THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

January 15, 2021

The McKnight Brain Research Foundation
c/o Ms. Melanie Cianciotto
Vice President for Foundations and Endowments
SunTrust Bank
333 Garland Avenue,17th Floor
Orlando, Florida 32801

Dear McKnight Brain Research Foundation Trustees,

I am honored to provide the following update regarding the ongoing progress of the Evelyn F. McKnight Brain Institute at UAB. Despite the myriad challenges of the past year, your partnership has helped to ensure that our scholars and scientists have the resources they need to stay at the forefront of efforts to better understand and treat age-related memory disorders. We are truly grateful for the remarkable impact that the Foundation's generosity has made on UAB, the field of neuroscience, and the hopes of countless families affected by these disorders.

If you have any questions or need any additional information, please do not hesitate to contact me or Melanie A. Armstrong, Director of Donor Relations and Engagement, at (205) 996-5600, or by email at melaniek@uab.edu. On behalf of everyone who continues to benefit from the McKnight Brain Research Foundation's steadfast support, thank you for all that you do.

Sincerely,

Tom Brannan

Tom Brannan
Vice President for Advancement

OFFICE OF ADVANCEMENT

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The Evelyn F. McKnight Brain Institute

Preserving Memory, Enhancing Life

Annual Report

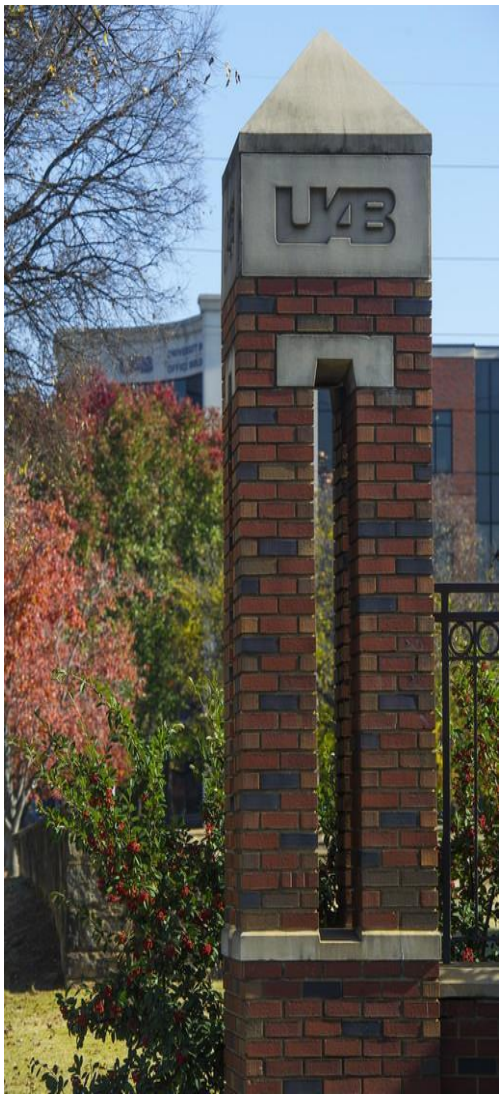
2020

Ronald M. Lazar, PhD, FAHA, FAAN
Professor of Neurology and Neurobiology
Evelyn F. McKnight Endowed Chair of Learning and Memory in Aging
Director, UAB Evelyn F. McKnight Brain Institute
Director, Division of Neuropsychology (Neurology)
Department of Neurology

Erik D. Roberson, MD, PhD
Rebecca Gale Endowed Professor
Associate Director, Evelyn F. McKnight Brain Institute
Director, Center for Neurodegeneration and Experimental Therapeutics
Director, Alzheimer's Disease Center
Department of Neurology

The University of Alabama at Birmingham
Sparks Center – SC650K
1720 7th Avenue South
Birmingham, Alabama 35294

Sections



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INSTITUTE DIRECTOR'S OVERALL REPORT

Institute Director's Overall Report

1. Summary of Scientific Achievements since last Report

In March 2020, research was halted at UAB because of the COVID-19 pandemic and all clinical trials sponsored by NIH stopped, and national and international scientific conferences were either postponed or were conducted virtually. Research activities at UAB resumed on a phased basis on May 26 with gradually more operations allowed throughout June. To mitigate the spread of disease, however, precautions involving disinfection and spaced access since that time have resulted reduced access to imaging and laboratory services, which has had a greater impact on clinical than bench research. Despite these circumstances, however, the UAB McKnight enterprise has continued to yield novel research findings as they relate to age-related memory and cognitive decline. The emphases at this institution have been focused on primary prevention and mitigation of age-related cognitive change and the exploration of new models of premature aging in the setting of systemic disease.

The Visscher Lab has had a great year with the completion of data acquisition at UAB for the McKnight Brain Aging Registry, as well as data cleaning and preliminary analysis of the cohort. Four primary papers from this dataset are in progress among the four collaborating sites. Secondary papers are in planning stages based on this dataset.

In the quest to pursue modifiable risk factors for age-related cognitive decline, the Lazar Lab in collaboration with the UAB Center for Exercise Medicine and the Department of Medicine, described an innovative model linking hypertension with peripheral and central reductions in vascular density, and with the devastating effects on brain function. They reviewed in *GeroScience* compelling evidence from two lines of inquiry: one that links microvascular rarefaction with insulin-like growth factor 1 (IGF-1) deficiencies, and another which posits that vascular dysfunction precedes hypertension. Based on the findings from experimental and clinical studies, they suggested that age-related declines in IGF-1 concentrations precede microvascular rarefaction, initiate an increase in vascular resistance, and therefore are causally linked to onset of hypertension. Physical exercise provides a relevant model for supporting this premise, given the well-established effects of exercise in attenuating vascular dysfunction, hypertension, IGF-1 deficiency, and cognitive decline. They highlighted the role of exercise-induced increases in blood flow in improving vascular integrity and enhancing angiogenesis via the actions of IGF-1, resulting in reversal of rarefaction and hypertension, and enhancement of cerebral blood flow and cognition.

In *The Journal of Gerontology (Series A)*, Dr. Steven Austad reported in a companion dog model of aging new data about the underlying mechanisms that drive their health and longevity. In addition, dogs have a well described phenotypic pattern in which small dogs live significantly longer than large dogs, such that weight can be used as a crude proxy for longevity. To investigate this pattern, they completed a small lipidomics study on 41 dogs to determine individual circulating lipids that were associated with age and body weight. They discovered that sphingomyelins were significantly higher in large, short-lived dogs, independent of age, and triglycerides were higher in older dogs of all sizes. Their results point toward physiological differences that may explain a portion of the variation in longevity seen in companion dogs.

Drs. Virginia Wadley and Virginia Howard used the UAB population-based REGARDS study to study whether faster rates of cognitive decline is associated with systemic inflammation and whether this relationship differs by race. Their objective was to examine the association of baseline C-reactive protein (CRP) with cognitive decline among a large, racially diverse cohort of older adults. In *Plos One*, they looked at 21,782 participants aged 45 and older (36% were Black, Mean age at baseline 64) from the REasons for Geographic And Racial Differences in Stroke (REGARDS) study. CRP was measured at baseline and used as a continuous variable or a dichotomous grouping based on race-specific 90th percentile cutoffs. Cognitive measures of memory and verbal fluency were administered every 2 years for up to 12 years. Latent growth curve models evaluated the association of CRP on cognitive trajectories, adjusting for relevant demographic and health factors. They found that higher CRP was associated with worse memory and verbal fluency at baseline but not with rate of cognitive decline. Race did not modify the association between CRP and cognition. The findings suggest that levels of CRP at age 45+ are a marker of cognitive impairment but may not be suitable for risk prediction for cognitive decline.

Drs. Thomas Buford and Marcas Bamman reported in *Experimental Gerontology* pilot data on the safety and feasibility of combining exercise (EX) and resveratrol to treat older adults with physical function limitations. Their design involved a three-arm, two-site pilot randomized, controlled trial (RCT) for community-dwelling adults (N = 60), 71.8 ± 6.3 years of age with functional limitations. Participants were randomized to receive either 12 weeks of (1) EX + placebo [EX0], (2) EX + 500 mg/day resveratrol [EX500], or (3) EX + 1000 mg/day resveratrol [EX1000]. Safety was assessed through adverse events and feasibility through exercise session and supplement (placebo, or resveratrol) protocol adherence. Outcome measures included a battery of indices of physical function as well as skeletal muscle mitochondrial function. They found that adverse event frequency and type were similar between groups. They concluded that the combination of EX + resveratrol was safe and feasible for older adults with functional limitations and may improve skeletal muscle mitochondrial function and mobility-related indices of physical function.

UAB McKnight faculty are studying age-related cognitive changes in non-white populations. Dr. Michael Crowe examined associations between job strain and cognitive aging in a sample of older Puerto Ricans. As reported in the *Journal of Aging and Health*, he studied members of the Puerto Rican Elderly: Health Conditions study, aged 60-100 years at baseline. Job strain indicators were quantified from O*NET (n = 1632) and a matrix of Job Content Questionnaire scores (JCQ; n = 1467). Global cognition was assessed twice across 4 years. Controlling for age, sex, depressive symptoms, financial problems, hypertension, diabetes, childhood economic hardship, low job control and high job strain were consistently associated with greater cognitive decline. Adding education attenuated these associations. High education strengthened the JCQ job control-cognitive change link. The authors concluded that low job control and high job strain may accelerate cognitive aging in this population.

Dr. Lynn Dobrunz' group investigated the use of MRI-visible, albumin-based nanoclusters for noninvasive, localized and temporally specific drug delivery to the rat brain. In their paper published in the *Journal of Controlled Release*, they demonstrated that IV injected nanoclusters could be deposited into target brain regions via focused ultrasound facilitated blood brain barrier opening. They showed that nanocluster location could be confirmed in vivo with MRI. Additionally, following confirmation of nanocluster delivery, release of the nanocluster payload into brain tissue can be triggered by a second focused ultrasound treatment performed without circulating microbubbles. Release of glutamate from nanoclusters in vivo caused enhanced c-Fos expression, indicating that the loading capacity of the nanoclusters is sufficient to induce neuronal activation. This novel technique for noninvasive stereotactic drug delivery to the brain with temporal specificity could provide a new way to study brain circuits in vivo preclinically with high relevance for clinical translation.

The relationship between age-related cognitive decline and depression is an intense area of interest, but disparities in access to healthcare in mental health remain to be fully explored. Drs. Cynthia Brown, Richard Kennedy and their group at UAB in collaboration with the Univ of Mississippi tested how neighborhood disadvantage (ND) relates to depressive symptomology and diagnosis to assess for neighborhood disparities in mental health care cross-sectionally. Published in *International Journal of Environmental Research and Public Health*, data from 998 community-dwelling, Black and White individuals aged 65+ included in the University of Alabama at Birmingham Study of Aging were analyzed. They obtained participants' depressive symptomology from the Geriatric Depression Scale (n = 100) and a verified depression diagnosis from self-report and review of medication, physician-report, and/or hospital discharge summaries (n = 84). They found living in the high and mid-ND tertiles to be associated with depressive symptomology, yet ND had no significant relation to depression diagnosis. Therefore, older adults living in high and mid-disadvantaged neighborhoods may be more likely to experience depressive symptomology but not receive a diagnosis, indicating a possible disparity in mental health care.

Preclinical models of hippocampal function are critical early steps that lead to the development of interventions to prevent and ameliorate age-related cognitive decline. To this end, Dr. Farah Lubin and her UAB colleagues are conducting research on the epigenetic mechanisms that may be critical for hippocampal-dependent memory formation in rodent models. Their 2020 publication in *Biological Psychiatry* built upon previous studies that implicate the N-lysine methyltransferase SETD6 in the activation of nuclear factor-κB RELA (also known as transcription factor p65) as an epigenetic recruiter, leading to the hypothesis that SETD6 is a key player in the epigenetic control of long-term memory. Using a series of molecular, biochemical, imaging, electrophysiological, and behavioral experiments, they interrogated the effects of short interfering RNA-mediated knockdown of Setd6 in the rat dorsal hippocampus during memory consolidation. They demonstrated that SETD6 is necessary for memory-related nuclear factor-κB RELA methylation at lysine 310 and associated increases in H3K9me2 (histone H3 lysine 9 dimethylation) in the dorsal hippocampus and that SETD6 knockdown interferes with memory consolidation, alters gene expression patterns, and disrupts spine

morphology. These findings suggested that SETD6 plays a critical role in memory formation and may act as an upstream initiator of H3K9me2 changes in the hippocampus during memory consolidation.

Another UAB McKnight pursuit in preclinical neuroscience by Dr. Linda Overstreet-Wadiche and her colleagues examined how voluntary running enhances adult hippocampal neurogenesis, with consequences for hippocampal-dependent learning ability and mood regulation. They showed in the journal *Cell Reports* that voluntary running induces unique and dynamic gene expression changes specifically within the adult-born hippocampal neurons, with significant impact on genes involved in neuronal maturation and human diseases. They identified the regulator of G protein signaling 6 (RGS6) as a key factor that mediates running impact on adult-born neurons. RGS6 overexpression mimics the positive effects of voluntary running on morphological and physiological maturation of adult new neurons and reduces sensitivity of adult-born neurons to the inhibitory effect of GABAB (γ-Aminobutyric acid B) receptor activation. Knocking down RGS6 abolishes running-enhanced neuronal maturation and hippocampal neurogenesis-dependent learning and anxiolytic effect. Their study provided a data resource showing genome-wide intrinsic molecular changes in adult-born hippocampal neurons that contribute to voluntary running-induced neurogenesis.

Sensory deprivation is a known risk factor for age-related cognitive decline. The development of interventions for visual and auditory loss represents a critical avenue of research, which has important implications for older individuals. Dr. Kristina Visscher and her colleagues at the University of California, Riverside, published in the *Journal of Vision* a method of characterizing oculomotor strategies after central vision loss to understand the time course of changes in oculomotor strategies through training in 19 healthy individuals with a gaze-contingent display obstructing the central 10° of the visual field. After 10 days of training, they found mean improvements in saccadic re-referencing (the percentage of trials in which the first saccade placed the target outside the scotoma), latency of target acquisition (time interval between target presentation and a saccade putting the target outside the scotoma), and fixation stability. These results are consistent with participants developing compensatory oculomotor strategies as a result of training. They also observed substantial individual differences in the formation of eye movement strategies and the extent to which they transferred to an untrained task, likely reflecting both variations in learning rates and patterns of learning. This more complete characterization of peripheral looking strategies and how they change with training may help our understanding of individual differences in rehabilitation after central vision loss.

2. What do you consider your most important scientific achievement this year?

Norling, A.M., Gerstenecker, A.T., Buford, T.W., Khan, B., Oparil, S., Lazar, R.M. The Role of IGF-1 Deficiencies in Microvascular Rarefaction and Hypertension. GeroScience, 2020 Feb;42(1):141-158. (Journal Impact Factor = 6.44)

A major goal of the UAB Evelyn F. McKnight Brain Institute is to identify interventions for modifiable risk factors of cognitive decline which can be implemented before the onset of cognitive decline. It is widely recognized that exercise can improve memory and cognition as we age, but how it may prevent cognitive decline is less well understood. As noted above in Section 1 (Scientific Achievement) above, a collaboration among McKnight faculty and the Department of Medicine produced a ground-breaking model the relates hypertension, the most prevalent risk-factor cause of cognitive decline, with age-related changes in insulin-like growth factor and changes in cognition, which may be treatable with exercise. Despite less than one year since its publication, this model has been cited in numerous journal articles, including Geroscience, Psychophysiology, Current Hypertension Reports, American Journal of Physiology, and Therapeutic Advances in Neurological Disorders. We are now pursuing this approach utilizing Optical Coherence Tomography Angiography (OCTA) at the UAB Callahan Eye Hospital and at the Bascom-Palmer Eye Institute at the University of Miami Miller School of Medicine, which collaborates with the Miami EMBI.

3. Publications in Peer Reviewed Journals

Researchers at the UAB Evelyn F McKnight Brain Institute continue their publication success with investigators publishing a total of 271 research papers, reviews, and commentaries in peer-reviewed journals.

4. Publications (Other)

Successful research was documented in 28 other areas.

5. Presentations at Scientific Meetings (Also Includes Invited Research Seminars)

The Evelyn F. McKnight Brain Institute hosted Jeff Williamson, M.D. who presented "Blood Pressure Control: The first Randomized trial proof that MCI and Dementia can be prevented – updated findings and recent thoughts"
Appendix A

The year 2020 brought a new learning experience for everyone. Due to travel restrictions, events were cancelled and then gradually shifted to virtual events. Virtual events have gone from limited use to a new way of life and researchers presented at 68 meetings.

6. Presentations at Public (Non-scientific) Meetings or Events

Through virtual events, community service continued with 24 presentations conducted virtually at non-scientific events.

7. Awards

Amara, Amy
Best Research Article of the Year for Movement Disorders journal for "Randomized Controlled Trial of Exercise on Objective and Subjective Sleep in Parkinson's Disease"

Brown, Cynthia
Awarded the Gerontological Society of America's Joseph T. Freeman award, awarded to a prominent clinician in the field of aging, both in research and practice.
Listed in Best Doctors in America – Birmingham

Gerstenecker, Adam

Dr. Adam Gerstenecker, Assisstant Professor in the Department of Neurology-Division of Neuropsychology at UAB, was recognized as the Early Career Impact Award winner for both NAN (National Academy of Neuropsychology) and the Federation of Associations in Behavioral and Brain Sciences.
Early career awards recognize neuropsychologist's research on cognitive decline - The Reporter | UAB

Gray, Michelle
Profiled in The Scientist magazine in October 2020 in Scientist to Watch section
https://www.the-scientist.com/scientist-to-watch/michelle-gray-tracks-huntingtons-in-different-brain-cells-67956

Gross, Alecia
AKG identified as "Leading Scientist in Vision Research" (one of five chosen in Retinal Diseases group) from ScEYEnce https://sceyence.org/top-scientists/

Howard, George
Stroke Council Award and Lecture from the AHA

Howard, Virginia
Awarded Distinguished Professor by the Board of Trustees, University of AL
Web of Science, Highly Cited Researcher (in Clinical Medicine)

Lubin, Farah
UAB School of Medicine Dean's Excellent Award for Diversity Enhancement
President's Diversity Champion Award-UAB

Saag, Michael
Named co-editor of the journal AIDS

Standaert, David
Bachmann-Strauss Prize for Excellence in Dystonia Research (Michael J. Fox Foundation, with Dr. Antonio Pisani)

Thyme, Summer
UAB Pitmann Scholar
Klingenstein-Simons Fellowship Award in Neuroscience
BBRF NARSAD Young Investigator Grant
Mallinckrodt Grant

Ubogu, Eroboghene
UAB FY20 Provider Communication Award

8. Faculty

Faculty bios are included in Appendix B.

9. Trainees

A. Post-doctoral and residents

30

B. Pre-doctoral students

78

C. Other students

74

10. Clinical/Translational Programs

A. New Programs

Lazar, Ronald (See McKnight Chair's Report)
Dr. Amara's study on slow wave sleep as a biomarker of rehabilitation-induced cognitive improvement in Parkinson's disease: will be starting soon and includes investigation of glymphatic clearance
Dr. Benveniste is studying Parkinson's Disease response to diverse biological stimuli.
Dr. Geldmacher is working on the redesign of the "Memory Disorders Clinic" to a "Brain Health, Aging, and Memory" program
Using the UAB McKnight award, Dr. Lubin, is looking at "Exercise-related effects on memory function and neuronal circuitry- a clinical and preclinical investigation"
Dr. Ubogu is working on a Argenx clinical trial on Efgartigimod PH20 SC in Adult Patients with Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)
Dr. Visscher's newest project is titled "Characterization of Multiple Factors in Training and Plasticity in Central Vision Loss."

B. Update on Existing Clinical Studies

Lazar, Ronald (See McKnight Chair's Report)
Dr. Amara continues a longitudinal study investigating influence of slow wave sleep on longitudinal cognitive decline
Dr. Bradley will continue to follow the cognitive status of participants as a function of hypertension thresholds targeted in a randomized controlled trial
Dr. Kennedy is examining speed of processing training as an intervention to prevent cognitive decline among older adults after an episode of delirium. He is also performing data mining among concomitant medications of older adults to identify potential novel therapeutic agents and developing new data mining methods for identifying delirium among hospitalized older adults.
Dr. Roberson has published new data on whole genome sequencing in people with age-related cognitive disorders (PMID 31836585) and racial differences in specialist evaluations (PMID 33337364)
In February, the UAB arm of the McKnight Brain Aging Registry finished acquiring the goal of 50 participants over the age of 85, who are in excellent cognitive health. Dr. Visscher's lab completed this task prior to lock down of research in this high risk population due to COVID-19.

11. Technology Transfer

A. Patent Applications

Bolding, Mark
Applying for a patent for the C. elegans X-ray optogenetics work

B. Revenue Generated from Technology

Not applicable.

12. Budget Update

A full financial report is included in the Finance Section.

13. Educational Programs Focusing on Age Related Memory Loss

A. Scientific

Lazar, Ronald (See McKnight Chair's Report)

Amara, Amy
Influence of slow wave sleep on longitudinal cognitive performance in Parkinson's disease

Kennedy, Richard
With colleagues from the Department of Psychiatry and the Department of Medicine, we have continued with development of a curriculum for graduate students to teach reproducible research in neurosciences and other basic science fields. We have expanded this to an online learning platform with a goal of making this curriculum available to other institutions.

Lahti, Andrienne
In July 2020, together with Tom Denney (the Director of the Auburn MRI Research Center), I organized the 9th annual Alabama Advanced Imaging Consortium (AAIC) retreat virtually. Because of the virtual format, we were able to invite 3 internationally recognized speakers.

B. Public

Lazar, Ronald (See McKnight Chair's Report)

Lahti, Andrienne
She has reorganized the Comprehensive Neuroscience Center (CNC) signature event, the Neuroscience café, which used to be held in several public libraries in the Birmingham area. Taking advantage of the virtual format, they can access the public of all of these libraries in one event.

14. Collaborative programs with other McKnight Institutes, institutions and research programs

Lazar, Ronald (See McKnight Chair's Report)

Bolding, Mark
Kristina Visscher's McKnight sponsored healthy aging neuroimaging study.

Geldmacher, David
Participation in MBAR study

Dobrunz, Lynn
I collaborate with Dr. Lori McMahon from UAB, Dr. Mark Bolding from UAB, and Dr. Mark Bevensee from UAB

Lubin, Farah
Plans to submit MBAR grant application with Drs. Tom Foster and Matt Huentelman. This project will be focused on processing blood samples from aged adults for DNA methylation and exosome analysis.

Visscher, Kristina
McKnight Brain Aging Registry, in association with collaborators at UF, UM and U of Arizona.
Within UAB, I collaborate with the Alzheimers Disease Center, especially Jon McConathy and Erik Roberson. In addition, as part of my role as co-director of the Civitan International Neuroimaging Lab, our MRI facility at UAB, I help run several programs whose goal is to foster collaborations among UAB researchers using neuroimaging tools, including McKnight researchers. See this website for more information: https://www.uab.edu/medicine/cinl/seminars

15. Collaborative programs with non-McKnight Institutes, institutions and research programs

Lazar, Ronald (See McKnight Chair's Report)

Amara, Amy
Collaborator at Emory evaluating spectral analysis of EEG changes related to cognition

Austad, Steve
Grant collaborations with Oklahoma University Health Science Center

Bolding, Mark
Physicist for the UAB Alzheimer's Disease Center

Dobrunz, Lynn
She collaborates with Dr. Yuping Bao from the University of Alabama, with Dr. Stephen Foulger from Clemson, Dr. Jason Weick from the University of New Mexico

Howard, Virginia
PI of ongoing subcontract with Johns Hopkins Univ/NIA: Transitions to Family Caregiving and the impact on Caregivers' Health

Pozzo-Miller, Lucas
Alan Percy (UAB), Jeff Neul (Vanderbilt), Maurizio Giustetto (Turin, Italy), Frank Longo (Stanford), Michelle Olsen (VA Tech), Karen Gamble (UAB), Aurelio Galli (UAB), Kirill Martemyanov (Scripps Florida), Keri Martinowich (Johns Hopkins University School of Medicine), Rita Cowell (SR).

Saag, Michael
Network of Integrated Clinical Systems (CNICS)
https://sites.uab.edu/cnics/

Ubogu, Eroboghene, E
Jennifer DeBerry, Ph.D., Assistant Professor of Anesthesiology and Perioperative Medicine, UAB: Neurobehavioral assessments of nociception and drug reward/ abuse potential in murine peripheral neuropathy models
Member, Center for Addiction and Pain Prevention and Intervention (CAPPI), UAB
Annemieke Kavelaars, Ph.D., Professor, Department of Symptom Research, MD Anderson Cancer Center, Houston, Texas: Molecular modulation of blood-nerve barrier permeability and chronic neuropathic pain
Bryan Moyer, Ph.D., Vice President, Head of Biology, Latigo Biotherapeutics, Thousand Oaks, CA: Novel analgesic drug permeability across the in vitro human blood-nerve barrier

Visscher, Kristina
Collaboration with Dr. Aaron Seitz at UC Riverside and Dr. Nick Turk-Browne at Yale (NIH project Characterization of Multiple Factors in Training and Plasticity in Central Vision Loss, NEI). This project examines research aims to investigate the role of four vision factors on perceptual learning and visually-guided behaviors in peripheral vision in both healthy and macular degeneration (MD) samples (i.e., eye movements, visual sensitivity, spatial integration, and spatial attention), as well as measurements of plasticity including behavior and MRI anatomical, functional and connectivity measures.
Collaboration with Leslie Ross at Clemson University (NIH project Elucidating the Necessary Components and Mechanisms of Cognitive Training, NIA). This large scale project aims to understand what components and mechanisms of cognitive training are necessary for cognitive improvements in older adults. I lead the MRI portion of the project.

16. Briefly describe plans for future research and/or clinical initiatives

Lazar, Ronald (See McKnight Chair's Report)

Amara, Amy
Slow wave sleep as a biomarker of rehabilitation-induced cognitive improvement in Parkinson's disease: will be starting soon and includes investigation of glymphatic clearance
PPMI 2.0
Investigation of light therapy on sleep in Parkinson's disease (site PI for NeuroNEXT study)

Benveniste, Tika
New programs - Michael J. Fox Foundation, October 1, 2020 – September 30, 2023. Cytokine Production by Adaptive Immune Cells from Patients with Parkinson's Disease: Response to Diverse Biological Stimuli. Total Direct Costs $499,999. Principal Investigator: E. N. Benveniste.

Bradley, Virginia
SPRINT MIND R01 to continue following the cognitive status of the participants as a function of hypertension thresholds targeted in this randomized controlled trial (co-I/ consultant)

Geldmacher, David
Redesign of the “Memory Disorders Clinic” to a “Brain Health, Aging, and Memory” program is underway

Lubin, Farah
UAB McKnight Award – “Exercise-related effects on memory function and neuronal circuitry- a clinical and preclinical investigation”

Roberson, Erik
NIH P20 Exploratory ADRC

Ubogu, Eroboghene
Argenx clinical trial on Efgartigimod PH20 SC in Adult Patients with Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)

Visscher, Kristina
NIH council has approved funding for a multi-site mechanistic clinical trial, of which UAB is the lead site, and I am the MPI. It is titled "Characterization of Multiple Factors in Training and Plasticity in Central Vision Loss." It would be funded by NEI.

17. Please provide endowment investment results for the report period.

See investment report.

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

No

19. Do you recommend any modification to the Purpose or mandates in the Gift Agreement?

No

20. Did all activities during the report period further the Purpose?

Yes

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

None

22. Please provide any general comments or thoughts not covered elsewhere – a response is not required. Please respond only if you would like to add something not otherwise covered elsewhere.

N/A

23. What social media platforms are you active on and how many followers do you have?

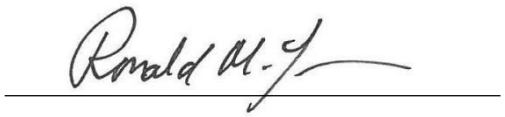
Researchers at the Institute use social media at various levels. Some are actively involved while others have limited or no use of social media.

24. Number of media impressions and placements secured mentioning the MBI and/or your leadership/researchers

25. Number of monthly visitors to your website and any peak areas of interest or engagement

26. Outline topics and attendance for any new podcasts, blogs, webinars, You Tube videos, etc.

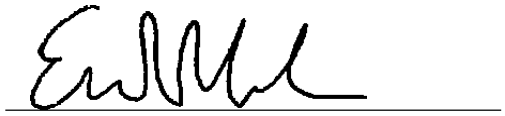
27. Signature, date, and title of person submitting the report.



Date: 1/15/2020

Ronald M. Lazar, PhD, FAHA, FAAN
Professor of Neurology

Evelyn F. McKnight Endowed Chair for Learning and Memory in Aging Director,
UAB Evelyn F. McKnight Brain Institute
Director, Division of Neuropsychology (Neurology) Department of
Neurology



Date: 1/15/2020

Erik D. Roberson, MD, PhD

Associate Professor of Neurology and Neurobiology
Patsy W. and Charles A. Collat Professor of Neuroscience
Director, Alzheimer's Disease Center
Associate Director, UAB Evelyn F. McKnight Brain Institute
Co-Director, Center for Neurodegeneration and Experimental Therapeutics

FINANCE

Fiscal Year 2020 Expenses and Distributions

Description	MBRF Funds Expended	MBRF Chair, Gift and Endowment Earnings	Matching Endowment Earnings
R. Lazar Salary	$ 31,897		
R. Lazar Cell Phone	$ 769		
A. Solomon Salary	$ 16,541		
V. Hixon Salary	$ 30,340		
T. Myers Salary	$ 20,743		
H. Freeman Salary	$ 27,118		
A. Norling Support	$ 5,924		
Travel Expenses	$ 6,060		
Guest Lecturer	$ 748		
Business Meals & Refreshments	$ 1,675		
Office Supplies & Services	$ 2,209		
Photocopying & Printing	$ 1,755		
Subject payments	$ 12,266		
Behavioral Core Salaries	$ 19,861		
Behavioral Core Supplies & Services	$ 2,192		
Other Research Supplies & Services	$ 14,889		
Pilot Project Salaries	$ 2,624		
Pilot Project Supplies & Services	$ 18,733		
F. Cleveland Kinney Endowed Chair		$ 27,493	
Geropsychiatry Research Chair		$ 85,177	
Warren Family Endowed Chair			$ 41,444
Jarman F. Lowder Endowed Professorship			$ 14,490
Virginia B. Spencer Endowed Professorship			$ 39,317
Patsy W. and Charles A. Collat Endowed Professorship			$ 13,241
Rebecca Gale Endowed Professorship			$ 10,292
Patsy W. and Charles A. Collat Scholar Endowed Support			$ 3,678
MBRF Chair Spendable Earnngs		$ 39,271	
MBRF Institute Spendable Earnings		$ 172,911	

Total	**$ 216,345**	**$ 324,851**	**$ 122,463**

Evelyn F. McKnight Brain Institute FY2021 Budget

Category	McKnight Institute Expenses	McKnight Chair Expenses	McKnight Behavior Core Expenses	Additional Endowment Earnings	Matching Endowment Spendable Earnings
Salary and Benefits	$ 120,000	$ 32,000	$ 20,000		
Dr. Lazar Phone		$ 800			
Travel & Meetings	$ 2,000				
Subject Payments	$ 10,000				
Supplies & Services	$ 23,000		$ 2,000		
Pilot Projects	$ 20,000				
F. Cleveland Kinney Chair				$ 27,493	
Geropsychiatry Research Chair				$ 85,177	
Warren Chair					$ 41,444
Lowder Professorship					$ 14,490
Collat Professorship					$ 13,241
Spencer Professorship					$ 39,317
Gale Professorship					$ 10,292
Collat Scholar					$ 3,678
TOTAL	**$ 175,000**	**$ 32,800**	**$ 22,000**	**$ 112,670**	**$ 122,462**

Evelyn F. McKnight Brain Institute Extramural Funding Summary

The Evelyn F. McKnight Brain Institute currently has active extramural funding of $27,302,851 in direct awards and $35,871,971 in total awards broken down as follows:

Federal	21,545,888
Foundations Philanthropy	2,076,781
Industry	1,023,182
Institutions	1,519,759
Misc Non-Federal	13,293
NP Agency/Assoc	428,084
State	1,000,000
Total Direct Awarded	27,606,987

A detailed report of grant awards is attached.

PI Name	Project Title	Sponsor Name	Sponsor Type	Project Start Date	Project End Date	Direct Awarded for Currently Active Increments	Indirect Awarded for Currently Active Increments	Total Awarded for Currently Active Increments
Amara, Amy Willis	A Dose Selection Trial of Light Therapy for Impaired Sleep in Parkinson's Disease	MASSACHUSETTS GENERAL HOSPITAL	Institutions	09/15/2019	06/30/2021	-	-	-
Amara, Amy Willis	The Parkinson's Progression Markers Initiative (PPMI) 2.0 Clinical - Establishing a Deeply Phenotyped PD Cohort	Fox (Michael J.) Foundation for Parkinson's Research	Foundations Philanthropy	09/09/2020	09/08/2033	1,651,762	247,764	1,899,526
Asif, Irfan M	Value Based Medical Student Education Training Program	Health Resources and Services Administration/DHHS	Federal	07/01/2020	06/30/2024	1,620,370	129,630	1,750,000
Asif, Irfan M	UAB Family and Community Medicine Faculty Development Fellowship	UNIVERSITY OF ALABAMA HEALTH SERVICES FOUNDATION	Foundations Philanthropy	11/01/2019	10/31/2021	45,430	-	45,430
Austad, Steven N	A Sex Difference Approach to Evaluating Resilience as a Predictor of Healthspan in Mice	National Institute on Aging/NIH/DHHS	Federal	09/15/2017	05/31/2022	205,000	99,425	304,425
Austad, Steven N	A Four Core Genotype (FCG) Approach to Investigating Sex Differences in Health and Longevity	National Institute on Aging/NIH/DHHS	Federal	09/15/2018	05/31/2021	-	-	-
Austad, Steven N	Comparative Bioenergetics of Aging - Core A - Administrative Program Enrichment Core	National Institute on Aging/NIH/DHHS	Federal	09/15/2020	05/31/2025	162,683	78,901	241,584
Austad, Steven N	Comparative Bioenergetics of Aging - Core E - Comparative Data Analytics Core	National Institute on Aging/NIH/DHHS	Federal	09/15/2020	05/31/2025	119,233	12,125	131,358
Ball, Karlene K	Center for Translational Research on Aging and Mobility - Older Veterans EmpowerRed to use Regular Exercise	National Institute on Aging/NIH/DHHS	Federal	09/30/2014	05/31/2021	-	-	-
Ball, Karlene K	Center for Translational Research on Aging and Mobility - Core A: Management and Administration Core	National Institute on Aging/NIH/DHHS	Federal	09/30/2014	05/31/2021	-	-	-
Ball, Karlene K	Center for Translational Research on Aging and Mobility - Core B: Pilot Core	National Institute on Aging/NIH/DHHS	Federal	09/30/2014	05/31/2021	-	-	-
Ball, Karlene K	Deep South Resource Center for Minority Aging Research (RCMAR) - Research Education Core (REC)	National Institute on Aging/NIH/DHHS	Federal	08/01/2019	06/30/2023	170,320	13,626	183,946
Benveniste, Etty	HSF-GEF Research Acceleration Award - Benveniste	UNIVERSITY OF ALABAMA HEALTH SERVICES FOUNDATION	Foundations Philanthropy	09/01/2014	08/31/2022	-	-	-
Benveniste, Etty	The Role of CK2 in Glioblastoma Development	National Cancer Institute/NIH/DHHS	Federal	12/01/2015	11/30/2021	-	-	-

PI Name	Project Title	Sponsor Name	Sponsor Type	Project Start Date	Project End Date	Direct Awarded for Currently Active Increments	Indirect Awarded for Currently Active Increments	Total Awarded for Currently Active Increments
Benveniste, Etty	Innate and Adaptive Immunity in Parkinson Disease - Project 2: Validating the JAK/STAT Pathway as a Novel	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	09/30/2018	07/31/2023	242,552	117,638	360,190
Benveniste, Etty	Cytokine Production by Adaptive Immune Cells from Patients with Parkinson's Disease: Response to Diverse Biological	Fox (Michael J.) Foundation for Parkinson's Research	Foundations Philanthropy	08/01/2020	07/31/2023	139,498	20,925	160,423
Bolding, Mark S	Pulse Sequence and Image Reconstruction Software Exchange Agreement for Sequences from The	Siemens	Industry	03/09/2018	03/08/2023	-	-	-
Bolding, Mark S	RF Coil Development for Technical Innovation in Neuroscience	GE HEALTHCARE	Industry	05/07/2019	05/06/2021	4,377	2,122	6,499
Brown, Cynthia J	VA-IPA - Brown-IPA- Connor Donahue	VETERANS ADMINISTRATION	Federal	11/07/2017	11/06/2021	41,050	-	41,050
Brown, Cynthia J	IPA - Tatiana Brecht	VETERANS ADMINISTRATION	Federal	04/01/2020	03/31/2022	92,251	-	92,251
Brown, Cynthia J	VA IPA - Yue Zhang	VETERANS ADMINISTRATION	Federal	10/01/2020	09/30/2022	39,023	-	39,023
Buford, Thomas	ACE2 as a Novel Therapeutic to Preserve Physical Function in Late Life	National Institute on Aging/NIH/DHHS	Federal	08/01/2017	05/31/2022	205,000	99,425	304,425
Buford, Thomas	ACES - ACE Inhibitors Combined with Exercise for Hypertensive Seniors	National Institute on Aging/NIH/DHHS	Federal	09/15/2017	05/31/2022	427,044	146,028	573,072
Buford, Thomas	Interconnections Among Cognition, Pain, and Physical Function in Aging	National Institute on Aging/NIH/DHHS	Federal	08/01/2020	05/31/2025	97,092	7,767	104,859
Buford, Thomas	Age-Related Dysbiosis and Physical Resilience	National Institute on Aging/NIH/DHHS	Federal	09/30/2020	08/31/2021	413,976	45,024	459,000
Buford, Thomas	Interdisciplinary Training in Pathobiology and Rehabilitation Medicine	National Institute of Child Health and Human Development/NIH/DHHS	Federal	05/01/2020	04/30/2022	309,574	24,766	334,340
Carter, Christy	Comparative Bioenergetics of Aging - Core B - Research Development Core	National Institute on Aging/NIH/DHHS	Federal	09/15/2020	05/31/2025	125,000	60,625	185,625
Crowe, Michael	Aging in Puerto Rico: Longitudinal Follow-Up of the PREHCO Study	National Institute on Aging/NIH/DHHS	Federal	09/01/2019	04/30/2024	604,434	49,428	653,862

PI Name	Project Title	Sponsor Name	Sponsor Type	Project Start Date	Project End Date	Direct Awarded for Currently Active Increments	Indirect Awarded for Currently Active Increments	Total Awarded for Currently Active Increments
Day, Jeremy J.	Epigenetic Control of Brain Reward Systems	National Institute on Drug Abuse/NIH/DHHS	Federal	07/01/2015	06/30/2021	-	-	-
Day, Jeremy J.	Enhancer RNA Regulation of Experience-dependent Neuroepigenetic Processes	National Institute of Mental Health/NIH/DHHS	Federal	07/01/2018	03/31/2023	298,074	139,083	437,157
Day, Jeremy J.	Molecular Genetics of Associative Reward Learning	National Institute on Drug Abuse/NIH/DHHS	Federal	07/01/2019	06/30/2021	125,000	60,625	185,625
Day, Jeremy J.	Amphetamine in Adolescence Disrupts Frontal Cortex Development	McGill University	Misc Non-Federal	09/30/2020	07/31/2025	13,293	6,447	19,740
De Miranda, Briana	Environmental Mitochondrial Toxicants Cause LRRK2 Activation in Parkinson's Disease	National Institute of Environmental Health Sciences/NIH/DHHS	Federal	09/01/2020	07/31/2023	167,677	81,323	249,000
Dobrunz, Lynn	Effects of NPY on Hippocampal Circuit Function	National Institute of Mental Health/NIH/DHHS	Federal	07/15/2020	04/30/2025	476,431	217,489	693,920
Gamble, Karen Lynnette	Circadian Dysfunction and Neurodegenerative Disease	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	04/01/2018	03/31/2023	407,292	182,997	590,289
Gamble, Karen Lynnette	The Nigral Molecular Clock and Vulnerability to Neurodegeneration	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	07/15/2018	04/30/2023	385,488	65,395	450,883
Gamble, Karen Lynnette	Cell-Type Specific Role of the Circadian Molecular Clock in Regulating Hippocampal Physiology and Cognition	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	09/06/2019	09/05/2021	67,284	-	67,284
Gamble, Karen Lynnette	Day-Night Differences in Hippocampal Neurophysiology in Alzheimer's Disease	National Institute on Aging/NIH/DHHS	Federal	09/01/2020	08/31/2021	37,340	-	37,340
Gamlin, Paul D	Intrinsically Photosensitive Retinal Ganglion Cells and their Central Projections	National Eye Institute/NIH/DHHS	Federal	12/01/2015	11/30/2021	-	-	-
Gamlin, Paul D	Optimizing AAV Vectors for Central Nervous System Transduction	University of Florida	Institutions	08/01/2017	05/31/2022	93,552	45,373	138,925
Gamlin, Paul D	Shared Instrumentation for Pre-, Post-, and Intra-Operative Ocular Imaging	NIH - OFFICE OF THE DIRECTOR	Federal	08/21/2019	08/20/2021	-	-	-
Gamlin, Paul D	Development of AAV-CRISPR/CAS9-Based Therapies for Cone Rod Dystrophy	University of Florida	Institutions	06/01/2019	05/31/2023	176,891	85,792	262,683

