sleep:](#)

April 6, 2022

Christian Agudelo, MD was interviewed on CNN regarding the time change and its effects on sleep and health.

La calidad del sueño podría verse afectada por el horario de Verano. El cambio de horario, dos veces al año, en Estados Unidos se ha convertido en una costumbre, sin embargo, expertos en sueño indican que quizás deberíamos decirle adiós a esta rutina porque el horario de verano podría no ser beneficioso para nuestra salud.



In this Spanish interview, Dr. Agudelo discussed how the quality of sleep could be affected by Daylight Saving Time. The change in time, twice a year, in the United States has become a tradition, however, sleep experts indicate that perhaps we should say goodbye to this routine because Daylight Saving Time may not be beneficial for our health.

November 15, 2022

Christian Agudelo, MD was interviewed by CNN again in Nov

¿Estas durmiendo lo suficiente?

Mira lo que dice la ciencia



Cuando dormimos profundamente, el cerebro se limpia de todas las tóxicas que genera durante el día, explica el neurólogo Christian Agudelo. El médico analiza con la Dra. Azaret la importancia del sueño para tu corazón y cómo afecta a tu cuerpo el cambio de horario de verano a invierno.

Lilah Besser Media

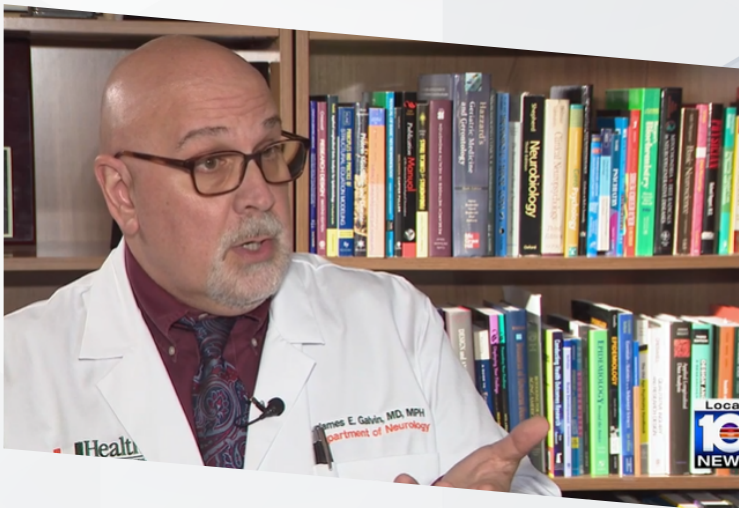
VJDEMENTIA™

The Video Journal of Dementia

<https://vjdementia.com/speaker/lilah-besser/>

A new study led by researchers with the University of Miami Miller School of Medicine revealed that among older black adults, living in segregated versus more integrated neighborhoods is associated with a significant difference in cognitive processing speed.

<https://physician-news.umiamihealth.org/segregated-neighborhoods-associated-with-cognitive-decline-for-older-african-americans/>



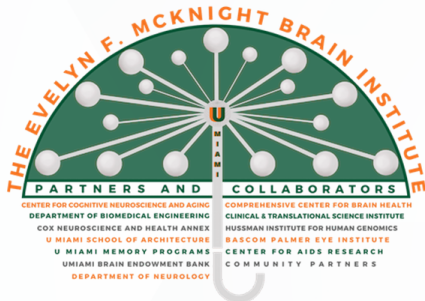
Dr. Galvin had many TV, newspaper, and media interviews in 2022.



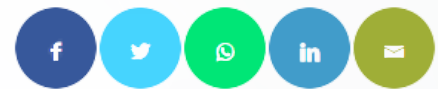
UNIVERSITY OF MIAMI
MILLER SCHOOL OF MEDICINE
EVELYN F. McKNIGHT
BRAIN INSTITUTE

2022 WEBSITE REDESIGN

We redesigned our EMBI website mbi-umiami.org towards the end of 2021. The premise was to expand the site to serve as a unified information point about our EMBI leadership, organizational structure, collaborations, and partnerships and to be a resource for age-related memory loss and cognitive impairment programs and activities. Our goal is to offer a wealth of resources on brain health and to be an interactive site with a large network of linked websites and resources. We used Google Analytics tracking to see who is visiting our site, where they come from, and where most time is spent. In addition to the general redesign, we have been implementing upgrades throughout the year such as adding social share buttons to our news posts and animating and linking our collaborators' umbrella to redirect to their respective sites (where possible).



NEW SOCIAL SHARE BUTTONS

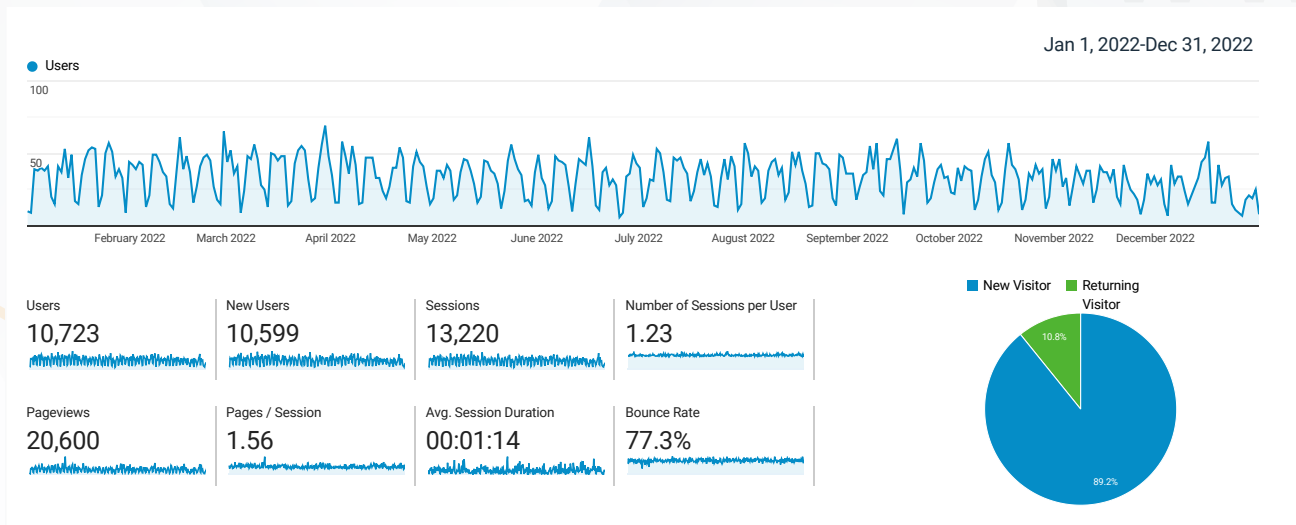


In the coming years, we hope to attract more traffic to our site specifically through social media platforms like Facebook, Instagram, LinkedIn and Twitter. As we increase our efforts and interactions within these platforms, we hope to build more trust and familiarity with our followers by consistently providing them with helpful resources and valuable information. We often cross-link our different social media pages with our EMBI site and other verified UM pages. By increasing our visibility on these different platforms, we hope to establish credibility with our users and increase overall web traffic.



Statistical Highlights & Milestones

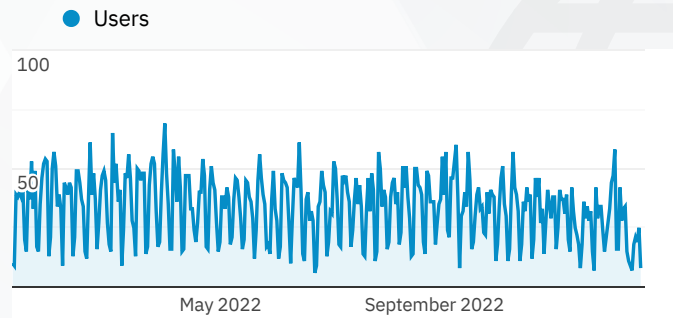
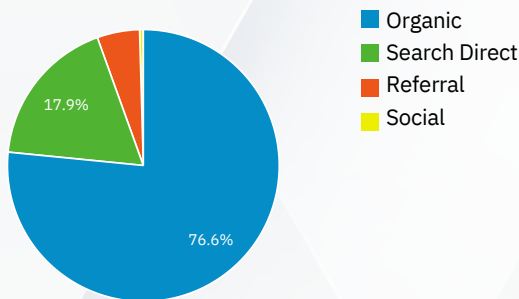
- Increase in page views + 10.4%
- Increase in average time on page + 14.4%
- Increase in new users + 11.7%
- Early insight into how social media will increase webpage traffic



Over the past year, our website has seen an overall increase in performance, with a steady increase in traffic and engagement. We have seen an increase of 11.7% in new users, and visits to our webpage have grown by 10.4%. The time spent on the website has also increased by 14.4%.

One of our most recent improvements has been the implementation of social share buttons on each of the News Posts on our website. We hope this will increase interaction between our social media and website. Additionally, we are working on posting news items, blog posts, and other educational content on our website that can be linked to our social media posts, driving more traffic to the website. Examples of content we recently shared include information about sleep, The MIND Diet, and Neuroplasticity of the Brain & Physical Exercise.

Audience Overview
Top Channels



Acquisition

Behavior

	Users	New Users	Sessions	Bounce Rate	Pages / Session	Avg. Session Duration
1 Organic Search	10,723	10,599	13,220	77.39%	1.56	00:01:14
2 Direct	8,347			77.26%		
3 Referral	1,956			82.92%		
4 Social	551			63.35%		
	48			55.10%		

© 2023 Google

This figure shows how users got to our webpage. Most commonly, users searched for us via organic search engines like Google. The second most common way of reaching our site was by directly typing in the EMBI URL. Other common routes were through social media or referrals from another medium. We have started sharing links to our new blog post as well as to previous blogs written by our team. We will be using this approach more in 2023, and will add more original articles and posts to our website.