PI Name	Project Title	Sponsor Name	Sponsor Type	Project Start Date	Project End Date	Direct Awarded for Currently Active Increments	Indirect Awarded for Currently Active Increments	Total Awarded for Currently Active Increments
Gamlin, Paul D	Engineering AAV For Safe and Efficient Gene Delivery To The Human Retina	University of Florida	Institutions	09/01/2019	05/31/2024	142,753	69,235	211,988
Gamlin, Paul D	UAB Vision Science Research Center - Instrument Core	National Eye Institute/NIH/DHHS	Federal	08/01/2018	07/31/2021	98,383	46,727	145,110
Gamlin, Paul D	Preclinical Toxicology and Biodistribution study of Adeno-Associated Virus Mediated Gene Therapy for Friedreich's	AAVANTIBIO	Industry	01/21/2020	12/31/2021	193,000	93,605	286,605
Geldmacher, David	A Placebo-controlled, Double-blind, Parallel-Group, Bayesian Adaptive Randomization Design and Dose	EISAI, INC.	Industry	06/18/2013	06/17/2021	-	-	-
Geldmacher, David	Improving Family Quality of Life Through Training to Reduce Care-Resistant Behaviors by People with Alzheimer	DOD - ARMY MEDICAL RESEARCH ACQUISITION ACTIVITY	Federal	09/01/2016	05/31/2021	-	-	-
Geldmacher, David	Alzheimer's Disease Neuroimaging Initiative 3 (ADNI3)	University of Southern California	Institutions	09/15/2016	07/31/2021	-	-	-
Geldmacher, David	Innate and Adaptive Immunity in Parkinson Disease - Project 5: Innate and Adaptive Immunity in Lewy Body	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	09/30/2018	07/31/2023	250,000	121,250	371,250
Geldmacher, David	Examining the Clinical Workflow and Outcomes of Integrating Health Information Technology to Educate and	UNIVERSITY OF ALABAMA (TUSCALOOSA)	Institutions	09/30/2018	09/29/2021	-	-	-
Geldmacher, David	Randomized, Double-Blind, Placebo-Controlled, Parallel-Group Study to Assess the Safety, Tolerability, and	BIOGEN MA INC	Industry	08/01/2018	07/31/2022	249,261	74,777	324,038
Geldmacher, David	A Phase II, Multicenter, Randomized, Double-Blind, Placebo-Controlled, Parallel Group, Efficacy, and Safety Study Of	Genentech	Industry	08/17/2018	08/16/2022	200,700	60,210	260,910
Geldmacher, David	Global Alzheimer's Platform Trial-Ready Cohort for Preclinical/Prodromal Alzheimer's Disease	University of Southern California	Institutions	05/15/2019	04/30/2021	-	-	-
Geldmacher, David	Global Alzheimer's Platform Trial-Ready Cohort for Preclinical/Prodromal Alzheimer's Disease	University of Southern California	Institutions	05/15/2019	04/30/2023	13,468	6,532	20,000
Gerstenecker, Adam	Investigating the Impact of Cognition on Capacity in Multiple Sclerosis	National Institute of Child Health and Human Development/NIH/DHHS	Federal	09/12/2018	08/31/2023	116,829	9,346	126,175
Goldberg, Matthew S	Immune Cell Dysfunction in PINK1 PD Animal Models	Fox (Michael J.) Foundation for Parkinson's Research	Foundations Philanthropy	10/02/2019	10/01/2021	126,584	31,646	158,230

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Goldberg, Matthew S	VA IPA - Matthew Goldberg	VETERANS ADMINISTRATION	Federal	01/01/2020	12/31/2021	3,866	-	3,866
Gray, Michelle	Exploring the Contribution of Astrocytes to Huntington Disease	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	08/15/2020	06/30/2025	369,108	143,394	512,502
Gross Gutierrez, Alecia K.	Photoreceptor Disk Formation and Retinal Degenerations	National Eye Institute/NIH/DHHS	Federal	02/25/2020	02/24/2025	-	-	-
Gross Gutierrez, Alecia K.	Photoreceptor Disk Formation and Retinal Degenerations	National Eye Institute/NIH/DHHS	Federal	09/01/2020	05/31/2024	302,843	130,389	433,232
Herskowitz, Jeremy H	Targeting Rho Kinases for Alzheimer's Disease Therapeutics	National Institute on Aging/NIH/DHHS	Federal	07/15/2017	05/31/2022	253,919	117,331	371,250
Herskowitz, Jeremy H	Identifying Therapeutic Targets That Confer Synaptic Resilience to Alzheimer's Disease	National Institute on Aging/NIH/DHHS	Federal	09/30/2018	04/30/2023	909,592	110,262	1,019,854
Herskowitz, Jeremy H	Systems Genetic Analysis of Cognitive Resilience Using Multi-Parent Crosses	Jackson Laboratory	Industry	09/01/2019	03/31/2024	97,112	47,099	144,211
Herskowitz, Jeremy H	Pathologic tau and Dendritic Spine Loss in Alzheimer's Disease	National Institute on Aging/NIH/DHHS	Federal	09/01/2020	08/31/2022	36,890	-	36,890
Howard, George	CREST-2 Statistical and Data Coordinating Center - (SDCC)	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	03/15/2014	02/28/2021	1,420,701	667,729	2,088,430
Howard, George	Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial - Hemodynamics (CREST-	Columbia University	Institutions	05/15/2017	04/30/2022	65,222	30,654	95,876
Howard, George	Monitoring and Reporting of Alirocumab use in CREST-2	MAYO CLINIC	Institutions	08/28/2018	08/27/2023	14,686	7,122	21,808
Howard, George	Comparative Effectiveness Randomized Trial to Improve Stroke Care Delivery: C3FIT: Coordinated, Collaborative,	VANDERBILT UNIVERSITY	Institutions	02/01/2019	01/31/2021	576,358	230,543	806,901
Howard, Virginia J	Transitions to Family Caregiving and Its Impact on Health Indicators	Johns Hopkins University	Institutions	06/01/2016	05/31/2021	67,823	31,877	99,700
Howard, Virginia J	Educational Trajectories & Health: When People Finish School and How It Matters	UNIVERSITY OF CALIFORNIA (MERCED)	Institutions	07/01/2018	05/31/2021	81,912	39,728	121,640

PI Name	Project Title	Sponsor Name	Sponsor Type	Project Start Date	Project End Date	Direct Awarded for Currently Active Increments	Indirect Awarded for Currently Active Increments	Total Awarded for Currently Active Increments
Howard, Virginia J	Evaluating the Turning Point of Cardiovascular Health in Sickle Cell Anemia	American HeartAssociation	NP Agency/Assoc	01/01/2020	12/31/2021	31,016	-	31,016
Kennedy, Richard E.	In Silico Screening of Medications for Slowing Alzheimer's Disease Progression	National Institute on Aging/NIH/DHHS	Federal	09/15/2017	03/31/2022	484,704	161,274	645,978
Knight, David C	Investigating the Effects of Alcohol and Substance Use During Adolescence Using Multimodal Neuroimaging	National Institute on Alcohol Abuse and Alcoholism/NIH/DHHS	Federal	09/12/2018	09/11/2021	38,156	-	38,156
Lahti, Adrienne C.	Glutamate, Brain Connectivity and Duration of Untreated Psychosis	National Institute of Mental Health/NIH/DHHS	Federal	04/01/2014	01/31/2020	-	-	-
Lahti, Adrienne C.	Trajectories of Treatment Response as Window into the Heterogeneity of Psychosis: a Longitudinal Multimodal	National Institute of Mental Health/NIH/DHHS	Federal	04/10/2018	12/31/2022	494,752	239,954	734,706
Lazar, Ronald M	Carotid Revascularization And Medical Management For Asymptomatic Carotid Stenosis Trial (CREST-2) Trial ("Study")	MAYO CLINIC JACKSONVILLE	Industry	06/01/2017	02/28/2021	63,466	30,781	94,247
Lazar, Ronald M	Carotid Revascularization And Medical Management For Asymptomatic Carotid Stenosis Trial-Hemodynamics (CREST-	Columbia University	Institutions	05/15/2017	04/30/2022	29,055	14,092	43,147
Lazar, Ronald M	Genetic Contribution to Brain Arterial Dilatation and its Role in Cognition and Dementia	Columbia University	Institutions	08/15/2018	04/30/2023	7,304	3,542	10,846
Lazar, Ronald M	Arcadia CSI (Cognition and Silent Infarcts)	Stanford University	Institutions	07/01/2019	06/30/2024	141,512	68,633	210,145
Lazar, Ronald M	Family Study of Atherosclerosis and Vascular Cognitive Dysfunction	University of Miami	Institutions	08/01/2019	03/31/2021	-	-	-
Lazar, Ronald M	The Effect of Vascular Risk Factors on Risk of Alzheimer's Disease and Related Dementias after Stroke (STROKE COG)	University of Michigan	Institutions	07/01/2020	06/30/2025	89,286	43,304	132,590
Lazar, Ronald M (Co-Investigator)	StrokeBelt StrokeNet	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	08/15/2018	07/31/2023	214,850	83,650	298,500
Lubin, Farah D	UAB Neuroscience Roadmap Scholars Program	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	08/01/2020	07/31/2025	250,000	20,000	270,000
Lubin, Farah D	Epigenetic Effects of Exercise on Epilepsy	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	09/30/2020	08/31/2022	275,000	133,375	408,375

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McMahon Wakefield, Lori L	RII Track-2 FEC: The Creation of Next Generation Tools for Neuroscience - Noninvasive Radioluminescence	Clemson University	Institutions	09/01/2016	08/31/2021	-	-	-
McMahon Wakefield, Lori L	Rapid modulation of hippocampal GABAergic Inhibition by O-GlcNAcylation	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	04/01/2019	03/31/2021	125,000	60,625	185,625
McMahon Wakefield, Lori L	NSF Graduate Research Fellowship Program (GRFP)	NSF - National Science Foundation	Federal	09/01/2019	08/31/2024	64,400	-	64,400
McMahon Wakefield, Lori L	Consequences of Noradrenergic Degeneration in the Novel TgF344-AD Rat Model	National Institute on Aging/NIH/DHHS	Federal	08/15/2020	05/31/2025	476,969	153,996	630,965
McMahon Wakefield, Lori L	Digital Caging System for Home Cage Behavioral Analysis	UNIVERSITY OF ALABAMA HEALTH SERVICES FOUNDATION	Foundations Philanthropy	11/01/2019	10/31/2021	-	-	-
Parpura, Vladimir	Connexin 43 Modulates Regulated Exocytosis	National Institute of General Medical Sciences/NIH/DHHS	Federal	09/01/2019	05/31/2023	225,000	109,125	334,125
Powell, Craig M.	Novel Genetic Models of Autism	National Institute of Child Health and Human Development/NIH/DHHS	Federal	09/01/2018	05/31/2021	386,388	187,398	573,786
Powell, Craig M.	Molecular and Cellular Basis of Neurodevelopmental Disorders	National Institute of Mental Health/NIH/DHHS	Federal	03/10/2020	01/31/2025	467,339	219,142	686,481
Pozzo-Miller, Lucas D	REU Site: Summer Program in Neuroscience	NSF - National Science Foundation	Federal	03/01/2017	02/28/2021	-	-	-
Pozzo-Miller, Lucas D	Exploring Nonsense Suppression as a Treatment for Rett Syndrome	RETTSYNDROME.ORG	Foundations Philanthropy	06/01/2018	05/31/2021	-	-	-
Pozzo-Miller, Lucas D	Role of The Hippocampal-mPFC Pathway in Social Memory Deficits in Autism	National Institute of Mental Health/NIH/DHHS	Federal	04/01/2019	01/31/2023	268,106	125,497	393,603
Roberson, Erik	Validation of Online Methods to Predict and Monitor Cognitive Decline	University of California, San Francisco	Institutions	09/01/2018	08/31/2021	-	-	-
Roberson, Erik	BIN1, Interneuron Activity, and Network Dysfunction in Alzheimer Disease	National Institute on Aging/NIH/DHHS	Federal	06/15/2018	03/31/2023	282,098	136,818	418,916
Roberson, Erik	Circadian Changes in Network Excitability and Alzheimer Disease Pathogenesis	National Institute on Aging/NIH/DHHS	Federal	09/01/2019	08/31/2021	-	-	-

PI Name	Project Title	Sponsor Name	Sponsor Type	Project Start Date	Project End Date	Direct Awarded for Currently Active Increments	Indirect Awarded for Currently Active Increments	Total Awarded for Currently Active Increments
Roberson, Erik	A Phase II/III Randomized, Double-Blind, Placebo-Controlled, Cognitive Endpoint, Multicenter Study of Potential Disease	Washington University	Institutions	07/01/2018	05/31/2022	-	-	-
Roberson, Erik	Tau-Fyn Interaction and Alzheimer's Disease	National Institute on Aging/NIH/DHHS	Federal	08/01/2020	07/31/2022	36,890	-	36,890
Roberson, Erik	A Phase II/III Randomized, Double-Blind, Placebo-Controlled, Cognitive Endpoint, Multicenter Study of Potential Disease	THE WASHINGTON UNIVERSITY	Institutions	09/15/2018	05/31/2021	-	-	-
Roberson, Erik	Optimizing Progranulin Gene Therapy for Frontotemporal Dementia	THE BLUEFIELD PROJECT TO CURE FRONTOTEMPORAL	NP Agency/Assoc	01/01/2020	12/31/2021	164,918	15,082	180,000
Roberson, Erik	The Progranulin C-Terminal Domain and AAV-Progranulin Gene Therapy for Frontotemporal Dementia	National Institute on Aging/NIH/DHHS	Federal	09/01/2020	08/31/2024	38,786	-	38,786
Saag, Michael S	Unsolicited R24 CFAR Network of Clinical Systems (CNICS)	National Institute of Allergy and Infectious Diseases/NIH/DHHS	Federal	09/30/2016	08/31/2021	3,057,342	1,399,366	4,456,708
Saag, Michael S	UAB Center for AIDS Research - Administrative Core	National Institute of Allergy and Infectious Diseases/NIH/DHHS	Federal	06/01/2019	05/31/2024	171,817	83,332	255,149
Saag, Michael S	Determinants and Outcomes of Nicotine Metabolism Ratoin in HIV + Smokers	University of Pennsylvania	Institutions	02/10/2020	01/31/2021	19,937	9,669	29,606
Saag, Michael S	Genes, Substance use, and HIV Outcomes in People Living with HIV Across the US	UNIVERSITY OF WASHINGTON	Institutions	06/01/2019	05/31/2023	-	-	-
Standaert, David George	APDA Advanced Center for Parkinson Disease Research at UAB	American Parkinson Disease Association	NP Agency/Assoc	09/01/2008	08/31/2021	134,650	-	134,650
Standaert, David George	The Parkinson's Progression Marker's Initiative (PPMI)	Fox (Michael J.) Foundation for Parkinson's Research	Foundations Philanthropy	07/27/2010	12/31/2023	40,174	10,044	50,218
Standaert, David George	UAB Cannabidiol Program	ALABAMA DEPARTMENT OF COMMERCE	State	04/01/2014	06/30/2022	-	-	-
Standaert, David George	UAB Neuroscience Core Center - Core B: Molecular Detection and Stereology Core	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	08/01/2016	05/31/2021	-	-	-
Standaert, David George	DUOdopa/Duopa in Patients with Advanced Parkinson's Disease (PD) – A Global Observational Study Evaluating	ABBVIE INC	Industry	02/08/2016	02/07/2021	-	-	-

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Standaert, David George	UAB Research and Education Program in Neuroscience	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	08/01/2017	06/30/2022	123,061	8,882	131,943
Standaert, David George	UAB Training Program in Neuroscience	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	07/01/2017	06/30/2022	146,720	9,606	156,326
Standaert, David George	Interactions of Gut Microbiome, Genetic Susceptibility and Environmental Factors in Parkinson's Disease	DOD - Department of Defense	Federal	09/01/2018	08/31/2022	107,615	52,193	159,808
Standaert, David George	Contribution of the Interaction Between Synuclein and Tau in the Pathophysiology of Dementia with Lewy Bodies	National Institute on Aging/NIH/DHHS	Federal	09/01/2018	08/31/2023	46,069	-	46,069
Standaert, David George	Innate and Adaptive Immunity in Parkinson Disease - Core A: Administrative Core	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	09/30/2018	07/31/2023	79,598	38,605	118,203
Standaert, David George	Innate and Adaptive Immunity in Parkinson Disease - Project 1: Role of Innate Immune Cells in Human Parkinson	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	09/30/2018	07/31/2023	221,165	107,265	328,430
Standaert, David George	Innate and Adaptive Immunity in Parkinson Disease - Project 3: LRRK2 Mediated Macrophage Responses in PD	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	09/30/2018	07/31/2023	294,281	-	294,281
Standaert, David George	Border-Associated Macrophages in an Alpha-Synuclein Overabundance Model of Parkinson Disease	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	09/30/2018	09/29/2021	36,451	-	36,451
Standaert, David George	Role of T cells in an Alpha-Synuclein Mediated Mouse Model of Parkinson Disease	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	09/30/2018	09/29/2021	36,955	-	36,955
Standaert, David George	A 52-Week, Open-Label, Single-Arm Study to Evaluate The Safety and Tolerability of 24-hour	ABBVIE INC	Industry	08/27/2019	08/26/2024	90,668	27,200	117,868
Standaert, David George	Identification and Rescue of Striatal Circuit Abnormalities in Models of GNAL Dystonia	Fox (Michael J.) Foundation for Parkinson's Research	Foundations Philanthropy	12/01/2019	11/30/2022	13,333	-	13,333
Standaert, David George	Advanced Parkinson's Disease: Double-Blind, Double-Dummy, Active-Controlled, Efficacy and Safety Study of ABBV-951	ABBVIE INC	Industry	09/21/2020	09/20/2024	124,598	37,382	161,980
Standaert, David George	Alabama Project on Alzheimer Disease and Related Disorders	ALABAMA INNOVATION FUND	State	10/01/2020	09/30/2021	1,000,000	-	1,000,000
Thannickal, Victor John	Myofibroblast Senescence in Pulmonary Fibrosis	National Institute on Aging/NIH/DHHS	Federal	09/01/2014	05/31/2021	-	-	-

PI Name	Project Title	Sponsor Name	Sponsor Type	Project Start Date	Project End Date	Direct Awarded for Currently Active Increments	Indirect Awarded for Currently Active Increments	Total Awarded for Currently Active Increments
Thannickal, Victor John	Training Program in Lung Biology and Translational Medicine	National Heart, Lung, and Blood Institute/NIH/DHHS	Federal	09/01/2015	08/31/2021	-	-	-
Thannickal, Victor John	Protein o,o'-Dityrosine Cross-linking in Lung Injury and Wound Healing	National Heart, Lung, and Blood Institute/NIH/DHHS	Federal	02/01/2017	01/31/2021	45,349	-	45,349
Thannickal, Victor John	Therapeutic Targeting of the Myofibroblast in Fibrotic Lung Disease - Core A: Administrative and Biostatistical	National Heart, Lung, and Blood Institute/NIH/DHHS	Federal	08/01/2018	07/31/2023	70,573	34,228	104,801
Thannickal, Victor John	Therapeutic Targeting of the Myofibroblast in Fibrotic Lung Disease - Project Two: Redox Regulation of	National Heart, Lung, and Blood Institute/NIH/DHHS	Federal	08/01/2018	07/31/2023	275,000	133,375	408,375
Thannickal, Victor John	VA IPA for Carmen Nail	VETERANS ADMINISTRATION	Federal	02/01/2017	01/31/2021	6,864	-	6,864
Thannickal, Victor John	Impact of Airborne Heavy Metals on Lung Diseases & the Environment - Research Experience and Training Coordination -	National Institute of Environmental Health Sciences/NIH/DHHS	Federal	03/15/2020	01/31/2025	51,000	24,735	75,735
Thannickal, Victor John	Impact of Airborne Heavy Metals on Lung Diseases & the Environment - Predisposition to Asthma in Children	National Institute of Environmental Health Sciences/NIH/DHHS	Federal	03/15/2020	01/31/2025	169,356	82,138	251,494
Thyme, Summer B.	Functional Analysis of Schizophrenia-Associated Genes	National Institute of Mental Health/NIH/DHHS	Federal	07/01/2019	06/30/2022	167,677	81,323	249,000
Thyme, Summer B.	Targeting Rare Genetic Disorders to Treat Common Neuropsychiatric Conditions	Klingenstein (Esther A. & Joseph) Fund	NP Agency/Assoc	07/01/2020	06/30/2023	75,000	-	75,000
Thyme, Summer B.	Large-Scale Functional Assessment of Developmentally Regulated Neuronal Microexons	Mallinckrodt (Edward Jr.) Foundation	Foundations Philanthropy	10/01/2020	09/30/2021	60,000	-	60,000
Ubogu, Eroboghene E.	A Phase ll of Rituximab in Myasthenia Gravis (NN 103)	MASSACHUSETTS GENERAL HOSPITAL	Institutions	04/21/2015	06/30/2023	-	-	-
Ubogu, Eroboghene E.	Topiramate as a Disease Altering Therapy for Cryptogenic Sensory Peripheral Neuropalhy (CSPN)	MASSACHUSETTS GENERAL HOSPITAL	Institutions	09/01/2017	06/30/2023	-	-	-
Ubogu, Eroboghene E.	CD11d Antagonism For Chronic Inflammatory Neuropathies	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	07/15/2019	07/14/2021	125,000	60,625	185,625
Ubogu, Eroboghene E.	Alpha-1 Catenin Regulation of the Mammalian Blood-Nerve Barrier	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	09/30/2020	08/31/2022	150,000	72,750	222,750

PI Name	Project Title	Sponsor Name	Sponsor Type	Project Start Date	Project End Date	Direct Awarded for Currently Active Increments	Indirect Awarded for Currently Active Increments	Total Awarded for Currently Active Increments
Visscher, Kristina M	Adaptive Neuroplasticity Following Central Visual Field Loss in Macular Degeneration	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	07/31/2019	07/30/2021	39,520	-	39,520
Visscher, Kristina M	Identifying Cortical Laminar Architecture Changes Associated With Compensation for Central Vision Loss Due to Macular	Fight for Sight, Inc.	NP Agency/Assoc	09/01/2020	08/31/2021	22,500	-	22,500
Wadiche, Jacques I.	Subcellular Localization of Glutamate Spillover on to Inhibitory Interneurons in the Cerebellar Cortex	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	12/01/2018	05/31/2021	33,723	-	33,723
Wadiche, Jacques I.	AMPAR Function in Synaptic and Extrasynaptic Membranes	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	09/15/2019	06/30/2024	288,388	134,667	423,055
Wadiche, Jacques I.	Cocaine Modulation of Synapses Onto Dopamine Neurons	National Institute on Drug Abuse/NIH/DHHS	Federal	07/01/2020	06/30/2022	187,436	48,500	235,936
Wadiche, Linda S.	Inhibitory Neural Circuits in Dentate Function	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	06/15/2018	04/30/2023	279,707	131,257	410,964
Wadiche, Linda S.	Newborn Neurons In The Adult Hippocampal Network	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	03/01/2019	02/29/2024	391,842	111,017	502,859
Wilson, Scott M	The Role of ESCRTs in Regulating Nervous System Function	National Institute of Neurological Disorders and Stroke/NIH/DHHS	Federal	12/01/2019	11/30/2024	213,622	82,428	296,050
					TOTAL	**27,606,987**	**8,696,074**	**36,303,061**

MCKNIGHT BRAIN INSTITUTE AT UAB

Cumulative Endowment Total

Book Value at 9/30/2020: $14,189,072

Market Value at 9/30/2020: $14,536,159

Projected Spendable Earnings for FY 2020/21: $699,583

Evelyn F. McKnight Brain Institute Endowed Support Fund

Date Approved: 2/4/2011

Book Value at 9/30/202.: $5,000,000

Market Value at 9/30/2020: $5,007,425

Projected Spendable Earnings for FY 2020/21: $240,796

Evelyn F. McKnight Endowed Chair for Learning and Memory in Aging

Date Approved: 10/1/2004

Current Occupant: Ronald M. Lazar, Ph.D.

Occupant Date: 9/15/2017

Book Value at 9/30/2020: $1,500,000

Market Value at 9/30/2020: $1,430,024*

Projected Spendable Earnings for FY 2020/21: $68,767

Geropsychiatry Research Chair

Date Approved: 6/28/1993

Designated Occupant: Junghee Lee, Ph.D.
Occupant Date: 3/1/2020

Book Value at 9/30/2020: $1,222,896
Market Value at 9/30/2020: $1,817,111
Projected Spendable Earnings for FY 2020/21: $87,831

F. Cleveland Kinney Endowed Chair in Geriatric Psychiatry

Date Approved: 6/15/2007

Current Occupant: Adrienne C. Lahti, M.D.
Occupant Date: 4/6/2018

Book Value at 9/30/2020: $1,503,940
Market Value at 9/30/2020: $1,417,325*
Projected Spendable Earnings for FY 2020/21: $68,156

Warren Family Endowed Chair in Neurology

Date Approved: 6/15/2012

Current Occupant: David S. Gelmacher, M.D., FACP
Occupant Date: 11/4/2016

Book Value at 9/30/2020: 1,506,618
Market Value at 9/30/2020: $1,509,173
Projected Spendable Earnings for FY 2020/21: $72,572

Patsy W. and Charles A. Collat Endowed Professorship in Neuroscience

Date Approved: 4/4/2014

Current Occupant: Jeremy H. Herskowitz, Ph.D.
Occupant Date: 11/8/2019

Book Value at 9/30/200.: $500,000
Market Value at 9/30/2020: $482,169*
Projected Spendable Earnings for FY 2020/21: $523,186

Jarman F. Lowder Endowed Professorship in Neuroscience

Date Approved: 6/15/2012

Current Occupant: Lori L. McMahon, Ph.D.
Occupant Date: 6/15/2012

Book Value at 9/30/2020: $505,619
Market Value at 9/30/2020: $527,662*
Projected Spendable Earnings for FY 2020/21: $25,374

Virginia B. Spencer Endowed Professorship in Neuroscience

Date Approved: 9/14/2012

Current Occupant: Craig Matlow Powell, M.D., Ph.D.
Occupant Date: 6/8/2018

Book Value at 9/30/2020: $1,500,000
Market Value at 9/30/2020: $1,431,726*
Projected Spendable Earnings for FY 2020/21: $68,848

.

Rebecca Gale Endowed Professorship

Date Approved: 6/7/2049

Current Occupant: Erik D. Roberson, Ph.D.

Occupant Date: 9/6/2019

Book Value at 9/30/2020: $750,000

Market Value at 9/30/2020: $726,918*

Projected Spendable Earnings for FY 2020/21: $34,956

Patsy W. and Charles Collat Scholar in Neuroscience Endowed Support Fund

Date Approved: 4/10/2015

Book Value at 9/30/2020: $200,000

Market Value at 9/30/2020: $189,181*

Projected Spendable Earnings for FY 2020/21: $9,097

*Due to uncontrollable market fluctuations, this fund's market value is less than its book value (corpus/principle). The UA System's strategy to assist underwater funds is to require quarterly gains to be reinvested and by doing so purchase more units in the System's investment pool at lower cost. Purchasing units at lower cost aids in the fund's recovery and increases potential future gains. The projected spendable earnings above are merely an estimate for annual budget purposes assuming endowment market value remains above corpus.

McKnight Brain Research Foundation

Financial Summary Format:

(Institute) and/or (Endowed Chair)

All Endowments benefitting the Evelyn F. McKnight Brain Institute

Summary for 12 months ended 09/30/2020

A.	Beginning Balance on	10/1/2019	$	15,344,039
B.	Investment Growth		$	(105,297)
C.	Projected Distributions		$	(699,583)
D.	Additional Contribution		$	0
E.	Ending Balance on	09/30/2020	$	14,536,159

DEFINITIONS

DISTRIBUTION is the money transferred from the account to the spendable/operating account for the designated use.

BALANCE is the market value of the account as of the first or last day of the reporting year.

ADDITIONAL CONTRIBUTION is additional contribution by MBRF, the reporting institution, match etc.

INVESTMENT GROWTH (Loss) is the total undistributed interest, dividends, and realized and unrealized gains and losses.

BALANCE is the value of the account's corpus including all contributions, and applicable state match monies as of the date indicated.

McKnight Brain Research Foundation

Financial Summary Format:

(Institute) and/or (Endowed Chair)

Account Name: Evelyn F. McKnight Brain Institute Endowed Support Fund

Summary for 12 months ended 09/30/2020

B.	Beginning Balance on	10/1/2019	$	5,280,302
B.	Investment Growth		$	(32,081)
C.	Projected Distributions		$	(240,796)
D.	Additional Contribution		$	0
E.	Ending Balance on	09/30/2020	$	5,007,425

DEFINITIONS

DISTRIBUTION is the money transferred from the account to the spendable/operating account for the designated use.

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McKnight Brain Research Foundation

Financial Summary Format:

(Institute) and/or (Endowed Chair)

Account Name: Evelyn F. McKnight Endowed Chair for Learning and Memory in Aging

Summary for 12 months ended 09/30/2020

C.	Beginning Balance on	10/1/2019	$	1,507,952
B.	Investment Growth		$	(9,161)
C.	Projected Distributions		$	(68,767)
D.	Additional Contribution		$	0
E.	Ending Balance on	09/30/2020	$	1,430,024

DEFINITIONS

DISTRIBUTION is the money transferred from the account to the spendable/operating account for the designated use.

BALANCE is the market value of the account as of the first or last day of the reporting year.

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INVESTMENT GROWTH (Loss) is the total undistributed interest, dividends, and realized and unrealized gains and losses.

BALANCE is the value of the account's corpus including all contributions, and applicable state match monies as of the date indicated.

McKnight Brain Research Foundation

Financial Summary Format:

(Institute) and/or (Endowed Chair)

Account Name: Geropsychiatry Research Chair

Summary for 12 months ended 09/30/2020

D.	Beginning Balance on 10/1/2019	$	1,954,974
B.	Investment Growth	$	(50,032)
C.	Projected Distributions	$	(87,831)
D.	Additional Contribution	$	0
E.	Ending Balance on 09/30/2020	$	1,817,111

DEFINITIONS

DISTRIBUTION is the money transferred from the account to the spendable/operating account for the designated use.

BALANCE is the market value of the account as of the first or last day of the reporting year.

ADDITIONAL CONTRIBUTION is additional contribution by MBRF, the reporting institution, match etc.

INVESTMENT GROWTH (Loss) is the total undistributed interest, dividends, and realized and unrealized gains and losses.

BALANCE is the value of the account's corpus including all contributions, and applicable state match monies as of the date indicated.

McKnight Brain Research Foundation

Financial Summary Format:

(Institute) and/or (Endowed Chair)

Account Name: F. Cleveland Kinney Endowed Chair in Geriatric Psychiatry

Summary for 12 months ended 09/30/20

E.	Beginning Balance on	10/1/2019	$	1,479,721
B.	Investment Growth		$	5,760
C.	Projected Distributions		$	(68,156)
D.	Additional Contribution		$	0
E.	Ending Balance on	09/30/2020	$	1,417,325

DEFINITIONS

DISTRIBUTION is the money transferred from the account to the spendable/operating account for the designated use.

BALANCE is the market value of the account as of the first or last day of the reporting year.

ADDITIONAL CONTRIBUTION is additional contribution by MBRF, the reporting institution, match etc.

INVESTMENT GROWTH (Loss) is the total undistributed interest, dividends, and realized and unrealized gains and losses.

BALANCE is the value of the account's corpus including all contributions, and applicable state match monies as of the date indicated.

McKnight Brain Research Foundation

Financial Summary Format:

(Institute) and/or (Endowed Chair)

Account Name: Warren Family Endowed Chair in Neurology

Summary for 12 months ended 09/30/2020

F.	Beginning Balance on 10/01/2019	$	1,591,417
B.	Investment Growth	$	(12,227)
C.	Projected Distributions	$	(72,572)
D.	Additional Contribution	$	0
E.	Ending Balance on 09/30/2020	$	1,506,618

DEFINITIONS

DISTRIBUTION is the money transferred from the account to the spendable/operating account for the designated use.

BALANCE is the market value of the account as of the first or last day of the reporting year.

ADDITIONAL CONTRIBUTION is additional contribution by MBRF, the reporting institution, match etc.

INVESTMENT GROWTH (Loss) is the total undistributed interest, dividends, and realized and unrealized gains and losses.

BALANCE is the value of the account's corpus including all contributions, and applicable state match monies as of the date indicated.

McKnight Brain Research Foundation

Financial Summary Format:

(Institute) and/or (Endowed Chair)

Account Name: Patsy W. and Charles A. Collat Endowed Professorship in Neuroscience

Summary for 12 months ended 09/30/2020

G.	Beginning Balance on	10/1/2019	$	508,445
B.	Investment Growth		$	(3,090)
C.	Projected Distributions		$	(23,186)
D.	Additional Contribution		$	0
E.	Ending Balance on	09/30/2020	$	482,169

DEFINITIONS

DISTRIBUTION is the money transferred from the account to the spendable/operating account for the designated use.

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INVESTMENT GROWTH (Loss) is the total undistributed interest, dividends, and realized and unrealized gains and losses.

BALANCE is the value of the account's corpus including all contributions, and applicable state match monies as of the date indicated.

McKnight Brain Research Foundation

Financial Summary Format:

(Institute) and/or (Endowed Chair)

Account Name: Jarman F. Lowder Endowed Professorship in Neuroscience

Summary for 12 months ended 09/30/2020

H.	Beginning Balance on	10/1/2019	$	556,417
B.	Investment Growth		$	(3,381)
C.	Projected Distributions		$	(25,374)
D.	Additional Contribution		$	0
E.	Ending Balance on	09/30/2020	$	527,662

DEFINITIONS

DISTRIBUTION is the money transferred from the account to the spendable/operating account for the designated use.

BALANCE is the market value of the account as of the first or last day of the reporting year.

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INVESTMENT GROWTH (Loss) is the total undistributed interest, dividends, and realized and unrealized gains and losses.

BALANCE is the value of the account's corpus including all contributions, and applicable state match monies as of the date indicated.

McKnight Brain Research Foundation

Financial Summary Format:

(Institute) and/or (Endowed Chair)

Account Name: Virginia B. Spencer Endowed Professorship in Neuroscience

Summary for 12 months ended 09/30/2020

I.	Beginning Balance on	10/1/2019	$	1,509,747
B.	Investment Growth		$	(9,173)
C.	Projected Distributions		$	(68,848)
D.	Additional Contribution		$	0
E.	Ending Balance on	09/30/2020	$	1,431,726

DEFINITIONS

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INVESTMENT GROWTH (Loss) is the total undistributed interest, dividends, and realized and unrealized gains and losses.

BALANCE is the value of the account's corpus including all contributions, and applicable state match monies as of the date indicated.

McKnight Brain Research Foundation

Financial Summary Format:

(Institute) and/or (Endowed Chair)

Account Name: Rebecca Gale Endowed Professorship

Summary for 12 months ended 09/30/2020

I.	Beginning Balance on 10/1/2019	$	757,078
B.	Investment Growth	$	4,796
C.	Projected Distributions	$	(34,956)
D.	Additional Contribution	$	0
E.	Ending Balance on 09/30/2020	$	726,918

DEFINITIONS

DISTRIBUTION is the money transferred from the account to the spendable/operating account for the designated use.

BALANCE is the market value of the account as of the first or last day of the reporting year.

ADDITIONAL CONTRIBUTION is additional contribution by MBRF, the reporting institution, match etc.

INVESTMENT GROWTH (Loss) is the total undistributed interest, dividends, and realized and unrealized gains and losses.

BALANCE is the value of the account's corpus including all contributions, and applicable state match monies as of the date indicated.

McKnight Brain Research Foundation

Financial Summary Format:

(Institute) and/or (Endowed Chair)

Account Name: Patsy W. and Charles Collat Scholar in Neuroscience Endowed Support Fund

Summary for 12 months ended 09/30/2020

I.	Beginning Balance on	10/1/2019	$	197,986
B.	Investment Growth		$	292
C.	Projected Distributions		$	(9,097)
D.	Additional Contribution		$	0
E.	Ending Balance on	09/30/2020	$	189,181

DEFINITIONS

DISTRIBUTION is the money transferred from the account to the spendable/operating account for the designated use.

BALANCE is the market value of the account as of the first or last day of the reporting year.

ADDITIONAL CONTRIBUTION is additional contribution by MBRF, the reporting institution, match etc.

INVESTMENT GROWTH (Loss) is the total undistributed interest, dividends, and realized and unrealized gains and losses.

BALANCE is the value of the account's corpus including all contributions, and applicable state match monies as of the date indicated.

UAB EMBI Matching Funds

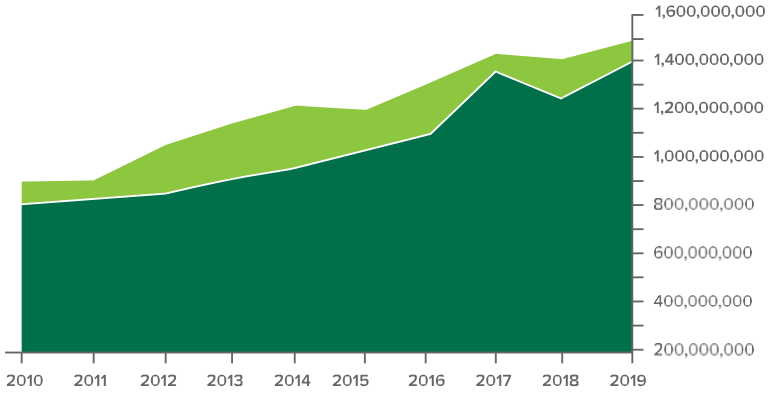
Endowment Name	Date Established	Corpus as of 9/30/2020	Projected Spendable Earnings FY 20/21
Warren Family Endowed Chair in Neurology	6/15/2012	$1,506,618	$72,047
Patsy W. and Charles A. Collat Endowed Professorship in Neuroscience	4/4/2014	$500,000	$20,449
Jarman F. Lowder Endowed Professorship in Neuroscience	6/15/2012	$505,619	$25,190
Virginia B. Spencer Endowed Professorship in Neuroscience	9/14/2012	$1,500,000	$50,824
Rebecca Gale Endowed Professorship	6/7/2019	$750,000	$34,076
Patsy W. and Charles A. Collat Scholar Endowed Support Fund	4/10/2015	$200,000	$8,911
Total Matching Funds **Remaining UAB Match**		$4,962,237 **$37,763**	$211,497

INVESTMENT REPORT

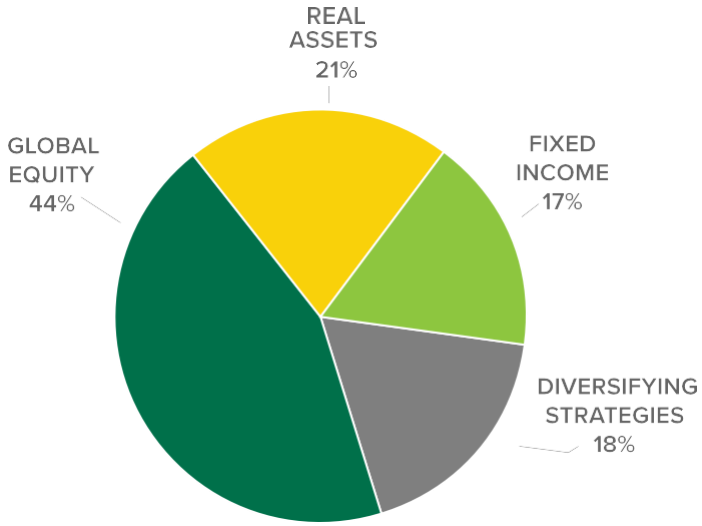
- Created in 1978, the University of Alabama Pooled Endowment Fund (UAPEF) is managed by the Chancellor's Office and is overseen by the Investment Committee of the Board of Trustees.
- As of September 30, 2019, the market value of the UAPEF was $1.49 billion. Of this amount, 36%, or $538 million, is attributable to UAB and the hospital.
- The UAPEF had a ten-year annualized investment return of 7% for the period ending September 30, 2019, compared to a return of 4.3% for the custom index.*
- The Investment Committee oversees investment activities, monitors performance of professional money managers, and ensures the prudent control of the investment of funds.
- Participants include all three campuses of the University of Alabama System along with related foundations.
- The Board seeks superior investment returns through professional money management. Assets of the UAPEF are managed by a variety of professional investment firms.
- The UAPEF also utilizes an investment consultant, Fund Evaluation Group, with expertise in investment policy development, spending policy analysis, manager evaluation and selection, and performance evaluation.

* The custom index is a blend of indices that closely represents the actual UAPEF portfolio and is used as a benchmark for comparison, both in terms of return and risk.

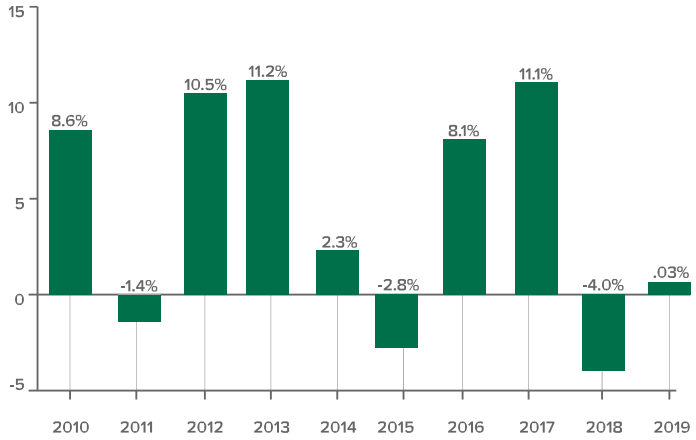
UAPEF Growth in Endowment Funds
December 31, 2010 - September 30, 2019



Asset Allocation
as of September 30, 2019



UAPEF Rates of Return
December 31, 2009 - September 30, 2019



MCKNIGHT CHAIR'S REPORT

McKnight Chair's Report

1. Summary of scientific achievements since last report

- **Norling, A.M., Gerstenecker, A.T., Buford, T.W., Khan, B., Oparil, S., Lazar, R.M. The Role of IGF-1 Deficiencies in Microvascular Rarefaction and Hypertension. GeroScience, 2020 Feb;42(1):141-158.** In the quest to pursue modifiable risk factors for age-related cognitive decline, the Lazar Lab in collaboration with the UAB Center for Exercise Medicine and the Department of Medicine described an innovative model linking hypertension with peripheral and central reductions in vascular density, and with the devastating effects on brain function. They reviewed compelling evidence from two lines of inquiry: one that links microvascular rarefaction with insulin-like growth factor 1 (IGF-1) deficiencies, and another which posits that vascular dysfunction precedes hypertension. Based on the findings from experimental and clinical studies, they proposed that these lines of evidence converge, and suggest that age-related declines in IGF-1 concentrations precede microvascular rarefaction, initiate an increase in vascular resistance, and therefore are causally linked to onset of hypertension. Physical exercise provides a relevant model for supporting our premise, given the well-established effects of exercise in attenuating vascular dysfunction, hypertension, IGF-1 deficiency, and cognitive decline. They highlighted the role of exercise-induced increases in blood flow in improving vascular integrity and enhancing angiogenesis via the actions of IGF-1, resulting in reversal of rarefaction and hypertension, and enhancement of cerebral blood flow and cognition.

- **Mutsaerts, H.J., Petr, J., Bokkers, R., Lazar, R.M., Marshall, R.S., Asllani, I.Spatial Coefficient of Variation of Arterial Spin Labeling MRI as a Marker of Vascular Sufficiency in Carotid Occlusion, PloS One, 2020 Feb 26;15(2).** Atherosclerosis is a major cause of age-related cognitive decline. Dr. Lazar and his colleagues at the Columbia University Irving Medical Center, Amsterdam University Medical Center in the Netherlands, University Medical Center Groningen (the Netherlands), and the University of Sussex (UK) sought to clarify further the clinical interpretation of arterial spin labeling (ASL) perfusion MRI in cerebrovascular disease with respect to its sensitivity to concomitant contributions from both intravascular and tissue compartments. While acquisition of multi-delay images can differentiate between the two contributions, the prolonged acquisition is prone to artifacts and not practical for clinical applications. Here, the utility of the spatial coefficient of variation (sCoV) of a single-delay ASL image as a marker of the intravascular contribution was evaluated by testing the hypothesis that sCoV can detect the effects of differences in label arrival times between ipsi- and contra-lateral hemispheres even in the absence of a hemispheric difference in CBF. Hemispheric lateralization values for sCoV and CBF were computed from ASL images acquired on 28 patients (age 73.9 ± 10.2 years, 8 women) with asymptomatic unilateral carotid occlusion. The results showed that sCoV lateralization predicted the occluded side with 96.4% sensitivity, missing only 1 patient. In contrast, the sensitivity of the CBF lateralization was 71.4%, with 8 patients showing no difference in CBF between hemispheres. The findings demonstrated the potential clinical utility of sCoV as a cerebrovascular correlate of large vessel disease. Using sCoV in tandem with CBF, vascular information can be obtained in image processing without the need for additional scan-time.

- **Marshall, R.S., Pavol, M., Cheung, Y.K., Asllani, I., Lazar, RM. Cognitive Impairment Correlates Linearly with Mean Flow Velocity by Transcranial Doppler Below a Definable Threshold, Cerebrovascular Diseases EXTRA, 2020;10(1):21-27.**
  Low cerebral blood flow can affect cognition in patients with high-grade asymptomatic internal carotid artery stenosis who are otherwise neurologically normal. Although correlations between low-flow and cognitive impairment have been reported, it is not known whether a threshold exists below which such a correlation expresses itself. Patients with ≥80% unilateral internal carotid artery stenosis with no history of stroke were recruited. They underwent bilateral insonation of middle cerebral arteries with standard 2-Hz probes over the temporal windows

with transcranial Doppler. Cognitive assessments were performed using a cognitive battery comprising 14 standardized tests with normative samples grouped by age. Z-scores were generated for each test and averaged to obtain a composite Z-score for each patient. Multivariable linear regression examined associations between mean flow velocity (MFV) and composite Z-score, adjusting for age, education, and depression. The Davies test was used to determine if there was a breakpoint for a non-zero difference in slope of a segmented relationship over the range of composite Z-score values. Forty-two patients with unilateral high-grade internal carotid artery stenosis without stroke were enrolled (26 males, age = 74 ± 9 years, education = 16 ± 3 years). In linear regression adjusted for age, education, and depression, MFV correlated with cognitive Z-score. A single breakpoint in the range of composite Z-scores was identified at 45 cm/s. For MFV <45 cm/s, Z-score decreased 0.05 SD per cm/s MFV (95% CI: 0.01-0.10). For MFV >45 cm/s, Z-score change was nonsignificant (95% CI: -0.07 to 0.05). They concluded that in high-grade, asymptomatic carotid artery stenosis, cognitive impairment correlated linearly with lower flow in the hemisphere fed by the occluded internal carotid artery, but only below a threshold of MFV = 45 cm/s. Identifying a hemodynamic threshold for cognitive decline using a simple, noninvasive method may influence revascularization decision-making in otherwise "asymptomatic" carotid disease.

- **Liu M., Sum M, Cong E., Colon I., Bucovsky M., Williams J., Kepley A., Kuo J., Lee J..A, Lazar R.M.., Marshall R, Silverberg S., Walker M.D. Cognition and cerebrovascular function in primary hyperparathyroidism before and after parathyroidectomy. J Endocrinol Invest. 2020 Mar;43(3):369-379.** There are cognitive changes in primary hyperparathyroidism (PHPT) that improve with parathyroidectomy, but the mechanism of cognitive dysfunction has not been delineated. They assessed if cerebrovascular function is impaired in PHPT, improves post-parathyroidectomy and is associated with PTH level and cognitive dysfunction. They conducted an observational study of 43 patients with mild hypercalcemic or normocalcemic PHPT or goiter. At baseline, cerebrovascular function (dynamic cerebral autoregulation and vasomotor reactivity) by transcranial Doppler and neuropsychological function were compared between all three groups. A subset underwent parathyroidectomy or thyroidectomy, and was compared 6 months post-operatively. Mean cerebrovascular and neuropsychological function was normal and no worse in PHPT compared to controls preoperatively. Higher PTH was associated with worse intracerebral autoregulation ($r = -0.43$, $p = 0.02$) and worse cognitive performance on some tests. Post-parathyroidectomy, mood improved significantly, but changes did not differ compared to those having thyroidectomy ($p = 0.84$). There was no consistent improvement in cognition or change in vascular function in either surgical group. Thus, higher PTH was associated with worse intracerebral autoregulation, cerebrovascular function, cognition and mood were normal in mild PHPT. PTX did not improve vascular or cognitive function.

- **Yaghi, S., Cotsonis, G., de Havenon, A., Prahbakaran, S., Romano, J.G., Lazar, R.M., Marshall, R., Feldmann, E., Liebeskind, D. Post Stroke Montreal Cognitive Assessment and Recurrent Stroke in Patients with Symptomatic Intracranial Atherosclerosis. J Stroke Cerebrovasc Dis. 2020 Feb 7:104663.** One of the goals of the UAB McKnight enterprise is to determine the extent to which cognition can serve as a metric of systemic and central nervous system integrity, as well as a predictor of future disease. In a post-hoc analysis of the Stenting and Aggressive Medical Therapy for Preventing Recurrent Stroke in Intracranial Stenosis (SAMMPRIS) trial, the primary predictor was poststroke cognitive function measured by Montreal Cognitive Assessment (MOCA) at 3-6 months and the primary outcome was recurrent ischemic stroke. Of the 451 patients enrolled in SAMMPRIS, 393 patients met the inclusion criteria. The mean age of the sample (in years) was 59.5 ± 11.3, 62.6% (246 of 393) were men. Fifty patients (12.7%) had recurrent ischemic stroke during a mean follow up of 2.7 years. The 3–6 month MOCA score was performed on 351 patients. In prespecified multivariable models, there was an association between 3- and 6-month MOCA and recurrent stroke (hazard ratio [HR] per point increase .93 95% confidence interval [CI] .88-.99, P = .040). Overall, we found weak associations and trends between MoCA at 3-6 months and stroke recurrence but more notable and stronger associations in certain subgroups.

2. What do you consider your most important scientific achievement this year?

Norling, A.M., Gerstenecker, A.T., Buford, T.W., Khan, B., Oparil, S., Lazar, R.M. The Role of IGF-1 Deficiencies in Microvascular Rarefaction and Hypertension. GeroScience, 2020 Feb;42(1):141-158. (Journal Impact Factor = 6.44)

A major goal of the UAB Evelyn F. McKnight Brain Institute is to identify interventions for modifiable risk factors of cognitive decline which can be implemented before the onset of cognitive decline. It is widely recognized that exercise can improve memory and cognition as we age, but how it may prevent cognitive decline is less well understood. As noted above in Section 1 (Scientific Achievement) above, a collaboration among McKnight faculty and the Department of Medicine produced a ground-breaking model the relates hypertension, the most prevalent risk-factor cause of cognitive decline, with age-related changes in insulin-like growth factor and changes in cognition, which may be treatable with exercise. Despite less than one year since its publication, this model has been cited in numerous journal articles, including Geroscience, Psychophysiology, Current Hypertension Reports, American Journal of Physiology, and Therapeutic Advances in Neurological Disorders. They are now pursuing this approach utilizing Optical Coherence Tomography Angiography (OCTA) at the UAB Callahan Eye Hospital and at the Bascom-Palmer Eye Institute at the University of Miami Miller School of Medicine.

3. Publications in peer reviewed journals

- Norling, A.M., Gerstenecker, A.T., Buford, T.W., Khan, B., Oparil, S., **Lazar, R.M.** The Role of IGF-1 Deficiencies in Microvascular Rarefaction and Hypertension. GeroScience, 2020 Feb;42(1):141-158. PMID: 3180802

- Yaghi, S., Cotsonis, G., de Havenon, A., Prahbakaran, S., Romano, J.G., **Lazar, R.M.,** Marshall, R., Feldmann, E., Liebeskind, D. Post Stroke Montreal Cognitive Assessment and Recurrent Stroke in Patients with Symptomatic Intracranial Atherosclerosis. J Stroke Cerebrovasc Dis. 2020 Feb 7:104663 [Epub ahead of print] PMID: 32044220

- Mutsaerts, H.J., Petr, J., Bokkers, R., **Lazar, R.M**., Marshall, R.S., Asllani, I.
  Spatial Coefficient of Variation of Arterial Spin Labeling MRI as a Marker of Vascular Sufficiency in Carotid Occlusion, PloS One, 2020 Feb 26;15(2):e0229444. PMID: 32101567

- Marshall, R.S., Pavol, M., Cheung, Y.K., Asllani, I., **Lazar, RM**. Cognitive Impairment Correlates Linearly with Mean Flow Velocity by Transcranial Doppler Below a Definable Threshold, Cerebrovascular Diseases EXTRA, 2020;10(1):21-27. PMID: 32289771.

- Lin, C., Lee, J., **Lazar, R.M**., Arevalo, Y.A., Mansour, M.A.A., Corado, C., Harvey, R.L., Prabhakaran, S. Gait Measures at Admission to Inpatient Rehabilitation after Ischemic Stroke Predict 3-Month Quality of Life and Function. Physical Medicine & Rehabilitation. 2020 May 9. doi: 10.1002/pmrj.12402. Online ahead of print. PMID: 32388905.

- Broderick, J.P., Elm, J.J., Janis, S, Zhao, W., Moy, C.S., Dillon, C.R., Chimowitz, M.I., Sacco, R.L., Cramer, S.C., Wolf, S.L.,Johnston, K.C.,MD, Saver, J.L., Marshall, R.S., Brown, D., Wintermark, M., Elkind, M.S.V., Kamel, H., Tirschwell, D.L., Longstreth, W.T., Chervin, R.D., Adeoye, O.M., Barreto, A.D., Grotta, J.C., Ramey, S.L., Lo, W.D., Feng, W., Schlaug, G., Sheth, K.N., Selim, M., Naidech, A.M., Lansberg, M.G., **Lazar**, **R.M**., Albers, G.W.,. Griffin, J.S., Sirline, L.P., Frasure, J., Wright, C.B., Khatri, P., MD. On behalf of the NIH StrokeNet Investigators. National Institutes of Health StrokeNet During the Time of COVID-19 and Beyond, Stroke. 2020 Aug;51(8):2580-2586. PMID: 32716819

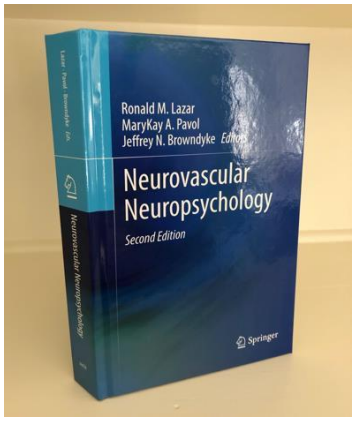
- Pavol, M.A., Boehme, A.K., Willey, J.Z., Festa, J.R., **Lazar, R.M**., Kakagawa, S., Casida, J., Yuzefpolskaya, M., Colombo, P.C. Predicting post-LVAD outcomes: Is there a role for cognition, Int J Artif Organs. 2020 Sep 10:391398820956661. doi: 10.1177/0391398820956661. Online ahead of print.

- **Lazar, R.M**., Howard, V.G., Kernan, W.N., Aparicio, H.J., Levine, D.A., Viera, A.J., Jordan, L.C., Nyenhuis, D.L., Possin, K.L., Sorond, F.A., White, C. A primary care agenda for brain health, Stroke, 2020, In press.

- **Lazar, R.M.**, Wadley, V.G., Myers, T., Jones, M.R., Heck, D. V., Marshall, R.S., Howard, V.J., Voeks, J.H., Manly, J.J., Moy, C.S., Chaturvedi, S., Meschia, J.F., Lal, B.K, Brott, T.G.,
  - G., Howard. Baseline Cognitive Impairment in Patients with Asymptomatic Carotid Stenosis in the CREST-2 Trial. 2020, in revision.

4. Publications (other)

- **Lazar, R.M.,** Pavol, M., Browndyke, J. (Eds.) Neurovascular Neuropsychology, 2nd Edition, New York: Springer, September 2020 (542 pages)



5. Presentations at scientific meetings

- Turan, T.N., Voeks, J.H. Barrett, K.M., Brown, R.D., Chaturvedi, S., Chimowitz, M., Demaerschalk, B., Emmady, P., Howard, G., Howard, V.J., Huston, J., Jones, M., Lal, B.K., **Lazar, R.M.,** Moore, W., Moy, C.S., Roldan, A.M., Roubin, G.S., Sangha, N., Brott, T.B., Meschia, J.F., Baseline Differences in Risk Factor Control Between CREST-2 and SAMMPRIS. Stroke. 2020;51: ATP123-ATP123.

- Chaturvedi, S., Meschia, J.F., Lal, B.K., Howard, G., Roubin, G.S., Turan, T.N., Teal, P., Brown, R.D., Barrett, K.M., Chimowitz, M.I., Demaerschalk, B.M., Howard, V.J., Huston, J., **Lazar, R.M**., Moore, W.S., Moy, C.S., Voeks J.H., Brott, T.G., Carotid Stenosis and Polyvascular Disease Stroke. 2020;51: ATP131-ATP131.

- Marshall, R.S., **Lazar, R.M**., Meschia, J.F., Meyers, P.M., Connolly, E.S., Gutierrez, J., Lal, B.K., Lehman, V.T., Lindell, E.P., Siegel, J.L., Lin, M.P., Honda, T., Edwards, L.J.,
- Howard, G., Huston, J., Brott, T.G., Liebeskind, D.S., Can the Human Eye Match a Computer Algorithm in Identifying Hypoperfusion in Asymptomatic Carotid Artery Stenosis? Stroke. 2020;51: ATP141-ATP141.

- Somani, S., Gazi, M., Minor, M., Acker, J., Fadairo, A., **Lazar, R**., Gropen, T.I. Can We Improve Clinical Detection of Right Hemisphere Large Vessel Occlusion? Stroke. 2020;51: ATP237-ATP237.

- **Lazar, R.M,** Myers, T., Gropen, T.I., Leesar, M.A., Davies, J.E., Gerstenecker, A., Norling, A.M., Pavol, M.A., Marshall, R.S., Kodali, S.K., Transcatheter Aortic Valve Replacement (TAVR) Does Not Improve Cerebral Hemodynamics or Neurocognition in Patients With Severe Aortic Stenosis Stroke. 2020;51: ATP483-ATP483.

- Meschia JF, Lal BK, Howard G, Roubin G, Brown RD Jr, Barrett KM, Chaturvedi S, Chimowitz M, Demaerschalk BM, Howard VJ, Huston III J, **Lazar R**, Moore W, Moy C, Turan T, Voeks J, Brott TG, for the CREST-2 Investigators. Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis: CREST- 2 Update. International Stroke Conference, 2020. Stroke. 2020

- Chaturvedi S, Meschia JF, Lal BK, Howard G, Roubin, Turan T, Teal P, Brown RD Jr, Barrett K, Chimowitz M, Demaerschalk BM, Howard V, Huston J III, **Lazar R**, Moore W, Moy C, Voeks J, and Brott TG, for the CREST-2 Investigators. Frequency and predictors of disease in other vascular beds in patients with asymptomatic carotid stenosis: Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis (CREST-2) . American Academy of Neurology, Annual Meeting, 2020. Neurology. 2020

- Turan TN, Voeks J, Barrett KM, Brown, Jr RD, Chaturvedi S, Chimowitz M, Demaerschalk B, Emmady P, Howard G, Howard VJ, Huston J III, Jones M, **Lazar RM**, Moore W, Moy CS, Roldan AM, Roubin GS, Sangha N, Lal BK, Brott TG, Meschia JF, for the CREST-2 Investigators. Baseline Differences in Risk Factor Control and Medication Use Between 2 Trials Employing Intensive Medical Management (SAMMPRIS & CREST2). American Academy of Neurology, Annual Meeting, 2020. Neurology. 2020

- Sandefer, K.J., Gropen, T.I., Myers, T.L., Leesar, M.A., Robinson, A.R., **Lazar, R.M.** Transcatheter Aortic Valve Replacement (TAVR) Improves Flow Acceleration on Transcranial Doppler. European Stroke Organization Conference, International Journal of Stroke, 2020.

6. Presentations at public (non-scientific) meetings or events

- “Power to End Stroke” Birmingham Chapter of the American Heart Association. 6/6/2020.

- “Brain Health Teletown Hall”, Alabama Chapter of AARP. 8/7/2020.

- “Brain Health”. Norm Kent Show, WWNN radio South Florida, 12/2/2020

7. Awards (other)

8. CV

See Appendix B

9. Trainees

A. Post doctoral
Karli Martin, PsyD

B. Pre-doctoral
Amani Norling, MA
Alexandra Jacob, BA

C. Other
Adam Gerstenecker, PhD
Lin Chen, MD
Ekaterina Bakradze, MD
Andrew MacDonald, MD
Donna Murdaugh, PsyD
Thomas Buford, PhD

10. Clinical/translational programs

A. New programs

1 R33 AG067069-01 (PI's Austad/Crane/Kritchevsky; Role: Co-I))
NIH/NIA
AIDS and Aging Research Platform (AARP)
The goal is to build a more mature and sustainable interdisciplinary geroscience research infrastructure to advance an expanded research agenda focused on improving the healthspan of aging people living with HIV (PLWH).

R01AG068410 (PI Levine; Role: Co-I))
NIH/NIA
The Effect of Vascular Risk Factors on Risk of Alzheimer's Disease and Related Dementias after Stroke (STROKE COG)
The goal of this project is to analyze participant data from five American prospective cohorts with adjudicated incident strokes, stroke subtyping, and repeated objective measures of vascular risk factors and cognition before and after stroke to determine the relationships between risk factor levels and use of risk factor medications, ischemic stroke subtypes, and post-stroke cognitive trajectories.

R01NS103824-01 (PI's Vagal/Khatri/Kissella; Role: Consultant)
NIH/NINDS
APRISE Dementia (Assessing Population-based Radiological brain health in Stroke Epidemiology-Dementia)
The major goal of this project is to create a prediction model of post stroke dementia incorporating imaging parameters in a biracial ischemic stroke/hemorrhagic stroke/TIA population using state-of-the-art modeling approaches.
Role: Consultant

B. Update on existing clinical studies

1U01 NS080168-01A1 (PI: Brott; Cognitive Core PI: Lazar) NIH/NINDS CREST-2 Clinical Coordinating Center.
The goal of this project is to assess if contemporary medical therapy is not inferior to contemporary revascularization (carotid endarterectomy or carotid angioplasty/stenting) plus best medical therapy in patients with ≥ 70% asymptomatic carotid stenosis. The cognitive substudy is to assess whether medical therapy alone is non-inferior to revascularization to maintain the level of cognitive function at 4 years of follow-up. They reported at the 2019 meeting of the European Stroke Organization Meeting the cognitive profile of the first 1,000 randomized patients, demonstrating cognitive decline in the absence of stroke. They now have 1,753 enrolled. Collaboration is among UAB, Columbia, Mayo Clinic and UMaryland.

R01NS097876 (Lazar, Marshall, Liebeskind, Connolly)
NIH/NINDS Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial - Hemodynamics
The purpose of this project is to determine whether there is a subset of patients with carotid stenosis who have MRI-detected cerebral hemodynamic compromise and associated cognitive decline, and whether revascularization will be associated with improved hemodynamics and improved cognition. Clinical site training has taken place for 150 investigators and coordinators across the US. The first enrollment took place in January 2018, and they now have enrolled 169 patients. (Collaboration is among UAB, Columbia and UCLA).

R01 AG057709-01 (PI:Gutierrez; Role: Co-I for neurocognitive outcomes)
NIH/NINDS
Genetic Contribution to Brain Arterial Dilatation and its Role in Cognition and Dementia
The goal of this project is to study the role of gene regulation in the dilatation of intracerebral arteries in response to systemic cardiovascular risk factors. Analyses are now being performed across 4 large databases.

1U01NS110728-01 (Lazar/Lansberg)
NIH/NINDS ARCADIA CSI (Cognition and Silent Infarcts)
This ancillary study to the ARCADIA trial will determine whether aspirin or apixaban reduces the number of silent brain infarcts in patients with atrial cardiomyopathy, with the effect of mitigating cognitive decline. To date, they have enrolled 125 participants from 83 centers around the United States.

Cerebral Oxygen Perfusion and Exercise in Aging (The "COPE" study)
McKnight Endowment Funds. To determine the extent to which a brief (8 weeks) exercise intervention would improve cerebral blood flow and the oxygen utilization in the brains of elderly, sedentary individuals, and by extension, improve neurocognitive functions. To date, they have enrolled 7 of the 10 individuals that will meet the goal of this pilot study.

Neuroinflammation after Myocardial Infarction
UAB Impact Funds. The association between cardiovascular disease and cognitive impairment has been known since the 1970's, leading to the search for the underlying cause for brain dysfunction. They and others have shown that coronary artery bypass grafting (CABG), congestive heart failure and associated heart transplant and mechanical device support, abnormal heart rhythms, valve disease and repair/replacement, and carotid artery blockage and corrective surgery affect cognition, especially among older patients. Recent animal models have shown that a temporary blockage of a coronary artery and removing the blockage causes inflammation in the brain in specific regions, with alterations on memory tasks. It is now possible to measure brain inflammation in patients using novel methods of brain imaging. The purpose of this study is to determine whether patients who recently experienced a heart attack and treated with a stent have an inflammatory response in their brains, which affects their cognitive function, and whether the inflammatory effects last over time. They received FDA approval in November 2019, and we have recruited 6 of the 20 patients.

Cognitive and Surgical Predictors of Post-Surgical Delirium in the Elderly
Integrative Center for Aging Research (ICAR) Pilot Award and UAB McKnight Funds. Elderly patients are uniquely susceptible to post-surgical delirium detected during post-procedural care. Moreover, the cognitive changes appearing during hospitalization often persist for months and sometimes never resolve, and appear unrelated to any underlying dementia. In this unique collaboration among specialists from Neuropsychology; Gerontology, Geriatrics and Palliative Care; Anesthesiology; Orthopedic Surgery; and Nursing, they are examining the relationships between pre-surgical cognition and other medical and demographic factors, with the long-term goals of establishing a delirium risk model and formulating preventive strategies. To date, they have recruited 33 patients, with the goal of 50 over the next year.

11. Technology transfer

A. Patents applications – None
B. Revenue generated from technology – N/A

12. Budget update – See Finance Report

13. Educational programs focusing on age related memory loss

A. Scientific - None because of the COVID-19 pandemic.

B. Public

1. "Brain Health Teletown Hall", Alabama Chapter of AARP. 8/7/2020.

2. “Brain Health”. Norm Kent Show, WWNN radio South Florida, 12/2/2020

14. Collaborative programs with other McKnight Institutes, institutions and research programs

3R01NS040807-15S1 (Supplement PI Lazar) 8/1/2019 – 12/31/2020
NIH/NINDS. Family Study of Atherosclerosis and Vascular Cognitive Dysfunction.
The parent study, Family Study of Dominicansis led by the Evelyn F. McKnight Endowed Chair Tanjana Rundek, MD, PhD. at the Miami MBI and investigates how the genetic and non-genetic factors affect vascular precursor phenotypes of stroke with its deep phenotyping, extensive behavioral and clinical assessments, and the rich genetic data from previous grant cycles. The supplement studies genetic, epigenetic and vascular risk of cognitive function and cognitive decline in the high-vascular risk Dominican families.

The EMBI’s at UAB and Miami have submitted and inter-Institutional Pilot proposal to the MBRF, entitled, “Improving Age-Related Cognitive Decline with Exercise in Hypertensive Older Adults: A Pilot Study to Investigate A Retina Microvascular Biomarker and the Role of IGF-1.” The application is targeted toward gaining a greater understanding of the underlying mechanisms that may contribute to the cognitive benefit of exercise as we age.

15. Collaborative program with non-McKnight Institutes, institutions and research programs

Grants/Contracts (2020 - present)

U24NS107223 (Gropen, Lazar, Harrigan) 09/01/2018 – 08/31/2023
NIH/NINDS StrokeBelt StrokeNet
The goal of the StrokeBelt StrokeNet is to establish a Regional Coordinating Center to Facilitate Stroke research in the Southeastern States of Alabama and Mississippi. This infrastructure will provide research opportunities in acute stroke treatment, primary and secondary prevention, and post stroke rehabilitation for an underserved, high-risk stroke population.

1 U01 NS080168-01A1 (Brott) 1/1/2014 – 12/31/2021
NIH/NINDS CREST-2 Clinical Coordinating Center.
The goal of this project is to assess if contemporary medical therapy is not inferior to contemporary revascularization (carotid endarterectomy or carotid angioplasty/stenting) plus best medical therapy in patients with ≥ 70% asymptomatic carotid stenosis. The cognitive aim is to assess whether medical therapy alone is non-inferior to revascularization to maintain the level of cognitive function at 4 years of follow-up.
Role: Co-I and Cognitive Core Leader.

Co-Investigator (PI: G. Howard) 3/15/14 – 2/28/21
NIN/NINDS CREST-2 Statistical and Data Coordinating Center – (SDCC)
CREST-2 is a pair of randomized trials to assess potential stroke reduction: 1) carotid endarterectomy plus aggressive medical management versus medical management alone, and 2) carotid stenting plus aggressive medical management versus medical management alone. Each trial will have approximately 1,240 patients randomized and followed for up to 4 years for any stroke during a 44-day peri-procedural period plus ipsilateral stroke over a follow-up period extending 4 years. The study is being performed in approximately 150 clinical centers in the US and Canada.
Role: Co-I.

R01NS097876 (Lazar, Marshall, Liebeskind, Connolly) 4/1/2017 – 3/31/2022
NIH/NINDS Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial - Hemodynamics

The purpose of this project is to determine whether there is a subset of patients with carotid stenosis who have MRI-detected cerebral hemodynamic compromise and associated cognitive decline, and whether revascularization will be associated with improved hemodynamics and improved cognition.

AMC21 Multi-PI Pilot Grant, UAB School of Medicine (MPI:C Brown, Corresponding PI; Lazar, MPI) Prevention of and Recovery from Hospital-Associated Disability. (1/20/2018-1/19/2020)
Pilot funding for 2020 submission for NIA Claude D Pepper Older Americans Independence Center

R01 AG057709-01 (Pl Gutierrez) 7/1/2018 - 6/30/2023
NIH/NINDS Genetic Contribution to Brain Arterial Dilatation and its Role in Cognition and Dementia
The goal is to study the role of gene regulation in the dilatation of intracerebral arteries in response to systemic cardiovascular risk factors.
Role: Co-I (neurocognitive outcomes).

1U01NS110728-01 (Lazar/Lansberg) 04/01/2019 - 03/31/2024
NIH/NINDS ARCADIA CSI (Cognition and Silent Infarcts)
This ancillary study to the ARCADIA trial will determine whether aspirin or apixaban reduces the number of silent brain infarcts in patients with atrial cardiomyopathy, with the

1 R33 AG067069-01 (Austad/Crane/Kritchevsky; Role: Co-I) 4/01/2020 – 3/31/2025
NIH/NIA
AIDS and Aging Research Platform (AARP) The goal is to build a more mature and sustainable interdisciplinary geroscience research infrastructure to advance an expanded research agenda focused on improving the healthspan of aging people living with HIV (PLWH).
Role: Co-I

R01AG068410 (Levine) 7/1/2020 – 6/30/2024
NIH/NIA
The Effect of Vascular Risk Factors on Risk of Alzheimer's Disease and Related Dementias after Stroke (STROKE COG) The goal of this project is to analyze participant data from five American prospective cohorts with adjudicated incident strokes, stroke subtyping, and repeated objective measures of vascular risk factors and cognition before and after stroke to determine the relationships between risk factor levels and use of risk factor medications, ischemic stroke subtypes, and post-stroke cognitive trajectories.
Role: C0-I

R01NS103824-01 (Vagal/Khatri/Kissella) 07/1/2020–6/30/2025
NIH/NINDS
APRISE Dementia (Assessing Population-based Radiological brain health in Stroke Epidemiology Dementia) The major goal of this project is to create a prediction model of post stroke dementia incorporating imaging parameter in a biracial ischemic stroke/hemorrhagic stroke/TIA population using state-of-the-art modeling approaches.
Role: Consultant

15. Activity on Social Media Platforms

LinkedIn: 584 Connections

16. Media Impressions and Placements

Not known at this time. Will pursue in 2021.

17. Monthly Visits to UAB McKnight website and areas of interest

Analytics MBI Channels 2020

Default Channel Grouping	Users	New Users	Sessions	Bounce Rate	Pages / Session	Avg. Session Duration
Organic Search	839	416	1,029	43.93%	2.53	0:02:14
Direct	172	131	194	46.39%	2.31	0:01:43
Referral	138	72	161	39.13%	2.93	0:02:02
(Other)	3	0	4	50.00%	1.25	0:00:11
Email	3	0	3	0.00%	4	0:08:04
Social	2	2	2	50.00%	1	0:00:43
	1,157	621	1,393	43.65%	2.54	0:02:09

18. Outline topics and attendance for media platforms

Unknown for the three media presentations during 2020. Will pursue in 2021.

LISTING OF INVESTIGATORS

Listing of Investigators

Professors

Ronald M. Lazar, PhD, FAHA, FAAN
Professor, Departments of Neurology and Neurobiology
Evelyn F. McKnight Endowed Chair for Learning and Memory in Aging Director, UAB McKnight Brain Institute
Director, Division of Neuropsychology (Neurology)
Area of Interest: Cognitive Resilience and Recovery in Aging, Brain Health, Cerebral hemodynamics, Neurovascular Disease.

Erik D. Roberson, MD, PhD
Rebecca Gale Endowed Professor
Associate Director, Evelyn F. McKnight Brain Institute
Director, Center for Neurodegeneration and Experimental Therapeutics
Director, Alzheimer's Disease Center
Department of Neurology

Irfan Asif, MD
Professor and Chair, Family and Community Medicine
Area of Interest: Primary care

Steve Austad, PhD
Professor and Chair, Department of Biology
Area of Interest: Molecular and organismal biology of aging

Karlene Ball, PhD
Professor, Department of Psychology
Area of Interest: Aging-related cognitive function

Etty (Tika) Benveniste, PhD
Senior Associate Dean for Research Administration, SOM Associate Vice President for Medicine and Basic Sciences Charlene A. Jones Endowed Chair in Neuroimmunology
Professor, Department of Cell, Developmental and Integrative Biology Co-Director, UAB Multiple Sclerosis Center
Associate Director, Basic Science Research • Comprehensive Cancer Center

Virginia Wadley Bradley, PhD
Professor Emerita, Division of Gerontology, Geriatrics, and Palliative Care
Area of Interest: Mild Cognitive Impairment, Alzheimer's disease, comorbid cerebrovascular disease

Michael Brenner, PhD
Professor Emeritus, Department of Neurobiology
Area of Interest: Glial cell biology, Alexander Disease

Cynthia J. Brown, MD, MSPH Professor
Director, Division of Gerontology, Geriatrics and Palliative Care Comprehensive Center for Healthy Aging
Area of Interest: quality of life for the aging through research, education and clinical care

Thomas Buford, PhD, FACSM, FAHA
Professor and Director, Center for Exercise Medicine
Area of Interest: Exercise and aging

Lynn Dobrunz, PhD
Professor, Department of Neurobiology
Area of Interest: Regulation of short-term synaptic plasticity in the hippocampus

Lloyd J. Edwards, PhD Professor and Chair
Department of Biostatistics, School of Public Health
Area of Interest: Conducting statistical research in linear and generalized linear mixed model methodology, longitudinal data analysis, health disparities, cardiovascular disease, neuroscience, and clinical trials design and analysis

Karen Gamble, PhD
Professor, Department of Psychiatry and Behavioral Neurobiology
Area of Interest: Environmental modulation of circadian clock function in mammalian sys

Paul Gamlin, PhD
Professor, Department of Ophthalmology
Area of Interest: Cell biology and systems neuroscience of vision and visual disorders

David Geldmacher, MD
Professor, Collat Scholar, Department of Neurology
Area of Interest: Aging-related memory disorders and visual cognition in AD.

George Howard, DrPH
Professor, Department of Biostatistics, School of Public Health
Area of Interest: Strokes and aging

Virginia Howard, PhD
Professor, Department of Epidemiology, School of Public Health
Area of Interest: Cardiovascular disease, strokes and aging

David Knight, PhD
Professor and Director, Behavioral Neuroscience, Department of Psychology
Area of Interest: Human imaging approached to investigating memory

Adrienne Lahti, MD
F. Cleveland Kinney, Professor
Chair, Department of Psychiatry and Behavioral Neurobiology
Director, Division of Behavioral Neurobiology
Director, Comprehensive Neuroscience Center
Co-director, Alabama Advanced Imaging Consortium
Area of Interest: Neuroimaging

Seth Landefeld, MD
Professor and Chair Department of Medicine
Area of Interest: Geriatrics and Health Care Research

Robin Lester, PhD
Professor, Department of Neurobiology
Area of Interest: Nicotinic receptors in CNS function

Dan Marson, JD, PhD
Professor Emeritus,
Department of Neurology
Area of Interest: Neuropsychology

Lori McMahon, PhD
Dean, UAB Graduate School Professor

Jarman F. Lowder Professor of Neuroscience
Department of Physiology/Biophysics Director
Area of Interest: Hormonal control of synaptic plasticity in aging

James H. Meador-Woodruff, MD
Professor, Department of Psychiatry and Behavioral Neurobiology
Area of Interest: Cellular alterations of neural circuitry and molecular expression in psych

Vlad Parpura, MD, PhD
Professor, Department of Neurobiology
Area of Interest: Imaging approaches to investigating synaptic and glial cell function

Craig Powell, MD, PhD
Professor and Chair, Department of Neurobiology
Area of Interest: Autism

Lucas Pozzo-Miller, PhD
Professor, Department of Neurobiology
Associate Director, Neuroscience Graduate Theme, Graduate Biomedical Science
Area of Interest: Mechanisms controlling dendritic spine morphology

Michael Saag, MD
Professor and Associate Dean, Infectious Diseases
Director, William C. Gorgas Center for Geographic Medicine
Director, Center for AIDS Research
Areas of Interest: Infectious Diseases, HIV/AIDS, Blood Equality, Hepatitis, Antiretroviral

David Standaert, MD, PhD
John N. Whitaker Professor and Chair of Neurology
Area of Interest: Aging, Neurodegeneration, and Translational Neuroscience

Victor J. Thannickal, MD
Professor and Chair of Medicine in Respiratory Disease, Div of Pulmonary, Critical Care
Area of Interest: Fibrotic lung diseases, acute lung injury

Anne Theibert, PhD
Professor, Department of Neurobiology
Director, UAB Undergraduate Neuroscience B.S. Program
Area of Interest: PI-3-Kinase signal transduction in neuronal cell biology

Erobo Ubogu, PhD
Professor, Department of Neurology
Director of the Neuromuscular Division of Neurology
Area of Interest: Inflammatory neuropathies

Linda Wadiche, PhD
Professor, Department of Neurobiology
Area of Interest: Adult neurogenesis in the dentate gyrus

Associate Professors

Amy Amara, MD, PhD
Associate Professor, Department of Neurology
Area of Interest: Sleep disorders, movement disorders

Mark Bolding, PhD

Associate Professor, Division of Advanced Medical Imaging Research
Area of Interest: Visual cognition, MRI, and neuroimaging

Christy Carter, PhD
Associate Professor, Division of Gerontology, Geriatrics & Palliative Care
Area of Interest: Exercise medicine

Michael Crowe, PhD
Associate Professor, Department of Psychology
Area of Interest: Gerontology, Cognitive Aging and Dementia

Jeremy Day, PhD
Associate Professor, Department of Neurobiology
Area of Interest: Epigenetic mechanisms in memory formation

Matt Goldberg, PhD
Associate Professor, Neurology
Area of Interest: Mechanisms of neurodegeneration

Michelle Gray, PhD
Associate Professor, Dixon Scholar, Department of Neurology
Area of Interest: Neurogenetics, glial function, and Huntington's disease

Alecia Gross, PhD
Associate Professor, Department of Vision Sciences
Area of Interest: Signal transduction mechanisms in the CNS

Jeremy Herskowitz, PhD
Patsy W. and Charles A. Collat Endowed Professor of Neuroscience.
Associate Professor, Department of Neurology
Area of Interest: Amyloid beta effects on neurons.

Richard E. Kennedy, MD, PhD, FAPM
Associate Professor, Department of Gerontology, Geriatrics & Palliative Care
Area of Interest: Aging

Farah Lubin, PhD
Associate Professor, Department of Neurobiology
Area of Interest: Signal transduction mechanisms in memory and memory disorders

Roy C. Martin, PhD
Associate Professor, Department of Neurology
Area of Interest: Neuropsychology

Kazu Nakazawa, PhD
Associate Professor, Department of Psychiatry and Behavioral Neurobiology
Area of Interest: Epigenetics and cognition

Kristen Triebel, PsyD
Associate Professor, Department of Neurology
Area of Interest: Neuropsychology

Kristina Visscher, PhD
Associate Professor, Department of Neurobiology
Co-director, Civitan International Neuroimaging Laboratory
Area of Interest: Human imaging approaches to investigating memory

Jacques Wadiche, PhD
Associate Professor, Department of Neurobiology
Area of Interest: Synaptic plasticity and function in the cerebellum

Scott Wilson, PhD
Associate Professor, Department of Neurobiology
Area of Interest: The ubiquitin/proteasome system in neuronal function

Assistant Professors

Jane Allendorfer, PhD
Assistant Professor
Area of Interest: Epilepsy

Andrew Arrant, PhD
Assistant Professor, Department of Neurology
Area of Interest: Frontotemporal dementia

De Miranda, Briana
Assistant Professor, Department of Neurology
Area of Interest: Environmental toxicants and Parkinson's Disease

Tanja Dudenbostel, MD
Assistant Professor, Department of Medicine, Cardiovascular Disease
Area of Interest: Cardiovascular disease

Cristin Gavin, PhD
Assistant Professor, Department of Neurobiology
Dean, Undergraduate Neuroscience Program
Co-director, Post baccalaureate Research Education Program
Area of Interest: Cellular and molecular mechanisms of structural and functional plasticity

Adam Gerstenecker, PhD
Assistant Professor, Department of Neurology
Area of Interest: Functional activity, decisional capacity, and cognition in persons with cognitive impairment and dementia

Summer Thyme, PhD
Assistant Professor, Department of Neurobiology
Area of Interest: Genes linked to neuropsychiatric and neurodevelopmental disorders

INDIVIDUAL INVESTIGATORS' REPORTS

Individual Investigators' Report

1. Summary of Scientific Achievements since last report

Lazar, Ronald (See McKnight Chair's Report)

Amara, Amy
- R01 to NICHD scored 4th percentile for submission "Slow wave sleep as a biomarker of rehabilitation-induced cognitive improvement in Parkinson's disease"
- Awarded Best Research Article of the Year for Movement Disorders journal for "Randomized Controlled Trial of Exercise on Objective and Subjective Sleep in Parkinson's Disease"
- Co-director: Sleep and Circadian Research Core
- Co-leader: Comprehensive Neuroscience Center Circadian/Sleep Pillar
- Site investigator PPMI 2.0 (Parkinson's Progression Markers Initiative)
- Collaboration on imaging glymphatic clearance
- Publication using sleep EEG spectral analysis

Arrant, Andrew
- Established microdialysis protocols to measure extracellular progranulin in the brain, received an R21 to support this work.
- Nearing publication of a project showing that progranulin acts through lysosomes to protect neurons from excitotoxicity.
- Worked with UAB's transgenic mouse facility to generate novel mouse lines to study progranulin's mechanism of action in the brain.
- Established a novel mouse cross to study the interaction of progranulin with TDP-43, a key protein in multiple age-related neurodegenerative disorders and pathology.

Allendorfer, Jane
- Successful grant re-submission of an NIH R01-A1 application in July 2020 to study the efficacy and putative mechanism of action of a 6-week supervised exercise program for treatment of memory deficits in epilepsy. While investigation of age-related decline is not a specific goal of the study, age as a biological variable will be investigated.
- Successfully submitted a NIsH R03-A0 application in October 2020 to assess spatiotemporal characteristics of memory with aging.

Austad, Steve
- Published 9 peer-reviewed papers, two non-peer-reviewed papers, and a number of op-eds
- Grant application for creating a new heterogeneous rat model for cognitive studies.
- Caroline P. and Charles W. Ireland Prize for Scholarly Distinction. University of Alabama at Birmingham, College of Arts & Sciences

Benveniste, Tika
Continued work on the role of neuroinflammation in Parkinson's Disease (PD), Multiple Sclerosis (MS) and Brain Tumors. Assessing the role of T-cells, monocytes/microglia, neutrophils, B-cells and astrocytes in pre-clinical models of these diseases as well as evaluation of peripheral blood from patients.

Bolding, Mark
- Genetically modified C. elegans (nematode) to produce a novel behavioral response to X-rays. This demonstrated that my goal of using X-rays for an optogenetic like technique is feasible.
- Identified candidate proteins endogenous to mammalian CNS that can be modified to translate the C. elegans work into a mammalian cell.

- Found behavioral and electrophysiological evidence that low doses of X-rays stimulate dopamine or maybe serotonin release in specific regions of the brain of Drosophila (fruit flies).
- Built a prototype device for automated mapping of the human somatotopic map (the "homunculus") in the human brain using fMRI.

Bradley, Virginia
- Completion of 5-year R01 randomized controlled trial of processing speed training in persons with Mild Cognitive Impairment (MCI).
- Co-I on new R01 obtained by SPRINT MIND to continue following the cognitive status of the participants as a function of hypertension thresholds targeted in this randomized controlled trial.

Buford, Thomas
16 publications; new R56, P30, and K02 awards as PI. The latter having a focus on late-life cognition with Dr. Lazar as a collaborator

Crowe, Michael
Continued grant funding and publications

Day, Jeremy
My major research interest is the neurobiological regulation of reward-related memory systems in the brain

De Miranda, Briana
During this reporting period, we have completed a large-scale, in vivo study examining the effects of environmental toxicants and their effect on the Parkinson's disease (PD) associated protein LRRK2 (leucine-rich repeat kinase 2), published data on novel gene-therapy methods to protect against protein aggregation in the brain, and successfully started up the De Miranda Lab at UAB.

Dobrunz, Lynn
My lab published our findings that overexpression of Neuropeptide Y (NPY) causes impairment of NPY Y1 receptors in hippocampus of mice. Because NPY is proposed as a therapeutic for anxiety disorders and PTSD, and NPY regulates memory in addition to reducing anxiety, this has important clinical implications.

My lab showed that radioluminescence emitted from nanoparticles in response to X-ray can modulate neuronal circuits in acute brain slices via optogenetics. This technique could potentially be used to manipulate brain circuits in vivo to study or modulate memory.

Edwards, Lloyd
Worked with 3 doctoral students whose dissertations are/were neuroscience focused.
1. Sara Sims – Graduate Research Fellow, Department of Psychology. Dissertation advisor is Kristina Visscher, PhD. Dissertation Title: Cognition and the brain of the healthy oldest old. Sara presented preliminary oral presentation in April 2020.
2. Justin Leach – Biostatistics PhD Student. Dissertation advisor was Imaculada Aban, PhD, Department of Biostatistics. Dissertation Title: Incorporating spatial structure into Bayesian variable selection using spike-and-slab priors with application to imaging data. Justin completed June 2020.
3. Christina Glenn – Biostatistics DrPH Student. Dissertation advisor is Stacey Cofield, PhD, Department of Biostatistics. Dissertation Title: Depression and chronic disease management: Examining MRI metrics and clinical outcomes in people living with relapsing-remitting multiple sclerosis

Gamble, Karen
Promoted to full professor and had two new MPI grants awarded.
NIH R56 Research Project Grant (R56AG061785), MPI-Principal Investigator, "Circadian Changes in Network Excitability and Alzheimer Disease Pathogenesis." Co-PI: Erik Roberson. 2019–2020. $500,000 D.C.