[New Blog post from Dr. Kaur about achieving better sleep, and the role of the glymphatic system in brain health](#)

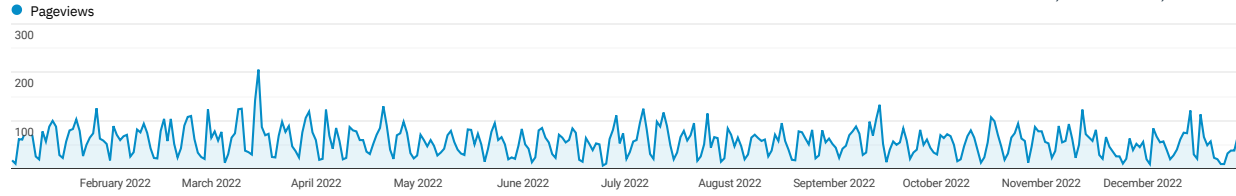


Additional Website Interaction Data

Audience Overview

Overview

Jan 1, 2022-Dec 31, 2022



Pageviews 20,600	Unique Pageviews 17,645	Avg. Time on Page 00:02:12
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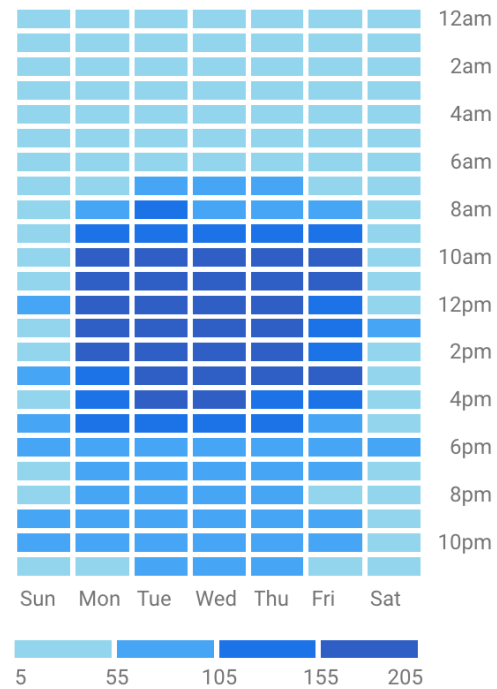
Page Title	Pageview	%
1.Home - U Miami McKnight Brain Institute	s 2,835	Pageviews
2.James E. Galvin, MD, MPH - U Miami McKnight Brain Institute	1,569	13.76%
3.Ralph L. Sacco, MD, MS, FAHA, FAAN - U Miami McKnight Brain Institute	1,397	7.62%
4.People - U Miami McKnight Brain Institute	1,110	6.78%
5.Research Areas - U Miami McKnight Brain Institute	975	5.39%

Sessions by device



Desktop	Mobile	Tablet
75.6%	23.7%	0.7%
↑16.9%	↑9.8%	↑14.0%

Users by time of day



Social Media



FACEBOOK

University of Miami
McKnight Brain Institute



TWITTER

@UMiamiMBI



INSTAGRAM

umiamimbi



LINKEDIN

University of Miami Evelyn
F. McKnight Brain Institute



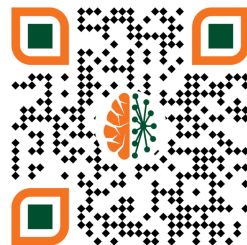
NEXTDOR

University of Miami Evelyn
F. McKnight Brain Institute



WEB

mbi-umiami.org



Our social media continues to grow both in interaction and in the number of platforms we have a presence on. We have been posting more regularly on platforms we were already using and have opened new accounts in order to broaden our reach. This year we created accounts on major platforms (Instagram and LinkedIn) as well as some smaller local accounts such as Nextdoor.

We've seen a steady growth in our reach on all Meta platforms. Our Facebook reach for this year saw over **20k%** (**1621**) growth from last year, while our newer Instagram page which was created in July of 2022 is up to 200 in reach and 50 followers. This new account still has room for growth, and we will continue to push content to gain followers in 2023. We hope that as we grow these social media accounts, they will be utilized not only for research study recruitment, but for outreach and education in our communities.

CLICK SOCIAL ICONS TO VISIT OUR PAGES

Reach

Compare your reach from this period to the previous one.

See more about your content performance

Facebook Page reach ⓘ

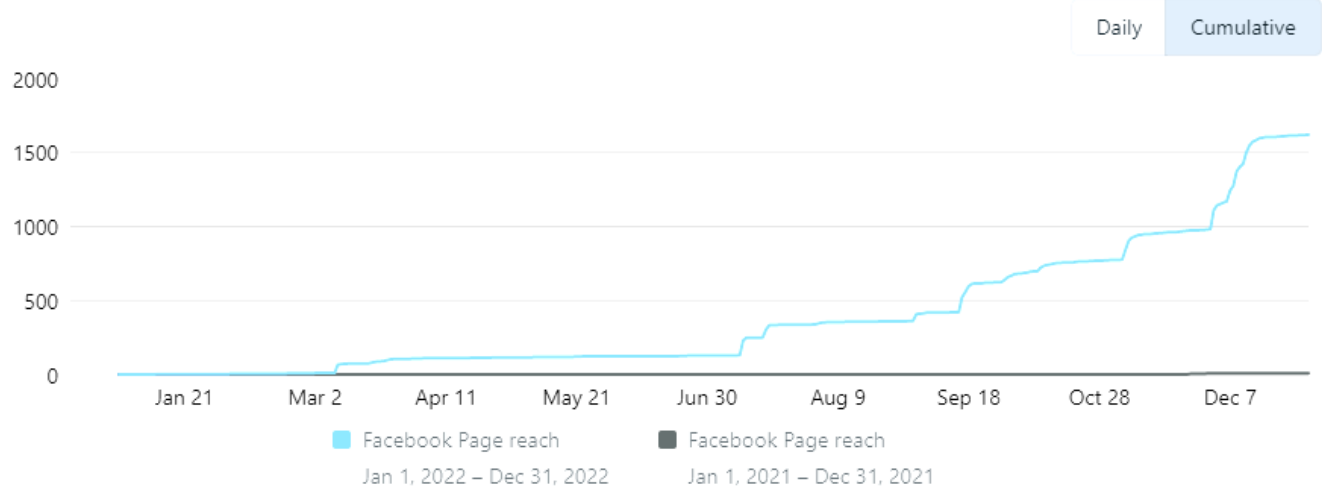
1,621 ↑ 20.2K%

Instagram reach ⓘ

200 ↑ 100%

Paid reach ⓘ

307 ↑ 100%



Throughout 2022, we experienced a significant increase in our Facebook and Instagram reach. Through a combination of engaging content and strategic partnerships, we have been able to expand our online presence and to reach a wider audience. Our new LinkedIn account has seen the fastest growth, most of which is in the Miami-Fort Lauderdale Area.

We plan on working diligently in the coming year on more organized and strategic social media campaigns in an effort to connect with our audience and provide value through our content, as well as use our content to drive traffic to the Miami EMBI website. Our goal is to provide valuable educational content for our community so that they engage more with our social media accounts, as we work towards becoming a trusted source for new research and credible information on healthy brain aging.

Follower demographics ⓘ

Location ▾

Miami-Fort Lauderdale Area · 91 (65.0%)

New York City Metropolitan Area · 5 (3.6%)

Washington DC-Baltimore Area · 4 (2.9%)

Greater Orlando · 3 (2.1%)

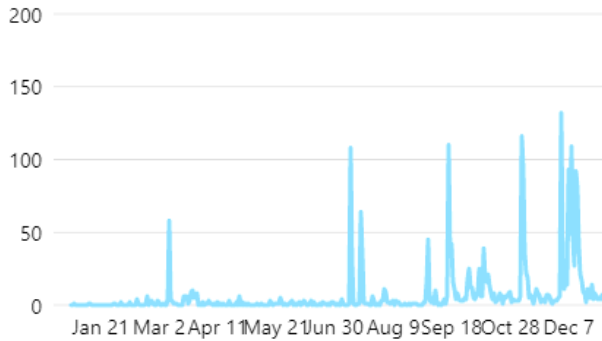
Atlanta Metropolitan Area · 2 (1.4%)

Dallas-Fort Worth Metroplex · 2 (1.4%)

Reach

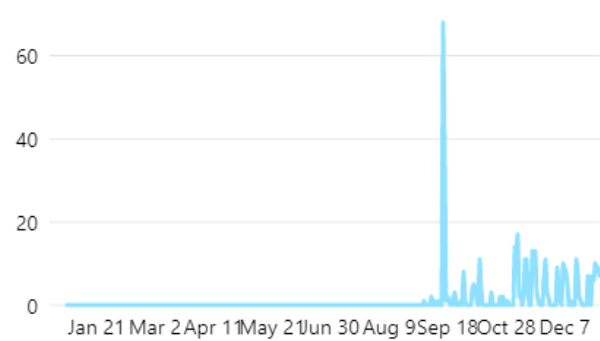
Facebook Page reach ⓘ

1,621 ↑ 20.2K%



Instagram reach ⓘ

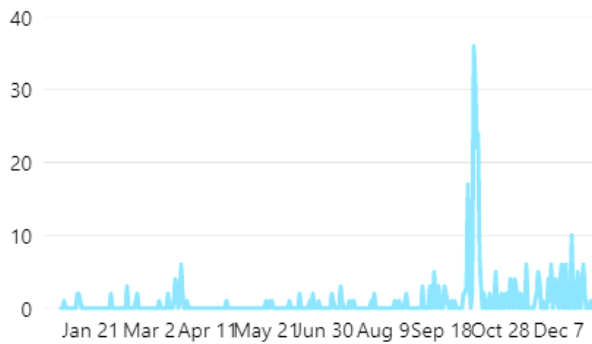
200 ↑ 100%



Page and profile visits

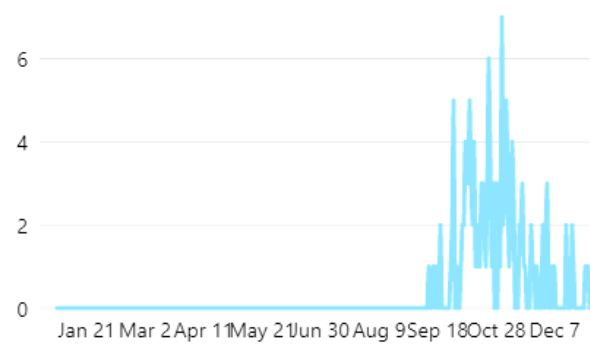
Facebook Page visits ⓘ

358 ↑ 5.9K%



Instagram profile visits ⓘ

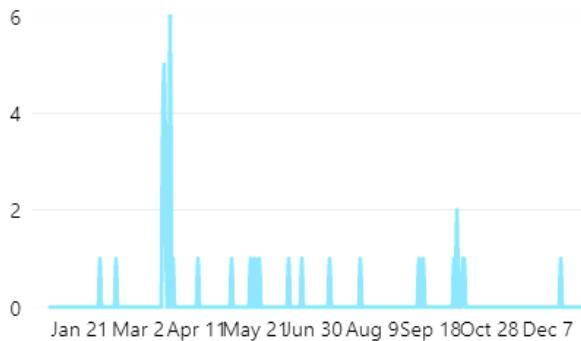
146 ↑ 100%



New likes and follows

Facebook Page new likes ⓘ

37 ↑ 236.4%



3 Most Engaging Posts ⓘ



Healthy Holiday Habits (Move)

Over the holidays we often run out of time for #exercise....



Five ways to have Brain Healthy Holiday

Breathe, Journal, Move, Hydrate, and Sleep. These are som...



Healthy Holiday Habits (SLEEP)

Making #sleep a priority is key during the holidays. Our ...



FUTURE PLANS

Develop campaign goals: We plan on working towards increasing awareness of the University of Miami EMBI and our mission, research recruitment, and advertising and publicity for educational events.

Target audience: We are currently targeting people over 40 in Florida. With that in mind, we will be focusing more heavily on Facebook, Instagram, and Twitter, as well as LinkedIn for more professional development and scientific posts.

Develop campaign messaging: We will be focusing on creating messaging that will resonate with older adults, focusing heavily on healthy cognitive aging.

Create content: We plan to develop a content calendar that outlines the types of posts we believe would be interesting and educational for our followers, as well as commenting on relevant topics in health and research.

Campaign promotion via ads: We have mostly stayed away from paid advertising. However, for certain events and important messaging, it may be worth looking into, as social media ads are far more affordable than many other types of advertising and have the ability to reach more people than many traditional forms of advertising. As our followers grow, we also hope more people will find our content interesting enough to share, thus helping to increase our reach.

Measure and analyze: Towards the end of this year, we decided to invest more heavily in our social media through the purchase of Loomly. This tool not only allows us to post simultaneously to multiple platforms, but finally allows us to see advanced analytics overview of the posts' performance. This kind of insight will allow us to learn what our viewers engage with so that we can fine-tune our posting strategy and achieve better results in the future.