NIH R01 Research Project Grant (R01DA047297), MPI-Principal Investigator, “Racial differences in circadian and sleep mechanisms for nicotine dependence, craving, and withdrawal.” Co-PI: Karen Cropsey. 2020–2025. $385,871 D.C.

Geldmacher, David

- Continued work on understanding factors influencing Quality of Life among older adults with memory loss and their families.
- Continued work on the role of computerized cognitive training on daily function among older adults with memory impairments
- Continued work on cognition in adults over age 85

Gerstenecker, Adam

Continued to collect data pertaining to the relationship between hippocampal subfield atrophy and systemic inflammation in persons with multiple sclerosis and cognitively healthy controls. This information will allow for a better understanding of the effects of inflammation on the hippocampus, which provides important knowledge about cognitive aging.

Goldberg, Matthew

Last year, we reported our finding age-dependent alpha-synuclein pathology that spontaneously forms in the brains of PINK1 knockout rats. Because this was similar to the age-dependent alpha-synuclein neuropathology in human brains, such as Lewy body pathology that occurs in Lewy Body Dementia as well as Parkinson’s disease, we embarked on a rigorous evaluation of the effects of abnormal synuclein on synaptic structure and function in PINK1 knockout rats. Using electron microscopy and electrophysiology to analyze brain slices, we found significant age-dependent abnormalities in the corticostriatal pathway. These include decreased alpha-synuclein in glutamatergic terminals and increased glutamate release from cortical neurons onto spiny projection neurons within the striatum. This is a major advance because it provides a useful animal model of striatal circuit abnormalities and shows that PINK1 knockout rats can serve as a novel tool to study and gain a better understanding of network abnormalities that occur with aging and with neurodegenerative disease.

Gray, Michelle

1. Renewed R01
2. Published our work on modulating gliotransmission

Gross, Alecia

- We have published 2 primary research articles
- We were awarded an NEI R01 (EY030096), submitted a different R01 application to the NIH NEI with a collaborator (AKG as co-PI), submitted a program project grant application to the Foundation Fighting Blindness (AKG as lead PI)

Herskowitz, Jeremy

Published a relevant review: Walker CW, Herskowitz JH. Dendritic Spines: Mediators of Cognitive Resilience in Aging and Alzheimer’s disease. *The Neuroscientist*. In press.

Howard, George

Just keeping the Reasons for Geographic and Racial Differences in Stroke (REGARDS) and the Carotid Revascularization Endarterectomy Stenting Trial (CREST) running in the midst of the pandemic … so many changes to make that happen.

Howard, Virginia

Ongoing grant funding, publications, presentations at national meetings, mentoring/data sharing, Awarded Distinguished Professor by the Board of Trustees University of Alabama, Named Highly Cited Researcher (in Clinical Medicine) in Web of Science

Kennedy, Richard

Since the last report, we are continuing to expand our research on the identification and management of delirium occurring in hospitalized older adults, with new efforts in data mining of electronic health

records to examine consequences of delirium. We are also continuing our research on clinical trial designs and data mining of past clinical trials.

Lahti, Andrienne

- Association with a growing number of multicenter imaging collaborations. Last year, together with UCLA, NYU and Columbia, I participated in a NIMH multicenter brain imaging project where we had to conquer all the challenges associated with the multi-scanner acquisition of data during an acute intravenous administration of ketamine, an anesthetic agent that can produce symptoms similar to those seen in schizophrenia. I am currently part of another multicenter imaging consortium (Yale, Harvard, Feinstein and Toronto), for which we are working in close collaboration with NIMH, with the goal of submitting multicenter grants related to the first episode of psychosis. This week, we got the green light from NIMH to submit those grants.
- Starting a new project using phosphorous MR spectroscopy (^{31}P MRS) at 7 Tesla at Auburn University to measure bioenergetic indices in patients with psychosis.

Lubin, Farah

- Held our **Sixth** annual NEURAL (**N**ational **E**nhancement of **U**nder**R**epresented **A**cademic **L**eaders) conference at UAB. While the conference this year was held virtually because of COVID-19 restrictions, the meeting was well attended with ~100 non-UAB underrepresented minority (URM) neuroscience graduate students join us from across the country and ~125 UAB students including neuroscience graduate and undergraduate students, PREP students, and SPIN students.
- I continue to present my research both at national and international meetings.
- Secured an NIH/NINDS R21 NS116937 09/30/2020-08/31/2022 grant to conduct exciting study on the effects of exercise on epilepsy. This grant award was made possible by pilot funds awarded by the McKnight Brain Research Foundation. Additionally, I have a grant "Pending" funding from the NIH/NIA R01 AG071785 "Long Non-coding RNA Regulation in Astrocytes within the Aging Brain" 04/01/2021- 03/31/2026

Marson, Daniel

- Continued to consult on the development and testing of an electronic form of the FCI-SF financial cognition assessment measure for an NIA funded R01 project (eVAL Study – UCSF). Work this year included training and certifying multiple raters across four study sites on the administration and scoring of the FCI-SF (original form), in preparation for study recruitment.
- Continued to serve as Director Emeritus of UAB Alzheimer's Disease Center and on its Executive Committee.
- Peer reviewed publications and a non-scientific presentation.
- Companion paper collaboration with Dr. Martin and Dr. Gerstenecker

Martin, Roy

- McKnight BRF sponsored project entitled "Presurgery Cognitive Status as a Predictor of Post-Operative Delirium in Older Adults Undergoing Elective Surgery" continues study recruitment. Due to COVID restrictions, recruitment efforts have been modified to remote assessment format.
- Awarded a one-year pilot grant from the UAB Integrative Center for Aging Research (ICAR) to continue funding for the previously sponsored McKnight BRF grant that completed funding at end of October. This ICAR pilot grant will begin funding on November 1, 2020.
- Participation on grant projects:
  1. NSF EPSCoR grant (UAB Site PI: Jerzy Szaflarski) RII Track-2 FEC: "Probing and Understanding the Brain: Micro and Macro Dynamics of Seizure and Memory Networks," awarded to Louisiana Tech University to the National Science Foundation EPSCoR's Research Infrastructure Improvement Track-2 solicitation.
  2. NIH grant "Noninvasive biomarkers to advance emerging DBS electrode technologies in Parkinson's disease" (PI: Harrison Walker).
  3. NIA R01 AG059009 grant (M Weiner: PI; UAB Site PI: Erik Roberson) "Validation of Online Measures to Predict and Monitor Cognitive Decline".
  4. NIA Administrative supplement "Building a Research Agenda on Alzheimer's Disease Treatment Gaps in Older Adults" (UAB PI: Maria Pisu)

McMahon, Lori
A major advance from the laboratory has come from using the PINK1 knock rat model of Parkinson's disease.

Powell, Craig
The Powell Laboratory has begun to examine the roles for the ubiquitin ligase molecule, Cul3, in brain function and dysfunction. In particular, our research has demonstrated evidence that conditional deletion of Cul3 from the brain of mouse models alter synaptic function and behavioral tests of cognitive function.

Roberson, Erik
- Published 17 papers (erik roberson 2020 - Search Results - PubMed (nih.gov))
- Exploratory ADRC P20 funded

Saag, Michael
- Successfully competed for a new R33 grant to provide infrastructure for study of aging and memory (H. Crane, PI; UAB administrative core)

- Identification of routine cognitive assessment Patient Reported Outcomes that will be implemented in 8 HIV clinics around the country in 2021 via the CNICS (CFAR Network of Integrated Clinical Systems) Network

Standaert, David
- Collaborative work with investigators at Columbia and the La Jolla Institute which shows that there are T cells autoreactive to alpha-synuclein in Parkinson disease
- Collaborative work with the Payami lab showing microbiome alterations in PD

Thannickal, Victor
Our laboratory is actively engaged in elucidating mechanisms of cellular senescence, oxidative stress and aging in the context of chronic lung diseases, in concert with the development of experimental therapeutics for IPF.

Thyme, Summer
- Set up lab, hired two graduate students and three technicians
- Wrote and published our first paper on bioRxiv
- applied for many new PI grants and was awarded several prestigious ones (see awards).

Triebel, Kristen
Invited Reviewer for American Academy of Neurology (AAN) Research Grants Program, 2017, 2018, 2019, 2020

Ubogu, Eroboghene
- Award of collaborative NIH R01 grant (with MD Anderson) to study PI16 in chronic neuropathic pain
- Award of NIH R21 grant to study the role of α-1 catenin in mammalian blood-nerve barrier formation
- Further characterization of the molecular components of the human blood-nerve barrier *in situ* in normal and diseased peripheral nerves from patients with chronic neuropathic pain
- Further development a conditional MHC Class II knockout mouse strain (C57BL/6-*H2-Aa*$^{tm1c(KOMP)WistUbee}$/ Mmmh) in the SJL background
- Established a Tamoxifen-inducible von Willebrand Factor Cre recombinase mouse strain in SJL background to study microvascular endothelial cell conditional gene knockout

Visscher, Kristina

Since our last report in 2019, the world has changed. We thankfully completed data acquisition for the McKnight Brain Aging Registry cohort of individuals over 85 years old in excellent cognitive health. In March, data acquisition in our older adult cohorts was shut down due to COVID 19. The lab, thankfully, has a lot of data analysis of existing datasets to do in the interim.

We have three major project directions in the lab: 1) the McKnight Brain Aging Registry, the goal of which is to understand and characterize the healthy aging brain, 2) Our work examining neural changes associated with changing visual experience in later life, due to macular degeneration, 3) Our work using computerized interventions to understand how changes in visual experience influence brain function as well as behavior.

Scientific Achievements in each of these major projects include: 1) Completion of data acquisition at UAB for the McKnight Brain Aging Registry, as well as data cleaning and preliminary analysis of the cohort. The 4 primary papers from this dataset are in progress among the 4 collaborating sites. Secondary papers are in planning stages based on this dataset.
2) We have developed several new analytical techniques for precisely characterizing brain changes in the cortical regions we expect to be associated with experience-dependent plasticity in macular degeneration. We are working on 3 papers which use these methods in the macular degeneration population.
3) We have developed a method for characterizing how eye movements change with experience. We have published a paper describing this method, as well as a paper characterizing how these eye movements change with a particular form of eye movement training.

2. What do you consider your most important scientific achievement this year?

Allendorfer, Jane
Scoring in the 2nd percentile (Impact score of 20) for my July 2020 NIH R01-A1 application.

Amara, Amy
RO1 fundable score

Arrant, Andrew
Establishment of the progranulin/TDP-43 mouse cross. We have exciting preliminary data that progranulin insufficiency worsens phenotypes in a TDP-43 transgenic line. This work could provide insight on mechanisms of FTD, Alzheimer's, and the newly designated age-related pathology "Limbic-predominant age-related TDP-43 encepalopathy (LATE)".

Austad, Steve
Large number of public outreach webinars on COVID-19 and aging.

Benveniste, Tika
Eludication of the dysregulation of the adaptive immune system in patients with PD, especially the involvement of B-cells.

Bolding, Mark
The genetic modification of C. elegans to respond to X-rays with a novel behavior.

Bradley, Virginia
Completion of 5-year RO1 randomized controlled trial of processing speed training in persons with Mild Cognitive Impairment.

Buford, Thomas
Demonstrating that a genetically-modified probiotic expressing Ang(1-7) can reduce neuroinflammatory gene-expression in the pre-frontal cortex of older rats

Crowe, Michael
Getting a new RO1 project on aging in Puerto Rico started

De Miranda, Briana
Our finalized report showing that one of the most ubiquitous and lasting environmental chemicals, trichloroethylene (TCE) activates the protein LRRK2, the most common genet c mutation involved in PD. These data indicate that a gene-environment interaction between TCE and LRRK2 could influence PD risk for many individuals, particularly those with mutations in the LRRK2 gene. In addition, LRRK2 kinase inhibitors, which are currently in clinical trials, may be useful to slow disease progression in individuals with idiopathic PD.

Dobrunz, Lynn
Our most important scientific achievement is the discovery that radioluminescent nanoparticles can modulate neuronal circuits via optogenetics.

Edwards, Lloyd
Establishing the molecular determinants and plausible pathways necessary for normal blood-nerve barrier function and recovery from injury, and relationship between aberrant peripheral nerve endoneurial homeostasis and chronic nociception that is biologically relevant to peripheral neuropathy patients with chronic neuropathic pain

Gamble, Karen
Promotion to full Professor, award of new R01 from NIDA

Geldmacher, David
Publication of the “Family Quality of Life in Dementia” primary report

Gerstenecker, Adam
Collecting data pertaining to the relationship between hippocampal subfield atrophy and systemic inflammation in persons with multiple sclerosis and cognitively healthy controls.

Goldberg, Matthew
Published the important finding that PINK1 knockout rats are more susceptible to neurodegeneration induced by alpha-synuclein aggregates similar to those found in Lewy Body Dementia and in Parkinson’s disease.

Gray, Michelle
RO1 renewal

Gross, Alecia
Award of NEI R01 application

Herskowitz, Jeremy
Publication of the review article: Walker CW, Herskowitz JH. Dendritic Spines: Mediators of Cognitive Resilience in Aging and Alzheimer’s disease. *The Neuroscientist*. In press.

Howard, George
Just keeping REGARDS and CREST running in the midst of the pandemic … so many changes to make that happen.

Howard, Virginia
Multi-PI on subcontract award (Columbia University) from NHLBI/NINDS for Collaborative Cohort of Cohorts for COVID Research (C4R), representing REGARDS to study impact of COVID-19 on participant’ health including cognitive functioning

Kennedy, Richard

Submission of the UAB Pepper Center grant application, which would fund an interdisciplinary center on aging and has already generated large-scale data for examining cognitive sequelae of hospitalization in older adults.

Lahti, Andrienne

- Named chair of the Department of Psychiatry and Behavioral Neurobiology
- Became director of the UAB Comprehensive Neuroscience Center (CNC)
- Work related to change in structural and functional connectivity (measured with DWI and resting state fMRI) in relation to increased duration of untreated psychosis in first episode psychosis patients.

Lubin, Farah

Publilshing and maintaining funding.
Secured an NIH/NINDS R21 NS116937 09/30/2020-08/31/2022 grant to conduct exciting study on the effects of exercise on epilepsy. This grant award was made possible by pilot funds awarded by the McKnight Brain Research Foundation. Additionally, I have a grant "Pending" funding from the NIH/NIA R01 AG071785 "Long Non-coding RNA Regulation in Astrocytes within the Aging Brain" 04/01/2021- 03/31/2026.

Marson, Daniel

Participation in NIH/NIA grant developing an electronic internet based version of the FCI-SF

Martin, Roy

A multi-disciplinary team of UAB clinicians and researchers continues recruiting for our project investigating a preoperative risk assessment model of post-operative delirium (POD) in adults undergoing non-cardiac surgery. The initial project phase will assess for potential preoperative cognitive markers predicting at-risk individuals. Recruitment referral is currently occurring through initial identification from the UAB Orthopedic Surgery clinic with follow-up contact from the UAB Neurology/ Neuropsychology Division. This prospective design involves neuropsychological testing of adults prior to their hospitalization. The key study aim focuses on whether preoperative cognitive function predicts the occurrence of POD. This project intends to extend already existing in-patient clinical care protocols at UAB (i.e., Virtual Acute Care in Elders program) currently assessing for peri-operative delirium identification and in-hospital intervention.

McMahon, Lori

Obtaining 2 new Ro1 awards, one as PI and one as co-PI and a major advance form the laboratory has come from using the PINK1 knock rat model of Parkinson's disease.

Parpura, Vlad

Gottipati, M.K., Bekyarova, E., Haddon, R.C., Parpura, V. (2020) Chemically Functionalized Water-Soluble Single-Walled Carbon Nanotubes Obstruct Vesicular/Plasmalemmal Recycling in Astrocytes Down-Stream of Calcium Ion

Powell, Craig

Our contribution to multiple clinical phenotyping and biomarker studies on the role of SHANK3 mutations in human patients with such mutations.

Roberson, Erik

We made significant advances in understand how interactions between tau and SH3 domain–containing proteins can alter neural function. We showed in our *eLife* paper that interactions between the SH3 protein BIN1 (an AD risk factor) and tau contribute to network hyperexcitability, and in our *Neurobiology Dis* paper demonstrated that inhibiting tau-SH3 interactions has beneficial effects.

Saag, Michael

Adoption of recommendations to routinely assess cognitive dysfunction in all HIV patients over the age of 60 on a biannual basis (as published in International Guidelines published in *JAMA*)

Standaert, David
The most important work we have ongoing are our Udall Center studies of innate and adaptive immunity in PD. These are progressing well despite the ongoing pandemic.

Thannickal, Victor
Research on stress and aging and the effects of lung diseases

Thyme, Summer
Setting up my lab, and publishing our first paper on bioRxiv.

Ubogu, Eroboghene
Established a Tamoxifen-inducible von Willebrand Factor Cre recombinase mouse strain in SJL background to study microvascular endothelial cell conditional gene knockout

Visscher, Kristina
Completion of data acquisition at UAB for the McKnight Brain Aging Registry, as well as data cleaning and preliminary analysis of the cohort.

3. Publications in peer reviewed journals

Allendorfer, Jane

1. Nenert R, Allendorfer JB, Bebin EM, Gaston TE, Grayson LE, Houston JT, and Szaflarski JP (2020). Cannabidiol normalizes resting-state functional connectivity in treatment-resistant epilepsy. *Epilepsy and Behavior.* 112:107297. PMCID: 32745959
2. Binder JR, Tong J, Pillay SB, Conant LL, Humphries CJ, Raghavan M, Mueller WM, Busch RM, Allen L, Gross WL, Anderson CT, Carlson C, Lowe M, Langfitt JT, Tivarus M, Drane DL, Loring DW, Jacobs M, Morgan VL, Allendorfer JB, Szaflarski JP, Bonilha L, Bookheimer S, Grabowski T, Vannest J, and Swanson SJ (2020). Temporal lobe regions essential for picture naming after left temporal lobe epilepsy surgery. *Epilepsia.* PMID: 32780878
3. Gaston TE, Allendorfer JB, Nair S, Bebin EM, Grayson LP, Martin RC, Szaflarski JP (2020). Effects of highly purified cannabidiol (CBD) on fMRI of working memory in treatment-resistant epilepsy. *Epilepsy and Behavior.* 112:107358. PMID: 32871501
4. Goodman AM, Allendorfer JB, Baird G, Blum AS, Bolding M, Correia S, ver Hoef L, Gaston T, Grayson L, Kraguljac N, Lahti AC, Martin AN, Monroe WS, Philip NS, Skidmore F, Tocco K, Vogel V, LaFrance Jr. WC, Szaflarski JP (2020). White matter integrity and neurite morphology differ in psychogenic non-epileptic seizures. *Annals of Clinical and Translational Neurology.* 7(10):1973-1984. PMCID: PMC7545605
5. Balachandran N, Goodman AM, Allendorfer JB, Martin AN, Tocco K, Vogel V, LaFrance Jr. WC, Szaflarski JP (2020). Relationship between neural responses to stress and mental healthy symptoms in psychogenic nonepileptic seizures after traumatic brain injury. *Epilepsia.* PMID: 33238045
6. Goodman AM, Diggs MD, Balachandran N, Kakulamarri PS, Oster RA, Allendorfer JB, Szaflarski JP (2020). Repeatability of neural and autonomic responses to acute psychosocial stress. *Frontiers in Neuroscience.* In press.

Amara, Amy

1. Wood, KH, AA Memon, RA Memon, A Joop, J Pilkington, C Catiul, A Gerstenecker, K Triebel, G Cutter, MM Bamman, S Miocinovic, and AW Amara. Slow wave sleep and EEG delta spectral power are associated with cognitive function in Parkinson's disease. *J. Parkinson's Disease* in press
2. Chahine, LM, MC Brumm, C Caspell-Garcia, W Oertel, B Mollenhauer, AW Amara, A Fernandez-Arcos, E Tolosa, C Simonet, B Hogl, A Videnovic, SJ Hutten, C Tanner, D Weintraub, E Burghardt, C Coffey, HR Cho, K Kieburtz, KL Postono, K Merchant, D Galasko, T Foroud, A Siderowf, K Marek, T Simuni, and A Iranzo. (2020) Dopamine transporter imaging predicts clinically-defined α-synucleinopathy in REM sleep behavior disorder. *Annals of Clinical and Translational Neurology*. In press. PMID: 33321002

3. Singhania, A, J Pham, R Dhanwani, JR Dutra, KS Marder, E Phillips, S Mallal, AW Amara, DG Standaert, D Sulzer, B Peters, A Sette, CS Lindestam Arlehamn. (2020) The TCr repertoire of α-synuclein-specific T cells in Parkinson's disease is surprisingly diverse. *Scientific Reports*. In press
4. Amara AW, KH Wood, A Joop, RA Memon, J Pilkington, SC Tuggle, J Reams, MJ Barrett, DA Edwards, AL Weltman, CP Hurt, G Cutter, MM Bamman. (2020) Randomized Controlled Trial of Exercise on Objective and Subjective Sleep in Parkinson's Disease. *Movement Disorders*. 35:947. PMID: 32092190; PMCID pending
5. Lindestam Arlehamn, CS, R Dhanwani, J Pham, R Kuan, A Frazier, JR Dutra, EJ Phillips, SA Mallal, M Roderer, KS Marder, AW Amara, DG Standaert, JG Goldman, I Litvan, B Peters, D Sulzer, and A Sette. (2020) α-synuclein-specific T cell reactivity is associated with preclinical and early Parkinson's disease. *Nature Communications.* 11:1875 PMID: 32313102, PMCID: PMC7171193
6. Amara, A.W. (2020) Sleep and cognition in Parkinson's disease. *Sleep Medicine*. 73:179 PMID: 32841925

7. Amara AW, KH Wood, A Joop, RA Memon, J Pilkington, SC Tuggle, J Reams, MJ Barrett, DA Edwards, AL Weltman, CP Hurt, G Cutter, MM Bamman. (2020) Reply to Exercise for "Sleep Rehabilitation" in Parkinson's Disease. *Movement Disorders*. 35:1286 PMID: 32691908
8. Cristini, J, M. Weiss, B. de Las Heras, A. Medina-Rincón, A. Dagher, R.B. Postuma, R. Huber, J. Doyon, P. Rosa-Neto, J. Carrier, A.W. Amara, M. Roig. (2020) The effects of exercise on sleep quality in persons with Parkinson's Disease: a systematic review with meta-analysis. *Sleep Medicine Reviews* 55:101384 PMID: 32987321
9. Memon, A.A, J. Coleman, A.W. Amara. (2020) Effects of Exercise on Sleep in Neurodegenerative Disease. *Neurobiology of Disease* 140:104859 PMID: 32243913, PMCID pending
10. Wallace, DM. W.K. Wohlgemuth, L.M. Trotti, A.W. Amara, I.A. Malaty, S.A. Factor, S. Nallu, L. Wittine, R.A. Hauser (2020) Practical evaluation and management of insomnia in Parkinson's disease: a review. *Movement Disorders Clinical Practice*. 7:250. PMID: 32258222; PMCID: PMC7111581

Arrant, Andrew

1. Stoyka, LE, Arrant, AE, Thrasher, DR, Russell, DL, Freire, J, Mahoney, CL, Narayanan, A, Dib, AG, Standaert, DG, and Volpicelli-Daley, LA (2020). Behavioral defects associated with amygdala and cortical dysfunction in mice with seeded α-synuclein inclusions. Neurobiol Dis. 134: 104708.
2. Arrant, AE, Davis, SE, Vollmer, RM, Murchison, CF, Mobley, JA, Nana, AL, Spina, S, Grinberg, LT, Miller, BL, Seeley, WW, and Roberson ED (2020). Elevated levels of extracellular vesicles in progranulin-deficient mice and FTD-GRN Patients. Ann Clin Transl Neurol. doi: 10.1002/acn3.51242. Online ahead of print.

Austad, Steve

1. Richardson A, Austad SN. (2020). Edward J. Masoro, Scientist and Friend. Journals of Gerontology: Biological Sciences & Medical Sciences, 75(11), 2105-2107.
2. Hoffman JM, Kiklevich JV, Klavins K, Valencak TG, Austad SN. (2020). Alterations of lipid metabolism with age and weight in companion dogs. Journals of Gerontology A: Biological Sciences and Medical Sciences. Aug 4 (epub ahead of print). doi: 10.1093/gerona/glaa186.
3. Barzilai N, Appleby JC, Austad SN, Cuervo AM, Kaeberlein M, Gonzalez-Billault C, Lederman S, Stambler I, Sierra F (2020). Geroscience in the age of COVID-19. Aging and Disease 11(4):725-729. http://dx.doi.org/10.14336/AD.2020.0629.
4. Sun S, White RR, Fischer KE, Zhang Z, Austad SN*, Vijg J*. (2020). Inducible aging in Hydra oligactis implicates sexual reproduction, loss of stem cells, and genome maintenance as major pathways. Geroscience 42(4):1119-1132. doi: 10.1007/s11357-020-00214-z. * co-senior/corresponding authors
5. Austad SN (2020). On looking at Sydney Asdell's comparative chronologic age in man and other mammals from issue 1 of the Journal of Gerontology. Journals of Gerontology Biological Sciences & Medical Sciences 75(6) 1019-20. doi: 10.1093/Gerona/glz261.
6. Carter CS, Richardson A, Huffman DM, Austad S. (2020). Bring Back the Rat! Journals of Gerontology A Biological and Medical Sciences 75 (3), 405–415. doi: 10.1093/Gerona/glz298.
7. Hoffman JM, Kiklevich JV, Austad M, Tran V, Jones DP, Royal A, Henry C, Austad

SN. (2020). Tryptophan metabolism is differently regulated between large and small dogs. Geroscience 42(3):881-896. doi:10.1007/s11357-019-00114-x.

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9. Van Skike CE, Lin A-L, Burbank RR, Halloran JJ, Hernandez SF, Cuvillier J, Soto VY, Hussong SA, Jahrling JB, Javors MA, Hart MJ, Fischer KE, Austad SN, Galvan V. (2020) mTOR drives cerebrovascular, synaptic, and cognitive dysfunction in normative aging. Aging Cell, Jan;19(1):e13057. doi: 10.1111/acel.13057

Benveniste, Tika

1. Yang, W., Gibson, S.A., Yan, Z., Wei, H., Tao, J., Sha, B., Qin, H., and E. N. Benveniste. 2020. Protein kinase 2 (CK2) controls CD4+ T-cell effector function in the pathogenesis of colitis. Mucosal Immunol. 13(5):788-798.
2. Koo, H., McFarland, B., Hakim, J.A., Crossman, D. K., Crowley, M.R., Benveniste, E. N. and Morrow, C. D. 2020. An individual mosaic of maternal microbial strains is transmitted to the infant gut microbial community. R. Soc. Open Sci.15;7(4):192200.

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2. Vickers, S. M., Watts, R., Agarwal, A., Benveniste, E. N., Bulgarella, D., Fouad, M. N., Hoesley, C., Jones, K., Kimberly, R. P., Rogers, D. A., Larson, J. A., Leeth, T. R., Mack, L., and Patel, N. 2020. Returning to growth: A successful five-step approach to change management. Acad. Med. Under Revision.
3. Carlisle, S., Qin, H., Hendrickson, C., Muwanguzi, J., Lefkowitz, E., Kennedy, R., Yan, Z., Yacoubian, T., Benveniste, E.N., West, A., Harms, A., and Standaert, D. 2020. Sex-based differences in the activation of peripheral blood monocytes in early Parkinson disease. Submitted.

4. Yan, Z., Yang, W., Wei, H., Dean, M.N., Standaert, D.G., Cutter, G., Benveniste, E. N., and Qin, H. 2020. Dysregulation of the adaptive immune system in early stage Parkinson Disease patients. Submitted.
5. Song, C. J., Li, Z., Bland, S. J., Aloria, E. J., Lever, J. M., Gonzalez, N. M., Lang, M. L., Benveniste, E. N., Harrington, L. E., Tsiokas, L., George, J. F., Crossman, D. K., Yoder, B. K., Agarwal, A., Mrug, M., Hopp, K., and Zimmerman, K. A. 2020. A comprehensive immune cell atlas of cystic kidney disease reveals the involvement of CD4 T-cells in injury mediated cyst progression. Submitted.
6. Xu, E., Boddu, R., Abdelmotilib, H. A., Sokratian, A., Kelly, K., Liu, Z., Bryant, N., Chandra, S., Carlisle, S. M., Lefkowitz, E. J., Harms, A. S., Benveniste, E. N., Yacoubian, T. A., Volpicelli-Daley, L. A., Standaert, D. G., and West, A. B. 2020. LRRK2 mediates the recruitment of pro-inflammatory monocytes to the brain in response to pathological -Synuclein. Submitted.

Bolding, Mark

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2. Goodman, A. M., Allendorfer, J. B., Blum, A. S., Bolding, M. S., Correia, S., Ver Hoef, L. W., Gaston, T. E., Grayson, L. E., Kraguljac, N. V., Lahti, A. C., et al. (2020). White matter and neurite morphology differ in psychogenic nonepileptic seizures. Ann. Clin. Transl. Neurol. doi:10.1002/acn3.51198.
3. Goss, A. M., Dowla, S., Pendergrass, M., Ashraf, A., Bolding, M., Morrison, S.,

Amerson, A., Soleymani, T., and Gower, B. (2020). Effects of a carbohydrate-restricted diet on hepatic lipid content in adolescents with non-alcoholic fatty liver disease: A pilot, randomized trial. Pediatr. Obes., e12630. doi:10.1111/ijpo.12630.

4. Meng, Y., Mabry, S., Stewart, P., Cannon, K., Liu, L., Bolding, M., Zhang, L., and Adams, M. L. (2020). Correlating the passive response of eye and brain to head impact using MEMS IMUs on 3D-printed human head phantom. Physiol. Meas. doi:10.1088/1361-6579/ab78bd.
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6. Rich, M., Whitsitt, Q., Lubin, F., and Bolding, M. (2020b). A Benchtop Approach to the Location Specific Blood Brain Barrier Opening using Focused Ultrasound in a Rat Model. J. Vis. Exp. doi:10.3791/61113.
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8. Willoughby, W. R., Thoenes, K., and Bolding, M. (2020). Somatotopic Arrangement of Eight Distinct Skin Areas in the Human Primary Somatosensory Cortex Derived from Functional Magnetic Resonance Imaging. BioRxiv. doi:10.1101/2020.06.22.164871.

Brown, Cynthia

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6. Lorgunpai SJ, Finke B, Burrows I, Brown CJ, Rubin FH, Wierman HR, Heisey SJ, Gartaganis S, Ling SM, Inouye SK. Creating a Culture of Mobility in Acute Care: Mobility Action Group and Change Package. J Am Geriatr Soc. 2020 Aug 5. [Online ahead of print]. PMID: 32757219.
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8. King BJ, Bodden J, Steege L, Brown CJ. Older Adult Patient Experiences with Ambulation during a Hospital Stay: A Qualitative Study. Geriatr Nurs. 2020 Aug 26:S0197-4572(20)30249-4. doi: 10.1016/j.gerinurse.2020.08.005. [Online ahead of print] PMID: 32861430.
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Buford, Thomas

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2. LM Roberts, TW Buford*. Lipopolysaccharide Binding Protein is Associated with CVD Risk in Older Adults. Aging Clin Experim Res. (in press)
3. ML Erickson, KA Esser, WE Kraus, TW Buford, LM Redman. A Role for Exercise to Counter Skeletal Muscle Clock Disruption. Exercise Sport Sci Rev. (in press)
4. JA Sanford, CD Nogiec, ME Linholm, JN Adkins, D Amar, S Dasari, JK Drugan, FM Fernandez, S Radom-Aizik, S Schenk, MP Snyder, RP Tracy, P Vanderboom, S Trappe, MJ Walsh, MoTrPAC Consortium. Molecular Transducers of Physical Activity Consortium: Mapping the Dynamic Responses to Exercise. Cell (in press)
5. TW Buford*. The Gut Microbiome and Aging. J Gerontol A Biol Sci. 75(7): 1229-1231. 2020.
6. TW Buford*, Y Sun, LM Roberts, A Banerjee, S Peramsetty, A Knighton, A Verma, D Morgan, G Torres, Q Li, CS Carter. Angiotensin (1-7) delivered orally via probiotic, but not subcutaneously, benefits the gut-brain axis in older rats. Geroscience (in press)
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16. AM Norling, AT Gerstenecker, TW Buford, B Khan, S Oparil, RM Lazar. The Role of Exercise in the Reversal of IGF-1 Deficiencies in Microvascular Rarefaction and Hypertension. Geroscience. 42(1): 141-158. 2020.

Crowe, Michael

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Day, Jeremy

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De Miranda, Briana

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Dobrunz, Lynn

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Edwards, Lloyd

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Kennedy, Richard
14 manuscripts

Lahti, Andrienne
1. Adam M. Goodman, Jane B. Allendorfer, Grayson Baird, Andrew S. Blum, Mark Bolding, Stephen Correia, Larry ver Hoef, Tyler Gaston, Leslie Grayson, Nina Kraguljac, Adrienne C. Lahti, Amber N. Martin, William S. Monroe, Noah S. Philip, Frank Skidmore, Krista Tocco, Valerie Vogel, W. Curt LaFrance, Jr., & Jerzy P. Szaflarski. White matter integrity and neurite morphology in psychogenic non-epileptic seizures following TBI, Annals of Clinical and Translational Neurology, *in press*
2. Gawne TJ, Overbeek GJ, Killen JF, Reid MA, Kraguljac NV, Denney TS, Ellis CA, Lahti AC. A Multimodal Magnetoencephalography, 7T fMRI Stroop, and 7T Proton MR Spectroscopy Study in First Episode Psychosis, NPJ Schizophrenia, 6 :23, 2020
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Lubin, Farah

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Martin, Roy

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3. McMeekin LJ, Bartley AF, Bohannon AS, Adlaf EW, van Groen T, Boas SM, Fox SN, Detloff PJ, Crossman DK, Overstreet-Wadiche LS, Hablitz JJ, Dobrunz LE, Cowell RM (2020) A Role for PGC-1α in Transcription and Excitability of Neocortical and Hippocampal Excitatory Neurons. *Neuroscience*. 435:73-94. PMC7325608

Wilson, Scott

Tian T, McLean JW, Wilson JA, Wilson SM. 2020. Examination of genetic and pharmacological tools to study the proteasomal deubiquitinating enzyme ubiquitin-specific protease 14 in the nervous system. Journal of Neurochemistry. In press.

4. ***Publications (other)***

Amara, Amy

Dean, M and AW Amara (2020), "Clinical Trials for Sleep Disorder and Daytime Somnolence in Parkinson's Disease", In Perez-Lloret, S. (Eds.) Clinical Trials in Parkinson's Disease Neuromethods Vol. 160, (1st ed.). Springer.

Austad, Steve
1. Austad SN. Is 100 the new life expectancy for people born in the 21st century. Wall Street Journal 4/16/20 (electronic), 4/20/20 (print)
2. Olshansky SJ, Ricanek K, Ashburn K, Austad S (2020). Health, wealth and longevity: new tools allow science-based financial planning. Journal of Active Aging 19(1), 64-71.
3. Columns for Next Avenue, PBS Health Blog for Older Americans (https://www.nextavenue.org)

- What Can We Expect From a COVID-19 Vaccine?
- Immune Health and Aging in the Age of the Coronavirus
- Does Our Blood Hold the Secrets of Our Longevity?

Bolding, Mark
Publications - 3

Buford, Thomas
Developing series of articles highlighting the need for neuroscience and geroscience perspectives to be joined to improve late life brain health. Includes members of UAB and UF MBIs

De Miranda, Briana
Castro, S.L., Rocha, E.M., Bodle, C.R., Johnson, K.E., Greenamyre, J.T., De Miranda, B.R. The industrial solvent trichloroethylene induces LRRK2 kinase activity and dopaminergic neurodegeneration in a rat model of Parkinson's disease. *Biorxiv* (2020).

Buck, S.A., Steinkeller, T. et al., Despoina, A., Villenueve, S., Bhatte, S.H., Childers, V.C., Rubin, S.A., De Miranda, B.R., et al., Freyberg, Z. VGLUT modulates sex differences in dopamine neuron vulnerability to age-related neurodegeneration. *Biorxiv* (2020).

Dobrunz, Lynn
1. Cannon KE, Ranasinghe M, Do A, Pierce HM, Millhouse PW, Roychowdhury A, Foulger S, Dobrunz LE, Anker JN, Bolding M. LITE-1 Dependent X-Ray Sensitivity in C. elegans. bioRxiv doi: https://doi.org/10.1101/766568.
2. *Bartley AF, Fischer M, Bagley ME, Barnes JA, Burdette MK, Cannon KE, Bolding MS, Foulger SH, McMahon LL, Weick JP, Dobrunz LE. 2020. X-ray mediated scintillation increases synaptic activity via Cerium-doped LSO and Channelrhodopsin-2. bioRxiv 2020.08.29.273359; doi: https://doi.org/ 10.1101/ 2020.08.29.273359.

Edwards, Lloyd
1. Lin, V., Kaza, N., Birket, S., Kim, H., Edwards, L., LaFontaine, J., Liu, L., Mazur, M., Byzek, S., Hanes, J., Tearney, G., Raju, S.V., Rowe, S. (2019). Excess mucus viscosity and airway dehydration impact COPD airway clearance. European Respiratory Journal, 55(1): 1900419; DOI: 10.1183/13993003.00419-2019.
2. Peabody Lever, JE, Mutyam, V, Hathorne, HY, Peng, N, Sharma, J, Edwards, LJ, Rowe, SM (2020). Ataluren/Ivacaftor Combination Therapy: Two N-of-1 Trials in CF Patients with Nonsense Mutations. Pediatric Pulmonology, 55(7):1838-1842.
3. Weiss, BD, Wolters, PL, Plotkin, SR, Widemann, BC, Tonsgard, JH, Blakeley, J, Allen, JC, Schorry, E, Korf, B, Robinson, NJ, Goldman, S, Vinks, AA, Emoto, C, Fukada, T, Thomas Robinson, C, Cutter, G, Edwards, L, Dombi, E, Ratner, N, Packer, R, Fisher, MJ (2020). NF106: A Neurofibromatosis Clinical Trials Consortium Phase 2 Trial of the MEK Inhibitor Mirdametinib (PD-0325901) in Adolescents and Adults with NF1-Related Plexiform Neurofibromas. In Press, Journal of Clinical Oncology.

Gamble, Karen
1. Gamble, K.L., Silver, R. (2020). Circadian rhythmicity and the community of clockworkers. Eur J Neurosci, 51(12): 2314-2328.

2. Gamble KL. (2020). Rhythms in neurometabolism decline with age. Neuroscience, in press.

Kennedy, Richard – 1 book chapter

Marson, Daniel
1. Marson, D. (2020). Clinical assessment of testamentary capacity: background, methods, and case studies. In Moye, J. (Ed.), Assessment of Older Adults with Diminished Capacity: A Casebook for Resolving Pragmatic and Ethical Challenges. American Psychological Association.
2. Multiple meetings during the year with Dr. Martin and Dr. Gerstenecker dedicated to preparing two companion empirical manuscipts in the understudied scientific area of testamentary capacity. This collaboration will hopefully lead to two important publications in this area:
    a. Martin, R., Hebert, T., Gerstenecker, A., Strebler, P., Triebel, K. & Marson, D. (in preparation). Assessment of testamentary capacity in older adults: Description and initial validation of a standardized interview instrument.
    b. Gerstenecker, A., Martin, R., Strebler, P., Hebert K., Triebel, K. & Marson, D. (in preparation). Cognitive correlates of impaired testamentary capacity in Alzheimer's dementia.

McMahon, Lori
APHA_Rapid Acting Antidepressants, Vol 89
ISBN: 9780128201893

Roberson, Erik
1. Alzheimer's Disease. In Mechanisms of Memory, Third Edition
2. Publications as part of the Alxheimer's Disease Genetics Consortium - 129

Saag, Micael
1. Chang H, Sewda A, Marquez-Luna C, White SR, Whitney BM, Williams-Nguyen J, Nance RM, Lee WJ, Kitahata MM, Saag MS, Willig A, Eron JJ, Mathews WC, Hunt PW, Moore RD, Webel A, Mayer KH, Delaney JA, Crane PK, Crane HM, Hao K, Peter I. Genetic architecture of cardiometabolic risks in people living with HIV. *BMC Med* 18(1):288, 2020. (PMID: 33109212)
2. Rebeiro PF, Jenkins CA, Bian A, Lake JE, Bourgi K, Moore RD, Horberg MA, Matthews WC, Silverberg MJ, Thorne J, Mayor AM, Lima VD, Palella FJ, Saag MS, Althoff KN, Gill MJ, Wong C, Klein MB, Crane HM, Marconi VC, Shepherd BE, Sterling TR, Koethe JR. Risk of incident diabetes mellitus, weight gain, and their relationships with integrase inhibitor-based initial antiretroviral therapy among persons with HIV in the US and Canada. *Clin Infect Dis* 2020 Sep16 (epub ahead of print). (PMID: 32936919)
3. Webel AR, Long D, Rodriguez B, Horvat Davey C, Buford TW, Crane HM, Mayer K, Saag MS, Willig AL. The PROSPER-HIV study: a research protocol to examine relationships among physical activity, diet intake, and symptoms in adults living with HIV. *J Assoc Nurses AIDS Care* 31(3):346-352, 2020. (PMID: 31789686 PMCID: PMC7313388)

Thyme, Summer
Vivian MD, Joo W, Graham B, Soucy ER, and Thyme, SB. A customizable low-cost system for high-throughput zebrafish behavior phenotyping. bioRxiv, under review at Frontiers in Behavioral Neuroscience.

Triebel, Kristen – book chapters
1. Triebel, K. L., Hollis, S., Novack, T. (2020). Chapter 4. Evaluating Capacities After Traumatic Brain Injury. In J. Moye (Ed.), *Assessing Capacities of Older Adults: A Casebook to Guide Difficult Decisions* (pp. 91-120). Washington DC: American Psychological Association.
2. Triebel, K., Mulhauser, K., Fiveash, J., Marotta, D., Gammon, M., Vance, D., & Nabors, B. Treatment decision making in the setting of advanced cancer. Oral presentation at the Annual Society for Neuro-Oncology conference. November 22, 2019. Phoenix, Arizona. *Neuro-Oncology*, Volume 21, Issue Supplement_6, November 2019, Page vi160, https://doi.org/10.1093/neuonc/noz175.670
Published: 11 November 2019

3. Marotta DA, Niccolai L, Aita S, Walker H, Del Bene V, Gerstenecker A, Gammon M, Martin R, Clay O, Crowe M, Triebel K. Cognition and Deep Brain Stimulation Consensus Conference Decision to Treat Primary Dystonia. Neurosurgery. 2020 Dec;67 (Supplement_1):nyaa447_674.