EVELYN F. MCKNIGHT NEUROCOGNITIVE SCHOLAR UPDATE

In 2022, **Christian Agudelo, MD**, has continued his scholarship. He has been meeting regularly with his mentoring team, Drs. Rundek, Sun, and Ramos, to track and evaluate the progress according to the goals of his Individual Development Plan.



This year, Dr. Agudelo published 2 manuscripts, one in the the Journal of Applied Sciences (as first author) and another in Journal of Alzheimer's Disease (as corresponding author). He also submitted a third manuscript for publication to Stroke (as first author), which is pending peer-review. Dr. Agudelo was also co-author on 4 abstracts accepted for presentation, 2 at the Annual Meeting of the Associated Professional Sleep Societies (Sleep 2022, Charlotte, NC) and 2 at the Alzheimer's Association International Conference (AAIC 2022, San Diego, CA). References for these are below.



Dr. Agudelo was very active in grant submissions this year. He was just awarded an NIH supplement (details presented below) and invited by the NIH to submit an R03 to extend this line of research.





PUBLISHED REFEREED MANUSCRIPTS

1. **Agudelo C**, Ramos AR, Sun X, Kaur S, Del Papa DF, Kather JM, Wallace DM. Alzheimer's Disease Neuroimaging Initiative (ADNI). Sleep Disordered Breathing Risk with Comorbid Insomnia is Associated with Mild Cognitive Impairment. Applied Sciences. 2022 February 25; 12(5):2414.
2. Rundek T, Del Brutto VJ, Goryawala M, Dong C, **Agudelo C***, Saporta AS, Merritt S, Camargo C, Ariko T, Loewenstein DA, Duara R, Haq I. Associations Between Vascular Risk Factors and Perivascular Spaces in Adults with Intact Cognition, Mild Cognitive Impairment, and Dementia. J Alzheimers Dis. 2022 September 13; 89(2):437-448. PubMed ID: 35871327. *Corresponding author

MANUSCRIPTS UNDER REVIEW

1. **Agudelo C**, Ramos AR, Gardener H, Cheung K, Elkind MSV, Sacco RL, Rundek T. Sleep duration is associated with subclinical carotid plaque burden. Stroke. Submitted for peer review on 11/29/2022.

ACCEPTED REFEREED ABSTRACTS AND POSTERS

1. Gonzalez, KA; Tarraf, W; Stickel, AM; Kaur, S; **Agudelo, C**; DeCarli, C; González, HM; Ramos, AR; Sleep duration and brain MRI measures: preliminary results from SOL-INCA MRI study. Annual Meeting of the Associated Professional Sleep Societies; Charlotte, NC; June 2022 (Refereed abstract)
2. Ramos, A; Gonzalez, K; Tarraf, W; Redline, S; Patel, S; Stickel, A; **Agudelo, C**; Kaur, S; Testai, F; Lipton, R; Isasi, C; Sotres-Alvarez, D; Gallo, L; DeCarli, C; Gonzalez, H; Sleep Disordered Breathing and MRI Markers of Brain Aging in the Hispanic Community Health Study/Study of Latinos. Annual Meeting of the Associated Professional Sleep Societies; Charlotte, NC; June 2022 (Refereed abstract)



3. Haq, IU; Del Brutto, V; Goryawala, M; Dias Saporta, AS; Merritt, SS; Camargo, C; **Agudelo, C**; Ariko, T; Dong, C; Loewenstein, D; Duara, R; Rundek, T; Association of enlarged perivascular spaces (ePVS) and MRI markers of small vessel disease (SVD) and neurodegeneration in the Florida Vascular Imaging Phenotypes (FL-VIP) Study of AD Risk. Alzheimer's Association International Conference; San Diego, CA; August 2022 (Refereed abstract)
4. Rundek, T; Del Brutto, V; Goryawala, M; Dias Saporta, AS; Merritt, SS; Camargo, C; **Agudelo, C**; Ariko, T; Dong, C; Loewenstein, D; Duara, R; Haq, IU; Determinants of enlarged perivascular spaces (ePVS) on MRI: The Florida Vascular Imaging Phenotypes (FL-VIP) Study of AD risk. Alzheimer's Association International Conference; San Diego, CA; August 2022 (Refereed abstract)

DR. AGUDELO'S ACHIEVEMENTS, AWARDS AND RECOGNITIONS INCLUDE:

1. He was awarded a Diversity Supplement to his mentor's (Dr. Alberto Ramos) NIH R01 grant, Sleep in Neurocognitive Aging and Alzheimer's Research (SANAR, NIA R01 AG067568). Upon the release of funds, this award will support 75% of Dr. Agudelo's effort toward research for two years and provide funds for travel to conferences.
2. He submitted an application for a renewal of his current NIH Loan Repayment Program award. This award provides \$50,000 per year to pay for his eligible federal undergraduate and medical school debt.
3. He submitted an invited letter of intent for an R03-type award for the Charleston Conference on Alzheimer's Disease in September 2022.
4. He was selected and attended the *2022 Programs to Increase Diversity Among Individuals Engaged in Health Related Researchs (PRIDE)*. Dr. Agudelo was specifically selected to attend the *Behavioral Medicine and Sleep Disorders Training Institute of PRIDE*, which was a 2-week inperson career development workshop hosted by the University of Miami Miller School of Medicine in 2022.



5. He mentored a neurology resident at the University of Miami, Dr. Dylan F. Del Papa, who won first prize for a poster presentation at the 2022 University of Miami Department of Neurology Resident Research Day. (*Sleep Disordered Breathing Risk with Comorbid Insomnia is Associated with Mild Cognitive Impairment*)
6. He attended and presented at the data blitz of the 13th Annual McKnight Inter-Institutional Meeting in March 2022 in Tucson, AZ.
7. He joined the Editorial Board of *Frontiers in Neurology* in June 2022.
8. He joined the Editorial Board of the *Journal of Alzheimer's Dementia* in July 2022.
9. He completed a manuscript review for the journal *Frontiers in Psychiatry* in August 2022.
10. He completed a manuscript review for the journal *Sleep Advances* in August 2022.
11. He completed a manuscript review for the journal *Frontiers in Sleep* in September 2022.
12. He was interviewed by CNN en Español in April 2022, discussing daylight saving time, sleep apnea and brain health.
13. He was interviewed by CNN en Español in November 2022, discussing standard time and sleep apnea, and brain health.
14. He presented at NeuroUpdate, a professional symposium hosted by the University of Miami to educate neurologists on the state of the field. His presentation topic was *Sleep as a contributor and confounder of cognitive impairment*.



15. As part of the McKnight Community Education Program, he presented in the Miami-Dade Public Library lecture series, *Maintaining A Healthy Aging Brain*. He discussed *How to Sleep to Maintain Brain Health* on July 12, 2022.
16. As part of the McKnight Community Education Program, he presented in the Miami-Dade Public Library lecture series, *Living with Low Vision*. He discussed *How to Sleep to Maintain Brain Health* on October 8, 2022.

Living with Low Vision Seminar

Try out the latest gadgets that can help people living with low vision and explore presentations on topics related to living with visual disabilities.

Free eye screenings will be provided by the Bascom Palmer Eye Institute Vision Van. Light refreshments will be available.

Ages 19 yrs. +

To RSVP, please contact the Braille & Talking Books Library at 305-751-8687 or email Talkingbooks@mdpls.org.

Saturday, October 8
10:00 a.m. - 2:00 p.m.

Model City Branch Library
2211 NW 54 St.
305-636-2233

UNIVERSITY OF MIAMI MILLER SCHOOL OF MEDICINE EVELYN F. McKNIGHT BRAIN INSTITUTE
MIAMI LIGHTHOUSE FOR THE BLIND
Bascom Palmer Eye Institute UNIVERSITY OF MIAMI MEDICAL CENTER
a/a
DIVISION OF VISUAL OPTICS

MIAMI-DADE COUNTY
In request materials in accessible format, sign language interpreters, and/or any accommodation to participate in any Miami-Dade Public Library System sponsored program or meeting, please call Monica Martinez at 305-376-3094 or email programsmgr@mdpls.org five days in advance to initiate your request. TTY users may also call 711 (Florida Relay Service).

7B-106 9/22

DR. AGUDELO REGULARLY ATTENDS THESE MEETINGS:

1. Mentorship meetings with Drs. Rundek, Ramos and Sun.
2. Monthly Sleep Medicine Division Journal Club.
3. Bi-monthly Vascular Imaging Phenotype and IMAGINE studies of the 1FL ADRC study group.
4. Bi-monthly McKnight Brain Institute Research Seminars.
5. Monthly Brain Aging Research Group Meeting of the Hispanic Community Health Study/Study of Latinos.
6. Monthly Sleep Investigator Group Meeting of the Hispanic Community Health Study/Study of Latinos.
7. Monthly meetings for the PRIDE program, which continue for one year beyond the 2-week in person workshop.
8. Weekly meetings of the SANAR study.



UPDATE ON DR. AGUDELO'S PROJECTS:

Dr. Agudelo's program of research has an overarching theme to identify modifiable sleep-related biomarkers of cognitive aging. Ultimately, his goal is to modify sleep to ameliorate cognitive decline. By leveraging excellent mentorship, ongoing research within the University of Miami McKnight Brain Institute, his affiliation with the Hispanic Community Health Study/Study of Latinos, and access to Alzheimer's Disease Neuroimaging Initiative (ADNI) data, Dr. Agudelo developed three projects, of which one is completed. As the Evelyn F. McKnight Neurocognitive Scholar, Dr. Agudelo has obtained the training and mentorship needed to complete Project 1, obtain NIH funding for Projects 2, translate project 3 into an integral part of his upcoming NIH K23 award application (Mentored Patient-Oriented Research Career Development Awards), and develop project 4 into an upcoming NIA R03 award application (Grants for Early Medical/Surgical Specialists' Transition to Aging Research).

Project 1: The association between co-morbid insomnia and sleep disordered breathing and mild cognitive impairment in the ADNI study.

Disrupted sleep has been associated with cognitive decline. Few studies have evaluated associations between sleep disordered breathing (SDB) with comorbid insomnia and mild cognitive impairment (MCI). Using Alzheimer's Disease Neuroimaging Initiative data, he evaluated cross-sectional associations between SDB with insomnia status and MCI. He included ADNI participants with normal cognition or MCI. Insomnia was defined by self-report. SDB risk was assessed by modified STOP-BANG. He created logistic regression models to evaluate associations between four sleep disorder subgroups (low risk for SDB alone, low risk for SDB with insomnia, high risk for SDB alone, and high risk for SDB with insomnia) and MCI. Models adjusted for age, sex, BMI, APOE4 genotype, race, ethnicity, education, marital status, hypertension, cardiovascular disease, stroke, alcohol abuse, and smoking. The sample (n=1,391) had a mean age of 73.5 ± 7.0 years. 44.9% were female. 72.0% were at low risk for SDB alone, 13.8% at low risk for SDB with insomnia, 10.1% at high risk for SDB alone, and 4.1% at high risk for SDB with insomnia. Only high risk for SDB with comorbid insomnia was associated with higher odds of MCI (OR 3.22, 95% CI 1.57-6.60). These findings inform the approach to current and future projects. In studies examining insomnia, Dr. Agudelo will adjust for sleep apnea.



Project 2: Obstructive sleep apnea may be a modifiable risk factor for cognitive disease mediated by the loss of gray matter microstructure integrity.

Project 2 is the topic of a recently awarded 2-year Diversity Supplement to Dr. Alberto Ramos' existing R01 grant, SANAR (R01 AG067568). SANAR is determining the relationship between obstructive sleep apnea (OSA) and vascular determinants of cognitive decline among US Hispanic/Latino adults, who have >2-fold risk of dementia and early cognitive decline compared to non-Hispanic white adults. Trials of disease modifying therapies for cognitive disease have failed because they occur too late in the pathologic process. A critical gap in the development of effective therapy is the absence of (1) reliable preclinical biomarkers of cognitive disease associated with (2) modifiable risk factors of cognitive pathology. To bridge this critical gap as a Supplement to SANAR, Dr. Agudelo proposes that (1) gray matter (GM) microstructure integrity is a biomarker of preclinical cognitive decline, and (2) OSA is a modifiable risk factor for cognitive disease mediated by the loss of GM microstructure integrity. The primary aims of this project are (1) determine if prior and persistent exposures to OSA and OSA-related hypoxemic burden are associated with lower hippocampal GM microstructure integrity; (2a) determine if hippocampal GM microstructure integrity is associated with average 12-year cognitive change among participants with and without OSA; (2b) determine if hippocampal GM microstructure integrity mediates associations between OSA and 12-year average cognitive change; and (3) determine the independent and interactive association of non-dipping blood pressure and OSA with hippocampal GM microstructure integrity. This study will use data from the multi-center community-based Hispanic Community Health Study/Study of Latinos, its completed ancillary studies (SOL-INCA, SOL-INCA MRI, Sueño), and the ongoing ancillary study (SANAR). Completed studies have acquired baseline self-reported sleep data, baseline and repeat cognitive evaluations 7 and 12 years after baseline, repeat portable sleep apnea tests 12 years after baseline, and MRI among 1,000 predominantly middle-aged and older participants with and without OSA and without cognitive disease. MRI protocols included DTI, which measures GM microstructure integrity. SANAR is obtaining 24-hour ambulatory blood pressure monitoring (to measure non-dipping blood pressure, a feature of OSA) and repeat home sleep apnea tests (10 years later). This Diversity Supplement will fund 75% of his effort for two years.



Project 3: Mesial temporal lobe gray matter microstructure integrity as a marker of accelerated cognitive aging associated with sleep continuity and slow wave activity.

Project 3 will leverage data from Project 2 (the Diversity Supplement) and use data from the Hispanic Community Health Study/Study of Latinos. Project 3 will be the basis of a mentored career development award application in 2023 (institutional KL2 or NIH K23). Dr. Agudelo proposes that (1) gray matter (GM) microstructure integrity is a marker of subclinical cognitive decline, (2) sleep continuity and slow wave activity during sleep are associated with lower GM microstructure integrity, and (3) lower GM microstructure integrity mediate a relationship between sleep and accelerated cognitive aging. He hypothesizes that lower sleep continuity and lower slow wave activity during sleep are associated with lower GM microstructure integrity. Lower gray matter microstructure integrity, in turn, will mediate a relationship between sleep and accelerated cognitive aging. In addition to the measures used in Project 2, Project 3 will also use the sleep actigraphy data. This project will also propose the novel use of portable dry-lead electroencephalography (EEG) to measure sleep architecture, and specifically, slow-wave activity during sleep. This project, as part of a 5-year career development award, will be the final stepping stone toward becoming an independent clinical scientist. He expects to submit this project as a mentored career development award application in the fourth quarter of 2023.

Project 4: Nap phenotypes and their association with cognition.

Project 4 will similarly leverage data from the Hispanic Community Health Study/Study of Latinos and serve as the basis for a 2-year NIA R03 award application (Grants for Early Medical/Surgical Specialists' Transition to Aging Research) Napping is an understudied phenomenon, and napping behaviors vary widely among different cultures and societies. Furthermore, there are significant cultural and societal variations in napping behaviors. Dr. Agudelo proposes using the actigraphic data available for almost 2,000 participants of the Hispanic Community Health Study to determine how people nap. Specifically, using data-driven latent class analysis, phenotypes of napping can be developed that define different ways people nap regarding nap frequency, duration, timing, and self-reported daytime sleepiness. He then will examine if any nap phenotypes are



associated with accelerated cognitive decline or protective against brain aging. This project will also leverage the portable dry-lead EEG proposed in Project 3. Project 4 will pilot the use of dry-lead EEG worn over multiple 24-hour periods, to capture the sleep architecture of napping in the real-world environment. This pilot will serve as proof of methodological concept and provide pilot data for a subsequent R01 grant application that incorporates portable EEG-derived sleep architecture into the study of napping, nap phenotypes, and cognitive aging.

We are grateful for the funding to support Dr. Agudelo. As the Evelyn F. McKnight Neurocognitive Scholar, he has achieved the milestones needed to develop into an independent clinical scientist. As of January 1st, 2023, he will be completely funded by his NIH Diversity Supplement, which will support his ongoing development and provide data needed for a competitive NIH K23 career development award application and beyond. He will join the Department of Neurology Faculty in June of 2023.





APPENDIX 6

FINANCIALS

BUDGET for June 1, 2022 - May 31, 2023

Revenue from Endowment			686,100.00
Revenue for Scholar			50,000.00
Total Revenue			736,100.00
Personnel			
Faculty	Role In Project	Effort	
Tatjana Rundek, MD, PhD	Scientific Director	25%	
Ralph Sacco, MD	Executive Director	5%	
Xiaoyan Sun, MD, PhD	Educational Director	10%	
Bonnie Levin, PhD	Neuropsychology	25%	
Kunjan Dave, PhD	Neurology -Basic Science	5%	
Noam Alperin, PhD	Radiology	5%	
Hong Jiang, MD, PhD	Neurology	5%	
Lilah Besser, PhD, MSPH	Neuropsychology	10%	
Sonya Kaur, PhD	Neuropsychology	20%	
James Galvin, MD, MPH	Neurology	25%	
Christian Camargo, MD	Neurology	5%	
Katalina McInerney, PhD	Neuropsychology	10%	
Subtotal Faculty Salary and CFB			309,051.00
Christian Agueldo - McKnight Fellow	Neurology		59,081.00
Staff	Role in Project	Effort	
Stacy Merritt	Project Mgr	80%	
Sang Lee	Radiology	5%	
Marti Flothmann	Clinical Outreach Coordinator	20%	
Taylor Ariko	Neurology/BioMed PHD Student	100%	
Marisa Modjeski	Neurology	50%	
Anita Saporta	Neuropsychology	20%	
Susan Fox-Rosellini	Marketing/Outreach Admin Director	50%	
Botagoz Aimagambetova	Neurology/MS Student	10%	
NeuroPsych 2	Neuropsychology	25%	
NeuroPsych 3	Neuropsychology	25%	
NeuroPsych 4	Neuropsychology	25%	
NeuroPsych 5	Neuropsychology	25%	
Subtotal Staff and CFB			295,851.78
Total Personnel			663,983.78
Non Personnel Expenses			
SC08818 - Publication Costs (Excluding Copying)			
SC08801 - Registration Conferences & Seminars			
SC08803 - Dues & Memberships - Other			
SC08611 - Employee Domestic Travel			
SC08619 - Meetings - Subsistence			
SC08624 - Entertainment - F&B, Recep			
SC08852 - Monthly - Lines & Sets & SC08858 - Monthly - Voice Mail			
SC08103 - Advertising - Other			
SC08024 - Interdepart/ Intercomp - Service			
SC08235 - Computer Hardware & Software Non-Capital			
SC08218 - Clerical Supplies			
SC08219 - Instructional Supplies			
SC08229 - Photocopy, Publishing, & Print Supplies			
SC08200 - Chemicals/blood samples store/ship			
SC08011 - Interdepartmental / Intercompany - Animal Care Services - Internal			
SC08225 - Technical Supplies - Other			
Total Non Personnel Expenses			31,197.22
Grand Total Expenses			695,181.00



Annual Report

McKnight Brain Research Foundation
Sponsored Institutes and Research Programs
 (Include activity of all McKnight supported faculty and trainees)
 Report Period: May 31, 2022

Financial Summary

Evelyn F. McKnight Brain Institute at the University of Miami Miller School of Medicine

Summary for 12 months ended May 31, 2022

Account Name: 2002 Gift

A.	Beginning Balance on <u>6/1/2021</u>	\$ 14,498,605
B.	Investment Growth	\$ 414,155
C.	Distributions	\$ 501,779
D.	Contribution**	\$ 15
E.	Ending Balance on <u>5/31/2022</u>	\$ 13,582,685
F.	Unmatched Balance (if applicable)	NA

Account Name: 2014 Gift

A.	Beginning Balance on <u>6/1/2021</u>	\$ 5,325,843
B.	Investment Growth	\$ 152,132
C.	Distributions	\$ 184,321
D.	Additional Contribution	\$ 0
E.	Ending Balance on <u>5/31/2022</u>	\$ 4,989,390
F.	Unmatched Balance (if applicable)	NA

TOTAL ENDING BALANCE ON 5/31/22 \$ 18,572,075

**** Private online donation**

Account Name: Evelyn F. McKnight Neurocognitive Scholar

A.	McKnight Scholar Gift	\$ 50,000
B.	Match Gift	\$ 50,000



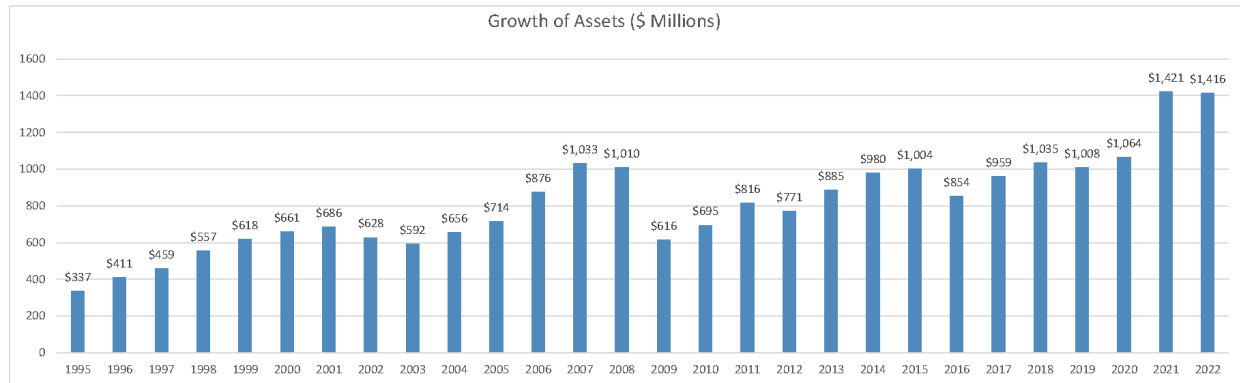
UNIVERSITY OF MIAMI - ALL MANAGED ASSETS
Performance Periods Ending: May 31, 2022

Total Returns (Periods Greater Than 1 Year are Annualized)						
Growth Pool	Inception	1 Year (%)	3 Year (%)	5 Year (%)	7 Year (%)	10 Year (%)
Growth Pool Total Composite*	12/31/1990	-2.7	10.0	7.8	6.7	8.0
Growth Pool Market Benchmark**	12/31/1990	-3.6	10.3	8.0	7.2	8.8
Value (+/-)		0.9	-0.3	-0.2	-0.4	-0.8

Inception-to-Date Growth Pool Risk/Return as of May 31, 2022		
Growth Pool	15 Year Return	15 Year Standard Deviation
Growth Pool Total Composite	5.2	10.8
Growth Pool Market Benchmark	5.5	11.9