5. ***Presentations at scientific meetings***

Allendorfer, Jane

1. Goodman AM, Allendorfer JB, LaFrance WC, and Szaflarski JP. Neural response to stress changes during short-term phase prior to diagnosis of psychogenic nonepileptic seizures. Functional Neurological Disorder Society Annual Meeting, Boston, MA. 2020.
2. Allendorfer JB, Goodman AM, LaFrance WC, and Szaflarski JP. Associations between delay in diagnosis and facial emotion processing in PNES. Functional Neurological Disorder Society Annual Meeting, Boston, MA. 2020.
3. Goodman AM, Balachandran N, Allendorfer JB, Martin A, Vogel V, Tocco K, LaFrance WC, and Szaflarski JP. Altered hippocampal function and self-reflection network in psychogenic non-epileptic seizures (PNES). Organization of Human Brain Mapping Annual Meeting (Virtual), Montreal, Canada. June 2020.
4. Allendorfer JB, Goodman AM, Byington C, Martin A, Tocco K, Vogel V, LaFrance WC, and Szaflarski JP. Mood symptom severity affects prefrontal emotion processing in psychogenic non-epileptic seizures. Organization of Human Brain Mapping Annual Meeting (Virtual), Montreal, Canada. June 2020.
5. Gaston TE, Allendorfer JB, Nair S, Bebin EM, Grayson L, Houston JT, and Szaflarski JP. Highly Purified Cannabidiol (CBD) affects Working Memory Performance in Epilepsy. Organization of Human Brain Mapping Annual Meeting (Virtual), Montreal, Canada. June 2020.
6. Nenert R, Allendorfer JB, Goodman AM, and Szaflarski JP. Glymphatic system activity declines with age in older but not in younger individuals. Organization of Human Brain Mapping Annual Meeting (Virtual), Montreal, Canada. June 2020.
7. Terry DM, Sharma A, Popp JL, Szaflarski JP, Martin RC, Nenert R, Kaur M, Brokamp G, and Allendorfer JB. Exercise levels, verbal memory, and hippocampal gray matter volume in persons with epilepsy. Organization of Human Brain Mapping Annual Meeting (Virtual), Montreal, Canada. June 2020.
8. Popp JL, Willoughby WR, Nenert R, Szaflarski JP, Goodman AM, and Allendorfer JB. Glymphatic system activity and exercise in people with idiopathic generalized epilepsy. University of Alabama at Birmingham Summer Expo (Virtual), Birmingham, AL. July 2020.

Amara, Amy

1. 10/22/2020: Parkinson's Association of Alabama Webinar Series: "Sleep and Parkinson's Disease", Birmingham, AL
2. 06/05/2020: Parkinson's Association of Alabama Webinar Series: "Update on Parkinson's Disease Research", Birmingham, AL

Austad, Steve

1. AFAR New Investigators in Alzheimer's Disease Annual Meeting
2. Metabesity 2020 Annual Meeting
3. Oklahoma Nathan Shock Center Annual Meeting
4. Keynote: UAB Department of Biochemistry and Molecular Genetics, Virtual Retreat
5. NIA Research Centers Collaborative Network Workshop on Aging and the Life Course
6. AFAR/Nathan Shock Centers Symposium on "Biology of Aging for Nonbiologists" Gerontological Society of American National Meeting

Benveniste, Tika

1. Invited Speaker, 2020 Race to Erase MS Symposium, Virtual Meeting, June 5, 2020
2. Invited Speaker, 2020 FASEB Translational Neuroimmunology Conference, Virtual Meeting, June 29-30, 2020
3. Invited Session Co-Chair, Innate Immunity in Multiple Sclerosis, ACTRIMS/ECTRIMS Multiple Sclerosis Meeting, Virtual Meeting, September 9-12, 2020

4. Invited Speaker, IPRM Virtual Research Symposium, UC Davis Health, December 7-11, 2020

Bolding, Mark
Scientific Meetings - 2

Brown, Cynthia
Awardee lecture, Developing the Evidence for Hospital Mobility, November 2020, 2020 Joseph T. Freeman Award lecture, Annual Scientific Meeting of the Gerontological Society of America, Philadelphia, PA. (virtual lecture)

Day, Jeremy
Speaking engagements were rescheduled due to COVID 19

De Miranda, Briana
1. NINDS Udall Centers National Meeting
2. University of Alabama at Birmingham, 2020
"Gene-environment interaction with widespread industrial contaminants and LRRK2 as a risk factor for Parkinson's disease"
3. UAB NINDS Udall Center Meeting
University of Alabama at Birmingham, 2020
"Gene-environment interaction with widespread industrial contaminants and LRRK2 as a risk factor for Parkinson's disease"

Edwards, Lloyd
Panel speaker at 2020 Regulatory Industry Statistics Workshop (RISW 2020), September 2020. Title of session: What is Statistician Leadership in the Pharmaceutical/Regulatory Space?

Gamble, Karen
Gamble, K.L. (2020). "Time, Death, and Memory: Hippocampal Dysfunction in Aging and Alzheimer's disease." Society for Research in Biological Rhythms (SRBR) 2020 Biannual Meeting, Virtual meeting.

Geldmacher, David
DS Geldmacher, RA Jablonski, V Winstead, G Pilonieta. Family Quality of Life in Dementia and Caregiver Burden are Associated with Different Caregiver Personal Characteristics. Presented at Alzheimer's Association International Conference (virtual meeting) July 2020

Gray, Michelle
1. Michelle Gray. Exploring the contribution of astrocytes to Huntington's disease pathogenesis. Graduate Program in Neurosciences Seminar Series (virtual), University of Minnesota, September 2020.
2. Michelle Gray. Using Preclinical Models of Huntington's Disease in Pursuit of Therapeutics. Towards Targeted Therapies for Neurodevelopmental Disorders Symposium. July 2020 Online/Virtual Symposium.

Gross, Alecia
1. Paper presentation: "NudC is critical for outer segment disk size and photoreceptor cell viability", Annual Meeting for the Association for Research in Vision and Ophthalmology, Bethesda, MD. May 2020 *conference and talks fully cancelled due to COVID-19*.
2.Invited symposium speaker: "Regulation of the cytoskeletal network in photoreceptors", International Congress for Eye Research, Buenos Aires, Argentina. October 2020 *conference and talks fully cancelled due to COVID-19*.

Howard, Virginia
1. "Early life exposure to the Stroke Belt and Later Life Incident Cognitive Impairment: The REGARDS study." American Stroke Association International Stroke Conference, Feb 19, 2020, Los Angeles

2. “Considerations in Cognitive Assessment in Disparate Populations” Invited Session, American Stroke Association International Stroke Conference, Feb 20, 2020, Los Angeles
3. “Design of REGARDS: A National Cohort of Black and White Adults to Study Disparities in Stroke and Cognitive Function.” Part 1 of Streaming Symposium: REGARDS: A Case Study in Aging and Disparities Research, Mentoring, and Data Sharing. GSA Annual Scientific Meeting online. November 6, 2020.
4. “Opportunities for More Aging and Disparities Research, Mentoring, and Data Sharing with REGARDS.” Part 5 of Streaming Symposium: REGARDS: A Case Study in Aging and Disparities Research, Mentoring, and Data Sharing. GSA Annual Scientific Meeting online. November 6, 2020

Kennedy, Richard
Oral presentations – 2
Poster presentations – 3

Lahti, Andrienne
Invitation as a plenary speaker to the 2020 Schizophrenia International Research Society, which was cancelled because of COVID-19.

Lubin, Farah
1. *2021* F.D. Lubin. SfN Global Connectome plenary speaker. Society for Neuroscience (SfN) annual meeting moved to virtual meeting in January 11-13, 2021.
2. *2020* F.D. Lubin. Epigenetic Transcriptional Programing in Epilepsy. Investigator Workshop lecture. American Epilepsy Society (AES) annual meeting.
3. F.D. Lubin. Panelist “Sex Differences in Brain Disorders: Emerging Transcriptomic Evidence and Implications for Therapeutic Development”. National Academies Forum on Neuroscience and Nervous System Disorders. The National Academies of Sciences, Engineering, and Medicine. Invited by Dr. Eric Nestler and Ms. Sheena M. Posey Norris.
4. F.D. Lubin. NIH/NINDS Training and Diversity Faculty Discussion Panel. Invited by Drs. Michelle Jones-London and Stephen Korn.
5. F.D. Lubin. National Institute of Aging Seminar Series.
6. F.D. Lubin. Tulane University Seminar Series. Invited by Dr. Laura Schrader.
7. F.D. Lubin. Vanderbilt Seminar Series. Invited by Dr. Lisa Monteggia.
8. F.D. Lubin. Neuroscience, Gladstone, and AARG Seminar Series. University of California San Francisco. Invited by Dr. Jeanne T. Paz.

Martin, Roy
1. Freeman H, Killen J, Martin R, Mohamed IS (2020, December). Lateralized neuromagnetic inferior frontal gyrus activation during auditory word recognition with Wada test results. Results presented at the Annual American Epilepsy Society meeting (virtual event).
2. Freeman, H. Killen J, Martin R, Mohamed IS (2020, June). Validation of a new computational approach for presurgical language lateralization in children with refractory epilepsy. Results presented at the Annual Organization for Human Brain Mapping Conference (virtual event).
3. Marotta DA, Niccolai L, Aita SL, Walker HC, Del Bene VA, Gerstenecker A, Gammon M, Martin RC, Clay OJ, Crowe M, Triebel KL (December, 2020). Cognition and Deep Brain Stimulation Consensus Conference Decision to Treat Primary Dystonia. Research to be presented at the upcoming annual meeting of the Congress of Neurological Surgeons (virtual event).

McMahon, Lori
1. NIH O-GlcNAc Workshop, (Bethesda, March, 2020)
2. Integrative Center for Aging Research Seminar Series, May 8th, 2020

Roberson, Erik
Auburn University Department of Drug Discovery and Development seminar

Standaert, David
1. University of Florida, Neurology Grand Rounds “Innate and Adaptive Immunity in Parkinson Disease” Feb 4, Gainesville, FL

2. MDS-PAS Congress, “Fluid and Tissue Biomarkers for PD” Miami, FL, Feb 12
3. National Institutes of Environmental Health Sciences, Durham, NC, “Innate and Adaptive Immunity in Parkinson Disease.” Jan 7, 2020
4. Udall Centers Meeting, NINDS, “Innate and Adaptive Immunity in Parkinson Disease,” meeting Chair. On-line meeting.
5. Grand Challenges in Parkinson Disease, Van Andel Institute, “Innate and Adaptive Immunity in Parkinson Disease.” On-line meeting, Sep 23

Thyme, Summer
Winter RosettaCon, 2020; New York, NY

Triebel, Kristen
Assessing medical decision-making capacity in advanced cancer. E-talk at the Society of Neuro-oncology Annual Conference. Phoenix, AZ.

Visscher, Kristina
Maniglia, MM, Demirayak, P, Defenderfer, M, Fleming, M, Biles, MK, Visscher, KM (2020) Quantifying level of compensation after central vision loss. Vision Sciences Society Meeting

Invited talks:
1. Brown University, Perception-Action seminar series (November, 2020) "The cortical underpinnings of central vs. peripheral vision, and changes after central vision loss."
2. University of Alabama, Tuscaloosa, Psychology (October, 2020) "Learning in the older brain: insights from human brain studies of training and long-term experience."
3. Civitan Foundation for Children with Intellectual and Developmental Disabilities (August 2020) Acceptance of the McNulty award

Wadiche, Jacques
1. Distinguished Guest Speaker; Academic Health Center Duluth Research Seminar Series; University of Minnesota Medical School, Department of Biomedical Sciences, Duluth, MN (invited)
2. Neuroscience Talk Shop Podcast with Salma Quarashi PhD, University of Texas

*6. **Presentations at public (non-scientific) meetings or events***

Allendorfer, Jane
11/2020: “Physical Exercise and Activity for Improving Cognition in Epilepsy”. University of Cincinnati Neuroscience Seminar (Virtual), Cincinnati, OH, USA.

Austad, Steve
1. Seminar, UAB Department of Epidemiology
2. Presentation, University of Colorado, Comparative Biology of Aging
3. Presentation, Genetics and Genomic Sciences Course on Animal Models
4. AFAR/Grants-in-Aging Webinar on the Biology of Aging and Our Body’s Readiness for COVID-19 vaccines (other)
5. Protective Life Lunch-and-Learn, Five Recent Breakthroughs in Aging
6. AFAR/Grants-in- Aging Webinar on Aging and COVID-19: What Does Science Actually Tell Us?

Benveniste, Tika
1. Invited Speaker and Organizer, AAMC Advanced Leadership Program: A Master Class for Experienced Associate Deans and Department Chairs, Washington, DC, January 7-9, 2020
2. Invited Moderator, AAMC LSL Annual Meeting, Impact of COVID-19 on Research and The Research Enterprise at Academic Medical Centers, Virtual Meeting, November 16-18, 2020

Brown, Cynthia
1. Keynote Speaker, Increasing Mobility in the Hospital Setting, August 2019, 17th Annual Rocky Mountain Geriatrics Conference, Snowbird, Utah.
2. Invited Speaker, The Future of Academic Medicine: A Vision for Internal Medicine at LSUHSC-New Orleans, September 2020, Medical Grand Rounds, Louisiana State University (LSU), New Orleans, Louisiana.
3. Keynote Speaker, Creating a Culture of Hospital Mobility, September 2020, T. Franklin Williams Memorial Lecture, 34th Annual Conference Spanning the Continuum of Care: Innovations in the Practice of Age Friendly Care. University of Rochester Medical Center, Rochester, New York. (Virtual lecture)

De Miranda, Briana
Ending PD Webinar Series: Preventing PD with Ray Dorsey and Dan Kinel

Dobrunz, Lynn
“The Role of Neuropeptide Y in Regulating Stress-Induced Anxiety in Adolescence”, Civitan International Research Club

Gray, Michelle
Career spotlight webinar. Society for Black Brain and Behavioral Scientists. October 2020.

Lubin, Farah
1. F.D. Lubin. Promotion and, Tenure Requirements in STEM Departments, at the ADVANCE Virtual Seminar. Invited by Drs. Paulette Patterson Dilworth, Louis Dale, Daneesh Simien, and Mary C Braswell.
2. F.D. Lubin. BP-ENDURE program Seminar Series. Hunter College, New York. Invited by Dr. Nesha Burghardt.
3. F.D. Lubin. Harvard Postdoctoral Association. Harvard Medical School. Invited by Dr. Manal Adam, Dean's Postdoctoral Fellow.

Marson, Daniel
Marson, D. (September 10, 2020). Financial capacity and undue influence in civil cases involving older adults. Keynote speaker at plenary session at the D.C. Bar Institute Aging and the Law Conference (virtual event), Washington, DC.

Pozzo-Miller, Lucas
Career Path for *Health and Medicine*, Department of Spanish Community-Based Learning Program, University of Richmond, VA (October); video conference.

Standaert, David

2020 Alzhemier's of Central Alabama, "Queso and Questions," Feb 27

Thyme, Summer
Magnolia District Junior Civitan online convention, 2020; remote

Ubogu, Eroboghene
Invited speaker, Development Day, Indian Springs School, Indian Springs, AL, November 13th, 2020

Visscher, Kristina
Birmingham Perimeter Civitan Club, December, 2020 "Understanding human brain plasticity using vision as a model"

7. ***Awards (other)***

Amara, Amy
Best Research Article of the Year for Movement Disorders journal for "Randomized Controlled Trial of Exercise on Objective and Subjective Sleep in Parkinson's Disease"

Brown, Cynthia
- Awarded the Gerontological Society of America's Joseph T. Freeman award, awarded to a prominent clinician in the field of aging, both in research and practice.
- Listed in Best Doctors in America – Birmingham

De Miranda, Briana
Collat Endowed Scholar in Neuroscience

Gray, Michelle
Profiled in The Scientist magazine in October 2020 in Scientist to Watch section
https://www.the-scientist.com/scientist-to-watch/michelle-gray-tracks-huntingtons-in-different-brain-cells-67956

Gross, Alecia
AKG identified as "Leading Scientist in Vision Research" (one of five chosen in Retinal Diseases group) from ScEYEnce https://sceyence.org/top-scientists/

Howard, George
Stroke Council Award and Lecture from the AHA

Howard, Virginia
- Awarded Distinguished Professor by the Board of Trustees, University of Alabama
- Web of Science, Highly Cited Researcher (in Clinical Medicine) (one of only 4 from UAB)

Lubin, Farah
2020 UAB School of Medicine Dean's Excellent Award for Diversity Enhancement
2020 President's Diversity Champion Award-UAB

Saag, Michael
Named co-editor of the journal AIDS

Standaert, David
Bachmann-Strauss Prize for Excellence in Dystonia Research (Michael J. Fox Foundation, with Dr. Antonio Pisani)

Thyme, Summer
- UAB Pitmann Scholar
- Klingenstein-Simons Fellowship Award in Neuroscience
- BBRF NARSAD Young Investigator Grant
- Mallinckrodt Grant

Ubogu, Eroboghene
UAB FY20 Provider Communication Award

8. Faculty. Please include abbreviated CV with publications for previous 12 months

See Appendix B

9. Trainees

Post-doctoral
Amara, Amy – Adeel Memon, Corina Catiul
Austad, Steve – Ashley Turner, Katelynn corder-Grier, Jessica Hoffman
Benveniste, Tika - 3
Bolding, Mark – 1
Buford, Thomas – Liliana Baptista; Taylor Buchanan; Lisa Roberts; Sara Harper
Day, Jeremy – Jen Tuscher, PhD
Gamble, Karen – Jodi Paul, PhD
Goldberg, Matthew – Sandeep Kumar Barodia
Gross, Alecia – Meredith Hubbard, MD
Kennedy, Richard – 1
Lahti, Andrienne - 2
McMahon, Lori – Cawsar Hernandez
Powell, Craig – Qiang-qiang Xia, PhD
Standaert, David – Edward Griffith, PhD
Triebel, Kristen – Karli Martin, PsyD
Visscher, Kristina – Dr. Marcello Maniglia, Dr. Pinar Demirayak
Wadiche, Jacques – Reagan Pennock, PhD
Wadiche, Linda – JC Gonzalez, PhD; PA Harshad, PhD

Pre-doctoral
Allendorfer, Jane - Silvienne Jago, Rudhab Bahabry
Amara, Amy – Hemant Srivastave, Perry Griffin, Karyn Ding
Arrant, Andrew – Derian Pugh, Anna Cook
Austad, Steve – Jared Miller
Bolding, Mark - 1
Bradley, Virginia – Tyler Bull
Crowe, Michael - 2
Day, Jeremy – Katerine Savell, Nancy Carullo, Morgan Zipperly,
Dobrunz, Lynn – Mariana Cortes, Taylor Davis, Patric Perez,
Kanisa Davidson, Duke, Robert Phillips, Samantha Black, Kasey Brida,
Devon Grey
Gamble, Karen – Lacy Goode, Allison Fusilier, Ananya Swaroop,
Jennifer Davis
Gerstenecker, Adam – Sara Whiten, Annie Ensor
Goldberg, Matthew – Rose Creed, Adeel Memon
Gray, Michelle – Annesha King
Gross, Alecia – Hailey Levi, Adrianna Reyes Moon
Kennedy, Richard – 2 pre-doctoral students
Knight, David – Heather Dark, Juliann Purcell, Anudeep Bolaram,
Kristen Buford, Matheus Araujo

Lahti, Andrienne - 1
Lubin, Farah - Rebecca Hauser, Silvienne C. Sint Jago. Ashleigh Irwin
Rubhab Bahabry
Martin, Roy – Stephen Aita, Katie Hannah Fisher, Thomas Valentine,
Heather Dark, Kayla Steward, Alexandra Jacob, Katie Hannah Fisher,
Thomas Valentine
McMahon, Lori – Anthoni Goodman, rose Creed, Bethany Langer, Shehinah Phillips, Melissa Garcia,
Adeel Memon
Pozzo-Miller, Lucas – Cesar Acevedo-Triana
Powell, Craig – Prathibha Sekar
Roberson, Erik – Natalie Davis
Standaert, David – Aubrey Schonhoff
Thyme, Summer – Emma Jones
Triebel, Kristen – Ben Eshner, Melissa Greenfield
Visscher, Kristina – Leland Fleming, Matthew Defenderfer, Mandy Biles,
Sara Sims, Jason Vice
Wadiche, Jacques – William Kennedy, Gokul Banumurthy, Yuliya Voskobiynyk
Wadiche, Linda – Willian Kennedy

Other

Allendorfer, Jane - Johanna Popp, Christian Puzzo
Arrant, Andrew – Qays Alajabi, Ahmad Hakim
Bolding, Mark - 4
Day, Jeremy – Natalie Simpkins, Jenna Hinds, Salomon Roman,
Akash Pandey, Matthew Boyaijan, Abhi Kamanth
Dobrunz, Lynn – David Gahan
Goldberg, Matthew – Reshu Chandra, Sindhu Komaragiri, Elijah Quinones,
Azim Farishta, Erika Cork, Matt Zbell, S. Kandikattu, David Sylvester
Gray, Michelle – Vyshnavi Rallapalle, Jonathan Wyatt, Emily Payne,
Ariana Bennett, Lawela Enfinger
Gross, Alecia – Anushree Gade, Seth Hubbard
Knight, David – Tameka Key, Carly Snidow
Martin, Roy – Steven Ampah
McMahon, Lori – Micah Bagley, Mariangela Scarduzio
Pozzo-Miller – Nirvignesh Vador; Natalie Saliba
Powell, Craig – Chenghui Song, PhD; Jing Wang, PhD,
Zhong Xuan, MD, PhD, Anju Singh, PhD
Thyme, Summer – Verdion Martina, Gretchen Kioschos, Michael Vivian,
Lynne Zhou, Kristie Mya, Mandy Chen, Caleb Calhoun
Triebel, Kristen – Sara Sims, Gabrielle Willhelm, Helen Bae, Dario Marotta,
Zach Tucker, Cary Pirtle, Abigail Snow, Sara Abolghasemi, Rebecca Pall
Ubogu, E – 3 Fellows
Visscher, Kristina – Vuga Parpura, Hannah Cowart, Saikrishna Sriraman, Brandon Mackey, Hector
Caceres, Mary Faulkner
Wadiche, Jacques – Shreya Malhotra
Wadiche, Linda – Cristina Dieni, PhD

10. ***Clinical/Translational programs***

A. **New programs**

Amara, Amy

- Slow wave sleep as a biomarker of rehabilitation-induced cognitive improvement in Parkinson's disease: will be starting soon and includes investigation of glymphatic clearance
- PPMI 2.0

- Investigation of light therapy on sleep in Parkinson's disease (site PI for NeuroNEXT study)

Benveniste, Tika
New programs - Michael J. Fox Foundation, October 1, 2020 – September 30, 2023. Cytokine Production by Adaptive Immune Cells from Patients with Parkinson's Disease: Response to Diverse Biological Stimuli. Total Direct Costs $499,999. Principal Investigator: E. N. Benveniste.

Bradley, Virginia
SPRINT MIND R01 to continue following the cognitive status of the participants as a function of hypertension thresholds targeted in this randomized controlled trial (co-I/ consultant)

Geldmacher, David
Redesign of the "Memory Disorders Clinic" to a "Brain Health, Aging, and Memory" program is underway

Lubin, Farah
UAB McKnight Award – "Exercise-related effects on memory function and neuronal circuitry- a clinical and preclinical investigation"

Roberson, Erik
NIH P20 Exploratory ADRC

Ubogu, Eroboghene
Argenx clinical trial on Efgartigimod PH20 SC in Adult Patients with Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)

Visscher,Kristina
NIH council has approved funding for a multi-site mechanistic clinical trial, of which UAB is the lead site, and I am the MPI. It is titled "Characterization of Multiple Factors in Training and Plasticity in Central Vision Loss." It would be funded by NEI.

B. **Update on existing clinical studies**

Amara, Amy
We are continuing our longitudinal study investigating influence of slow wave sleep on longitudinal cognitive decline

Bradley, Virginia
Completion of 5-year R01 randomized controlled trial of processing speed training in persons with MCI. Results under review for publication.

Kennedy, Richard
Completed R21/R33 grant from NIH/NIA to examine speed of processing training as an intervention to prevent cognitive decline among older adults after an episode of delirium; continued funding on R01 grant performing data mining among concomitant medications of older adults to identify potential novel therapeutic agents; continued funding on R01 grant to develop new data mining methods for identifying delirium among hospitalized older adults.

Roberson, Erik
Published new data on whole genome sequencing in people with age-related cognitive disorders (PMID 31836585) and racial differences in specialist evaluations (PMID 33337364)

Ubogu, Eroboghene
Completion of the NIH-funded Agrin/LRP4 antibody positive myasthenia gravis study and
Continued participation in NIH-funded NN108 NeuroNext idiopathic polyneuropathy study

Visscher, Kristina

In February, the UAB arm of the McKnight Brain Aging Registry finished acquiring our goal of 50 participants over the age of 85, who are in excellent cognitive health. We were very lucky that we completed this task prior to lock down of research in this high risk population due to COVID-19.

Additionally, our U01 grant examining brain connectivity changes associated with learning to use peripheral vision in later life is in no cost extension. We have not been able to run participants in this older adult cohort (macular degeneration participants tend to be older, and thus their matched controls are older).

11. Technology transfer

A. Patents/applications

Bolding, Mark
Applying for a patent for the C. elegans X-ray optogenetics work

B. Revenue generated from technology

12. Budget update (last year's budget and actual results with an explanation of material variances)

A. Status of matching funds, if applicable
B. Projected budget for coming year
C. Extramural funding

13. Educational programs focusing on age related memory Loss

A. Scientific

Amara, Amy
Influence of slow wave sleep on longitudinal cognitive performance in Parkinson's disease

Kennedy, Richard
With colleagues from the Department of Psychiatry and the Department of Medicine, we have continued with development of a curriculum for graduate students to teach reproducible research in neurosciences and other basic science fields. We have expanded this to an online learning platform with a goal of making this curriculum available to other institutions.

Lahti, Andrienne
In July 2020, together with Tom Denney (the Director of the Auburn MRI Research Center), I organized the 9th annual Alabama Advanced Imaging Consortium (AAIC) retreat virtually. Because of the virtual format, we were able to invite 3 internationally recognized speakers.

McMahon, Lori
Neuroscience Café – Discoveries in the Making

B. Public

Lahti, Andrienne
We have virtually restarted our Comprehensive Neuroscience Center (CNC) signature event, the Neuroscience café, which used to be held in several public libraries in the Birmingham area. Again, because of the virtual format, we can access the public of all of these libraries in one event.

14. ***Collaborative programs with other McKnight Institutes, institutions and research programs***

Bolding, Mark
Kristina Visscher's McKnight sponsored healthy aging neuroimaging study.

Geldmacher, David
Participation in MBAR study

Dobrunz, Lynn
I collaborate with Dr. Lori McMahon from UAB, Dr. Mark Bolding from UAB, and Dr. Mark Bevensee from UAB

Lubin, Farah
Plans to submit MBAR grant application with Drs. Tom Foster and Matt Huentelman. This project will be focused on processing blood samples from aged adults for DNA methylation and exosome analysis.

Visscher, Kristina
McKnight Brain Aging Registry, in association with collaborators at UF, UM and U of Arizona.

Within UAB, I collaborate with the Alzheimers Disease Center, especially Jon McConathy and Erik Roberson.

In addition, as part of my role as co-director of the Civitan International Neuroimaging Lab, our MRI facility at UAB, I help run several programs whose goal is to foster collaborations among UAB researchers using neuroimaging tools, including McKnight researchers. See this website for more information: https://www.uab.edu/medicine/cinl/seminars

15. ***Collaborative programs with non-McKnight Institutes, institutions and research programs***

Amara, Amy
Collaborator at Emory evaluating spectral analysis of EEG changes related to cognition

Austad, Steve
Grant collaborations with Oklahoma University Health Science Center

Bolding, Mark
Physicist for the UAB Alzheimer's Disease Center

Dobrunz, Lynn
I collaborate with Dr. Yuping Bao from the University of Alabama, with Dr. Stephen Foulger from Clemson, Dr. Jason Weick from the University of New Mexico,

Howard, Virginia
PI of ongoing subcontract with Johns Hopkins Univ/NIA: Transitions to Family Caregiving and the impact on Caregivers' Health

Pozzo-Miller, Lucas
Alan Percy (UAB), Jeff Neul (Vanderbilt), Maurizio Giustetto (Turin, Italy), Frank Longo (Stanford), Michelle Olsen (VA Tech), Karen Gamble (UAB), Aurelio Galli (UAB), Kirill Martemyanov (Scripps Florida), Keri Martinowich (Johns Hopkins University School of Medicine), Rita Cowell (SR).

Saag, Michael
Network of Integrated Clinical Systems (CNICS)

https://sites.uab.edu/cnics/

Ubogu, Eroboghene, E

- Jennifer DeBerry, Ph.D., Assistant Professor of Anesthesiology and Perioperative Medicine, UAB: Neurobehavioral assessments of nociception and drug reward/ abuse potential in murine peripheral neuropathy models
- Member, Center for Addiction and Pain Prevention and Intervention (CAPPI), UAB
- Annemieke Kavelaars, Ph.D., Professor, Department of Symptom Research, MD Anderson Cancer Center, Houston, Texas: Molecular modulation of blood-nerve barrier permeability and chronic neuropathic pain
- Bryan Moyer, Ph.D., Vice President, Head of Biology, Latigo Biotherapeutics, Thousand Oaks, CA: Novel analgesic drug permeability across the in vitro human blood-nerve barrier

Visscher, Kristina
Collaboration with Dr. Aaron Seitz at UC Riverside and Dr. Nick Turk-Browne at Yale (NIH project Characterization of Multiple Factors in Training and Plasticity in Central Vision Loss, NEI)

This project examines research aims to investigate the role of four vision factors on perceptual learning and visually-guided behaviors in peripheral vision in both healthy and macular degeneration (MD) samples (i.e., eye movements, visual sensitivity, spatial integration, and spatial attention), as well as measurements of plasticity including behavior and MRI anatomical, functional and connectivity measures.

Collaboration with Leslie Ross at Clemson University (NIH project Elucidating the Necessary Components and Mechanisms of Cognitive Training, NIA)
This large scale project aims to understand what components and mechanisms of cognitive training are necessary for cognitive improvements in older adults. I lead the MRI portion of the project.

16. *Briefly describe plans for future research and/or clinical initiatives*

Martin, Roy
Complete pilot McKnight sponsored UAB project (post-operative delirium project) and use findings as preliminary data to support NIH/NIA R01 grant application for submission early 2021.

De Miranda, Briana
Future research endeavors include a proposal to examine the transcriptomic profile of the most extensive environmental exposures (pesticides and solvents) with those in idiopathic PD patients. This proposal was chosen through an internal review at UAB to be submitted to the National Searle Scholars Program. Our future research plans also include expanding environmental influence on neurodegenerative disease.

Ubogu, Eroboghene

- Molecular determinants and signaling mechanisms implicated in blood-nerve barrier junctional complex formation in health and disease
- Molecular mediators of chronic neuropathic pain in peripheral neuropathies using microvascular-specific conditional knockout murine models, supported by in situ observations from patient peripheral nerve biopsies
- Elucidate the role of pathogenic leukocyte trafficking in the pathogenesis of immune-mediated and infectious polyneuropathies
- Elucidate the role of immune activation and tissue-specific autoimmunity in peripheral nerves
- Develop biomarkers (diagnostic/ prognostic) for peripheral neuropathies in adult patients

17. *Please provide endowment investment results for the report period.*

See Finance Report

18. ***Where any funds used for a Prohibited Purpose during the report period?***

No

19. ***Do you recommend any modification to the Purpose or mandates in the Gift Agreement?***

No

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

Yes

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

None

22. ***Please provide any general comments or thoughts not covered elsewhere – a response is not required. Please respond only if you would like to add something not otherwise covered elsewhere.***

23. ***What social media platforms are you active on and how many followers do you have?***

Allendorfer, Jane
Instagram (66)
Facebook (388)

Austad, Steve
Facebook (737)
Twitter (779)

Bradley, Virginia
UAB ADRC Facebook

Buford, Thomas
Twitter (600)

De Miranda, Briana
Twitter (350)

Gross, Alecia
Facebook (608)
Linked-in (370)
Twitter (21)

Pozzo-Miller
Twitter (1,087)

Powell, Craig
Twitter (919)

Roberson, Erik
Twitter @RobersonLabUAB: 215 followers
Twitter @UAB_Alzheimers: 366 followers

Saag, Michael
Twitter (4,200)

Thyme, Summer
Twitter (705)

Visscher, Kristina
Twitter (458)

*24. **Number of media impressions and placements secured mentioning the MBI and/or your leadership/researchers***

Austad, Steve – approximately 12

Howard, Virginia
Eight related to my ISC presentation above: Early life exposure to the Stroke Belt and Later Life Incident Cognitive Impairment

Saag, Michael
Many related to COVID (CNN, MSNBC, Fox Business, Washington Post, Birmingham News, CSPAN, Yahoo Finance, local news stations)

25. ***Number of monthly visitors to your website and any peak areas of interest or engagement***

Analytics MBI Channels 2020

Default Channel Grouping	Users	New Users	Sessions	Bounce Rate	Pages / Session	Avg. Session Duration
Organic Search	839	416	1,029	43.93%	2.53	0:02:14
Direct	172	131	194	46.39%	2.31	0:01:43
Referral	138	72	161	39.13%	2.93	0:02:02
(Other)	3	0	4	50.00%	1.25	0:00:11
Email	3	0	3	0.00%	4	0:08:04
Social	2	2	2	50.00%	1	0:00:43
	1,157	621	1,393	43.65%	2.54	0:02:09
Month Index	Users					
January	142					
February	152					
March	96					
April	67					
May	53					
June	76					
July	76					
August	103					
September	108					
October	116					
November	112					
December	91					
	1,192					

Thyme, Summer
Average of 137 unique visitors / month (year-to-date) to thymelab.org

Visscher, Kristina
I help organize a monthly science seminar series which is primarily attended by older adults. It is called SCI café: https://www.mcwane.org/learn/sci-cafe-online/ This is run in collaboration between the Research Civitan Club and the McWane Science Center. We have moved totally online due to pandemic, and have had a good transition. We have roughly 30 participants monthly.

26. ***Outline topics and attendance for any new podcasts, blogs, webinars, You Tube videos, etc.***

APPENDICES

Blood Pressure Control: The first Randomized trial proof that MCI and Dementia can be prevented – updated findings and recent thoughts

Jeff Williamson, M.D.
Program Director, J. Paul Sticht Center for
Healthy Aging and Alzheimer's Prevention
Department of Internal Medicine
Wake Forest School of Medicine
Winston-Salem, North Carolina

February 13, 2020
12:00 Noon
Finley Conference Room

Sponsored by the Evelyn F. McKnight Brain Institute

THE EVELYN F. McKNIGHT BRAIN INSTITUTE
UNIVERSITY OF ALABAMA AT BIRMINGHAM
Preserving memory, enhancing life

Appendix B
Biographical Sketches

NAME Ronald M. Lazar, PhD, FAAN, FAHA		POSITION TITLE Evelyn F. McKnight Endowed Chair in Learning and Memory in Aging	
EDUCATION/TRAINING			
New York University, University Heights, NY	BA	06/71	Psychology
Northeastern University, Boston, MA	MA	06/73	Psychology
Northeastern University, Boston, MA	PhD	05/77	Psychology
Georgetown University, Washington, DC	Post-Doc	08/78	Psychology
Eunice K. Shriver Ctr, Waltham, MA	Post-Doc	01/80	Behavioral Sci
Memorial Sloan-Kettering Cancer Center	Fellow	06/83	Neuropsychology

Position

1980-1984 Graduate Faculty, Neuropsychology and Learning Processes Programs, CUNY, NY 1980-1984 Asst Professor of Psychology, Dept of Psychology, Queens College of CUNY, NY 1981-1983 Adj Attending Psychol, Dept of Neurol, Memorial Sloan-Kettering Cancer Ctr, NY 1983-1984 Assistant Attending Psychologist, Dept of Psychiatry, New York Hospital, NY
1983-1984 Adj Asst Prof of Psychology (Psychiat), Cornell Univ Medical College, NY
1983-1984 Asst Attending Psychol, Dept of Neurol, Memorial Sloan-Kettering Cancer Ctr, NY 1984-1993 Chief Psychologist and Director of Neuropsychological Services, Dept of Psychology, Kings County Hospital Center, Brooklyn, NY
1984-1993 Director, Neuropsychol Service, Dept of Neurol, State Univ Hospital of Brooklyn, NY
1984-1993 Asst Prof of Neurology and Psychiatry, SUNY/Health Science Ctr at Brooklyn, NY 1993-1994 Asst Prof of Clinical Neuropsychol, Dept of Neurology, Columbia Univ College of Physicians & Surgeons, NY
1994-1996 Assoc Professor of Clinical Neuropsychol, Dept of Neurology, Columbia Univ Coll of Physicians & Surgeons, NY
2003-2013 Professor of Clinical Neuropsychology, Depts of Neurology and Neurological Surgery (Tenured), College of Physicians & Surgeons, Columbia University, NY
1994-2017 Professional Neuropsychologist, Dept of Neurology, NY Presbyterian Hospital, NY 1994-2017 Director, Levine Cerebral Localization Laboratory, Stroke Division, Dept of Neurol, NY Neurological Institute, Columbia Univ Medical Center, New York, NY
2013-Pres Prof of Neuropsychology in Neurol and Neurological Surgery at the Columbia University Medical Center, NY
2017-Pres Evelyn F. McKnight Endowed Chair. Dept of Neurology, Univ of Alabama at Birmingham, Birmingham AL
2017-Pres Professor of Neurology (with Tenure), Dept of Neurology, Univ of Alabama at Birmingham, AL
2017-Pres Director, UAB McKnight Brain Institute, Dept of Neurology, Univ of Alabama at Birmingham, AL
2017-Pres Director, Neuropsychology Division, Dept of Neurology, Univ of Alabama at Birmingham, AL
2017-Pres Senior Scientist, UAB Center for Exercise Medicine, Univ of Alabama at Birmingham
2017-Pres Senior Scientist, UAB Comprehensive Neuroscience Center, Univ of Alabama at Birmingham
2017-Pres Senior Scientist, Center for Neurodegeneration and Experimental Therapeutics at UAB
2018-Pres Professor of Neurology and Neuroscience, Dept of Neurol, Univ of Alabama at Birmingham, AL

Honors, Awards, and Advisory Committees

Honors:

Psi Chi / Robert Formica Memorial Award, Department of Psychology, New York Univ, 1971 Andrew W Mellon Fellow, Dept of Neurology, Memorial Sloan-Kettering Cancer Ctr, 1982- 1983
Sigma Xi, 1980
Fellow, American Psychological Association, 2000
Fellow, American Heart Association, 2005
Fellow, American Academy of Neurology, 2011
Fellow, American Neurological Association, 2012
Evelyn K. McKnight Endowed Chair in Learning and Memory in Aging, 2017

Federal Government Advisory Committees

2016 - Pres Fogarty Global Brain Disorders Study Section ZRG1 BDCN-N (55) R, CSR, NIH 2013 – 2015 Agency for Healthcare Quality and Research (AHRQ) US Dept of Health and Human Services
Evidence-based Practice Center Program, Evidence-based Practice Center Program
2009 – 2015 Chartered Member, Acute Neural Injury and Epilepsy (ANIE) Study Section, Center for Scientific Review (CSR), NIH
2002 – 2010 Permanent Member, Circulatory System Devices Advisory Panel, Medical Devices Advisory Committee, Center for Devices and Radiological Health, US FDA
2009 – 2010 ZRG1 BDCN-L (95) S Competitive Revisions; Clinical Neuroscience and Disease, NIH.
1996 Select Committee on Aging. US House of Representatives
Alzheimer's Disease and Related Disorders: The Government's Response. Ninety-Ninth Congress, Second Session (Cold Spring Harbor, New York)
2019 - Pres NINDS Advisory Committee for Common Data Elements 2.0 for Stroke Outcomes

Other Advisory Committees

1995 – 1997 Division 40 (Society for Clinical Neuropsychology), American Psychological Assn National Co-Chair, Hospital Staff Membership Task Force Practice Advisory Committee
2014 – 2016 National Institutes of Neurological Disorders and Stroke, NIH StrokeNet Recovery Working Group
2019 – Pres. Brain Health Science Subcommittee, American Heart Assn/American Stroke Assn

Peer-Review Panels

2011 – Pres Editorial Review Board, Stroke
1993 - Pres Ad Hoc Reviewer: New England Journal of Medicine, Anesthesiology, Cancer, Journal of Applied Behavioral Analysis, Annals of Neurology, Epilepsia, Neuropsychologia, Neuropsychology, Circulation, Neuroscience Letters, Journal of the International Neuropsychological Society, Neurology, Stroke, Journal of Neurology, Neurosurgery, & Psychiatry, Cerebrovascular diseases, American Journal of Physical Medicine and Rehabilitation, Resuscitation, Neurosurgery, Brain, Neuropsychology Review, Journal of Neurological Sciences, American Journal of Medicine, Journal of Clinical Anesthesia, Journal of Alzheimer's Disease, Frontiers of Neurology, Cardovascular Therapy, Annals of Internal Medicine, Neurorehabilitation and Neural Repair, Aphasiology,

Publications (Peer-Review only)

1. Norling, A.M., Gerstenecker, A.T., Buford, T.W., Khan, B., Oparil, S., **Lazar, R.M.** The Role of IGF-1 Deficiencies in Microvascular Rarefaction and Hypertension. GeroScience, 2020 Feb;42(1):141-158. PMID: 3180802
2. Yaghi, S., Cotsonis, G., de Havenon, A., Prahbakaran, S., Romano, J.G., **Lazar, R.M.,** Marshall, R., Feldmann, E., Liebeskind, D. Post Stroke Montreal Cognitive Assessment and Recurrent Stroke in Patients with Symptomatic Intracranial Atherosclerosis. J Stroke Cerebrovasc Dis. 2020 Feb 7:104663 [Epub ahead of print] PMID: 32044220
3. Mutsaerts, H.J., Petr, J., Bokkers, R., **Lazar, R.M**., Marshall, R.S., Asllani, I. Spatial Coefficient of Variation of Arterial Spin Labeling MRI as a Marker of Vascular Sufficiency in Carotid Occlusion, PloS One, 2020 Feb 26;15(2):e0229444. PMID: 32101567

4. Marshall, R.S., Pavol, M., Cheung, Y.K., Asllani, I., **Lazar, RM**. Cognitive Impairment Correlates Linearly with Mean Flow Velocity by Transcranial Doppler Below a Definable Threshold, Cerebrovascular Diseases EXTRA, 2020;10(1):21-27. PMID: 32289771.
5. Lin, C., Lee, J., **Lazar, R.M**., Arevalo, Y.A., Mansour, M.A.A., Corado, C., Harvey, R.L., Prabhakaran, S. Gait Measures at Admission to Inpatient Rehabilitation after Ischemic Stroke Predict 3-Month Quality of Life and Function. Physical Medicine & Rehabilitation. 2020 May 9. doi: 10.1002/pmrj.12402. Online ahead of print. PMID: 32388905.
6. Broderick, J.P., Elm, J.J., Janis, S, Zhao, W., Moy, C.S., Dillon, C.R., Chimowitz, M.I., Sacco, R.L., Cramer, S.C., Wolf, S.L.,Johnston, K.C.,MD, Saver, J.L., Marshall, R.S., Brown, D., Wintermark, M., Elkind, M.S.V., Kamel, H., Tirschwell, D.L., Longstreth, W.T., Chervin, R.D., Adeoye, O.M., Barreto, A.D., Grotta, J.C., Ramey, S.L., Lo, W.D., Feng, W., Schlaug, G., Sheth, K.N., Selim, M., Naidech, A.M., Lansberg, M.G., **Lazar**, **R.M**., Albers, G.W.,. Griffin, J.S., Sirline, L.P., Frasure, J., Wright, C.B., Khatri, P., MD. On behalf of the NIH StrokeNet Investigators. National Institutes of Health StrokeNet During the Time of COVID-19 and Beyond, Stroke. 2020 Aug;51(8):2580-2586. PMID: 32716819
7. Pavol, M.A., Boehme, A.K., Willey, J.Z., Festa, J.R., Lazar, R.M., Kakagawa, S., Casida, J., Yuzefpolskaya, M., Colombo, P.C. Predicting post-LVAD outcomes: Is there a role for cognition, Int J Artif Organs. 2020 Sep 10:391398820956661. doi: 10.1177/0391398820956661. Online ahead of print.
8. **Lazar, R.M**., Howard, V.G., Kernan, W.N., Aparicio, H.J., Levine, D.A., Viera, A.J., Jordan, L.C., Nyenhuis, D.L., Possin, K.L., Sorond, F.A., White, C. A primary care agenda for brain health, Stroke, 2020, In press.