*Net of fee returns

** A weighted average return derived by applying the target policy weights of each asset class to the performance of the asset class benchmarks





UNIVERSITY OF MIAMI - GROWTH POOL

Manager Structure - Market Values and Allocations Period Ending May 31, 2022

Growth Pool			
Manager	Asset Class	Market Value (\$)	% of Total Fund
Large/Mid/All Cap Equity		509,471,208	36.0%
Vanguard Institutional Index (9/30/14)	US Large Cap Core Equity	273,159,466	19.3%
Adage Capital Mgmt (4/30/04)	US Large Cap Core Equity	175,668,911	12.4%
Earnest Partners Mid Cap (8/27/2018)		30,511,460	2.2%
Vanguard Mid Cap (2/2/17)	US Midcap Core Equity	30,131,371	2.1%
Small Cap Equity		37,229,492	2.6%
Ariel Small Cap (8/31/2018)	US Small Cap Value Equity	29,041,215	2.1%
Artisan Small Cap (9/25/2020)	US Small Cap Equity	8,188,277	0.6%
International Equity		337,072,226	23.8%
Developed International Equity		243,658,703	17.2%
Silchester International (4/30/05)	Non-US DM/EM Value Equity	24,369,504	1.7%
Vanguard Developed Markets (10/31/14)	Non-US DM Core Equity	159,080,731	11.2%
GQG International (3/31/2020)	Non-US DM Core Equity	29,370,915	2.1%
Channing International (9/15/2021)	Non-US DM Core Equity	16,873,302	1.2%
Brown Capital (9/17/2021)	Non-US DM Core Equity	13,964,251	1.0%
Emerging Markets		93,413,523	6.6%
Neuburger Berman (9/26/2018)	Non-US EM Equity	21,772,587	1.5%
SSGA China CF (1/7/2022)	Non-US EM Equity	7,754,277	0.5%
Vanguard FTSE Emerging Markets (2/2/17)	Non-US EM Equity	35,031,459	2.5%
WGI Emerging Markets (8/31/08)	Non-US EM Equity	28,855,200	2.0%
Total Alternative Investments		109,529,870	7.7%
Credit Strategies		55,128,541	3.9%
Davidson Kempner (8/31/93)	Credit Strategy	18,079,017	1.3%
137 Ventures (12/31/2020)	Credit Strategy	6,640,465	0.5%
Brightwood (5/31/2021)	Credit Strategy	3,164,206	0.2%
Octagon Fund IV (10/31/2021)	Credit Strategy	3,499,287	0.2%
Shenkman Opp Crd (8/31/2018)	Credit Strategy	23,745,566	1.7%
Equity Long/Short		17,909,195	1.3%
Viking Global Equities III (9/30/10)	Equity Long/Short	13,775,796	1.0%
Melvin (3/31/2021)	Equity Long/Short	4,004,201	0.3%
Glenview Capital Management (12/31/05)	Equity Long/Short	129,198	0.0%
Multi-Strategy		36,492,134	2.6%
AQR Risk Parity (2/21/17)	Multi-Strategy	19,721,694	1.4%
Janus Multi-Strat (3/31/20)	Multi-Strategy	16,770,440	1.2%
Private Equity		151,659,789	10.7%
TIFF Partners IV (1/31/01)	Private Equity	103,976	0.0%
TIFF Partners V (4/30/04)	Private Equity	130,488	0.0%
TIFF Partners 2006 (4/30/06)	Private Equity	276,450	0.0%
TIFF Partners 2007 (1/31/07)	Private Equity	1,674,942	0.1%
TIFF Partners 2008 (1/31/08)	Private Equity	2,852,366	0.2%



Manager	Asset Class	Market Value (\$)	% of Total Fund
Private Equity			
Denham Commodity Fund V (6/30/08)	Private Equity	2,066,476	0.1%
Clayton, Dubilier & Rice Fund IX Credit (10/31/16)	Private Equity	14,136,651	1.0%
Clayton, Dubilier & Rice Fund IX (5/31/14)	Private Equity	44,231	0.0%
645 Ventures (8/31/2020)	Private Equity	3,959,850	0.3%
Bessemer XI (2/28/2021)	Private Equity	2,153,107	0.2%
IVP XVII (2/28/2021)	Private Equity	5,783,352	0.4%
Carlyle Strategic IV (11/30/16)	Private Equity	7,463,687	0.5%
KKR Americas XII (10/31/17)	Private Equity	15,144,242	1.1%
HIG Advantage Buyout (8/31/18)	Private Equity	7,514,606	0.5%
Carlyle Partners VII (1/3/2019)	Private Equity	11,242,380	0.8%
Apollo Investment Fund IX (3/14/2019)	Private Equity	6,629,502	0.5%
Silver Lake Partners (6/11/2018)	Private Equity	14,545,573	1.0%
General Atlantic (12/31/19)	Private Equity	9,703,513	0.7%
CINVEN Fund VII (1/31/19)	Private Equity	6,451,607	0.5%
Broadway Strategic (6/30/19)	Private Equity	1,756,273	0.1%
Spark Capital (5/31/19)	Private Equity	2,426,851	0.2%
Spark Capital VII (2/15/22)	Private Equity	587,410	0.0%
Shine Capital (4/30/21)	Private Equity	3,498,220	0.2%
Spark Growth III (2/29/20)	Private Equity	10,149,452	0.7%
Spark Growth IV (2/15/22)	Private Equity	965,426	0.1%
Lux Opp (5/31/21)	Private Equity	2,914,495	0.2%
Lux Ventures (5/31/21)	Private Equity	1,952,516	0.1%
Vista Equity Partners (6/30/2018)	Private Equity	10,524,633	0.7%
Variant (5/31/21)	Private Equity	1,167,485	0.1%
SOMA CAP III (10/31/21)	Private Equity	3,120,563	0.2%
BVP India (1/4/2022)	Private Equity	719,466	0.1%
Private Real Assets		61,214,885	4.3%
Grain Communications (12/31/2020)	Private Real Assets	1,981,663	0.1%
Lazard Global Infr (9/25/20)	Public Real Assets	14,787,207	1.0%
Ishares Inf. Global ETF (7/3/2018)	Public Real Assets	5,180,347	0.4%
ITE Rail (1/31/20)	Private Real Assets	10,486,065	0.7%
JPMorgan GTIF (2/29/20)	Private Real Assets	5,659,808	0.4%
CGI (5/31/22)	Private Real Assets	11,273,867	0.8%
Warburg Energy (5/31/14)	Private Real Assets	6,323,703	0.4%
LBA Realty Fund IV	Private Real Assets	529,892	0.0%
SRI Nine REIT (3/31/08)	Private Real Assets	128,161	0.0%
WCP Real Estate Fund II (11/30/08)	Private Real Assets	1,224,575	0.1%
WPE Cayman LP	Private Real Assets	394,296	0.0%
GS Renew PWR LLC (8/31/2018)	Private Real Assets	3,245,301	0.2%
Total Fixed		203,362,227	14.4%
CIFC Sr. Secured Corp Fund (8/31/2018)	Corporate Bonds	37,241,152	2.6%
PIMCO Income Fund (7/24/17)	Aggregate Bonds	43,095,907	3.0%
Prudential US High Yield (2/2/17)	High Yield Bonds	33,263,187	2.3%
SSGA 1-3 YR UST (7/31/19)	Short Duration Bonds	49,382,060	3.5%
SSGA US Agg (7/31/19)	Aggregate Bonds	40,379,921	2.9%
Cash		6,445,427	0.5%
Total Managed Assets		1,415,985,124	100.0%
Allocation to Index or Enhanced Index Strategies		Growth Pool	
% of Total:		42.0%	



UNIVERSITY OF MIAMI - GROWTH POOL
Inception to Date Performance vs. Relevant Benchmark(s)
Periods ending - May 31, 2022
Net of Fees

Total Returns (%) - Annualized if Greater than 1 Year			
Large/Mid/All Cap Equity	ROR	Value Added (+/-) Years	
Vanguard Institutional Index (9/30/14)	11.82	-0.43	7.7
S&P 500	12.25		7.7
Adage Capital Mgmt (4/30/04)	12.48	2.74	18.1
S&P 500	9.73		18.1
Earnest Partners Mid Cap (8/27/2018)	12.74	3.93	3.8
Russell Midcap	8.81		3.8
Vanguard Mid Cap (2/2/17)	10.97	-0.03	5.3
CRSP MidCap Index	11.00		5.3
Small Cap Equity			
Ariel Small Cap (8/31/2018)	7.00	2.12	3.8
Russell 2000 Value	4.88		3.8
Artisian Small Cap (9/25/2020)	-10.79	-9.70	1.7
Russell 2000 Growth	-1.10		1.7
Developed International Equity			
Silchester International (4/30/05)	7.19	2.42	17.1
MSCI EAFE Value ND	4.77		17.1
GQG International (3/31/20)	19.41	3.01	2.2
MSCI ACWI ex US	16.39		2.2
Vanguard Developed Markets (10/31/2014)	4.82	-0.30	7.6
FTSE Dev All Cap ex US	5.12		7.6
Brown Capital (9/17/21)	-29.50	-14.21	0.7
MSCI ACWI Small Cap ex US	-15.29		0.7
Channing Intl (9/15/21)	-15.47	-3.18	0.7
MSCI EAFE ND	-12.29		0.7
Emerging Markets			
Neuberger Berman (9/26/2018)	-0.13	-3.19	3.7
MSCI Emerging Markets ND	3.07		3.7
Vanguard FTSE Emerging Markets (2/2/17)	5.42	-0.10	5.3
MSCI Emerging Markets ND	5.51		5.3
WGI Emerging Markets (8/31/08)	9.51	6.24	13.8
MSCI Emerging Markets ND	3.27		13.8
SSGA China CF (1/7/22)	-13.84		0.4
Credit Strategies			
Davidson Kempner (8/31/93)	8.54	-0.12	28.8
HFR Event-Driven	8.66		28.8
Shenkman Opp Crd (8/31/2018)	6.12	-0.38	3.8
HFRI ED: DIST RS (USD)	6.50		3.8
137 Ventures (12/31/20)	16.73		1.4
Brightwood (5/31/21)	4.15		1.0
Octagon Fund IV (10/31/21)	-0.05		0.6



Total Returns (%) - Annualized if Greater than 1 Year

Equity Long/Short

Glenview Capital Management (12/31/05)	4.50	-0.29	16.4
HFRI Equity Hedge Total Index	4.79		16.4
Viking Global Equities III (9/30/10)	8.68	-1.07	11.7
MSCI World Index	9.75		11.7
Melvin (3/31/21)	-17.33	-22.25	1.2
S&P 500	4.91		1.2

Multi-Strategy

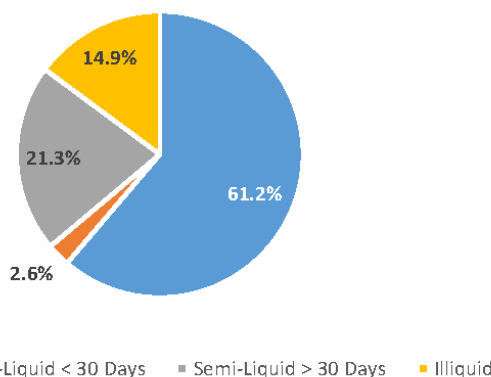
Janus Multi-Strat (3/31/20)	5.28	5.21	2.2
FTSE 1-Month T-Bill	0.08		2.2
AQR Risk Parity (2/21/17)	5.52	-0.99	5.3
60 MSCI AC WORLD/40 BB Barclays U.S. Aggregate	6.50		5.3

Fixed Income

SSGA US Agg (7/31/19)	-1.02	-0.51	2.8
BB Barclays U.S. Aggregate	-0.51		2.8
Pimco Income Fund (7/24/17)	2.73	1.61	4.9
BB Barclays U.S. Aggregate	1.12		4.9
Prudential US High Yield (2/2/17)	4.38	0.45	5.3
BB Barclays U.S. Corporate High Yield	3.94		5.3
CIFC Sr. Secured Corp Fund (8/31/18)	2.49	-0.53	3.8
S&P/LTSA Lev Loan Index	3.01		3.8
SSGA 1-3 YR UST (7/31/19)	0.25	-0.20	2.8
BB Barc US Agg Treasury 1-3 Yrs	0.45		2.8

UNIVERSITY OF MIAMI - GROWTH POOL

Portfolio Liquidity Restrictions: Based on Market Value



APPENDIX 7

BIOSKETCHES FOR NEW COLLABORATORS

DR. GIRARDIN JEAN-LOUIS

DR. IHTSHAM HAQ



BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Girardin Jean-Louis

POSITION TITLE: Professor of Psychiatry & Behavioral Sciences and Neurology (University of Miami)

eRA COMMONS USER NAME (credential, e.g., agency login): **GJEANLOUIS**

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
City College, City University of New York	B.A.	1992	Psychology
Graduate School City University of New York	M.A.	1997	Psychology
Graduate School City University of New York	Ph.D.	1997	Psychology/Sleep/Cognition
University of California, San Diego	PostDoc	2000	Sleep Epidemiology

A. Personal Statement

Research: The overarching goal of my research has been to address patient-level, provider-level, and system-level barriers hindering adoption of healthful practices among minorities. The *Sleep Disparity Workgroup* that I have led has been successful in building capacity to address sleep-related CVD disparities. I have established a community-academic partnership, activating both academic and community resources to reduce health disparities. I have learned of the psychosocial and cultural factors preventing adoption of sleep messages in at-risk communities and have implemented personalized behavioral models to address barriers to adequate medical care. I am currently studying sleep disorders and associations with CVD and brain injury, considering the role of epigenetics and (b) effects of sleep deficiency on markers of CVD and inflammation. **Training/ Mentoring:** Over the last 15 years, I have directed several training programs, which have generated a cadre of 175 postdocs and junior faculty in academic medicine. I am the Director of the NHLBI-funded PRIDE Institute (R25HL105444) and received an NIA Career Leadership Award 'Enhancing Leadership Capacity to Mentor Scientists in Translational AD-Related Research' (K07AG052685). Since my relocation to the University of Miami, I relinquished the directorship of the T32 on Cardiovascular Health Disparities Research (T32HL129953) at NYU. Success of these training programs hinges on the use of an environment of inclusive excellence, promoting academic careers of URM investigators. In the last 5 years, I have led the mentorship team of 36 scientists including individuals across the continuum of professional development and disciplines. In summary, I have a demonstrated record of successful and productive scholarly work in the proposed area of URM faculty development program. The community-engaged translational behavioral model I developed was recently featured in *Science and NPR*. I was recently named one of the Community of Scholars' most inspiring Black scientists in America (*Cell Mentor*) and received the *2021 Mary Carskadon Outstanding Educator Award*.

This application will allow me to continue to implement our successful T32 program '**Promoting Academic Workforce Diversity in Translational Behavioral & Cardio-Metabolic Research**', providing a theory-based mentored learning experience to URM postdoctoral scientists. We have assembled an outstanding team of investigators who are well known for their mentorship experience to support program aims. During the two academic years, mentees will receive didactic training in translational behavioral cardiometabolic sciences. URM mentees will participate in individualized and group learning exercises aimed at improving skills in critical thinking, verbal and written communication, and time management to achieve academic goals. They will be mentored while implementing their IDP, including acquisition of professional and career development skills, peer networking, and NIH grant writing at the Miller Scholl of Medicine, University of Miami.

Ongoing and completed projects that I would like to highlight include:

NIA R01AG067523 (Jean-Louis/Osorio MPIs)

04/01/2020-03/31/2025

Mechanisms of sleep deficiency and effects on brain injury and neurocognitive functions among older blacks:
We will use novel mHealth devices recording sleep/activity cycles, light, noise, air quality, temperature, and

greenspace exposure; novel brain biomarkers; and geospatial analytics to assess effects on sleep deficiency and delineate their role in explaining disparities in the brain and cognitive health of older blacks.

NHLBI R01HL142066 Jean-Louis (PI) 5/15/2019-3/31/2024

Environmental and psychosocial determinants of poor sleep and effects on CVD and brain health:

The purpose will provide evidence to delineate factors underlying greater rates of IS among blacks and explain putative associations with markers of CVD, inflammation, and brain injury.

NIA R01AG056531 Osorio, Jean-Louis (MPIs) 4/01/2018-3/31/2023

Slow wave sleep (SWS) and the effect of African ancestry on amyloid burden, a longitudinal study:

The purpose of this study is to test whether poor slow wave sleep (SWS) is associated with higher amyloid burden among African Americans.

NIA K07AG052685 Jean-Louis (PI) 4/01/2017-03/31/2022

Enhancing Leadership Capacity to Mentor Scientists in Translational Behavioral AD-Related Research: The award will serve as a collaborative learning laboratory and a resource to stimulate, support, and evaluate high-priority translational aging research in diverse communities. Its core faculty will mentor junior scientists engaged in research promoting healthy aging.

NHLBI R25HL105444 Jean-Louis, Ogedegbe (MPIs) 9/20/2019-5/31/2023

Program to Increase Diversity in Faculty Engaged in Behavioral and Sleep Medicine (PRIDE): The BSM PRIDE Institute will address a critical deficiency in the academic workforce by training and mentoring junior URM faculty to develop independent academic careers in translational behavioral medicine.

Completed Research Support

NHLBI T32HL129953 Jean-Louis, Ogedegbe (MPIs) 1/1/2017-12/31/2021

Mentoring URM Scientists in Translational Behavioral and Cardiovascular Health

The T32 Program on Behavioral Cardiovascular Health Research is a 2-year program providing an innovative, theory-based mentored learning experience to promote academic careers of URM postdocs

NINDS R25NS094093-01 Jean-Louis, Ogedegbe (MPIs) 9/30/2015-12/31/2021

Congruent Mentorship to Reach Academic Diversity (COMRADE) in Neuroscience Research: The goal is to train, mentor, and sustain a network of underrepresented postdoctoral scientists committed to developing independent academic careers in behavioral neuroscience and health equity research.

Citations:

- **Jean-Louis G**, Newsome V, Williams NJ, Zizi F, Ravenell J, Ogedegbe G. (2016). Tailored behavioral intervention among blacks with metabolic syndrome and sleep apnea: Results of the MetSO trial. *Sleep*, Sep; sp-00150-16. PMID: 27634794.
- St-Onge MP, Grandner MA, Brown D, Conroy MB, **Jean-Louis G**, Coons M, Bhatt DL (2016) Sleep Duration and Quality: Impact on Lifestyle Behaviors and Cardiometabolic Health: A Scientific Statement From the American Heart Association. American Heart Association Obesity, Behavior Change, Diabetes, and Nutrition Committees of the Council on Lifestyle and Cardiometabolic Health; Council on Cardiovascular Disease in the Young; Council on Clinical Cardiology; and Stroke Council. *Circulation*. Nov 1;134(18):e367-e386. PMID: 27647451
- **Jean-Louis G**, Grandner MA, Pandi-Perumal SR. (2021). Sleep Health and Longevity-Considerations for Personalizing Existing Recommendations. *JAMA Netw Open*. 4(9):e212438. PMID: 34477856
- Ogedegbe G, Ravenell J, Adhikari S, Butler M, Cook T, Francois F, Iturrate E, **Jean-Louis G**, Jones SA, Onakomaiya D, Petrilli CM, Pulgarin C, Regan S, Reynolds H, Seixas A, Volpicelli FM, Horwitz LI. (2020). Assessment of Racial/Ethnic Disparities in Hospitalization and Mortality in Patients With COVID-19 in New York City. *JAMA Netw Open*. 1;3(12):e2026881.PMID: 33275153

B. Positions, Scientific Appointments, and Honors

Positions and Honors

1990-1997 NIH Predoctoral Fellow

1994-1997 Associate Director of the Psychophysiology Laboratory, College of Staten Island (CUNY)

1994-1997 Adjunct Professor, Psychology Department (CUNY)

1997-1999 NHLBI Fellow, Psychiatry Department, University of California at San Diego
 2000-2004 Assistant Professor of Ophthalmology and Psychiatry, SUNY Downstate Medical Center
 2001-2005 Clinical Director of the Kingsbrook Sleep Center, Kingsbrook Jewish Medical Center
 2004-2011 Associate Professor of Medicine and Medicine, SUNY Downstate Medical Center
 2006-2013 Research Director of the Health Disparities Center, SUNY Downstate Medical Center
 2007-2013 Research Director of the Sleep Disorders Center, SUNY Downstate Medical Center
 2011-2013 Professor of Medicine and Psychiatry, SUNY Downstate Medical Center
 2013-2021 Professor of Population Health and Psychiatry, NYU School of Medicine
 2021- Adjunct Professor of Psychiatry, NYU School of Medicine
 2021- Professor of Psychiatry and Neurology, Miller School of Medicine, University of Miami

Other Experience and Professional Memberships:

2021- Sleep Research Society's Board of Directors
 2021- Workforce Diversity and HD Training Committee, Working group of the NINDS Advisory Council
 2021- Population Health & Methodology Council (NSF)
 2021- Sleep Health Disparities Statement Task Force (NSF)
 2020 National Advisory Council for Complementary and Integrative Health (NACCIH)
 2020 National Committee to Develop Pipeline Programs for URM in Sleep and Circadian Research
 2019 Search Committee for the Director of the National Center for Sleep Disorders Research (NHLBI)
 2019 Sleep and Cancer Prevention and Control (NCI Behavioral Research Program)
 2013-2017 Cancer, Heart and Sleep Epidemiology (CHSB) study section
 2012-2015 Sleep Disorders Research Advisory Board, National Heart, Lung & Blood Institute
 2009-2014 Special Emphasis Panel/Scientific Review Group (ZHL1 CSR-X), NHLBI
 2009 Special Emphasis Panel (NIH Challenge Grants in Health and Science Research--RC1)
 2008 Special Review Panel (British Diabetic Association--Diabetes UK (A charity registered in England (no. 215199) and in Scotland (no. SC039136)
 2008 Special Review Panel (Austrian Science Fund [FWF])--an organization for the promotion of basic research such as the US National Science Foundation (NSF)

Honors:

1995 World Federation of Sleep Research Society Travel Award
 1997 APSS Trainee Fellowship (SRS/ASDA)
 1999 Research Merit Award (SRS)
 2000 SRS Trainee Travel Award (Sleep Research Society)
 2002 Who's Who in Medicine and Healthcare
 2002 Minority Scholar (Office of Minority Health, NIH)
 2003 Young Investigator Award (AASM)
 2013 Leadership in Research and Education (AMHE)
 2016 Career Leadership Award (NIA)
 2019 Empire Innovation Professorship (SUNY)
 2020 Pioneer in Minority Health and Health Disparities (NIMHD)
 2020 The Community of Scholars' most inspiring Black scientists in America (Cell Mentor)
 2021 Sleep Research Society's 2021 Mary A. Carskadon Outstanding Educator Award (SRS)