.

Grants/Contracts

U24NS107223 (Gropen, Lazar, Harrigan) 09/01/2018 – 08/31/2023
NIH/NINDS StrokeBelt StrokeNet
The goal of the StrokeBelt StrokeNet is to establish a Regional Coordinating Center to facilitate Stroke research in the Southeastern States of Alabama and Mississippi. This infrastructure will provide research opportunities in acute stroke treatment, primary and secondary prevention, and post-stroke rehabilitation for an underserved, high-risk stroke population.

1 U01 NS080168-01A1 (Brott) 1/1/2014 – 12/31/2021
NIH/NINDS CREST-2 Clinical Coordinating Center.
The goal of this project is to assess if contemporary medical therapy is not inferior to contemporary revascularization (carotid endarterectomy or carotid angioplasty/stenting) plus best medical therapy in patients with ≥ 70% asymptomatic carotid stenosis. The cognitive aim is to assess whether medical therapy alone is non-inferior to revascularization to maintain the level of cognitive function at 4 years of follow-up.
Role: Co-I and Cognitive Core Leader.

U01 NS080165 (PI: G. Howard) 3/15/14 – 2/28/21
NIN/NINDS CREST-2 Statistical and Data Coordinating Center – (SDCC)
CREST-2 is a pair of randomized trials to assess potential stroke reduction: 1) carotid endarterectomy plus aggressive medical management versus medical management alone, and 2) carotid stenting plus aggressive medical management versus medical management alone. Each trial will have approximately 1,240 patients randomized and followed for up to 4 years for any stroke during a 44-day peri-procedural period plus ipsilateral stroke over a follow-up period extending 4 years. The study is being performed in approximately 150 clinical centers in the US and Canada.
Role: Co-I.

R01NS097876 (Lazar, Marshall, Liebeskind, Connolly) 4/1/2017 – 3/31/2022
NIH/NINDS Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial - Hemodynamics
The purpose of this project is to determine whether there is a subset of patients with carotid stenosis who have MRI-detected cerebral hemodynamic compromise and associated cognitive decline, and whether revascularization will be associated with improved hemodynamics and improved cognition.

AMC21 Multi-PI Pilot Grant, UAB School of Medicine (MPI:C Brown, Corresponding PI; Lazar, Co-PI)
Prevention of and Recovery from Hospital-Associated Disability. (1/20/2018-1/19/2020)

Pilot funding in preparation for 2019 submission for an NIA Claude D Pepper Older Americans Independence Center

R01 AG057709-01 (Pl Gutierrez) 7/1/2018 - 6/30/2023
NIH/NINDS Genetic Contribution to Brain Arterial Dilatation and its Role in Cognition and Dementia
The goal of this project is to study the role of gene regulation in the dilatation of intracerebral arteries in response to systemic cardiovascular risk factors.
Role: Co-I (neurocognitive outcomes).

1U01NS110728-01 (Lazar/Lansberg) 04/01/2019 - 03/31/2024
NIH/NINDS ARCADIA CSI (Cognition and Silent Infarcts)
This ancillary study to the ARCADIA trial will determine whether aspirin or apixaban reduces the number of silent brain infarcts in patients with atrial cardiomyopathy, with the
concomitant effect of mitigating cognitive decline.

3R01NS040807-15S1 (Supplement Pl Lazar) 8/1/2019 – 12/31/2020
NIH/NINDS. Family Study of Atherosclerosis and Vascular Cognitive Dysfunction.
The parent study, Family Study of Dominicans investigate how the genetic and non-genetic factors affect vascular precursor phenotypes of stroke with its deep phenotyping, extensive behavioral and clinical assessments, and the rich genetic data from previous grant cycles. The supplement studies genetic, epigenetic and vascular risk of cognitive function and cognitive decline in the high-vascular risk Dominican families.

1 R33 AG067069-01 (Austad/Crane/Kritchevsky; Role: Co-I) 4/01/2020 – 3/31/2025
NIH/NIA
AIDS and Aging Research Platform (AARP)
The goal is to build a more mature and sustainable interdisciplinary geroscience research infrastructure to advance an expanded research agenda focused on improving the health span of aging people living with HIV (PLWH).
Role: Co-I

R01AG068410 (Levine) 7/1/2020 – 6/30/2024
NIH/NIA
The Effect of Vascular Risk Factors on Risk of Alzheimer's Disease and Related Dementias after Stroke (STROKE COG)
The goal of this project is to analyze participant data from five American prospective cohorts with adjudicated incident strokes, stroke subtyping, and repeated objective measures of vascular risk factors and cognition before and after stroke to determine the relationships between risk factor levels and use of risk factor medications, ischemic stroke subtypes, and post-stroke cognitive trajectories.
Role: C0-I

R01NS103824-01 (Vagal/Khatri/Kissella) 07/1/2020–6/30/2025
NIH/NINDS
APRISE Dementia (Assessing Population-based Radiological brain health in Stroke Epidemiology-Dementia)
The major goal of this project is to create a prediction model of post stroke dementia incorporating imaging parameters in a biracial ischemic stroke/hemorrhagic stroke/TIA population using state-of-the-art modeling approaches.
Role: Consultant

NAME Jane Allendorfer		POSITION TITLE Assistant Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Uni of CA, Davis, CA	BS	06/2000	Psychology
CA State Uni, Hayward, CA		09/2004	Biological Science
Uni of Cincinnati, Cincinnati, OH	PhD	09/2009	Neuroscience
Uni of Cincinnati, Cincinnati, OH	Postdoc	08/2012	Neuroscience

POSITIONS

2003-2004 Graduate Student Researcher, Department of Biology, California State University East Bay, Hayward, CA
2004-2005 Graduate Student Research Rotations, University of Cincinnati, Cincinnati, OH
2006-2009 Graduate Student Research Assistant, Department of Psychiatry/Center for Imaging Research (Mentor: James C. Eliassen, PhD), University of Cincinnati, Cincinnati, OH
2009-2011 Postdoctoral Fellow, Department of Neurology, University of Cincinnati, Cincinnati, OH
2011-2012 Research Scientist, Department of Neurology, University of Cincinnati, Cincinnati, OH
2012-2013 Instructor, Department of Neurology, University of Alabama at Birmingham, Birmingham, AL
2014 - present Assistant Professor (Tenure Track), Department of Neurology, University of Alabama at Birmingham, Birmingham, AL
2017 - present Associate Director, Civitan International Neuroimaging Laboratory, University of Alabama at Birmingham, Birmingham, AL
2019 - present Investigator, Evelyn F. McKnight Brain Institute, University of Alabama at Birmingham

PUBLICATIONS:

1. Nenert R, Allendorfer JB, Bebin EM, Gaston TE, Grayson LE, Houston JT, and Szaflarski JP (2020). Cannabidiol normalizes resting-state functional connectivity in treatment-resistant epilepsy. Epilepsy and Behavior. 112:107297. PMCID: 32745959
2. Binder JR, Tong J, Pillay SB, Conant LL, Humphries CJ, Raghavan M, Mueller WM, Busch RM, Allen L, Gross WL, Anderson CT, Carlson C, Lowe M, Langfitt JT, Tivarus M, Drane DL, Loring DW, Jacobs M, Morgan VL, Allendorfer JB, Szaflarski JP, Bonilha L, Bookheimer S, Grabowski T, Vannest J, and Swanson SJ (2020). Temporal lobe regions essential for picture naming after left temporal lobe epilepsy surgery. Epilepsia. PMID: 32780878
3. Gaston TE, Allendorfer JB, Nair S, Bebin EM, Grayson LP, Martin RC, Szaflarski JP (2020). Effects of highly purified cannabidiol (CBD) on fMRI of working memory in treatment-resistant epilepsy. Epilepsy and Behavior. 112:107358. PMID: 32871501
4. Goodman AM, Allendorfer JB, Baird G, Blum AS, Bolding M, Correia S, ver Hoef L, Gaston T, Grayson L, Kraguljac N, Lahti AC, Martin AN, Monroe WS, Philip NS, Skidmore F, Tocco K, Vogel V, LaFrance Jr. WC, Szaflarski JP (2020). White matter integrity and neurite morphology differ in psychogenic non-epileptic seizures. Annals of Clinical and Translational Neurology. 7(10):1973-1984. PMCID: PMC7545605
5. Balachandran N, Goodman AM, Allendorfer JB, Martin AN, Tocco K, Vogel V, LaFrance Jr. WC, Szaflarski JP (2020). Relationship between neural responses to stress and mental healthy symptoms in psychogenic nonepileptic seizures after traumatic brain injury. Epilepsia. PMID: 33238045
6. Goodman AM, Diggs MD, Balachandran N, Kakulamarri PS, Oster RA, Allendorfer JB, Szaflarski JP (2020). Repeatability of neural and autonomic responses to acute psychosocial stress. Frontiers in Neuroscience. In press.

NAME Amy Willis Amara		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Agnes Scott College, Atlanta, GA	B.A.	1998	Medicine
Medical College of Georgia, GA	Ph.D.	2003	Medicine
Medical College of Georgia, GA	M.D.	2005	Medicine

HOSPITAL AND OTHER (NON ACADEMIC) APPOINTMENTS:
Hospital Privileges:
Birmingham Veterans Affairs Medical Center 2011-2012
Children's Hospital of Alabama 2010-present
University of Alabama Hospital 2009-presentUniversity of Alabama at Birmingham Highlands Hospital 2009-present Cooper Green Hospital 2009-present
Investigator, Evelyn F. McKnight Brain Institute 2018-present

PUBLICATIONS:

1. Wood, KH, AA Memon, RA Memon, A Joop, J Pilkington, C Catiul, A Gerstenecker, K Triebel, G Cutter, MM Bamman, S Miocinovic, and AW Amara. Slow wave sleep and EEG delta spectral power are associated with cognitive function in Parkinson's disease. J. Parkinson's Disease in press
2. Chahine, LM, MC Brumm, C Caspell-Garcia, W Oertel, B Mollenhauer, AW Amara, A Fernandez-Arcos, E Tolosa, C Simonet, B Hogl, A Videnovic, SJ Hutten, C Tanner, D Weintraub, E Burghardt, C Coffey, HR Cho, K Kieburtz, KL Postono, K Merchant, D Galasko, T Foroud, A Siderowf, K Marek, T Simuni, and A Iranzo. (2020) Dopamine transporter imaging predicts clinically-defined -synucleinopathy in REM sleep behavior disorder. Annals of Clinical and Translational Neurology. In press. PMID: 33321002
3. Singhania, A, J Pham, R Dhanwani, JR Dutra, KS Marder, E Phillips, S Mallal, AW Amara, DG Standaert, D Sulzer, B Peters, A Sette, CS Lindestam Arlehamn. (2020) The TCr repertoire of -synuclein-specific T cells in Parkinson's disease is surprisingly diverse. Scientific Reports. In press
4. Amara AW, KH Wood, A Joop, RA Memon, J Pilkington, SC Tuggle, J Reams, MJ Barrett, DA Edwards, AL Weltman, CP Hurt, G Cutter, MM Bamman. (2020) Randomized Controlled Trial of Exercise on Objective and Subjective Sleep in Parkinson's Disease. Movement Disorders. 35:947. PMID: 32092190; PMCID pending
5. Lindestam Arlehamn, CS, R Dhanwani, J Pham, R Kuan, A Frazier, JR Dutra, EJ Phillips, SA Mallal, M Roderer, KS Marder, AW Amara, DG Standaert, JG Goldman, I Litvan, B Peters, D Sulzer, and A Sette. (2020) -synuclein-specific T cell reactivity is associated with preclinical and early Parkinson's disease. Nature Communications. 11:1875 PMID: 32313102, PMCID: PMC7171193
6. Amara, A.W. (2020) Sleep and cognition in Parkinson's disease. Sleep Medicine. 73:179 PMID: 32841925
7. Amara AW, KH Wood, A Joop, RA Memon, J Pilkington, SC Tuggle, J Reams, MJ Barrett, DA Edwards, AL Weltman, CP Hurt, G Cutter, MM Bamman. (2020) Reply to Exercise for "Sleep Rehabilitation" in Parkinson's Disease. Movement Disorders. 35:1286 PMID: 32691908
8. Cristini, J, M. Weiss, B. de Las Heras, A. Medina-Rincón, A. Dagher, R.B. Postuma, R. Huber, J. Doyon, P. Rosa-Neto, J. Carrier, A.W. Amara, M. Roig. (2020) The effects of exercise on sleep quality in persons with Parkinson's Disease: a systematic review with meta-analysis. Sleep Medicine Reviews 55:101384 PMID: 32987321
9. Memon, A.A, J. Coleman, A.W. Amara. (2020) Effects of Exercise on Sleep in Neurodegenerative Disease. Neurobiology of Disease 140:104859 PMID: 32243913, PMCID pending
10. Wallace, DM. W.K. Wohlgemuth, L.M. Trotti, A.W. Amara, I.A. Malaty, S.A. Factor, S. Nallu, L. Wittine, R.A. Hauser (2020) Practical evaluation and management of insomnia in Parkinson's disease: a review. Movement Disorders Clinical Practice. 7:250. PMID: 32258222; PMCID: PMC7111581

NAME Steven N. Austad		POSITION TITLE Professor and Chair	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Uni of CA, Los Angeles	B.A.	1969	English Literature
CA State Uni, Norhtridge	B.A.	1976	Biology
Purdue University	PhD	1981	Biological Sciences

Positions

2014 – present: Distinguished Professor & Chair, Department of Biology, University of Alabama at Birmingham (UAB), Birmingham, AL

- Director. UAB Nathan Shock Center of Excellence in the Basic Biology of Aging.
- Associate Director. UAB Comprehensive Center for Healthy Aging.
- Senior Scientist. UAB Nutrition Obesity Research Center.
- Senior Scientist. UAB Center for Exercise Medicine.
- Senior Scientist. UAB Diabetes Research Center
- Steering Committee Member. UAB Mentored Experiences in Research, Instruction, and Teaching (MERIT) Program.
- Scientist. UAB Alzheimer's Disease Center.
- Executive Committee Member. UAB Comprehensive Neuroscience Center.
- Investigator, Evelyn F. McKnight Brain Institute
- Scientific Director, American Federation for Aging Research, New York City, NY
- Co-Director, Nathan Shock Centers Coordinating Center.

Publications

1. Richardson A, Austad SN. (2020). Edward J. Masoro, Scientist and Friend. Journals of Gerontology: Biological Sciences & Medical Sciences, 75(11), 2105-2107.

2. Hoffman JM, Kiklevich JV, Klavins K, Valencak TG, Austad SN. (2020). Alterations of lipid metabolism with age and weight in companion dogs. Journals of Gerontology A: Biological Sciences and Medical Sciences. Aug 4 (epub ahead of print). doi: 10.1093/gerona/glaa186.

3. Barzilai N, Appleby JC, Austad SN, Cuervo AM, Kaeberlein M, Gonzalez-Billault C, Lederman S, Stambler I, Sierra F (2020). Geroscience in the age of COVID-19. Aging and Disease 11(4):725-729. http://dx.doi.org/10.14336/AD.2020.0629.

4. Sun S, White RR, Fischer KE, Zhang Z, Austad SN*, Vijg J*. (2020). Inducible aging in Hydra oligactis implicates sexual reproduction, loss of stem cells, and genome maintenance as major pathways. Geroscience 42(4):1119-1132. doi: 10.1007/s11357-020-00214-z. * co-senior/corresponding authors

5. Austad SN (2020). On looking at Sydney Asdell's comparative chronologic age in man and other mammals from issue 1 of the Journal of Gerontology. Journals of Gerontology Biological Sciences & Medical Sciences 75(6) 1019-20. doi: 10.1093/Gerona/glz261.

6. Carter CS, Richardson A, Huffman DM, Austad S. (2020). Bring Back the Rat! Journals of Gerontology A Biological and Medical Sciences 75 (3), 405–415. doi: 10.1093/Gerona/glz298.

7. Hoffman JM, Kiklevich JV, Austad M, Tran V, Jones DP, Royal A, Henry C, Austad SN. (2020). Tryptophan metabolism is differently regulated between large and small dogs. Geroscience 42(3):881-896. doi:10.1007/s11357-019-00114-x.

8. Tomczyk S, Suknovic N, Schenkelaars Q, Wenger Y, Ekundayo K, Buzgariu W, Bauer C, Fischer K, Austad S, Galliot B (2020). Deficient autophagy in epithelial stem cells drives aging in the freshwater cnidarian Hydra. Development. Jan 23;147(2):dev177840. Doi: 10.1242/dev.177840.

9. Van Skike CE, Lin A-L, Burbank RR, Halloran JJ, Hernandez SF, Cuvillier J, Soto VY, Hussong SA, Jahrling JB, Javors MA, Hart MJ, Fischer KE, Austad SN, Galvan V. (2020) mTOR drives cerebrovascular, synaptic, and cognitive dysfunction in normative aging. Aging Cell, Jan;19(1):e13057. doi: 10.1111/acel.13057

NAME Karlene Ball		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Indiana University	B.A.	1974	Psychology
Northwestern University	M.S.	1977	Psychology
Northwestern University	Ph.D.	1979	Psychology
Northwestern University	Post-doc	1979-1984	Psychology

Positions
Director, UAB Edward R. Roybal Center for Research on Applied Gerontology Associate
Director, Comprehensive Center for Healthy Aging
Investigator, Evelyn F. McKnight Brain Institute

Accomplishments
Submission of the Roybal Center competing renewal. The UAB Roybal Center Theme is Translational Research on Aging and Mobility. This theme was selected due to the prevalence of mobility problems among older adults, and the impact that mobility problems have on everyday function. The theme has expanded and broadened over time and now includes additional areas
of research in which mobility can be threatened (e.g., pain and obesity), as well as other factors which can impact adherence to behavioral interventions.

NAME Etty (Tika) Benveniste		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
CA State Uni, Chico, CA	B.A.	1978	Biological Sciences
Univ of CA, Los Angeles, CA	PhD	1983	Immunology
Univ of CA, Los Angeles, CA	Post-doc	1986	Neuroimmunology

Positions
2015 – present Co-Director, UAB Multiple Sclerosis Center, UAB
2015 – present Senior Associate Dean for Research Administration, UAB 2016 – present Charlene A. Jones Endowed Chair in Neuroimmunology, UAB 2017 – present Senior Vice President for Basic Sciences
2017 – present, Investigator, Evelyn F. McKnight Brain Institute

Honors, Awards, and Advisory Committees
Chair: SOM Executive Risk Oversight Committee, 2015- Chair:
SOM Master Space Planning Committee, 2016-
Member: Science and Technology Honors Program Leadership Council, 2016-
Co-Chair: Search Committee, Director of the Comprehensive Cancer Center, 2016-2017 Member: Search Committee, Vice President for Research, 2016
Chair: Internal Advisory Board, UAB Women's Reproductive Health Research (WRHR) Program, 2016-
Member: Search Committee, Chair of Neurobiology, 2017
Member: Internal Advisory Board, Institute for Cancer Outcomes and Survivorship, 2017

Publications
1. Yang, W., Gibson, S.A., Yan, Z., Wei, H., Tao, J., Sha, B., Qin, H., and E. N. Benveniste. 2020. Protein kinase 2 (CK2) controls CD4+ T-cell effector function in the pathogenesis of colitis. Mucosal Immunol. 13(5):788-798.
2. Koo, H., McFarland, B., Hakim, J.A., Crossman, D. K., Crowley, M.R., Benveniste, E. N. and Morrow, C. D. 2020. An individual mosaic of maternal microbial strains is transmitted to the infant gut microbial community. R. Soc. Open Sci.15;7(4):192200.

Submitted/Under Review
1. Dees, K. J., Koo, H., Humphreys, J. F., Hakim, J. A., Crossman, D. K., Crowley, M. R., Nabors, L. B., Benveniste, E. N., Morrow, C. D., and McFarland, B.C. 2020. Human gut microbial communities dictate efficacy of anti-PD-1 therapy in a humanized microbiome mouse model of glioma. Neuro-Oncol. Under Revision.
2. Vickers, S. M., Watts, R., Agarwal, A., Benveniste, E. N., Bulgarella, D., Fouad, M. N., Hoesley, C., Jones, K., Kimberly, R. P., Rogers, D. A., Larson, J. A., Leeth, T. R., Mack, L., and Patel, N. 2020. Returning to growth: A successful five-step approach to change management. Acad. Med. Under Revision.
3. Carlisle, S., Qin, H., Hendrickson, C., Muwanguzi, J., Lefkowitz, E., Kennedy, R., Yan, Z., Yacoubian, T., Benveniste, E.N., West, A., Harms, A., and Standaert, D. 2020. Sex-based differences in the activation of peripheral blood monocytes in early Parkinson disease. Submitted.
4. Yan, Z., Yang, W., Wei, H., Dean, M.N., Standaert, D.G., Cutter, G., Benveniste, E. N., and Qin, H. 2020. Dysregulation of the adaptive immune system in early stage Parkinson Disease patients. Submitted.
5. Song, C. J., Li, Z., Bland, S. J., Aloria, E. J., Lever, J. M., Gonzalez, N. M., Lang, M. L., Benveniste, E. N., Harrington, L. E., Tsiokas, L., George, J. F., Crossman, D. K., Yoder, B. K., Agarwal, A., Mrug, M., Hopp, K., and Zimmerman, K. A. 2020. A comprehensive immune cell atlas of cystic kidney disease reveals the involvement of CD4 T-cells in injury mediated cyst progression. Submitted.
6. Xu, E., Boddu, R., Abdelmotilib, H. A., Sokratian, A., Kelly, K., Liu, Z., Bryant, N., Chandra, S., Carlisle, S. M., Lefkowitz, E. J., Harms, A. S., Benveniste, E. N., Yacoubian, T. A., Volpicelli-Daley, L. A., Standaert, D. G., and West, A. B. 2020. LRRK2 mediates the recruitment of pro-inflammatory monocytes to the brain in response to pathological ⍺-Synuclein. Submitted.

NAME Mark Bolding		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION Clemson University University of Alabama at Birmingham	DEGREE B.S. Ph.D.	YEAR(S) 1997 2012	FIELD OF STUDY Mathematics Vision Science/Philosophy

Current Positions:
2017 – Present:
Associate Professor, Radiology, UAB Associate Professor, Division of Advanced Medical Imaging Department of Radiology
Director, Civitan International Neuroimaging Laboratory
Investigator, Evelyn F. McKnight Brain Institute mbolding@uabmc.edu
205-975-4060

Areas of interest:
Vision - visual behavior and visual cognition; psychiatry – schizophrenia; imaging - MRI and neuroimaging

Publications

1. Bartley, A. F., Fischer, M., Bagley, M. E., Barnes, J. A., Burdette, M. K., Cannon, K. E., Bolding, M. S., Foulger, S. H., McMahon, L. L., Weick, J. P., et al. (2020). X-ray mediated scintillation increases synaptic activity via Cerium-doped LSO and Channelrhodopsin-2. BioRxiv. doi:10.1101/2020.08.29.273359.
2. Goodman, A. M., Allendorfer, J. B., Blum, A. S., Bolding, M. S., Correia, S., Ver Hoef, L. W., Gaston, T. E., Grayson, L. E., Kraguljac, N. V., Lahti, A. C., et al. (2020). White matter and neurite morphology differ in psychogenic nonepileptic seizures. Ann. Clin. Transl. Neurol. doi:10.1002/acn3.51198.
3. Goss, A. M., Dowla, S., Pendergrass, M., Ashraf, A., Bolding, M., Morrison, S., Amerson, A., Soleymani, T., and Gower, B. (2020). Effects of a carbohydrate-restricted diet on hepatic lipid content in adolescents with non-alcoholic fatty liver disease: A pilot, randomized trial. Pediatr. Obes., e12630. doi:10.1111/ijpo.12630.
4. Meng, Y., Mabry, S., Stewart, P., Cannon, K., Liu, L., Bolding, M., Zhang, L., and Adams, M. L. (2020). Correlating the passive response of eye and brain to head impact using MEMS IMUs on 3D-printed human head phantom. Physiol. Meas. doi:10.1088/1361-6579/ab78bd.
5. Rich, M. C., Sherwood, J., Bartley, A. F., Whitsitt, Q. A., Lee, M., Willoughby, W. R., Dobrunz, L. E., Bao, Y., Lubin, F. D., and Bolding, M. (2020a). Focused ultrasound blood brain barrier opening mediated delivery of MRI-visible albumin nanoclusters to the rat brain for localized drug delivery with temporal control. J. Control. Release 324, 172–180. doi:10.1016/j.jconrel.2020.04.054.
6. Rich, M., Whitsitt, Q., Lubin, F., and Bolding, M. (2020b). A Benchtop Approach to the Location Specific Blood Brain Barrier Opening using Focused Ultrasound in a Rat Model. J. Vis. Exp. doi:10.3791/61113.
7. Rich, M., Zhang, E., Dickey, A., Jones, H., Cannon, K., Bandera, Y., Foulger, S., Lubin, F., and Bolding, M. (2020c). A noninvasive approach to optogenetics using focused ultrasound blood brain barrier disruption for the delivery of radioluminescent particles. BioRxiv. doi:10.1101/2020.08.20.248302.
8. Willoughby, W. R., Thoenes, K., and Bolding, M. (2020). Somatotopic Arrangement of Eight Distinct Skin Areas in the Human Primary Somatosensory Cortex Derived from Functional Magnetic Resonance Imaging. BioRxiv. doi:10.1101/2020.06.22.164871.

NAME Virginia Bradley		POSITION TITLE Emeritus Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
University of Alabama at Birmingham	BS	1991	Psychology & English
University of Alabama at Birmingham	MA, PhD	1994, 1997	Medical Psychology

Positions

2019 – present Emeritus Professor, Department of Medicine Divisioin of Georntology

2015 - 2019 Professor, Department of Medicine, Division of Gerontology, Geriatrics, and Palliative Care; School of Social and Behavioral Sciences, Department of Psychology (secondary appointment); and Department of Ophthalmology (secondary appointment),

2012 - pres. Senior Scientist, Center for Outcomes and Effectiveness Research and Education, 2009 - 2015 Associate Professor, Department of Medicine, Division of Gerontology, Geriatrics, and Palliative Care; School of Social and Behavioral Sciences, Department of Psychology (secondary appointment); and Department of Ophthalmology (secondary appointment—2014-2015)),

2009 - pres. Scientist, appointed, UAB Comprehensive Neuroscience Center

2007 - pres. Associate Director, UAB Edward R. Roybal Center for Translational Research on Aging and Mobility

2007 - pres. Graduate Faculty, University of Alabama, Tuscaloosa, AL

2005 - 2009 Assistant Professor, Department of Medicine, Division of Gerontology, Geriatrics, and Palliative Care; and School of Social and Behavioral Sciences,

2005 - pres. Director, Dementia Care Research Program, Division of Gerontology, Geriatrics, and Palliative Care, University of Alabama at Birmingham, Birmingham, AL

2005 - pres. Director, Alzheimer's Family Program, Comprehensive Center for Healthy Aging, University of Alabama at Birmingham, Birmingham, AL

2000 - pres. Senior Scientist (2015), UAB Comprehensive Center for Healthy Aging (formerly Center for Aging)

2015 – present Investigator, Evelyn F. McKnight Brain Institute

Research Interests

Cognitive and functional assessment of older adults in the contexts of normal aging, Mild Cognitive Impairment, Alzheimer's disease, and stroke. Interventions to maintain cognition and daily function.

Website https://www.ncbi.nlm.nih.gov/sites/myncbi/virginia.wadley%20bradley.1/bibliography/47840873/public/?sort=date&direction=descending

NAME Michael Brenner		POSITION TITLE Emeritus Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Harvard College, Cambridge, MA	A.B.	1965	Biochemical Sciences
Churchill College, Cambridge, UK		1966	
Uni CA Berkeley, CA	PhD	1970	Biochemistry

Positions

2015-present Emeritus Professor, Department of Neurobiology, UAB 2007-
2015 Professor Department of Neurobiology, UAB
2006 – present Investigator, Evelyn F. McKnight Brain Institute
1999-2007 Associate Professor, Department of Neurobiology, UAB
1992-1998 Research Scientist, National Institute of Neurological Disorders and ("Special Expert")
Stroke, NIH, Bethesda, MD, Laboratory of Dr. John Hallenbeck
1987-92 Research Scientist, National Institute of Neurological Disorders and ("Special Expert")
Stroke, NIH, Bethesda, MD., Laboratory of Dr. Ernst Freese
1985-87 Research Scientist, National Institute of Diabetes, Digestive and Kidney ("Expert")
Diseases, NIH, Bethesda, MD, Laboratory of Dr. Jun-ichi Tomizawa 1980-84
Associate Professor, Temple Univ. Medical School, Philadelphia, PA
1979-80 Visiting Assistant Professor, Boston College, Chestnut Hill, MA 1979-80
Research Associate, Harvard University, Cambridge, MA
1976-79 Associate Professor, Harvard University, Cambridge, MA
1972-76 Assistant Professor, Harvard University, Cambridge, MA, Department of Biology

Patent:

United States Patent Number 5,627,047, "Astrocyte-Specific Transcription of Human Genes." granted 6 May 1997, covers the use of the human GFAP regulatory sequences for targeting expression of genes to astrocytes in culture or in transgenic animals. Licensing agreements have been executed with several biotechnology companies.

NAME Cynthia J. Brown		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
East Carolina Uni, Greenville, NC	B.S.	1982	Physical Therapy
North Carolina St, Raleigh, NC		1991	
Univ of North Carolina, Chapel Hill	MD	1996	
UAB	M.S.	2006	Public Health

Positions

2003 – present Investigator, Birmingham/Atlanta VA Geriatric Research, Education and Clinical Center (GRECC)
2003 – present Medical Director, Birmingham/Atlanta GRECC Fall Prevention and Mobility Clinic
2003 – present Staff Physician, UAB Hospital, UAB Highlands and the Veterans Affairs Medical Center, Birmingham, Alabama
2008 – 2013 Quality Improvement Director, Acute Care for Elders (ACE) Unit, UAB Highlands, Birmingham, Alabama
2017 – present Investigator, Evelyn F. McKnight Brain Institute

Publications

1. Iyer AS, Dionne-Odom JN, Khateeb DM, O'Hare L, Tucker RO, Brown CJ, Dransfield MT, Bakitas MA. A Qualitative Study of Pulmonary and Palliative Care Clinician Perspectives on Early Palliative Care in Chronic Obstructive Pulmonary Disease. J Palliat Med. 2020;23(4):513-526. PMID: 31657654.
2. Iyer AS, Goodrich CA, Dransfield MT, Alam SS, Brown CJ, Landefeld CS, Bakitas MA, Brown JR. End-of-Life Spending and Healthcare Utilization Among Older Adults with Chronic Obstructive Pulmonary Disease. Am J Med. 2020;133(7):817-824. PMID: 31883772.
3. Loyd C, Markland AD, Zhang Y, Fowler M, Harper S, Wright NC, Carter CS, Buford TW, Smith CH, Kennedy RE, Brown CJ. Prevalence of Hospital-Associated Disability in Older Adults: A Meta-Analysis. J Am Med Dir Assoc. 2020;21(4):455-461. PMID: 31734122.
4. Arya S, Khakharia A, Rothenberg KA, Johnson TM 2nd, Sawyer P, Kennedy RE, Brown CJ, Bowling CB. Association of Peripheral Artery Disease with Life-Space Mobility Restriction and Mortality in Community-Dwelling Older Adults. J Vasc Surg. 2020;71(6):2098-2106. PMID: 32081483.
5. Wright NC, Brown CJ, Chen L, Curtis JR, Shikany J, Saag KG. Racial Disparities Exist in Outcomes Post Major Fragility Fractures: A Descriptive Study. J Am Geriatr Soc. 2020. 68(8):1803-1810. PMID: 32337717.
6. Lorgunpai SJ, Finke B, Burrows I, Brown CJ, Rubin FH, Wierman HR, Heisey SJ, Gartaganis S, Ling SM, Inouye SK. Creating a Culture of Mobility in Acute Care: Mobility Action Group and Change Package. J Am Geriatr Soc. 2020 Aug 5. [Online ahead of print]. PMID: 32757219.
7. Bolstad CJ, Moak R, Brown CJ, Kennedy RE, Buys DR. Neighborhood Disadvantage is Associated with Depressive Symptoms but Not Depression Diagnosis in Older Adults: Results from the UAB Study of Aging. Int J Environ Res Public Health. 2020 Aug 8;17(16):5745. PMID: 32784478.
8. King BJ, Bodden J, Steege L, Brown CJ. Older Adult Patient Experiences with Ambulation during a Hospital Stay: A Qualitative Study. Geriatr Nurs. 2020 Aug 26:S0197-4572(20)30249-4. doi: 10.1016/j.gerinurse.2020.08.005. [Online ahead of print] PMID: 32861430.
9. Balentine CJ, Meier J, Berger M, Hogan T, Reisch J, Cullum M, Zeh H, Lee SC, Skinner CS, Brown CJ. Using Local Rather Than General Anesthesia for Inguinal Hernia Repair is Associated with Shorter Operative Time and Enhanced Postoperative Recovery. Am J Surg. 2020 Aug 25:S0002-9610(20)30515-8. doi: 10.1016/j.amjsurg.2020.08.024. [Online ahead of print]. PMID: 32896372.
10. Cohen AB, Parks A, Whitson HE, Zieman S, Brown CJ, Boyd C, Covinsky K, Steinman MA. Succeeding in Aging Research during the Pandemic: Strategies for Fellows and Junior Faculty. J Am Geriatr Soc. 2020 Oct 13. Online ahead of print. PMID: 33047812
11. Balentine CJ, Meier J, Berger M, Reisch J, Cullum M, Lee SC, Skinner CS, Brown CJ. Using Local Anesthesia for Inguinal Hernia Repair Reduces Complications in Older Patients. J Surg Res. 2020 Sep 28;258:64-72. PMID: 33002663.

NAME Thomas Buford	POSITION TITLE Associate Professor and Endowed Scholar Department of Medicine, Gerontology, Geriatrics and Palliative Care		
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Baylor University	PhD	2009	Exercise Physiology
Oklahoma State University	MS	2006	Kinesiology and Exercise Science
Oklahoma Baptist University	BS	2004	Mathematics

Positions

Associate Professor (P), Medicine - Gerontology, Geriatrics, and Palliative Care , Department of Medicine 2017
Scientist (C), Center for Exercise Medicine , Cell, Developmental and Integrative Biology (CDIB) 2017 -
Associate Director, Center for Exercise Medicine , Cell, Developmental and Integrative Biology (CDIB) 2017 -
Scientist (C), Evelyn F. McKnight Brain Institute , Neurology 2017 -
Scientist (C), Comprehensive Center for Healthy Aging , School of Medicine 2018 -
Scientist (C), Comprehensive Diabetes Center , School of Medicine 2019 -
Scientist (C), Nutrition Obesity Res Center (NORC) , Nutrition Sciences Research 2019 -

Publications

1. SA Harper, JR Bassler, S Peramsetty, Y Yang, LM Roberts, D Drummer, RT Mankowski, C Leeuwenburgh, K Ricart, RP Patel, MM Bamman, SD Anton, BC Jaeger, TW Buford*. Resveratrol and exercise to treat functional limitations in late life: a pilot randomized controlled trial. Exp Gerontol. (in press)
2. LM Roberts, TW Buford*. Lipopolysaccharide Binding Protein is Associated with CVD Risk in Older Adults. Aging Clin Experim Res. (in press)
3. ML Erickson, KA Esser, WE Kraus, TW Buford, LM Redman. A Role for Exercise to Counter Skeletal Muscle Clock Disruption. Exercise Sport Sci Rev. (in press)
4. JA Sanford, CD Nogiec, ME Linholm, JN Adkins, D Amar, S Dasari, JK Drugan, FM Fernandez, S Radom-Aizik, S Schenk, MP Snyder, RP Tracy, P Vanderboom, S Trappe, MJ Walsh, MoTrPAC Consortium. Molecular Transducers of Physical Activity Consortium: Mapping the Dynamic Responses to Exercise. Cell (in press)
5. TW Buford*. The Gut Microbiome and Aging. J Gerontol A Biol Sci. 75(7): 1229-1231. 2020.
6. TW Buford*, Y Sun, LM Roberts, A Banerjee, S Peramsetty, A Knighton, A Verma, D Morgan, G Torres, Q Li, CS Carter. Angiotensin (1-7) delivered orally via probiotic, but not subcutaneously, benefits the gut-brain axis in older rats. Geroscience (in press)
7. AL Willig, AR Webel, AO Westfall, EB Levitan, HM Crane, TW Buford, GA Burkholder, JH Willig, AJ Blashill, RD Moore, WC Mathews, A Zinski, J Muhammad, EH Geng, S Napravnik, JJ Eron, B Rodriguez, MM Bamman, ET Overton. Physical activity trends and metabolic health outcomes in people living with HIV in the US, 2008-2015. Progress in CVD. 63(2): 170-177. 2020.
8. LC Baptista, Y Sun, CS Carter, TW Buford*. Crosstalk between gut microbiome and bioactive lipids: therapeutic targets in cognitive frailty. Frontiers in Nutrition. 7:17. 2020.
9. J Adriansjach, ST Baum, EJ Lefkowitz, WJ Van Der Pol, TW Buford, RJ Colman. Age-related differences in the gut microbiome of Rhesus macaques. J Gerontol A- Biol Sci. 75(7): 1293-98.
10. RT Mankowski, L You, TW Buford, C Leeuwenburgh, TM Manini, S Schneider, P Qiu, SD Anton. Higher dose of resveratrol elevated cardiovascular disease risk biomarker levels in overweight older adults – a pilot study. Experimental Gerontol. 131: 110821. 2020.
11. SA Harper, LC Baptista, LM Roberts, SJ Wherry, RS Boxer, KL Hildreth, RS Seay, PH Allman, CS Carter, I Aban, WM Kohrt, TW Buford*. ACES – ACE Inhibitors Combined with exercise for hypertensive seniors: design of a randomized controlled trial. Frontiers Med – Geriatric Med. 6:327. 2020.
12. NW Glynn, T GMelin, AJ Santanasto, LC Lovato, BS Lange-Maia, BJ Nicklas, RA Fielding, TM Manini, VH Myers, N de Rekeneire, BJ Spring, M Pahor, AC King, WJ Rejeski, AB Newman, Lifestyle Interventions and Independence for Elders Study Group. 68(3): 619-624. 2020.
13. AR Webel, D Long, B Rodriguez, CH Davey, TW Buford, HM Crane, K Mayer, MS Saag, AL Willig. The PROSPER-HIV Study: A Research Protocol to Examine the Relationships Among Physical Activity, Diet Intake, and Symptoms in Adults Living with HIV. J Assoc Nurses AIDS Care. 31(3): 346-352. 2020.
14. Y Sun, LC Baptista, LM Roberts, P Jumbo-Lucioni, LL McMahon, TW Buford*, CS Carter. The Gut Microbiome as a Therapeutic Target for Cognitive Frailty. J Gerontol Series A: Biol Sci. 75(7): 1242-1250. 2020.
15. A Picca, RT Mankowski, G Kamenov, SD Anton, TM Manini, TW Buford, SK Saini, R Calvani, F Landi, R Bernabei, E Marzetti, C Leeuwenburgh. Advanced age is associated with iron dyshomeostasis and mitochondrial DNA damage in human skeletal mucle. Cells. 8 (12). Pii: E1525.
16. AM Norling, AT Gerstenecker, TW Buford, B Khan, S Oparil, RM Lazar. The Role of Exercise in the

Reversal of IGF-1 Deficiencies in Microvascular Rarefaction and Hypertension. Geros. 42(1): 141-158. 2020.

NAME Michael Crowe		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
University of Southern CA, Los Angeles, CA	PHD	1998-2004	Psychology
University of Illinois, Urbana, Illinois	BS	1994-1998	Psychology

POSITIONS

2020 – present Investigator, Evelyn F. McKnight Brain Institute, University of Alabama at Birmingham, Birmingham, AL
2016-present Associate Director, Comprehensive Center for Healthy Aging, University of Alabama at Birmingham
2013-present Associate Professor, Department of Psychology, University of Alabama at Birmingham.
2013-present Director, Undergraduate Honors Program in Psychology, University of Alabama at Birmingham
2007-present Assistant Director, Roybal Center for Research in Applied Gerontology, UAB
2007-present Associate Scientist, Minority Health & Health Disparities Research Center (MHRC), UAB
2007-present Associate Scientist, Alzheimer's Disease Research Center, University of Alabama at Birmingham
2007-2013 Assistant Professor, Department of Psychology, University of Alabama at Birmingham.
2006-present Scientist, Comprehensive Center for Healthy Aging, University of Alabama at Birmingham.
2006-2007 Assistant Professor, Department of Medicine, Division of Gerontology & Geriatric Medicine, UAB
2004-2006 National Institute on Aging Postdoctoral Trainee, Clinical and Behavioral Training in Gerontology Program, University of Alabama at Birmingham
2003-2004 Predoctoral Intern, APA-accredited predoctoral clinical psychology internship, University of Alabama at Birmingham Psychology Training Consortium (Birmingham VA Medical Center).

Publications

1. Passler, J. S., Kennedy, R. E., Crowe, M., Clay, O. J., Howard, V. J., Cushman, M., Wadley,V. G. (2020). The relationship of cognitive change over time to the selfreported Ascertain Dementia 8-item Questionnaire in a general population.. Arch Clin Neuropsychol. doi:10.1093/arclin/acz045

2. Niccolai, L., Aita, S. L., Walker, H. C., Martin, R. C., Clay, O. J., Crowe, M., & Triebel, K. L. (2020). An examination of the neurocognitive profile and base rate of performance impairment in primary dystonia. Journal of Clinical Neuroscience, 74, 1-5. doi: 10.1016/j.jocn.2019.12.050

3. Bell, T., Pope, C., Fazeli, P., Crowe, M., & Ball, K. (2020). The Association of Persistent Low Back Pain With Older Adult Falls and Collisions: A Longitudinal Analysis. Journal of Applied Gerontology. doi:10.1177/0733464820966517

4. Steward, K. A., Bull, T. P., Kennedy, R., Crowe, M., & Wadley,V. G. (2020). Neuropsychological Correlates of Anosognosia for Objective Functional Difficulties in Older Adults on the Mild Cognitive Impairment Spectrum. Archives of clinical neuropsychology : the official journal of the National Academy of Neuropsychologists, 35(4), 365-376. doi:10.1093/arclin/acz065

5. Brenowitz, W. D., Manly, J. J., Murchland, A. R., Nguyen, T. T., Liu, S. Y., Glymour, M. M., Howard, V. J. (2020). State School Policies as Predictors of Physical and Mental Health: A Natural Experiment in the REGARDS Cohort. American journal of epidemiology, 189(5), 384-393. doi:10.1093/aje/kwz221

NAME Christy Carter		POSITION TITLE Research Assistant Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Univ of Colorado	B.A.	1991	Psychology
Univ of North Carolina	Ph.D.	1998	Psychology

Positions
06/18 – present Investigator, Evelyn F. McKnight Brain Institute
01/16-present Program Director, Education Programs, Department of Aging & Geriatric Research, College of Medicine, University of Florida
07/12-present Research Assistant Professor, Department of Aging & Geriatric Research, College of Medicine, University of Florida (Multi-mission track, non-tenure accruing) 04/05-07/12 Assistant Professor, Department of Aging & Geriatric Research, College of Medicine, University of Florida, (tenure accruing)
2007-2008 North Florida South Georgia VAMC, Associate Director for Research, Geriatric Research, Education & Clinical Center, (non- tenure accruing,)
09/04-03/05 Assistant Professor, Wake Forest University, Department of Internal Medicine, Section on Geriatrics & Gerontology, School of Medicine, (tenure accruing)
07/01-08/04 Instructor, Department of Internal Medicine, Section on Geriatrics & Gerontology, Wake Forest University, (non-tenure accruing)
09/99-06/01 Research Associate, Department of Internal Medicine, Section on Geriatrics & Gerontology, Wake Forest University, (non-tenure accruing)

Honors, Awards, and Advisory Committees
2016 UF COM Teaching Incentive Award
2016 Online Education Excellence Award in the category of Graduate Course 2014
Fellow, Gerontological Society of America
2010 Online Education Excellence Award in the category of Graduate Course 2008
Outstanding Rating, US Department of Veterans Affairs
2003 Young Investigator Award, American Geriatrics Society
2001 Bloch Post-Doctoral Fellow Award, American Geriatrics Society
2001 “Physical Ability in Aged and Dwarf (dw/dw) Rats: Isolating Growth Hormone Effects”, American Federation for Aging Research (AFAR)/Pfizer
1996 Travel Award to Annual Meeting, Neurobehavioral Teratology Society
1995 National Research Service Fellowship Award (NRSA) (#MH11262 F31) at University of North Carolina, Chapel Hill, The National Institute of Mental Health (NIMH)

NAME Jeremy J. Day		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Auburn University	BA	2000-2003	Psychology
University of North Carolina Chapel Hill	MA	2004-2006	Psychology
University of North Carolina Chapel Hill	PhD	2006-2009	Psychology
University of Alabama at Birmingham		2009-2014	Neurobiology

Positions

2019-present	Associate Professor	UAB
2016-2019	Scientist, Alzheimer's Disease Center	UAB
2015-present	Associate Scientist, Civitan International Research Center	UAB
2014-present	Graduate Faculty	UAB
2014-present	Assistant Professor, Dept. of Neurobiology (Primary)	UAB
2014-present	Assistant Professor, Dept. of Genetics (Secondary)	UAB
2014-present	Assistant Professor, Dept. of CDIB (Secondary)	UAB
2014-present	Assistant Professor, Dept. of Psychology (Secondary)	UAB
2014-present	Investigator, Evelyn F. McKnight Brain Institute	UAB

Publications

1. Savell, K.E.*, Tuscher, J.J.*, Zipperly, M.E.*, Duke, C.G.*, Phillips, R.A.*, Bauman, A.J., Thukral, S., Sultan, F.A., Goska, N.A., Ianov, L., & Day, J.J. (2020). A dopamine-induced gene expression signature regulates neuronal function and cocaine response. Science Advances, 6(26): eaba4221.
2. Voskobiynyk, Y., Roth, J.R., Cochran, J.N., Rush, T., Carullo, N.V.N., Mesina, J.S., W aqas, M.,Vollmer, R.M., Day, J.J., McMahon, L.L., & Roberson, E.D. (2020). Alzheimer's disease risk gene BIN1 induces Tau-dependent network hyperexcitability. eLife, 9:e57354.
3. Carullo, N.V.N., Phillips III, R.A., Simon, R., Roman Soto, S.A., Hinds, J.E., Salisbury, A.J., Revanna, J.S., Bunner, K.D., Savell, K.E., Sultan, F., Ianov, L., Gersbach, C.A., & Day, J.J. (2020). Enhancer RNAs predict enhancer-gene regulatory links and are critical for enhancer function in neuronal systems. Nucleic Acids Research, 18:gkaa671.
4. Duke, C.G., Bach, S.V., Revanna, J.S., Sultan, F.A., Southern, N.T., Davis, M.N., Carullo, N.V.N., Bauman, A.J., Phillips III, R.A., & Day, J.J. (2020). An improved CRISPR/dCas9 interference tool for neuronal gene suppression. Frontiers in Genome Editing. DOI: 10.3389/fgeed.2020.00009.
5. Zipperly, M.E., Sultan, F.A., Graham, G.E., Brane, A.C., Simpkins, N.A., Carullo, N.V.N., Ianov, L., & Day, J.J. (2020). Regulation of dopamine-dependent transcription and cocaine action by Gadd45b. Neuropsychopharmacology, https://doi.org/10.1038/s41386-020-00828-z.

NAME Briana De Miranda		POSITION TITLE Assistant Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Colorado State University, Fort Collins, CO	PhD	2008-2014	Toxicology
Colorado state University Fort Collins, CO	BS	2004-2008	Biomedical Science minor

APPOINTMENTS:

2020 – Present	Assistant Professor, Department of Neurology University of Alabama at Birmingham
2020-Present	Investigator, Evelyn F. McKnight Brain Institute University of Alabama at Birmingham, Birmingham, AL
2014 – 2020	Postdoctoral Fellow, Pittsburgh Institute of Neurodegenerative Diseases Univeristy of Pittsburgh, Pittsburgh, PA
2009 - 2014	Graduate Research Assistant, Colorado State University, Fort Collins, CO

PUBLICATIONS:

Castro, S.L., Rocha, E.M., Bodle, C.R., Johnson, K.E., Greenamyre, J.T., De Miranda, B.R. The industrial solvent trichloroethylene induces LRRK2 kinase activity and dopaminergic neurodegeneration in a rat model of Parkinson's disease. *Biorxiv* (2020).

De Miranda, B.R., Rocha, E.M., Castro, S.L., Greenamyre, J.T. Protection from α-synuclein-induced dopaminergic neurodegeneration by overexpression of the mitochondrial import receptor TOM20 in the rat midbrain. *NPJ Parkinson's disease* (2020).

Buck, S.A., Steinkeller, T. et al., Despoina, A., Villenueve, S., Bhatte, S.H., Childers, V.C., Rubin, S.A., De Miranda,
B.R., et al., Freyberg, Z. VGLUT modulates sex differences in dopamine neuron vulnerability to age-related neurodegeneration. *Biorxiv* (2020).

De Miranda, B.R., Greenamyre, J.T. Trichloroethylene, a ubiquitous environmental contaminant in the risk for Parkinson's disease. *Environmental Science Process & Impacts* (2020).

De Miranda, B.R, Blossom, S. J. "The environmental pollutant trichloroethylene disrupts key neural pathways during brain development." *Neuroscience of Development*, (2020).

NAME Lynn Dobrunz		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Harvard University, Cambridge, MA	B.S.	1988	Engineering Science
Johns Hopkins, Baltimore, MD	PhD	1994	Biomedical Engineering
Salk Institute, La Jolla, CA	Postdoc	1999	Molecular Neurobiology

Positions

2014-present Associate Director, UAB Comprehensive Neurosciences Center
2008-present Associate Professor, Department of Neurobiology, University of Alabama at Birmingham, Birmingham, AL.
2012-present Secondary appointment, UAB Department of Cell, Developmental and Integrative Biology
2006-present Member, UAB Civitan International Research Center 2006-present
Member, UAB Comprehensive Neurosciences Center 2006-present
Investigator, Evelyn F. McKnight Brain Institute 2005-present
Member, UAB Center for Aging
2002-2012 Secondary appointment, UAB Department of Physiology and Biophysics 1999-2008
Assistant Professor, Department of Neurobiology, University of Alabama at Birmingham

Honors, Awards, and Advisory Committees

1988 Magna Cum Laude, Harvard University
1988 Phi Beta Kappa
1988-1989 National Science Foundation Award for Creativity in Engineering 1988-1989
Able Wolman Fellowship, The Johns Hopkins School of Medicine 1999-2000
Howard Hughes Medical Institute Career Development Award 2010-2014
Member, NIH MNPS Study Section
2014 Member, NIH Committee of Visitors
2014-2017 Member, NIH BRAIN Initiative Review Panel 2015
Member, NIH Conte Center Review Panel

Publications

1. *Corder KM, *Li Q, *Cortes MA, *Bartley AF, *Davis TR, Dobrunz LE. Overexpression of neuropeptide Y decreases responsiveness to neuropeptide Y. 2020 Neuropeptides. Feb 2020 Vol 7:101979. doi: 10.1016/j.npep.2019.101979. PMCID: PMC6960342.

2. McMeekin LJ, *Bartley AF, Bohannon AS, Adlaf EW, van Groen T, Fox SN, Detloff PJ, Crossman DK, Overstreet-Wadiche LS, Hablitz JJ, Dobrunz LE, Cowell RM. A role for PGC-1α in transcription and excitability of cortical and hippocampal excitatory neurons, Neuroscience. 2020;435:73-94. doi:10.1016/j.neuroscience.2020.03.036

3. Rich MC, Sherwood S, Bartley AF, Willoughby WR, Dobrunz LE, Lubin FD, Bao Y, Bolding M. 2019. Focused ultrasound blood brain barrier opening mediated delivery of MRI-visible albumin nanoclusters to the rat brain for localized drug delivery with temporal control. Journal of Controlled Release, 2020;324:172-180. doi:10.1016/j.jconrel.2020.04.054.

NAME Lloyd J. Edwards		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Morehouse College, Atlanta, GA	B.A.	1980	Mathematics
Univ of Maryland, College Park, MA	M.A.	1982	Mathematical Statistics
Univ of NC, Chapel Hill, NC	PhD	1990	Biostatistics

Positions

August 2017 Present, Professor and Chair - Department of Biostatistics, UAB
2017-present Investigator, Evelyn F. McKnight Brain Institute
2000 – 2017 Associate Professor - Department of Biostatistics University of North Carolina, Chapel Hill Chapel Hill, North Carolina
1998 - 2000 - Associate Professor - Department of Community and Family Medicine / Division of Biometry Head of Department of Medicine Biostatistics Unit Duke University Medical Center Durham, North Carolina
1998 Associate Professor, Dept Biostatistics, Uni of NC, Chapel Hill, NC
1991 – 1998 Assistant Professor - Department of Biostatistics, University of North Carolina - Chapel Hill, Chapel Hill, North Carolina
1990 – 1991 Visiting Assistant Professor - Department of Biostatistics, University of North Carolina - Chapel Hill, Chapel Hill, North Carolina
1986 – 1990 Graduate Research Assistant, University of North Carolina - Chapel Hill, Chapel Hill, North Carolina
1983 – 1986 Software Engineer/Statistician, TRW Defense Systems Group, McLean, Virginia

Organizations/Honors

1. Hogan, MJ, Stephens, K, Smith, E, Jalazo, ER, Hendriksz, CJ, Edwards, LJ, Bjoraker, KJ (2020). Toileting Abilities Survey as a surrogate outcome measure for cognitive function: Findings from neuronopathic mucopolysaccharidosis II patients treated with idursulfase and intrathecal idursulfase. In Press, Molecular Genetics and Metabolism Reports.
2. Kwessi, E, Edwards, LJ (2020). Artificial neural networks with a signed-rank objective function and applications. Communication in Statistics - Simulation and Computation, 1-26.

NAME Karen Gamble		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Georgia State University	PhD	2004	Neuroscience
Georgia State University	MA	2001	Psychology
King College	BA	1996	Psychology

Positions
Scientist, Evelyn F. McKnight Brain Institute
Associate Scientist, Comprehensive Neuroscience Center
Associate Scientist, Center for Neurodegeneration and Experimental Therapeutics
Member, Alzheimer's Disease Center
Member, Civitan International Research Center
Member, Nutrition & Obesity Research Center
Member, Center for Clinical and Translational Science
Member, Vision Science Research Center
Member, Graduate Program in Neuroscience
Member, Graduate Program in Genetics
Member, Graduate Program in Cell, Molecular and Developmental Biology

Honors, Awards, and Advisory Committees
1996 Graduated from King College Summa cum Laude in Psychology
2003 Bailey M. Wade Award, GSU
2003 Kirschstein National Research Service Award, Individual Predoctoral Fellow
2004 Postdoctoral Research Fellowship, Vanderbilt Kennedy Center for Research on Human Development
2004 Richard Morrell Outstanding Graduate Student Fellowship Award, GSU
2005 Neurogenomics Postdoctoral Training Program Fellowship, Vanderbilt University
2006 Society for Research in Biological Rhythms Travel Award
2006 Kirschstein National Research Service Award, Individual Postdoctoral Fellow
2009 Gordon Research Conference on Chronobiology Hot Topics Selected Speaker and Travel Award
2012 Clinical and Translational Science program (6 months), certification
2013 Young Investigator, William C. Dement Sleep and Chronobiology Apprenticeship, Brown University.
2014 Innovative Teaching Award, UAB Department of Psychiatry
2014 Outstanding New Senator Award, UAB Faculty Senate
2014 Faculty of 1000 Prime, Associate Member
2016 Tate Jordan Thomas Professorship in Psychiatric Medicine

Publications
1. Paul JR, Davis, J.A., Goode, L.K., Becker, B.K., Fusilier, A., Meador-Woodruff, A., and Gamble K.L. (2020). Circadian Regulation of Membrane Physiology in Neural Oscillators Throughout the Brain. Eur J Neurosci, 51(1): 109-138..
2. Davis, J. A., Paul, J.R., McMeekin, L.J., Nason, S.R., Antipenko, J.P., Yates, S.D., Cowell, R.M., Habegger, K.M., and Gamble, K.L. (2020). High fat and high sucrose diets impair time-of-day differences in spatial working memory of male mice. Obesity, in press.
3. Valcin, J.A., Udoh, U.S., Millender-Swain, T., Andringa, K.K., Patel, C.R., Al Diffalha, S., Baker, S.R.S., Gamble, K.L., and Bailey, S.M. (2020). Alcohol and liver clock disruption increase small droplet macrosteatosis, alter lipid metabolism and clock gene mRNA rhythms, and remodel the triglyceride lipidome in mouse liver, Front Phys Gastro Sci, in press.
4. Allison DB, Ren G, Peliciari-Garcia RA, Mia S, McGinnis GR, Davis J, Gamble KL, Kim JA, Young ME. (2020). Diurnal, metabolic and thermogenic alterations in a murine model of accelerated aging. Chronobiol Int, in press.

NAME Gamlin, Paul Douglas Roger		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
University of Cambridge, England	B.A.	1978	Zoology
State Uni of New York, Stony Brook, NY	PhD	1984	Neurobiology

Positions
2013 - present Professor, Department of Ophthalmology, University of Alabama at Birmingham 2013-present Investigator, Evelyn F. McKnight Brain Institute
1997 – present Professor, Departments of Biomedical Engineering, Psychology, and Neurobiology, University of Alabama at Birmingham
1996 - 2013 Professor, Department of Vision Sciences, University of Alabama at Birmingham 2003 - 2013 Director, UAB Center for the Development of Functional Imaging
2004 - 2012 Chairman, Department of Vision Sciences
2001 - 2006 Director, UAB Neuroscience Graduate Program
2002 - 2003 Associate Director, UAB Center for the Development of Functional Imaging
1995 - 1999 Director, UAB Vision Science Research Center
1995 - 1996 Scientist, Neurobiology Research Center, University of Alabama at Birmingham 1992 - 1996 Associate Professor, Departments of Physiological Optics and Psychology; Scientist, Vision Science Research Center, University of Alabama at Birmingham
1989 - 1992 Assistant Professor, Departments of Physiological Optics and Psychology; Associate Scientist, Vision Science Research Center, UAB
1989 Research Assistant Professor, Department of Physiological Optics, School of Optometry, University of Alabama at Birmingham
1984 - 1986 Research Associate, Neurosciences Program, UAB

Honors, Awards, and Advisory Committees
1984 Sigma Xi Award for Achievement in Research
1993 American Optometric Student Asso Award for Excellence in Basic Science Teaching
1997 UAB President's Award for Excellence in Teaching
2009 Irene E. Loewenfeld Lecturer
2014 RPB Walt and Lilly Disney Award for Amblyopia Research

NAME Cristin F. Gavin		POSITION TITLE Assistant Professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Birmingham-Southern College			
Birmingham-Southern College	BS, Biology	2006	Biology
University of Alabama at Birmingham	BA, Philosophy	2006	Philosophy
	PhD, Neuroscience	2012	Neuroscience

Positions
-Assistant Professor, Primary, Department of Neurobiology, Secondary, Department of Psychology, UAB
-Co-Director, Undergraduate Neuroscience Program
-Co-Director, Post-baccalaureate Research Education Program
-Investigator, Evelyn F. McKnight Brain Institute

Honors, Awards, and Advisory Committees Awards and Honors
2017-present Science and Technology Honors Program Leadership Council, Neuroscience representative
2017-present CLSS Process & Policy Advisory Group, Joint Health Sciences Programs Representative
2016-present Honors College Faculty Fellow

Manuscripts submitted but not yet accepted
Genome-wide transcription and DNA methylation profiling in an APP mouse model of Alzheimer's Disease Guzman-Karlsson MC, Fleming LL, Brown JA, Sesay F, Lewis JW, Hawkins KE, Kordasiewicz HB, Motley T, Swayze EE, Ecker DJ, Michael TP, Gavin CF, Kennedy, AJ, Day JJ, Roberson ED, Sweatt JD (under review at Nature Communications)

Manuscripts in preparation
Actin-myosin dynamics regulate structural plasticity in single spines.
Cristin F. Gavin, Maria Rubio, Erica Young, Courtney Miller and Gavin Rumbaugh. Department of Neuroscience, The Scripps Research Institute, Jupiter, FL

NAME David S. Geldmacher		POSITION TITLE Patsy and Charles Collat Endowed Professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
University of Rochester	B.A.	1978	Biology and Psychology
SUNY Health Science Center, NY	M.D	1986	Medicine

Positions
2011 – present Professor of Neurology (tenured)
Professof of Neurobiology
2014 – present Patsy can Charles Collat Endowed Professor in Neuroscience UAB
2014 – present Investigator, Evelyn F. McKnight Brain Institute , UAB

Publications
1. Rose KM, Williams IC, Anderson JG, Geldmacher DS. Development and Validation of the Family Quality of Life in Dementia Scale Gerontologist. 2020 Apr 24:gnaa022. doi: 10.1093/geront/gnaa022. Online ahead of print. PMID: 32329513
2. Tsai RM, Miller Z, Koestler M, Rojas JC, Ljubenkov PA, Rosen HJ, Rabinovici GD, Fagan AM, Cobigo Y, Brown JA, Jung JI, Hare E, Geldmacher DS, Natelson-Love M, McKinley EC, Luong PN, Chuu EL, Powers R, Mumford P, Wolf A, Wang P, Shamloo M, Miller BL, Roberson ED, Boxer AL. Reactions to Multiple Ascending Doses of the Microtubule Stabilizer TPI-287 in Patients With Alzheimer Disease, Progressive Supranuclear Palsy, and Corticobasal Syndrome: A Randomized Clinical TrialJAMA Neurol. 2020 Feb 1;77(2):215-224. doi: 10.1001/jamaneurol.2019.3812. PMID: 31710340

NAME Adam Gerstenecker		POSITION TITLE Assistant Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
So Illinois Univ at Carbondale	B.A.	2001	
Murray State University	M.S.	2007	
University of Louisville	PhD	2014	

Positions

2016 – present	Assistant Professor	UAB, Department of Neurology
03/16 – present	Faculty Member, UAB Multiple Sclerosis Center	
09/16 – present	Faculty Research Member, UAB Alzheimer's Disease Center	
2017 – present	Investigator, Evelyn F. McKnight Brain Institute	

Publications

1. Mulhauser, K., Marotta, D. A., Gerstenecker, A., Willhelm, G., Myers, T., Gammon, M., Vance, D., Nabors, B., Fiveash, J., & Triebel, K. (2020). Capacity to consent to research participation in adults with metastatic cancer: Comparisons of brain metastasis, non-CNS metastasis, and healthy controls. Neuro-Oncology Practice, npaa008, https://doi.org/10.1093/nop/npaa008
2. Marotta, D., Tucker, Z., Hayward, E. N., Gerstenecker, A., Gammon, M., Mason, M., Willhelm, G., Bae, H., & Triebel, K. (In Press). Relationship Between Cognitive Functioning, Mood, and Other Patient Factors on Quality of Life in Metastatic Brain Cancer. Psycho-Oncology.
3. Gerstenecker, A., Gammon, M., Marotta, D., Fiveash, J., Nabors, B., Mulhauser, K., & Triebel, K. (in press). Clinical correlates of the ability to consent to research participation in brain metastasis. Psycho-Oncology.
4. Wood, K. H., Memon, R. A., Joop, A., Pilkington, J., Gerstenecker, A., Triebel, K., Bamman, M. M., & Amara, A. W. (in press). Slow-wave sleep and EEG delta spectral power are associated with cognitive function in patients with Parkinson's disease.
5. Gerstenecker, A., Gammon, M., Marotta, D., Fiveash, J., Nabors, B., Mulhauser, K., & Triebel, K. (2020). Using cognition to predict the ability to understand medical treatment in brain and metastatic cancer. Psychooncology, 29(2), 406-412
6. Gerstenecker, A., Grimsley, L., Otruba, B., Cowden, L., Marson, D. C., Triebel Gerstenecker, K., Martin, R. C., & Roberson, E. D. (2019). Medical Decision-Making in progressive supranuclear palsy: A Comparison to other Neurodegenerative Disorders. Parkinsonism and Related Disorders,
a. 61, 77-81. https://doi.org/10.1016/j.parkreldis.2018.11.022
7. Gerstenecker, A., Martin, R., Triebel, K., & Marson, D. (2019). Anosognosia of Financial Ability in Mild Cognitive Impairment. International Journal of Geriatric Psychiatry, 34 (8), 1200-1207.
8. Norling, A. M., Gerstenecker, A., Buford, T. W., Khan, B., Oparil, S., & Lazar, R. M. (2020). The role of exercise in the reversal of IGF-1 deficiencies in microvascular rarefaction and hypertension. GeroScience: Official Journal of the American Aging Association (AGE), 42(1), 141-158.

NAME Matthew S. Goldberg		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
University of Michigan	B.S.	1990	Physics
Yale University	PhD	1998	Mol Biophysics
Harvard Medical School	Postdoc	1997- 2003	
Brigham and Women's Hospital	Postdoc	1997 - 2003	

Positions

Year	Rank/Title	Institution
2014-present	Associate Professor	University of Alabama Birmingham
2014-present	Investigator, Evelyn F. McKnight Brain Institute	UAB

Honors, Awards, and Advisory Committees
Grant reviewer March 2017: French Federation for Brain Research (FRC)
Grant reviewer April 2017: Michael J. Fox Foundation for Parkinson's Research
Ad-hoc reviewer Feb 5-7, 2017 Reston, VA: US Army Medical Research and Materiel Command
CDMRP Parkinson's Research Program

Publications
1. Barodia SK, McMeekin LJ, Creed RB, Quinones EJ, Cowell RM, Goldberg MS*, PINK1 phosphorylates ubiquitin predominantly in astrocytes, NPJ Parkinson's Disease 2019, 5:29. PMCID: PMC6906478 *corresponding author
2. Creed, RB, Goldberg MS*, Enhanced susceptibility of PINK1 Knockout rats to alpha synuclein fibrils, Neuroscience 2020, 437:64-75. PMID: 32353461 *corresponding author
3. Watzlawik JO, Hou X, Fricova D, Ramnarine C, Barodia SK, Gendron TF, Heckman MG, DeTure M, Siuda J, Wszolek ZK, Scherzer CR, Ross OA, Bu G, Dickson DW, Goldberg MS, Fiesel FC, Springer W, Sensitive ELISA-based detection method for the mitophagy marker p-S65-Ub in human cells, autopsy brain, and blood samples, Autophagy. 2020 Oct 28:1-16. PMID: 33112198

NAME Michelle Gray		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Alabama State University, Montgomery, AL	B.S.	1997	Biology
Ohio State University, Columbus, OH	PhD	2003	Molecular, Cellular, and Developmental Biology
University of California, Los Angeles, Los Angeles, CA	Post doc	2008	Neurogenetics/mouse genetics

Positions
2010 - present Assistant Professor, Dixon Scholar in Neuroscience, Department of Neurology, Center for Neurodegeneration and Experimental Therapeutics, University of Alabama at Birmingham
2010 – present Investigator, Evelyn F. McKnight Brain Institute

Publications
Differential effects of SNARE-dependent gliotransmission on behavioral phenotypes in a mouse model of Huntington's disease. AC King, TE Wood, E Rodriquez, V Parpura, M Gray - Experimental Neurology, 2020

NAME Alecia K. Gross		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Univ of New Hampshire	B.S.	1993	Biochemistry
Brandeis University	PhD	2002	Biochemistry
Baylor College of Medicine	Postdoc	2006	

Positions

Year	Rank/Title	Institution
2006 – 2011	Assistant Professor	UAB Department of Vision Sciences
2006 – present	Secondary Appointment	UAB Department of Cell, Developmental and Integrative Biology
2007 – present	Secondary Appointment	UAB Department of Neurobiology
2008 – present	Secondary Appointment	UAB Department of Biochemistry and Molecular Genetics
2006 – present	Scientist	UAB Comprehensive Neuroscience Center
2006 – present	Scientist	UAB Vision Science Research Center
2006 – present	Scientist	UAB Civitan International Research Center
2006 – present	Scientist	UAB Evelyn F. McKnight Brain Institute
2011 – present	Project Leader	UAB Intellectual and Developmental Disabilities Research Center 2011 – present Associate Professor (with tenure) UAB Department of Vision Sciences

Honors, Awards, and Advisory Committees

2016-present Director, Cell, Molecular and Developmental Biology Graduate Program

Publications

1. Hollingsworth TJ, Gross AK. Innate and Autoimmunity in the Pathogenesis of Inherited Retinal Dystrophy. Cells 2020 9(3). Pii: E360. PMCID: PMC7140441. https://pubmed.ncbi.nlm.nih.gov/32151065/.

2. Bales KL, Bentley MR, Croyle MJ, Kesterson RA, Yoder BK and Gross AK. BBSome component BBS5 is required for cone photoreceptor protein trafficking and outer segment maintenance. IOVS, 2020 61(10):17 Doi: 10.1167/iovs.61.10.17.PMCID:PMC7441369. https://pubmed.ncbi.nlm.nih.gov/32776140/12

NAME Jeremy H. Herskowitz		POSITION TITLE Assistant Professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
University of North Carolina Chapel Hill, NC	B.S.	2001	Chemistry
Emory University Atlanta, GA	Ph.D.	2007	Microbiology and Molecular Genetics

Positions

2014- Assistant Professor, Departments of Neurology and Neurobiology, University of Alabama at Birmingham

2014 - Investigator, McKnight Brain Institute

Publications

1. Walker CW, Greathouse KM, Boros BD, Poovey EH, Clearman KR, Ramdas R, Muhammad HM, Herskowitz JH*. Dendritic spine remodeling and synaptic tau levels in PS19 tauopathy mice. Neuroscience. Submitted. *Corresponding author.
2. Dunn AR, Hadad N, Neuner SM, Zhang J, Philip VM, Dumitrescu L, Hohman TJ, Herskowitz JH, O'Connell KMS, Kaczorowski CC. Identifying mechanisms of cognitive aging using a novel mouse genetic reference panel. Frontiers in Cell and Developmental Biology. Submitted.
3. Ouellette A; Neuner SM; Dumitrescu L; Anderson LC; Gatti DM; Mahoney ER; Bubier JA; Churchill G; Peters L; Huentelman MJ; Herskowitz JH; Yang HS; Smith AN; Reitz C; Kunkle BW; White CC; De Jager PL; Schneider JA; Bennett DA; Seyfried NT; Hadad N; Chesler EJ; Hohman TJ; Kaczorowski CC. Cross-species analyses identify DLGAP2 as a regulator of age-related cognitive decline and Alzheimer's dementia. Cell Reports. Submitted.
4. "Researchers Identify Potential Treatment for Patients at Risk for Alzheimer's Disease" MBF Bioscience: March 2, 2020. https://www.mbfbioscience.com/blog/2020/03/researchers-identify-potential-treatment-patients-risk-alzheimers-disease
5. Walker CK, Murchison CF, Greathouse KM, Dammer EB, Duong DM, Seyfried NT, Herskowitz JH. Systems analysis of dendritic spine morphology and the synaptic proteome in human entorhinal cortex uncovers mechanisms of synapse loss in Alzheimer's disease. Alzheimer's Association International Conference. Amsterdam, Netherlands, 2020.
6. Greathouse KM, Boros BD, Gearing M, Herskowitz JH. Dendritic spine remodeling accompanies Alzheimer's disease pathology and genetic susceptibility in cognitively normal aging. Tau 2020 Conference. Washington, DC, 2020.
7. Curtis KA, Boros BD, Greathouse KM, Gearing M, Herskowitz JH. Dendritic spine structural remodeling provides cognitive resilience against Alzheimer's disease pathology. Tau 2020 Conference. Washington, DC, 2020.
8. Walker CK, Boros BD, Greathouse KM, Dammer EB, Curtis KA, Muhammad H, Ramdas R, Chaudhary I, Duong DM, Seyfried NT, Herskowitz JH. Complementary analysis of dendritic spine morphology and the synaptic proteome in human entorhinal cortex to uncover mechanisms of synapse loss in Alzheimer's disease. Tau 2020 Conference. Washington, DC, 2020.

Book Chapters

1. Boros BD and Herskowitz JH*. Dendritic Spine Remodeling and Aging. The Neuroscience of Aging. Preedy VR. Academic Press (Elsevier). In press. *Corresponding author.

NAME George Howard		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
St. Andrews Presbyterian College, Laurinburg, NC	BA	1973	Math and Business
University of NC at Chapel Hill	MS	1976	Operations Research
University of NC at Greensboro, NC	MBA	1979	Finance and Marketing
Univeristy of NC at Chapel Hill	MSPH	1982	Biostatistics
University of NC at Chapel Hill	DrPH	1987	Biostatistics

Positions
Professor and Chair, Dept of Biostatistics, School of Public health, University of Alabama at Birmingham
Investigator, Evelyn F. McKnight Brain Institute, University of Alabama at Birmingham, Birmingham, AL

Research Description
Dr. George Howard is Professor and Chair of Biostatistics at the UAB. He received his training in biostatistics was from the University of North Carolina at Chapel Hill. He has had experience in biostatistics, data management, and the direction of coordinating centers of multicenter studies. He is currently the overall project PI for the REasons for Geographic and Racial Differences in Stroke (REGARDS) project, a national study developing a cohort of 30,000 individuals to provide insights to the excess stroke mortality among African Americans and Southerners.

Publications
In 2020: 5 first/senior; 29 others … but only 3 focused on cognitive performance (all co-authored)

NAME Virginia Howard		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
St. Andrews Presbyterian College, Charleston, SC	BA	1971-1975	Mathematics and Psychology
University of North Carolina, Chapel Hill, NC	MSPH	1980-1982	Biostatistics
University of North Carolina,	PhD Program	1992-2000	Epidemiology
Medical University of SC	PhD	2006-2008	Epidemiology

Positions

- Distinguished Professor (P), Epidemiology , School of Public Health 1999 -
- Senior Scientist (C), Minority Health & Research Center , General Clinical Research Center 2012 -
- Senior Scientist (C), Center for Outcomes and Effectiveness Research and Education (COERE) , General Clinical Research Center 2012 -
- Senior Scientist (C), Integrative Center for Aging Research , School of Medicine 2012 -
- Senior Scientist (C), Comprehensive Cardiovascular Center , School of Medicine 2012 -
- Senior Scientist (C), Comprehensive Diabetes Center , School of Medicine 2013 -
- Director, Epidemiology , School of Public Health 2013 -
- Senior Scientist (C), Center for Exercise Medicine , Cell, Developmental and Integrative Biology (CDIB) 2014 -
- Senior Scientist (C), Nephrology Research & Training Center , General Clinical Research Center 2014 -
- Senior Scientist (C), UAB Center for Study of Community Health , School of Public Health 2015 -
- Senior Scientist (C), Nutrition Obesity Res Center (NORC) , Nutrition Sciences Research 2015 -
- Senior Scientist (C), Evelyn F. McKnight Brain Institute , Neurology 2020 -

Publications

1. Sheehan OC, Haley WE, Howard VJ, . . . Roth DL. Stress, Burden, and Well-Being in Dementia and Non-Dementia Caregivers: Insights from the Caregiving Transitions Study. Gerontologist. 2020 Aug 20:gnaa108. doi: 10.1093/geront/gnaa108. Epub ahead of print. PMID: 32816014.
2. Passler JS, Kennedy RE, Crowe M, Clay OJ, Howard VJ, . . ., Wadley VG. The relationship of cognitive change over time to the self-reported Ascertain Dementia 8-item Questionnaire in a general population. Arch Clin Neuropsychol. 2020 Jul 1:acz045. doi: 10.1093/arclin/acz045. Epub ahead of print. PMID: 32613226.
3. Sarfo FS, Akinyemi R, Howard G, Howard VJ, . . . , Vascular-brain Injury Progression after Stroke (VIPS) study: concept for understanding racial and geographic determinants of cognitive decline after stroke. J Neurol Sci. 2020 May 15;412:116754. doi: 10.1016/j.jns.2020.116754. Epub 2020 Feb 19. PMID: 32120131.
4. Brenowitz WD, Manly JJ, Murchland AR, . . . Howard VJ. State School Policies as Predictors of Physical and Mental Health: A Natural Experiment in the REGARDS Cohort. Am J Epidemiol. 2020 May 5;189(5):384-393. doi: 10.1093/aje/kwz221. PMID: 31595946; PMCID: PMC7306678.
5. Nicoli CD, Howard VJ, Judd SE, Struck J, Manly JJ, Cushman M. Pro-Neurotensin/Neuromedin N and Risk of Cognitive Impairment in a Prospective Study. J Alzheimers Dis. 2020;76(4):1403-1412. doi: 10.3233/JAD-200456. PMID: 32623400.
6. Passler JS, Kennedy RE, Clay OJ, Crowe M, Howard VJ, . . . , Wadley VG. The relationship of longitudinal cognitive change to self-reported IADL in a general population. Neuropsychol Dev Cogn B Aging Neuropsychol Cogn. 2020 Jan;27(1):125-139. doi: 10.1080/13825585.2019.1597008. Epub 2019 Mar 27. PMID: 30915889; PMCID: PMC6764909.

NAME Richard Kennedy		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
University of MS, Oxford, MS	B.A.	1976-1990	Computer Science
University of MS, Jackson MS	MD, PhD	1990-1994	Doctorate
Virginia Commonwealth University		2002-2008	Biostatistics

Positions

- Scientist (C), Integrative Center for Aging Research , School of Medicine 2011 -
- Associate Professor (P), Medicine - Gerontology, Geriatrics, and Palliative Care , Department of Medicine 2012 -
- Scientist (C), Comprehensive Diabetes Center , School of Medicine 2013 -
- Scientist (C), Alzheimer's Disease Center , Neurology 2016 -
- Investigator (C), Evelyn F. McKnight Brain Institute , Neurology 2018 -
- Scientist (C), Center for Clinical and Translational Science (CCTS) , General Clinical Research Center 2020 -

Hospital and other (nonacademic) appointments
1997-1998 Chief resident, Arkansas State Hospital, Little Rock, Arkansas
1996-1998 Consulting physician, Arkansas State Hospital, Little Rock, Arkansas
1992 Laboratory assistant, University of Mississippi Medical Center, De- partment of Parasitology
1991-1992 Laboratory assistant, University of Mississippi Medical Center, Department of Anatomy, Neuroanatomy
1986 Computer Programmer, University of Mississippi, Department of Chemistry

Publications
14 manuscripts

NAME David C. Knight		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Truman State University, Kirksville MO	B.S.	1994	Psychology
University of Wisconsin, Milwaukee WI	M.S.	1999	Clinical Psychology
West Virginia Uni, Morgantown WV	Intern	2002	Neuropsychology
University of Wisconsin, Milwaukee WI	PhD	2002	Clinical Psychology
National Institute of Mental Health, Bethesda MD	Postdoc	2007	Cognitive Neuro

Positions
2013-Present Associate Professor, Department of Psychology and Neurobiology, UAB 2014-Present Co-Director, Undergraduate Neuroscience Program, UAB
2014-present Investigator, Evelyn F. McKnight Brain Institute
2017 – Present Director, Graduate Behavioral neuroscience Program, UAB

Other Experience and Professional Memberships
1995-Present Society for Neuroscience
1996-Present Organization for Human Brain Mapping 2004-Present Pavlovian Society
2016-Present Council on Undergraduate Research 2016-Present Faculty for Undergraduate Neuroscience
2007-Present Editorial Board: The Open Neuroimaging Journal 2016
Associate Editor: The Open Neuroimaging Journal
2017-Present Editor-in-Chief: The Open Neuroimaging Journal

NAME Adrienne C. Lahti		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Universite de Liege, Liege, Belgium	MD	1978	
Universite de Liege, Liege, Belgium	Resident	1983	
University of Maryland, Baltimore, MD	Research	1989	
University of Michigan, Ann Arbor, MI	Fellow Resident	1992	

Positions

2017-Present	Investigator, Evelyn F. McKnight Brain Institute
9/2014-Present	Patrick H. Linton Professor of Psychiatry
9/2012- Present	Professor with Tenure
1/2012-Present	Professor, Secondary Appointment, Psychology, UAB
2011-Present	Professor, Biomedical Engineering, Secondary Appointment, UAB 10/2010-
Present	Professor and Chair, Psychiatry and Behavioral Neurobiology, UAB

Publications

Lahti, Andrienne

1. Adam M. Goodman, Jane B. Allendorfer, Grayson Baird, Andrew S. Blum, Mark Bolding, Stephen Correia, Larry ver Hoef, Tyler Gaston, Leslie Grayson, Nina Kraguljac, Adrienne C. Lahti, Amber N. Martin, William S. Monroe, Noah S. Philip, Frank Skidmore, Krista Tocco, Valerie Vogel, W. Curt LaFrance, Jr., & Jerzy P. Szaflarski. White matter integrity and neurite morphology in psychogenic non-epileptic seizures following TBI, Annals of Clinical and Translational Neurology
2. Gawne TJ, Overbeek GJ, Killen JF, Reid MA, Kraguljac NV, Denney TS, Ellis CA, Lahti AC. A Multimodal Magnetoencephalography, 7T fMRI Stroop, and 7T Proton MR Spectroscopy Study in First Episode Psychosis, NPJ Schizophrenia, 6 :23, 2020
3. Joshua T. Kantrowitz, Jack Grinband, Donald C. Goff, Adrienne C. Lahti, Stephen R. Marder, Lawrence S. Kegeles , Ragy R. Girgis, Tarek Sobeih, Melanie M. Wall, Tse-Hwei Choo, Michael F. Green, Yvonne S. Yang, Junghee Lee, Guillermo Horga, John H. Krystal, William Z. Potter, Daniel C. Javitt, Jeffrey A. Lieberman. Clinical Efficacy and Target Engagement of Glutamatergic Drugs: Placebo-Controlled RCTs of Pomaglumetad and TS-134 for Reversal of Ketamine-Induced Psychotic Symptoms and PharmacoBOLD in Healthy Volunteers, Neuropsychopharmacology, 45: 1842-1850,
4. Eric A. Nelson, Nina V. Kraguljac, Jose O Maximo, Frederic Briend, William Armstrong, Victoria Johnson, Adrienne C. Lahti. Hippocampal Dysconnectivity and Altered Glutamatergic Modulation of the Default Mode Network – a Combined Resting State Connectivity and Magnetic Resonance Spectroscopy Study in Schizophrenia, Biological Psychiatry CNNI, 5: 231-238, 2020
5. Nina Kraguljac, Thomas Anthony, Charity Morgan, Ripu Jindal, Mark Burger, and Adrienne C. Lahti. White Matter Integrity, Duration of Untreated Psychosis, and Antipsychotic Treatment Response in Medication-Naïve First Episode Psychosis Patients. Molecular Psychiatry, in press
6. F Briend, EA Nelson, WP Armstrong, NV Kraguljac, AC Lahti. Hippocampal glutamate and hippocampus subfield volumes in antipsychotic-naive first episode psychosis subjects and relationships to duration of untreated psychosis, Translational Psychiatry, 10:137, 2020
7. Briend F, Kraguljac NV., Keilhloz SD., Lahti AC. Aberrant static and dynamic functional patterns of fronto-parietal control network in antipsychotic-naive first episode psychosis subjects, Human Brain Mapping, 41:2999-3008, 2020
8. Gurler D, White DM, Kraguljac NV, Ver Hoef L, Martin C, Tennant B, Lahti AC. Neural signatures of memory encoding in schizophrenia are modulated by antipsychotic treatment, Neuropsychobiology, 21:1-13
9. M Reddy-Thootkur, NV Kraguljac, AC Lahti. The Role of Glutamate and GABA in Cognitive Dysfunction in Schizophrenia and Mood Disorders – A Systematic Review of Magnetic Resonance Spectroscopy Studies, Schizophrenia Research, in press
10. Rosalinda C. Roberts, Lesley A. McCollum, Kirsten E. Schoonover, Samuel J. Mabry, Joy K. Roche, and Adrienne C. Lahti. Ultrastructural evidence for glutamatergic dysregulation in schizophrenia. Schizophrenia Research, in press.
11. Nelson EA, Kraguljac NV, White DM, Jindal RD, Shin AL, Lahti AC. A prospective longitudinal investigation of cortical thickness and gyrification in schizophrenia, Canadian Journal of Psychiatry, 65:381-391, 2020
12. Birur B, Kraguljac NV, VerHoef LW, Jindal RD, Reid MA, Luker A, Lahti AC. Neurometabolic correlates of six and sixteen weeks of treatment with risperidone in medication-naïve first episode psychosis patients, Translational Psychiatry, 10:15, 2020
13. Jose O. Maximo, Eric A. Nelson, William P. Armstrong, Nina V. Kraguljac, & Adrienne C. Lahti. Duration of Untreated Psychosis Correlates with Brain Connectivity and Morphology in Medication-Naïve Patients with First Episode Psychosis. Biological Psychiatry: CNNI, 117:108-115, 2020
14. Froelich MA, White DM, Kraguljac NV, Lahti AC. Brain network connectivity prospectively predicts memory impairment following midazolam in older adults, Anesthesia & Analgesia, 130(1): 224-232, 2020.

NAME Charles Seth Landefeld		POSITION TITLE Professor and Chair	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Harvard University			
Oxford University	B.A.	1974	History and Science
Yale University	B.A.	1978	Philosophy/Theology
UCSF	MD	1979	Medicine
UCSF	Intern	1980	Medicine
Harvard University	Resident	1982	Medicine
Weatherhead, Case Western Uni	Fellow	1985	Internal Medicine
Academic Alliance for Internal Medicine		1991 2007	Academic Mgmt Executive Leadership

Positions
University of Alabama at Birmingham
2012-present Professor and Chair, Department of Medicine, University of Alabama at Birmingham
2012-present Board of Directors, University of Alabama Health Services Foundation 2012-present Executive Committee, University of Alabama Health Services Foundation 2012-present Board of Directors, University of Alabama at Birmingham Health System (including Audit and Finance Committees)
2017-present Investigator, Evelyn F. McKnight Brain Institute

Biographical Sketch
Seth Landefeld is Chair, Department of Medicine and the Spencer Chair in Medical Science Leadership.