C. Contribution to Science (<http://www.ncbi.nlm.nih.gov/pubmed?term=jean-louis%20g>)

- 1) Based on long-standing interest in the biological basis of behavior, my initial research focused on physiological and behavioral aspects of sleep and the association between circadian rhythms of sleep and performance among persons with Alzheimer's disease. My research demonstrated, for the first time, the positive effect of exogenous melatonin on rest-activity resynchronization, mood, and memory among cognitively impaired adults. During my fellowship at the University of California, at San Diego, my research focused on population-based assessment of sleep disorders and depression, which yielded important scholarship on the influence of ambient light exposure on circadian rest-activity rhythms, sleep, and depression. Furthermore, I studied the mechanisms for light delivery via the popliteal fossae and eyelids to entrain the circadian pacemaker among visually impaired individuals.
 - **Jean-Louis, G.;** Zizi, F.; and von Gizycki, H. (1998). Melatonin effects on sleep, mood, and cognition in elderly with Alzheimer's disease. *Journal of Pineal Research*, 25(3): 177-183. PMID: 9745987

- **Jean-Louis, G.;** Kripke, D.F.; Ancoli-Israel, S.; Klauber, M.; Sepulveda, R.S. (2000). Circadian sleep, illumination, and activity profiles in a representative sample: Effects of gender and ethnicity. *Biological Psychiatry*, 47(10) 921-927. PMID: 10807965
 - **Jean-Louis, G.;** Kripke, D.F.; Cole, R.J.; and Elliott, J.A. (2000). No melatonin suppression by illumination of popliteal fossa or eyelid. *Journal of Biological Rhythms*, 15(3), 265-9. PMID: 10885880
 - Sharma RA, Varga AW, Bubu OM, Pirraglia E, Kam K, Parekh A, Wohlleber M, Miller MD, Andrade A, Lewis C, Tweardy S, Buj M, Yau PL, Sadda R, Mosconi L, Li Y, Butler T, Glodzik L, Fieremans E, Babb JS, Blennow K, Zetterberg H, Lu SE, Badia SG, Romero S, Rosenzweig I, Gosselin N, **Jean-Louis G,** Rapoport DM, de Leon MJ, Ayappa I, Osorio RS. (2018). Obstructive Sleep Apnea Severity Affects Amyloid Burden in Cognitively Normal Elderly. A Longitudinal Study. *Am J Respir Crit Care Med*. Apr 1;197(7):933-943. PMID: 29125327
- 2) One of my major contributions to the field of sleep medicine is the development and optimization of scoring algorithms, now widely used to interpret actigraphy data [ambulatory measurement of circadian variations in cardiovascular, respiratory and body temperature parameters. This work has established that sleep/activity patterns can be reliably assessed at the population level – an efficient cost-effective alternative to the sleep lab. This is especially important in my current research, which studies sleep and activity patterns among older adults, particularly those with AD in low-income communities.
- **Jean-Louis, G.;** von Gizycki, H.; Zizi, F.; Spielman, A.J.; Fookson, J. Fullilove, R.; and Taub, H. (1996). Determination of sleep and wakefulness with the actigraph data analysis software (ADAS). *SLEEP*, 19, 739-743. PMID: 9122562
 - **Jean-Louis, G.;** von Gizycki, H.; Zizi, F.; Spielman, A.J.; Hauri, P.; and Taub, H (1997). The actigraph data analysis software (ADAS): a novel approach to scoring and interpreting sleep-wake activity I. *Perceptual and Motor Skills*, 85, 207-216. PMID: 9293579
 - **Jean-Louis, G.;** Kripke, D.F.; Cole, R.J.; and Langer, R.D. (2001). Sleep detection with the Actillum: comparisons with polysomnography. *Physiology and Behavior*, 72(1-2), 21-28. PMID: 11239977
 - **Jean-Louis, G.;** Kripke, D.F.; Mason, W.J.; Elliott, J.A.; and Youngstedt S.D. (2001). Sleep estimation from wrist movement quantified by different actigraphic modalities. *Journal of Neuroscience Methods*, 105(2):185-91. PMID: 11275275
- 3) My current research focuses on decreasing the burden of sleep disorders in minority populations. My funding portfolio in this regard aims to delineate the mechanisms of racial disparities in sleep disorders and to develop and evaluate the effectiveness of behavioral interventions targeted at improving adherence to evidence-based treatment of sleep disorders such as sleep apnea in older minority populations. This body of work links community health-promotion to the healthcare system, thus achieving objectives of the NIH mandate to increase health equity in vulnerable minority and underserved populations. Using two waves of community-based data (SO6 GM54650) collected from older adults in Brooklyn, NY, my research team demonstrated that although PSG data show that blacks are characterized by more severe sleep disturbances than their white counterparts, they are less likely to report sleep complaints. We have also found that a high degree of repressive coping and social desirability are potential explanations for the under-reporting of sleep problems among blacks. Indeed, my group found that only 38% of blacks referred for sleep evaluation adhered to such recommendations, although they are more likely to experience sleep apnea and associated cardiovascular risks.
- **Jean-Louis, G.;** Magai, C.M.; Cohen, C.I.; Zizi, F.; von Gizycki, H.; DiPalma, J.; Casimir, G.J. (2001). Ethnic differences in self-reported sleep problems in older adults. *SLEEP*, 24, 926-933. PMID:11766163
 - **Jean-Louis, G.;** Magai, C.; Consedine, N.; Pierre-Louis, J.; Zizi, F.; Casimir, G.; Belzie, L. (2007). Insomnia Complaints and Repressive Coping in a Sample of Black and White Women. *BMC Women's Health* (Jan 29;7:1. doi:10.1186/1472-6874-7-1). PMID: 17261187
 - **Jean-Louis G,** Turner AD, Jin P, Liu M, Boutin-Foster C, McFarlane SI, Seixas A. Diabetes Metab Syndr Obes. (2020). Increased Metabolic Burden Among Blacks: A Putative Mechanism for Disparate COVID-19 Outcomes. 2;13:3471-3479. PMID: 33061507
 - **Jean-Louis G,** Shochat T, Youngstedt SD, Briggs AQ, Williams ET, Jin P, Bubu OM, Seixas AA. (2021) Age-associated differences in sleep duration in the US population: potential effects of disease burden. *Sleep Med*. Nov;87:168-173. doi: 10.1016/j.sleep.2021.09.004. PMID: 34619501

4) These findings have informed the development of several important projects. I have completed an RCT 'Sleep Apnea Treatment among Blacks with Metabolic Syndrome (R01MD004113),' the first study to evaluate the effects of a tailored intervention to overcome barriers to OSA evaluation among blacks. Analysis of findings from this study indicated significant intervention effects in acceptance of sleep consultation and lab-based sleep assessment. This RCT provided infrastructure to develop a registry of sleep phenotypes for 2,950 blacks; the largest registry of such patients in Brooklyn NY. Focus group qualitative interview data from participants of this RCT led to the development of another R01 'Tailored Peer-Based Sleep Health Education and Social Support among Blacks (R01MD006225), demonstrating the crucial role of social support in OSA adherence behavior. The goal of this trial was to evaluate effects of a tailored, peer-delivered behavioral intervention in increasing home-based, sleep disorders screening and adherence to recommended treatment. This also provided the basis for an educational outreach campaign to increase sleep literacy in vulnerable communities (R25HL116378). This project aimed to develop education tools and platforms to promote transfer of sleep health information to minorities to foster adoption of healthful sleep practices. This required engaging multiple community stakeholders and health champions to enhance acceptability of sleep health messages as well as dissemination of study results in credible venues.

- **Jean-Louis, G.**; Magai, C.; Casimir, G.; Zizi, F.; McKenzie, D; Moise, F.; Graham, Y. (2008). Sleep and Health Complaints in a Multiethnic Sample of American Women. *Journal of Women's Health*, 17(1):15-25. PMID:18240978
- **Jean-Louis G**, Newsome V, Williams NJ, Zizi F, Ravenell J, Ogedegbe G. (2017). Tailored Behavioral Intervention Among Blacks With Metabolic Syndrome and Sleep Apnea: Results of the MetSO Trial. *Sleep*. 1;40(1). doi: 10.1093/sleep/zsw008. PMID: 28364475
- Seixas AA, Trinh-Shevrin C, Ravenell J, Ogedegbe G, Zizi F, **Jean-Louis G**. (2018). Culturally tailored, peer-based sleep health education and social support to increase obstructive sleep apnea assessment and treatment adherence among a community sample of blacks: study protocol for a randomized controlled trial. *Trials*, Sep 24;19(1):519. PMID: 30249293
- **Jean-Louis G**, Robbins R, Williams NJ, Allegrante JP, Rapoport DM, Cohall A, Ogedegbe G. (2020). Tailored Approach to Sleep Health Education (TASHE): a randomized controlled trial of a web-based application. *J Clin Sleep Med*. 2020 Apr 24. doi: 10.5664/jcsm.8510. PMID: 32329437

Finally, mentoring has been an integral component of my academic activities. I have also been involved in several university-based training programs, which have targeted diverse mentees at the undergraduate, graduate, post-graduate, and faculty level. For the past 15 years, I have been PIs of the NHLBI-funded PRIDE Institute (R25HL105444) and NINDS-funded COMRADE Program (R25NS094093), which have trained over 175 junior URM faculty and postdocs across the nation; 30% of these scholars have obtained NIH funding as well as grants from other federal agencies. In the last 5 years, I have mentored individuals including those across the continuum of professional development and disciplines. Finally, I received funding to support the NYU T32 Program on Behavioral Cardiovascular Health Research (T32HL129953), relinquished since joining the University of Miami in June 2021. More details about the training programs are available at:

<https://med.miami.edu/tscs>.

- **Jean-Louis G**, Ayappa I, Rapoport D, Zizi F, Airhihenbuwa C, Okuyemi K, Ogedegbe G. (2016). Mentoring junior URM scientists to engage in sleep health disparities research: experience of the NYU PRIDE Institute. *Sleep Med*. Feb;18:108-17. PMID: 26631970
- Jeffe DB, Rice TK, Boyington JEA, Rao DC, **Jean-Louis G**, Dávila-Román VG, Taylor AL, Pace BS, Boutjdir M. (2016). Development and Evaluation of Two Abbreviated Questionnaires for Mentoring and Research Self-Efficacy. *Ethn Dis*. 2017 Apr 20;27(2):179-188. PMID: 28439189
- Boyington JE, Maihle NJ, Rice TK, Gonzalez JE, Hess CA, Makala LH, Jeffe DB, Ogedegbe G, Rao DC, Dávila-Román VG, Pace BS, **Jean-Louis G**, Boutjdir M. A (2016). Perspective on Promoting Diversity in the Biomedical Research Workforce: The National Heart, Lung, and Blood Institute's PRIDE Program. *Ethn Dis*. Jul 21;26(3):379-86. PMID: 27440978
- Williams N, Ravenell J, Duncan AF, Butler M, **Jean-Louis G**, Kalet A. (2020). Peer Mentor Development Program: Lessons Learned in Mentoring Racial/Ethnic Minority Faculty. *Ethn Dis*. 2020 Apr 23;30(2):321-3. PMID: 32346278

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Haq, Ihtsham UI

eRA COMMONS USER NAME (credential, e.g., agency login): IHTSHAMHAQ

POSITION TITLE: Division Chief/Pending Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	Completion Date MM/YYYY	FIELD OF STUDY
Columbia University (School of Engineering)	BS	05/1997	Bioengineering
Columbia University (Columbia College)	BA	05/1998	Philosophy
SUNY Downstate Medical Center	MD	06/2002	Medicine
Staten Island University Hospital	Intern	06/2003	Internal Medicine
Georgetown University Hospital	Resident	06/2006	Neurology
University of Florida	Fellow	06/2009	Movement Disorders

A. Personal Statement

My career goal is to understand the role of the basal ganglia in decision making in healthy individuals and in people with neurodegenerative disease. My main research interest is in the non-motor functions of the basal ganglia, particularly the effect of Deep Brain Stimulation (DBS) on basal ganglia function. I seek to bring a translational approach to the treatment of neuropsychiatric illness to the University of Miami, by using high-resolution physiological and imaging assessments to improve candidate phenotyping and identification of clinical trial outcomes and participants, and to investigate the role of the basal ganglia in neuropsychiatric disease. I am delighted to serve as a faculty member for the proposed T32.

1. Haq IU, Snively BM, Sweadner KJ, Suerken CK, Cook JF, Ozelius LJ, Miller C, McCall WV, Whitlow C, Brashear A. Revising Rapid-Onset Dystonia-Parkinsonism: broadening indications for ATP1A3 testing. 7-2019 Movement Disorders
2. Arystarkhova E, Haq IU, Luebbert T, Mochel F, Saunders-Pullman R, Bressman SB, et al. Factors in the disease severity of ATP1A3 mutations: Impairment, misfolding, and allele competition. Neurobiology of Disease 8-2019: 104577
3. Hartmann C, Lujan J, Chaturvedi A, Goodman W, Okun MS, McIntyre C, & Haq, I. Tractography activation patterns in dorsolateral prefrontal cortex suggest better clinical responses in OCD DBS. Frontiers in Neuroscience 2016
4. Haq IU, Foote KD, Goodman WG, Wu SS, Sudhyadhom A, Ricciuti N, Siddiqui MS, Bowers D, Jacobson CE, Ward H, Okun MS. Smile and laughter induction and intraoperative predictors of response to deep brain stimulation for obsessive-compulsive disorder. Neuroimage. 2011;54 Suppl 1:S247-55. PMID: PMC2907450

B. Positions, Scientific Appointments and Honors**Positions and Scientific Appointments**

2020 – Present	Division Chief, Movement Disorders section, University of Miami
2019 – Present	Fellow, American Academy of Neurology
2016 – 2020	Associate Professor, Wake Forest University Medical Center
2015 – 2020	Admissions Committee for the Neuroscience Graduate Program
2013 – 2020	Board member, Neurology Department Executive Committee
2013 – 2014	Medical Director, Janeway Neurology Clinic
2011 – 2013	Wake Forest Translational Science Institute Academy Scholar
2009 – 2016	Assistant Professor, Wake Forest University Medical Center
2008 – Present	Member, Movement Disorder Society
2005 – Present	Member, American Academy of Neurology
2006 – 2009	Fellow, University of Florida Movement Disorders Center
2005 – 2006	Chief Resident, Georgetown University Department of Neurology
2003 – 2006	Neurology Residency, Georgetown
2002 – 2003	Medical Internship, Staten Island University Hospital University
1997 – 1999	Student Researcher, Columbia-Presbyterian Hospital
1996 – 1997	Student Researcher, Maimonides Hospital

Honors

2018, 2020	Wake Forest School of Medicine Neurology Clerkship Teaching Award
2017	Selected to NIH Clinical Trial Methodology Course
2015	Ranked in national top 10% of physicians by Press Ganey's across specialties
2014	AAN Emerging Leaders Forum (ELF class of 2015)
2011	ANA Translational and Clinical Research Course for Clinician-Scientists travel award
2010	Wake Forest School of Medicine Department of Neurology Faculty Teaching Award
2009	Junior Academic Neurologist travel award
2006, 2007	Florida Society for Neuroscience Travel Fellowship Award
2006	Georgetown University String of Pearls Award for Excellence in Teaching

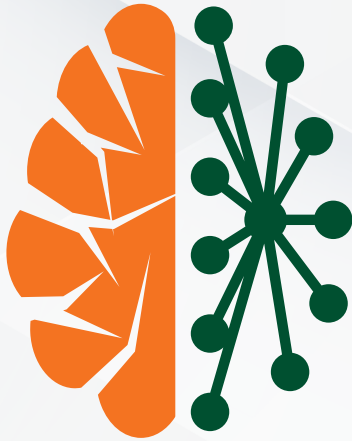
C. Contributions to Science

1. Capturing the full range of phenotypes of a movement disorder is the first step to determining its pathology, diagnosing it, and treating its manifestations in our patients. I have been fortunate to play a key role in phenotyping both rare and common movement disorders, particularly rapid-onset dystonia Parkinsonism.
 - a. **Haq IU**, Snively BM, Sweadner KJ, Suerken CK, Cook JF, Ozelius LJ, Miller C, McCall WV, Whitlow C, Brashear A. Revising Rapid-Onset Dystonia-Parkinsonism: broadening indications for ATP1A3 testing. *Mov Disord* . 2019 Oct;34(10):1528-1536.
 - b. Arystarkhova E, **Haq IU**, Luebbert T, Mochel F, Saunders-Pullman R, Bressman SB, et al. Factors in the disease severity of ATP1A3 mutations: Impairment, misfolding, and allele competition. *Neurobiol Dis* 2019 Dec;132:104577
 - c. Finger ME, Siddiqui MS, Morris AK, Ruckart KW, Wright SC, Haq IU, Madden LL. Auditory-Perceptual Evaluation of Deep Brain Stimulation on Voice and Speech in Patients With Dystonia. *J Voice* 2020 Jul;34(4):636-644. doi: 10.1016/j.jvoice.2019.02.010.
 - d. Hwynn N, **Haq IU**, Malaty IA, Resnick AS, Okun MS, Carew DS, Oyama G, Dai Y, Wu SS, Rodriguez RL, Jacobson CEt, Fernandez HH. The Frequency of Nonmotor Symptoms among Advanced Parkinson Patients May Depend on Instrument Used for Assessment. *Parkinsons Dis*. 2011; 2011:290195. PMID: PMC3144664
2. The role of the basal ganglia in decision making and mood has been well known among neuroscientists for many years. It has not historically received as much attention from clinicians. The Parkinsonisms in particular have been fertile ground for studying the cognitive changes seen in disorders that were formerly defined in terms of their motor symptoms. Many of my publications address the cognitive and mood changes seen with basal ganglia disease, both iatrogenic and due to disease progression.

- a. Cook J, Hill D, Snively B, Boggs N, Suerken C, Haq I, Stacy M, McCall W, Ozelius L, Sweadner K, Brashear A. Cognitive impairment in rapid-onset dystonia-parkinsonism. *Mov Disord* 2014 Mar;29(3):344-350. PMID: PMC3960305
 - b. Hwynn N, Haq IU, Malaty IA, Resnick AS, Okun MS, Carew DS, Oyama G, Dai Y, Wu SS, Rodriguez RL, Jacobson CE, Fernandez HH. The Frequency of Nonmotor Symptoms among Advanced Parkinson Patients May Depend on Instrument Used for Assessment. *Parkinsons Dis*. 2011;2011:290195. PMID: PMC3144664
 - c. Graff-Radford J, Foote KD, Mikos AE, Bowers D, Fernandez HH, Rosado CA, Rodriguez RL, Malaty IA, Haq IU, Jacobson CE, Okun MS. Mood and motor effects of thalamic deep brain stimulation surgery for essential tremor. *Eur J Neurol*. 2010;17(8):1040-6. PMID: PMC20113336
3. Deep brain stimulation (DBS), the implantation of stimulating electrodes into the basal ganglia, has proved efficacious for many neurological disorders. More recently DBS has been employed on an exploratory basis for the treatment of psychiatric disease. During my fellowship training at the University of Florida, I assisted in the then ongoing trial of DBS for Obsessive Compulsive Disorder. I noticed that the patients who laughed during intraoperative stimulation appeared to be those that had the greatest response to surgery. I investigated this phenomenon further and was able to show that induced smiles and laughter positively correlated both with surgical success and were stimulation dependent and emotionally congruent phenomena – i.e. at certain anatomical locations stimulation caused euphoria in a voltage dependent manner. This may serve as an intraoperative indicator of surgical success. I served as the primary investigator in this substudy of the OCD DBS cohort.
- a. Hartmann C, Lujan J, Chaturvedi A, Goodman W, Okun MS, McIntyre C, & Haq, I. Tractography activation patterns in dorsolateral prefrontal cortex suggest better clinical responses in OCD DBS. *Frontiers in Neuroscience* 2016, 9. doi:10.3389/fnins.2015.00519 PMID: PMC4717315
 - b. Haq IU, Foote KD, Goodman WG, Wu SS, Sudhyadhom A, Ricciuti N, Siddiqui MS, Bowers D, Jacobson CE, Ward H, Okun MS. Smile and laughter induction and intraoperative predictors of response to deep brain stimulation for obsessive-compulsive disorder. *Neuroimage*. 2011;54 Suppl 1:S247-55. PMID : PMC2907450
 - c. Haq IU, Foote KD, Goodman WK, Ricciuti N, Ward H, Sudhyadhom A, Jacobson CE, Siddiqui MS, Okun MS. A case of mania following deep brain stimulation for obsessive compulsive disorder. *Stereotact Funct Neurosurg*. 2010;88(5):322-8. PMID: 2969111.
 - d. Servello D, Sassi M, Brambilla A, Porta M, Haq I, Foote KD, Okun MS. De novo and rescue DBS leads for refractory Tourette syndrome patients with severe comorbid OCD: a multiple case report. *J Neurol*. 2009;256(9):1533-9.
4. As mentioned, DBS has been effective for many neurological disorders. It is a well-established treatment for medication-refractory Parkinson's disease. In my research I have explored the effect of different implantation and programming strategies to maximize benefit to our patients. I served as a coinvestigator on these studies.
- a. Vitek JL, Jain R, Chen L, et al. Subthalamic nucleus deep brain stimulation with a multiple independent constant current-controlled device in Parkinson's disease (INTREPID): a multicentre, double-blind, randomised, sham-controlled study. *The Lancet Neurology* 2020;19:491-501.
 - b. Vallabhajosula S, Haq IU, Hwynn N, Oyama G, Okun M, Tillman MD, Hass CJ. Low-frequency Versus High-frequency Subthalamic Nucleus Deep Brain Stimulation on Postural Control and Gait in Parkinson's Disease: A Quantitative Study. *Brain Stimul*. 2015 Jan-Feb;8(1):64-75
 - c. Sudhyadhom A, Haq IU, Foote KD, Okun MS, Bova FJ. A high resolution and high contrast MRI for differentiation of subcortical structures for DBS targeting: the Fast Gray Matter Acquisition T1 Inversion Recovery (FGATIR). *Neuroimage*. 2009;47 Suppl 2:T44-52.
 - d. Servello D, Sassi M, Brambilla A, Porta M, Haq I, Foote KD, Okun MS. De novo and rescue DBS leads for refractory Tourette syndrome patients with severe comorbid OCD: a multiple case report. *J Neurol*. 2009;256(9):1533-9.

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