Dr. Landefeld's work has aimed to transform and personalize health care to meet the needs of older Americans and their families in this Aging Century, a century that will be dominated by the medical and social issues of the aging global population. His research has improved outcomes of older persons with serious illness. In landmark studies of acutely ill hospitalized elders, Landefeld and his colleagues invented the Acute Care for Elders (ACE) Unit, a novel method for improving patients' functional outcomes. This model has been adapted at medical centers nationwide. In incremental studies of anticoagulant therapy, he developed the first valid, reliable measure of hemorrhagic complications, designed and validated risk assessment indices for anticoagulant-related bleeding, developed interventions to prevent major bleeding, and demonstrated their efficacy in clinical trials.

NAME Robin Lester		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
University of Bristol, U.K.	B.Sc.	1984	
University of Bristol, U.K.	PhD	1988	
Vollum Institute, Portland, OR	Post-doc	1991	

Positions
1992-1993 Research Assistant Professor / Baylor College of Medicine
1993-1995 Assistant Professor / Neuroscience / Baylor College of Medicine 1995-1996 Associate Scientist / NRC, University of Alabama at Birmingham
1996-2001 Assistant Professor / Neurobiology, University of Alabama at Birmingham 2006-present, Investigator, Evelyn F. McKnight Brain Institute
2001-2011 Associate Professor / Neurobiology, University of Alabama at Birmingham
2011-present Professor / Neurobiology, University of Alabama at Birmingham

Research
N/A

Teaching
Teaching full-time.

NAME Farah Lubin		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION AL State Univ, Montgomery, AL SUNY, Binghamton, NY	DEGREE B.S. PhD	YEAR(S) 1996 2001	FIELD OF STUDY Cell/Moleular Bio Biology

Appointments

2015-Present Associate Professor with Tenure, Dept. of Neurobiology, Dept. of Cell, Developmental and Integrative Biology, and Genetics Dept., University of Alabama at Birmingham, Birmingham, AL

2015-Present Director, Comprehensive Neuroscience Center EEG core

2014-Present Director, NINDS Neuroscience Roadmap Scholar Program; Co-Director: Lori L. McMahon, PhDat University of Alabama at Birmingham, Birmingham, AL

2009-Present Investigator, Evelyn F. McKnight Brain Institute, University of Alabama at Birmingham, Birmingham, AL

Publications

1. W.M. Webb , M.E Pepin , B.W. Henderson, V. Huang, A.A. Butler, J.H. Herskowitz, A.R. Wende, A.E. Cash, and F.D. Lubin. Methylation of NF-κB by the SETD6 Methyltransferase Plays an Essential Role in Hippocampus-Dependent Memory Formation. 2020. Biol. Psychiatry. Mar 15;87(6):577-587.

2. M.C. Rich, J. Sherwood, A.F. Bartley, Q.A. Whitsitt, M. Lee, W.R. Willoughby, L.E. Dobrunz, Y. Bao, F.D. Lubin, M. Bolding. Focused Ultrasound Blood Brain Barrier Opening Mediated Delivery of MRI-visible Albumin Nanoclusters to the Rat Brain for Localized Drug Delivery With Temporal Control. 2020 J Control Release. May 5;324:172-180.

3. S. Park, J. Sherwood, R. Hauser, A. Antone, B. Beswick, F.D. Lubin, Y. Bao, and Y. Kim. Surface Effects of Ultrasmall Iron Oxide Nanoparticles on Cellular Uptake, Proliferation, and Multipotency of Neural Stem Cells. 2020 ACS Applied Nano Materials. In Press.

4. M.C. Rich, Q. Whitsitt, F.D. Lubin and M. Bolding. A Benchtop Approach to the Location Specific Blood Brain Barrier Opening Using Focused Ultrasound in a Rat Model. 2020 JoVE. In Press.

NAME Daniel Marson		POSITION TITLE Director, Emeritus, Alzheimer's disese CenterAssociate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION Nowthwestern University University of Chicago	DEGREE PhD JD	YEAR(S) 1990 1981	FIELD OF STUDY Clinical Philosophy Law

Appointments:
Professor Emeritus, Department of Neurology
Professor Emeritus, Evelyn F. McKnight Brain Institute

Daniel Marson, JD, PhD is a clinical neuropsychologist, licensed attorney, and Emeritus Professor in the Department of Neurology at the University of Alabama at Birmingham (UAB). He directed the Department's Division of Neuropsychology from 1995 to 2016 and the UAB Alzheimer's Disease Center from 2005 to 2015. Dr. Marson graduated magna cum laude and Phi Beta Kappa from Carleton College in Northfield, Minnesota (1976), and earned his JD at the University of Chicago Law School (1981) and his PhD in clinical psychology (specializations in geropsychology and neuropsychology) at Northwestern University Medical School (1990). Dr. Marson has lectured nationally regarding competency and other medical-legal and ethical issues in dementia and other neurocognitive disorders. He has published over 100 papers, handbooks, and book chapters on these topics. He has been principal investigator on multiple National Institute of Health (NIH) funded studies of decisional and functional capacity in Alzheimer's disease, mild cognitive impairment, and traumatic brain injury. His work on financial capacity in older adults has been featured in the New York Times, USA Today, BBC, Kiplinger Report, and NPR. At the national level, Dr. Marson is the past president and a fellow of the National Academy of Neuropsychology (NAN). He is a member and former chair of the Internal Ethics Committee of the Alzheimer's Disease Cooperative Study, an NIH funded clinical trials group. He has served as a chartered reviewer at the NIH Center for Scientific Review. Dr. Marson previously served on the Committee on Human Research of the American Psychological Association and chaired the committee in 2012. Dr. Marson often testifies as an expert witness in civil and criminal forensic matters. On a personal note, Dr. Marson has played the diatonic harmonica for many years and is a lover of blues and jazz. He has published in the jazz magazine Downbeat.

Publications
1. Gerstenecker, A., Grimsley, L., Otruba, B., Cowden, L., Marson, D. C., Triebel Gerstenecker, K., Martin, R. C., & Roberson, E. D. (2019). Medical decision-making in progressive supranuclear palsy: a comparison to other neurodegenerative disorders. Parkinsonism and Related Disorders, 61, 77-81. https://doi.org/10.1016/j.parkreldis.2018.11.022
2. Gerstenecker, A., Martin, R., Triebel, K., & Marson, D. (2019). Anosognosia of financial ability in mild cognitive impairment. International Journal of Geriatric Psychiatry, 34 (8), 1200-1207.

NAME Roy C. Martin		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Augusta College, Augusta, GA	BS	1984	Psychology
Louisiana State University	PhD	1990-1995	Clinical Psychology
West Virginia University	Postdoctoral Fellowship	1995	Neuropsychology

Positions
Associate Professor, Department of Neurology
Investigator, Evelyn F. McKnight Brain Institute

Publications
1. Allendorfer JB, Nenert R, Hernando KA, DeWolfe JI, Pati S, Thomas AE, Billeaud N, Martin RC, Szaflarski JP. FMRI response to acute psychological stress differentiates patients with psychogenic non-epileptic seizures from healthy controls – A biochemical and neuroimaging biomarker study. NeuroImage: Clinical (2020) 24: 1010967. doi.org/10.1016/j.nicl.2019.101967.
2. Gaston TE, Nair S, Allendorfer J, Martin RC, Beattie JF, Szaflarski JP. Memory response and neuroimaging correlates of a novel cognitive rehabilitation program for memory problems in epilepsy: A pilot study. Restorative Neurology and Neuroscience (2019), 37 (5): 457-468.DOI:10.3233/RNN-190919
3. Gaston TE, Allendorfer JB, Nair S, Bebin EM, Grayson LP, Martin RC, Szaflarski JP, for the UAB CBD Program. Effects of highly purified Cannabidiol (CBD) on fMRI of working memory In treatment-resistant epilepsy. Epilepsy & Behavior2020(November)112: 107358. doi.org/10.1016/j.yebeh.2020.107358.
4. Martin RC. AEDs and cognition: One small fish in a very large pond? Epilepsy Currents (2020); 20 (4): 196-198. doi.org/10.1177/1535759720925763.
5. Martin RC, DiBlasio CA, Fowler ME, Zhang Y, Kennedy RE. Generalizability of Clinical Trials of Delirium Interventions. JAMA Network Open (2020); 3 (7): e2015080. doi:10.1001/jamanetworkopen.2020.15080.
6. Niccolai L, Aita SI, Walker HC, Martin RC, Clay OJ, Crowe M, Triebel KL. An examination of the neurocognitive profile and base rate of performance impairment in primary dystonia. Journal of Clinical Neuroscience 2020; 74: 1-5. doi.org/10.1016/j.jocn.2019.12.050.
7. Thompson MD, Martin RC, Bebin EM, Grayson LP, Ampah SB, Cutter G, Szaflarski JP. Cognitive function and adaptive skills after one-year trial of Cannabidiol (CBD) in a pediatric sample with treatment-resistant epilepsy. Epilepsy & Behavior 2020; 111 (10): 107299. doi.org/10.1016/j.yebeh.2020.107299

NAME Lori McMahon		POSITION TITLE Professor Dean, Graduate School	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
-Southern Illinois University, Edwardsville, IL	B.A.	1987	Biology/Chemistry
-St. Louis Health Science Ctr, St. Louis, MO	PhD	1993	Neuropharmacology
-Duke University, Durham, NC	Postdoc	1998	Neurophysiology

Academic Appointments

2015-pres	Dean	Graduate School	UAB
2015-pres	Secondary Appointment.	Department of Neurology	UAB

Other Appointments:
Evelyn F. McKnight Brain Institute
Neurology
Civitan International Research Center
Comprehensive Ctr for Healthy Aging
General Clinical Research Center
Electrical & Computer Engineering
Medicine

Professional Experience

2012-pres	Scientist, Center for Exercise is Medicine
2012-pres	Professor, UAB Dept of Cell, Developmental, and Integrative Biology
2012-pres	Jarman F Lowder Endowed Professor of Neuroscience
2012-2018	Director, Comprehensive Neuroscience Center
2012-pres	Member, UAB SOM Dean's Executive Committee
2012-2015	Associate Director, Comprehensive Center for Healthy Aging
2013-2016	Associate Director, UAB Evelyn F. McKnight Brain Institute
2015-pres	Dean, UAB Graduate School
2015-pres	Investigator, Evelyn F. McKnight Brain Institute

Book Chapters:
2020 APHA_Rapid Acting Antidepressants, Vol 89
ISBN: 9780128201893

Manuscripts Published:
1. Creed RB, Roberts RC, Farmer CB, *McMahon LL, *Goldberg MS. Increased glutamate transmission onto dorsal striatum spiny projection neurons in Pink1 knockout rats Neurobiol Dis. 2020 Dec 30:105246. doi: 10.1016/j.nbd.2020.105246 PMID: 33387634 *
2. Manimaran Ramani, Kiara Miller, Namasivayam Ambalavanan, McMahon LL Increased Excitability and Heightened Magnitude of Long-term Potentiation at Hippocampal CA3-CA1 Synapses in a Mouse Model of Neonatal Hyperoxia Exposure Manuscript ID: 609903

Complete List of Published Work:
https://www.ncbi.nlm.nih.gov/pubmed/?term=mcmahon+LL

NAME James H. Meador-Woodruff, MD	POSITION TITLE Heman E. Drummond Professor and Chairman Department of Psychiatry

EDUCATION/TRAINING

EDUCATION

09/73-06/76 Manchester High School, Richmond, Virginia
09/76-05/80 University of Richmond, Richmond, Virginia; B.S. in Chemistry, minor subject Mathematics (summa cum laude)
08/80-05/84 Medical College of Virginia Commonwealth University, Richmond, Virginia; M.D.

POSTDOCTORAL TRAINING

06/84-06/85 Intern, Department of Psychiatry, University of Michigan
07/85-06/89 Resident, Department of Psychiatry, University of Michigan (Graduation with Distinction) 07/85-12/89 Postdoctoral Fellow, Mental Health Research Institute

INSTITUTION AND LOCATION	DEGR	YEAR(S)	FIELD OF STUDY
Department of Psychiatry and Behavioral Neurobiology University of Alabama at Birmingham SC 560C	EE M.D.	1984	Psychiatry

Positions

04/06-present Heman E. Drummond Professor, Department of Psychiatry and Behavioral Neurobiology, University of Alabama at Birmingham
04/06-present Professor of Neurobiology, University of Alabama at Birmingham
04/06-present Senior Scientist, Civitan International Research Center, University of Alabama at Birmingham
04/06-present Investigator, Evelyn F. McKnight Brain Institute
8/06-present Senior Scientist, Center for Glial Biology in Medicine, University of Alabama at Birmingham
10/06-present Senior Scientist, Comprehensive Neuroscience Center, University of Alabama at Birmingham
07/07-present Senior Scientist, Center for Neurodegeneration and Experimental Therapeutics, University of Alabama at Birmingham
01/09-present Senior Scientist, Evelyn F. McKnight Brain Institute, University of Alabama at Birmingham
04/09-present Senior Scientist, Alzheimer's Disease Research Center (ADRC), University of Alabama at Birmingham

NAME Kazutoshi (Kazu) Nakazawa		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
-Keio University School of Medicine, Tokyo, Japan	MD	1981 – 1987	Medicine
-Graduate School of Medicine, Keio University, Tokyo, Japan	PhD	1987 – 1991	Biological Science
ological Science rontier Science Program, Riken nstitute, Japan-Picower Center for Learning & Memory, MIT	Post-doctoral	1991- 1995	
	Post-doctoral	1995 - 2003	

Positions
2018 – present Fellow in Neuroscience, Druge Discovery Division, Southern Research Institute
2013 – present Investigator, Evelyn F. McKnight Brain Institute

NAME Vladimir Parpura, MD, PhD		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
School of Medicine in Split, University of Zagreb, Croatia	MD	1989	Biological role of gangliosides
Iowa State University, Ames, IA	PhD	1993	Glia-neuron signaling

Positions
Professor, Departments of Neurobiology, Biomedical Engineerting, Cell, Developmental and Integrative Biology, Visioin Sciences, UAB
Investigator, Evelyn F. McKnight Brain Institute

Research
My current research includes: i) studying the modulation of calcium-dependent glutamate release from astrocytes in health and disease; ii) assessing the role of the enteric glia in gut functions; iii) visualization of vesicular/receptor trafficking; iv) examination of the nature and energetics of interactions between exocytotic proteins using single molecule detection approaches; v) development of scaffolds and dispersible materials, most notably modified carbon nanotubes, which can be used in repair after brain injury, vi) development of biosensors (e.g. botulinum toxin and nanofabricated carbon-based detectors, and viii) bio-mimetic micro-robotics. It should be noted that the work done in these overlapping categories is highly interrelated. Parpura has been interfacing neuroscience with nanoscience/nanotechnology, synthetic biology and biomedical engineering.

Publications
1. King, A.C., Wood, T.E., Rodriguez, E., Parpura, V., Gray, M. (2020) Differential effects of SNARE-dependent gliotransmission on behavioral phenotypes in a mouse model of Huntington's disease. Expt. Neurol. 330:113358. doi: 10.1016/j.expneurol.2020.113358.
2. Gottipati, M.K., Bekyarova, E., Haddon, R.C., Parpura, V. (2020) Chemically Functionalized Water-Soluble Single-Walled Carbon Nanotubes Obstruct Vesicular/Plasmalemmal Recycling in Astrocytes Down-Stream of Calcium Ions. Cells 9, E1597; doi:10.3390/cells9071597
3. Rooj, A.K., Cormet-Boyaka, E., Clark,E.B., Qadri, Y.J., Lee, W., Boddu, R., Agarwal, A., Uddin, M., Parpura, V., Sorscher, E.J., Fuller, C.M., Berdiev, B.K. (2020) Association of Cystic Fibrosis Transmembrane Conductance Regulator with Epithelial Sodium Channel Subunits Carrying Liddle's Syndrome Mutation
4. Escartin, C., Galea, E., Lakatos, A., O'Callaghan, J., Petzold, G.C., Serrano-Pozo, A., Steinhauser, A., Volterra, A., Carmignoto, G., Agarwal, A., Allen, N.J., Araque, A., Barbeito, L., Barzilai, A., Bergles, D., Bonvento, G., Butt, A.M., Chen, W-T., Cohen-Salmon, M., Cunningham, C. Deneen, B., De Strooper, B., Díaz-Castro, B., Farina, C., Freeman, M., Gallo, V., Goldman, J.E., Goldman, S.A., Götz, M., Antonia Gutiérrez, A., Haydon, P.G., Dieter H. Heiland, D.H., Hol, E.M., Holt, M., Iino, M., Kastanenka, K.V., Kettenmann, H., Khakh, B., Koizumi, S., Lee, C.J., Liddelow, S.A., MacVicar, B., Magistretti, P., Messing, A., Mishra, A., Molofsky, A.V., Murai, K., Norris, M.N., Okada, S., Oliet, S.H.R., Oliveira, J.F., Panatier, A., Parpura, V., Pekna, M., Pekny, M., Pellerin, L., Perea, G., Pérez-Nievas, B.G., Pfrieger, F.W., Poskanzer, K.E., Quintana, F.J., Ransohoff, R.R., Riquelme-Perez, M., Robel, S., Rose, C.R., Rothstein, J., Rouach, N., Rowitch, D.H., Semyanov, A., Sirko, S., Sontheimer, H., Swanson, R.A., Vitorica, J. Wanner, I.B., Wood, L.B., Wu, J., Zheng, B., Zimmer, E.R., Zorec, R., Sofroniew, M.V., Verkhratsky, A. (2020) White paper on reactive astrocytes: Working consensus on nomenclature, definitions, and future directions

NAME Craig Powell, MD, PhD		POSITION TITLE Professor and Chair	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Louisiana State University	B.S.	1984-1988	Zoology
Baylor College of Medicine	MD, PhD	1988-1997	Neuroscience

Positions
University of Alabama at Birmingham School of Medicine, Birmingham, AL Dept. of Neurobiology
Director, Civitan International Research Center 9/1/18-pres University of Alabama at Birmingham, Birmingham, AL
Dept. of Neurobiology and Depts. of Neurology, Pediatrics, Psychology, Psychiatry, &Cell Developmental & Integrative Biology
Professor with Tenure 9/1/18-pres
University of Alabama at Birmingham School of Medicine, Birmingham, AL
Dept. of Neurobiology and Depts. of Neurology, Pediatrics, Psychology, Psychiatry, &Cell Developmental & Integrative Biology
Investigator, The Evelyn F. McKnight Brain Institute 9/1/18-pres
University of Alabama at Birmingham School of Medicine, Birmingham, AL

Publications
1. Michael G Mariscal, Elizabeth Berry-Kravis, Joseph D Buxbaum, Lauren E Ethridge, Rajna Filip-Dhima, Jennifer H Foss-Feig, Alexander Kolevzon, Meera E Modi, Matthew W Mosconi, Charles A Nelson, Craig M. Powell, Paige M Siper, Latha Soorya, Andrew Thaliath, Audrey Thurm, Bo Zhang, Mustafa Sahin, April R Levin. (2020) Shifted Phase of EEG Cross-Frequency Coupling in Individuals with Phelan-McDermid Syndrome. Molecular Autism, submitted.
2. Kellie Gergoudis, Alan Weinberg, Jonathan Templin, Cristan Farmer, Alison Durkin, Jordana Weissman, Paige Siper, Jennifer Foss-Feig, Maria del Pilar Trelles, Jonathan A. Bernstein, Joseph D. Buxbaum, Elizabeth Berry-Kravis, Craig M. Powell, Mustafa Sahin, Latha Soorya, Audrey Thurm, and Alexander Kolevzon. (2020) Psychometric Study of the Social Responsiveness Scale in Phelan-McDermid Syndrome. Autism Research,13(8):1383-1396. doi: 10.1002/aur.2299
3. Bassell, J., Srivastata, S., Prohl, A.K., Scherrer, B., Kapur, K., Filip-Dhima, R., Berry-Kravis, E., Soorya, L., Thurm, A., Powell, C.M., Bernstein, J.A., Buxbaum, J., Kolevzon, A., Warfield, S.K., & Sahin, M. on behalf of Developmental Synaptopathies Consortium. (2020) Diffusion Tensor Imaging Abnormalities in the Uncinate Fasciculus and Inferior Longitudinal Fasciculus in Phelan-McDermid Syndrome. Pediatric Neurology,106:24-31. PMID32107139 doi: 10.1016/j.pediatrneurol.2020.01.006
4. Jaramillo, T.C., Xuan, Z., Reimers, J.M., Escamilla, C.O., Liu, S., & Powell, C.M. (2020) Early Restoration of Shank3 Expression in Shank3 Knock-Out Mice Prevents Core ASD-Like Behavioral Phenotypes. eNeuro, 2020 Jun, DOI: 10.1523/ENEURO.0332-19.2020 PMID: 32327468 PMCID: PMC7294460
5. Speed, H.E., Kouser, M., Xuan, Z., Liu, S., Duong, A., & Powell, C.M. (2019) Apparent genetic rescue of adult Shank3 exon 21 insertion mutation mice tempered by appropriate control experiments. eNeuro, doi:10.1523/ENEURO.0317-19.2019. PMC6774147
6. Srivastava, S., Scherrer, B., Prohl, A., Filip-Dhima, R., Kapur, K., Kolevzon, A., Buxbaum, J., Berry-Kravis, E., Soorya, L., Thurm, A., Powell, C., Bernstein, J.A., Warfield, S.K., & Sahin, M., Developmental Synaptopathies Consortium (2019) Volumetric Analysis of the Basal Ganglia and Cerebellar Structures in Patients with Phelan-McDermid Syndrome. Pediatric Neurology, 90, 37-43, doi:10.1016/j.pediatrneurol.2018.09.008. PMC6309632

NAME Lucas Damian Pozzo-Miller		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Universidad nacional de Cordoba, Argentina	B.S.	1985	Physical/Natural Sci
Universidad Nacional de Cordoba Argentina	M.S.	1986	Physical/Natural Sci
Universidad Nacional de Cordoba Argentina	PhD	1989	
Case Western Reserve Uni Cleveland, OH	Postdoc	1992	Hippocampal synapse
Roche Institute of Molecular Bio Nutley, NJ	Postdoc	1995	Hippocampal synapse
Master Teacher Program UAB		2006	
Healthcare Leadership Academy		2013	

Positions

1995-1998 Senior Staff Fellow (Research-track Assistant Professor). Laboratory of Neurobiology (Tom Reese, Lab Chief, member US National Academy of Sciences), National Institute of Neurological Disorders and Stroke (NINDS), National Institutes of Health (NIH), Bethesda, MD.

1998-2006 Assistant Professor (tenure-track), Department of Neurobiology, School of Medicine, UAB. Secondary appointments in the Departments of Cell Biology and Physiology & Biophysics (currently Cell, Developmental & Integrative Biology), School of Medicine, UAB.

2006-present Scientist, Civitan International Research Center; Investigator, Evelyn F. McKnight Brain Institute; Scientist, Center for Glial Biology in Medicine; Scientist, Vision Science Research Center; Member, Comprehensive Neuroscience Center, UAB.

2006-2009 Associate Professor (with tenure), Department of Neurobiology, School of Medicine, UAB.

2006-present Investigator, Evelyn F. McKnight Brain Institute

2009-present Professor, Department of Neurobiology, School of Medicine, UAB.

2013-present Professor, Department of Neurobiology, College of Arts & Sciences, UAB. 2014-present Secondary appointment in the Department of Neurology, School of Medicine, UAB.

2014-present Associate Director, Comprehensive Neuroscience Center, UAB.

2016-present Interim Scientific Co-Director, Civitan International Research Center, UAB. 2017-present Co-Director, Neuroscience Theme, Graduate Biomedical Sciences (GBS), UAB.

Publications

1. Phillips ML & L Pozzo-Miller (2020). Identification of socially-activated neurons. Bio-protocol 10 (17): e3744 (doi: 10.21769/BioProtoc.3744).
2. Scopus h-index: 40 (6,385 total citations) NIH iCite Weighted Relative Citation Ratio: 167

NAME Erik Roberson		POSITION TITLE Virginia B. Spencer Professor of Neuroscience	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Princeton University, Princeton, NJ	A.B.	1990	Molecular Biology
Baylor College of Medicine	PhD	1997	Neuroscience
Baylor College of Medicine	MD	1999	

Positions

2005–08 Assistant Adjunct Professor of Neurology, UCSF 2006–08
Staff Scientist, Gladstone Institute of Neurological Disease
2008–12 Assistant Professor of Neurology, UAB
2012– Associate Professor of Neurology with tenure, UAB
2013–15 Associate Director, UAB Alzheimer's Disease Center
2013– Co-Director, UAB Center for Neurodegeneration and Experimental Therapeutics
2015– Co-Director, Evelyn F. McKnight Brain Institute at UAB
2015– Director, UAB Alzheimer's Disease Center

Concurrent Appointments

2008–12 Assistant Professor of Neurobiology, UAB (joint appointment)
2012– Associate Professor of Neurobiology, UAB (joint appointment)
2008– Investigator, UAB Center for Neurodegeneration and Experimental Therapeutics
2008– Investigator, Evelyn F. McKnight Brain Institute , UAB
2008– Neurologist, UAB Division of Memory Disorders and Behavioral Neurology
2008– Faculty, UAB Graduate School
2008– Faculty, UAB Medical Scientist Training Program
2008– Scientist, UAB Comprehensive Center for Healthy Aging
2010– Scientist, UAB Center for Glial Biology in Medicine

Publications

17 papers, published, in press, submitted, or in progress

NAME Michael Switow Saag		POSITION TITLE Professor of Medicine Associate Dean for Global Health Director, UAB Center for AIDS Res	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Chemistry, Tulane Uni	B.S.	1977	Chemistry
University of Louisville, Louisville, Kentucky	MD	1981	Medicine
UAB	Intern	1982	Medicine
UAB	Resident	1984	
UAB	Chief Resident	1985	
UAB	Fellow	1987	
UAB	Post Doc	1987	

Positions

1987 - 2010	Staff Physician, Medical Service Infectious Diseases, Department of Veterans Affairs Medical Center, Birmingham, Alabama
1987 - 2010	Consulting Physician, Cooper Green Hospital, Birmingham, Alabama 1987 -
Present	Attending Physician, Department of Medicine, University of Alabama at Birmingham, School of Medicine, Birmingham, Alabama
2009 - Present	Secondary Appointment to Epidemiology, University of Alabama at Birmingham, School of Public Health, Birmingham Alabama
2017 – Present	Investigator, Evelyn F. McKnight Brain Institute

Honors, Awards, and Advisory Committees

2012 - Present	Board Member, Infectious Diseases and Therapy
2012 - Present	Member, WHO Antiretroviral Therapy Guidelines Committee
2013 -	Member, CFAR Sub-Saharan Africa Working Group (CFAR-SSA) 2013 -
Present	Member, NIH R13 Grant Review Panel
2013 - Present	Member, NIH NIAID/DIR Board of Scientific Counselors
2013 - Present	Co-Chair, AASLD/IDSA/ IAS-USA Hepatitis C Guidelines Committee 2016-
present	Member, United Health Council

Publications

Saag MS, Gandhi RT, Hoy JF, et al. Antiretroviral drugs for treatment and prevention of 66 HIV Infection in adults: 2020 recommendations of the International Antiviral Society-USA Panel. JAMA 2020;324(16):1651-1669. doi: 10.1001/jama.2020.17025.

NAME David George Standaert		POSITION TITLE Professor and Chair	
EDUCATION/TRAINING			
INSTITUTION/LOCATION Harvard University Washington University School of Medicine	DEGREE A.B. MD/PhD	YEAR(S) 1982 1988	FIELD OF STUDY Biochemistry Medicine, Pharmacolog

Positions

2006 – present	Neurologist, University of Alabama Hospital 2006 –
present	Investigator, Evelyn F. McKnight Brain Institute 2011 –
present	Chair, UAB Department of Neurology

Publications

Collaborated on numerous papers

1. Longitudinal measurements of glucocerebrosidase activity in Parkinson's patients. Ann Clin Transl Neurol, 7(10), 1816-1830.
2. Application of the '5-2-1' screening criteria in advanced Parkinson's disease: interim analysis of DUOGLOBE. Neurodegener Dis Manag, 10(5), 309-323.
3. Progressive Supranuclear Palsy and statin use. Mov Disord, 35(7), 1253-1257.
4. Comparison of an online-only Parkinson's disease research cohort to cohorts assessed In person. J Parkinsons Dis, 10(2), 677-691.
5. Innovative recruitment strategies to increase diversity of participation in Parkinson's disease research: the Fox Insight cohort experience. J Parkinsons Dis, 10(2), 665-675.
6. Disease modification and biomarker development in Parkinson disease: Revision or reconstruction? Neurology, 94(11), 481-494.
7. Bridging the gaps: More inclusive research needed to fully understand Parkinson's disease. Mov Disord, 35(2), 231-234.
8. The genetic architecture of the human cerebral cortex. Science, 367(6484).
9. Ten unsolved questions about neuroinflammation in Parkinson's disease. Mov Disord.
10. alpha-Synuclein-specific T cell reactivity is associated with preclinical and early Parkinson's disease. Nat Commun, 11(1), 1875.
11. Defining research priorities in dystonia. Neurology, 94(12), 526-537.
12. Once-weekly subcutaneous delivery of polymer-linked rotigotine (SER-214) provides continuous plasma levels in Parkinson's disease patients. Mov Disord, 35(6), 1055-1061.
13. Understanding the relationship between freezing of gait and other progressive supranuclear palsy features. Parkinsonism Relat Disord, 78, 56-60.
14. Innate and adaptive immune responses in Parkinson's disease. Prog Brain Res, 252, 169-216.
15. Clinical and dopamine transporter imaging characteristics of non-manifest LRRK2 and GBA mutation carriers in the Parkinson's Progression Markers Initiative (PPMI): a cross-sectional study. Lancet Neurol, 19(1), 71-80.
16. Behavioral defects associated with amygdala and cortical dysfunction in mice with seeded alpha-synuclein inclusions. Neurobiol Dis, 134, 104708.
17. Characterizing dysbiosis of gut microbiome in PD: evidence for overabundance of opportunistic pathogens. NPJ Parkinsons Dis, 6, 11.
18. T cell infiltration in both human multiple system atrophy and a novel mouse model of the disease. Acta Neuropathol, 139(5), 855-874.
19. Brain alchemy: transforming astrocytes into neurons for neurodegenerative disease. Mov Disord Clin Pract, 7(8), 902-903.

NAME Anne Theibert		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Goucher College, Baltimore, MD	B.A.	1979	Chemistry
Johns Hopkins Uni, Baltimore, MD	PhD	1985	Biochemistry
Johns Hopkins Uni, Baltimore, MD	Postdoc	1987	
Johns Hopkins Uni, Baltimore, MD	Postdoc	1991	

Positions
2009 – present Program Director, Undergraduate Neuroscience, UAB
2006-present Investigator, Evelyn F. McKnight Brain Institute
2000-present Associate Professor (primary) UAB Neurobiology
2000-present Associate Professor (secondary) UAB Department of Cell, Developmental and Integrative Biology
2000-2012 Associate Professor (secondary) UAB Physiology and Biophysics
1996-2000 Assistant Professor (primary) UAB Neurobiology
1991-1996 Assistant Professor (primary) UAB Department of Cell Biology

Honors, Awards, and Advisory Committees
Undergraduate Neuroscience Program Director; Undergraduate Neuroscience Program Curriculum Committee; Neurobiology Department Graduate Program Director and Executive Committee Chair; Graduate Biomedical Science (GBS) Steering and Oversight Committee (SOC); GBS Curriculum Committee; GBS Neuroscience Curriculum Committee; Comprehensive Neuroscience Center (CNC) Executive Committee; Science and Technology Honors Program Admissions Committee

Name Summer Thyme		POSITION TITLE Assistant Professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Scripps College	BA	2006	Biology & Chemistry
University of Washington	PhD	2012	Biochemistry

Positions:
2019 – Present Assistant Professor, Department of Neurobiology, University of Alabama at Birmingham
2019 – Present Investigator, Evelyn F. McKnight Brain Institute, University of Alabama at Birmingham

2012-2019 Harvard University
Postdoctoral Fellow
Molecular & Cellular Biology Department
Advisor Dr. Alexander Schier

Grants
8/2019 – 9/2022 NIMH R00 MH110603 (Thyme), $747,000 direct + indirect over 3 years.
Functional analysis of schizophrenia-associated genes

Publications
Thyme, S, et al. Macromolecular modeling and design in Rosetta: new methods and frameworks. Nature Methods. 2020; PMID: 32483333

NAME Kristen L. Triebel		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Pittsburg State University	B.A.	2002	
Forest Institute	M.A.	2005	Psychology
Forest Institute	PsyD	2006	Psychology
Coatesville VA Med Ctr, Coatesville, PA	Intern	2006	
Dept of Neurology, UAB	Fellow	2008	

Positions

10/2017 - Present Associate Professor/Neuropsychologist (Tenure-track) UAB, Neurology 2017-present
Investigator, Evelyn F. McKnight Brain Institute

Publications

1. Gerstenecker, A., Grimsley, L., Otruba, B.*, Cowden, L., Marson, D. C., Gerstenecker, K.T., Martin, R. C., & Roberson, E. D. Medical decision-making in progressive supranuclear palsy: A comparison to other neurodegenerative disorders. Parkinsonism and Related Disorders 2019; 61: 77-81. PMID: 30514650.
2. Bail, J. R.*, Ivankova, N., Heaton, K., Vance, D. E., Triebel, K., & Meneses, K. Cancer-related symptoms and cognitive intervention adherence among breast cancer survivors: A mixed methods study. Cancer Nurs. 2019: April 3. doi: 10.1097/NCC.0000000000000700. [Epub ahead of print]. PMID 30950929
3. Gerstenecker, A., Martin, R., Triebel, K., & Marson, D. Anosognosia of financial ability in mild cognitive impairment. Int J Geriatr Psychiatry. 2019 Aug;34(8): 1200-1207. doi: 10.1002/gps.5118. PMID: 30968462
4. Vo., J. B., Fazeli, P. L., Benz, R., Bail, J.*, Triebel, K., Vance, D. E., & Meneses, K. Effect of a speed of processing training intervention on self-reported health outcomes in breast cancer survivors. Nursing: Research and Reviews 2019; 9, 13-19. DOI: 10.2147/NRR.S199664
5. Gerstenecker, A., Gammon, M., Marotta, D.*, Fiveash, J., Nabors, B., Mulhauser, K*. & Triebel, K. Using cognition to predict the ability to understand medical treatment in brain and metastatic cancer. Psychooncology. 2020 Feb;29(2):406-412. doi:10.1002/pon.5277 PMID: 31702844
6. Niccolai, L.*, Aita, S. L.*, Walker, H., Martin, R. C., Clay, O., Crowe, M. & Triebel, K. An examination of the neuropsychological profile and base rate of performance impairment in primary dystonia. J Clin Neurosci. 2020 Apr;74:1-5. doi:10.1016/j.jocn.2019.12.050 PMID: 31932183
7. Marotta D*, Tucker Z*, Hayward E*, Gerstenecker A, Gammon M, Mason M*, Willhelm G*, Bae H*, & Triebel K. Relationship Between Cognitive Functioning, Mood, and Other Patient Factors on Quality of Life in Metastatic Brain Cancer. Psychooncology. 2020 Jul;29(7):1174-1184. doi:10.1002/pon.5401 PMID: 31932183
8. Fowler ME*, Triebel KL, Cutter GR, Schneider LS, Kennedy RE, & Alzheimer's Disease Neuroimaging Initiative. Progression of Alzheimer's disease by self-reported cancer history in the Alzheimer's Disease Neuroimaging Initiative. J Alzheimers Dis. 2020; doi: 10.3233/JAD-200108. [Epub ahead of print Jun 6, 2020]. PMID: 32538844
9. Mulhauser, K.*, Marotta, D.*, Gerstenecker, A., Willhelm, G.*, Gammon, M., Nabors, B., Vance, D., Fiveash, J., & Triebel, K. Capacity to Consent to Research Participation in Adults with Metastatic Cancer: Comparisons of Brain Metastasis, Non-CNS Metastasis, and Healthy Controls. Neuro-oncology Practice. 2020 Mar; npaa008, https://doi.org/10.1093/nop/npaa008

In press

1. Gerstenecker, A., Nabors, B., Vance, D., Fiveash, J., & Triebel, K. (In Press). Clinical correlates of the ability to consent to research participation in brain metastasis. Psychooncology.
2. Wood, K., Memon, A., Memon, R., Joop, A., Pilkington, J., Catiul, C., Gerstenecker, A., Triebel, K., Bamman, M., Miocinovic, S. & Amara, A. Slow wave sleep and EEG delta spectral power are associated with cognitive function in Parkinson's disease. (in press)
3. Niccolai, L.*, Aita, S.*, Walker, H., Del Bene, V., Gerstenecker, A., Marotta, D.*, Gammon, M., Martin, R. C., Clay, O., and Triebel, K. Cognition and Cardiovascular Risk are Associated with Deep Brain Stimulation Consensus Conference Decision to Treat Primary Dystonia (accepted pending minor revisions February 18, 2020).

NAME Eroboghene E. Ubogu		POSITION TITLE Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
King's College, Lagos, Nigeria		1991	Secondary School
University of Lagos, Lagos, Nigeria		1992	Pre-medical
Abbey Tutorial College, London, England		1993	Advanced Level
Imperial College School of Medicine London, England, United Kingdom		1998	MBBS

Positions
2013 Professor (tenured), Department of Neurology, University of Alabama at Birmingham
Director, Neuromuscular Immunopathology Research Laboratory
Director, Shin J. Oh Muscle and Nerve Histopathology
Director, Electromyography and Clinical Neurophysiology
Director, Clinical Neurophysiology Residency Program
Director, Neuromuscular Medicine Fellowship Program
Investigator, Evelyn F. McKnight Brain Institute

Publications
1. Ubogu EE. Biology of the human blood-nerve barrier in health and disease. Special Issue: Blood-CNS and blood-nerve barriers in health and diseases and potential therapy (Guest editors: Lee, J-P and Sheikh, K). Experimental Neurology 2020; 328: 113272 (On-line version: DOI: 10.1016/j.expneurol.2020.113272, published on March 3rd, 2020).
2. Rivner MH, Quarles BM, Pan J-X, Yu Z, Howard JF, Corse A, Dimachkie MM, Jackson C, Vu T, Small G, Lisak RP, Belsh J, Lee I, Nowak RJ, Baute V, Scelsa S, Fernandes JA, Simmons Z, Swenson A, Barohn R, Sanka RB, Gooch C, Ubogu E, Caress J, Pasnoor JM, Xu H, Mei L MD; LRP4 Research Group. The clinical features of LRP4/Agrin antibody positive myasthenia gravis: A multi-center study. Muscle and Nerve 2020; 62:333-343 (on-line version: DOI: 10.1002/mus.26985, published on June 1st, 2020).
3. Kazamel M, Lopez M, Bebin M, Bowling K, Korf BR, Barsh GS, Cooper GM, Hurst ACE, Ubogu EE. Fibulin-5 mutation featuring Charcot Marie Tooth disease, joint hyper-laxity, and scoliosis. Neurology: Genetics 2020; 6:e476 (on-line version DOI: 10.1212/NXG.0000000000000476, eCollection 2020 August, published on June 30th, 2020).
4. Lewis RA, Cornblath DR, Hartung HP, Sobue G, Lawo JP, Mielke O, Durn BL, Bril V, Merkies ISJ, Bassett P, Cleasby A, Ivan Schaik IN; PATH study group. Placebo effect in chronic inflammatory demyelinating polyneuropathy: The PATH study and a systematic review. Journal of the Peripheral Nervous System 2020; 25:230-237 (on-line version: DOI: 10.1111/jns.12402, published on August 5th, 2020).
5. Dong C, Choudhary A, Ubogu EE. Glial derived neurotrophic factor: A sufficient essential molecular regulator of mammalian blood-nerve barrier tight junction formation. Neural Regeneration Research 2021; 16:1417-1418 (on-line version: DOI: 10.4103/1673-5374.300992, published on December 7th, 2020).

NAME Kristina M. Visscher		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION Carleton College, Northfield MN Washington Uni, St. Louis, MO	DEGREE B.A. PhD	YEAR(S) 1998 2004	FIELD OF STUDY Physics Neuroscienc

Positions
2009-2017 Assistant Professor, Neurobiology, UAB,
Secondary appointments in Psychology, Vision Sciences/optometry, Biomedical Engineering, Ophthalmology, Vision Science Research Center, Comprehensive Center for Healthy Aging 2017-present Associate Professor, Neurobiology, UAB
Secondary appointments in Psychology, Vision Sciences/Optometry, Biomedical Engineering, Ophthalmology, Vision Science Research Center, Comprehensive Center for Healthy Aging 2009-present Investigator, Evelyn F. McKnight Brain Institute, UAB

Publications
1. Maniglia, M., Jogin, R., *Visscher, K.M., and *Seitz, A.R. (2020). We don't all look the same; detailed examination of peripheral looking strategies after simulated central vision loss. J. Vis. 20, 5.
2. Maniglia, M., *Visscher, K.M., and *Seitz, A.R. (2020). A method to characterize compensatory oculomotor strategies following simulated central vision loss. J. Vis. 20, 15.

NAME Jacques I. Wadiche		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
Northwestern University; Evanston, IL	B.A. PhD	1984-1988 1992-1998	Neurobio. & Physiology
Vollum Institute, OHSU; Portland, OR Vollum Institute, OHSU; Portland, OR CSHL Imaging Course; Cold Spring Harbor, NY	Postdoctoral Student	1998-2006 2003	Neurosci.Biophysics SynapticTransmission Neuroimaging

Positions

1987 - 1988 Undergraduate Thesis Fellow, Department of Neurobio. and Physiol., Northwestern University, Evanston, IL; Advisor: Fred Turek, PhD

1990 - 1992 Research Assistant, Department of Neuroscience, Baylor College of Medicine, Houston, TX; Advisor: James W. Patrick, PhD

1992 - 1998 Graduate Student, Vollum Institute, Oregon Health Sciences University, Portland, OR; Advisor: Michael P. Kavanaugh, PhD

1998 - 2006 Postdoctoral Fellow, Vollum Institute, Oregon Health Sciences University, Portland, OR; Advisor: Craig E. Jahr, PhD

2004 Teaching Assistant, Cold Spring Harbor Laboratories Imaging Course, Cold Spring Harbor, NY

2006 – 2013 Assistant Professor, Department of Neurobiology, University of Alabama at Birmingham; Birmingham, AL

2006-present Investigator, Evelyn F. McKnight Brain Institute

2013 - Associate Professor, Department of Neurobiology, University of Alabama at Birmingham; Birmingham, AL

Honors, Awards, and Advisory Committees

2008 - Ad hoc reviewer: Netherlands Organization for Scientific Research, Agence Nationale de la Recherce (France), North Carolina Biotechnology Center

2009 - Ad hoc reviewer NSF Peer Review Committees (Biomolecular Systems, Cellular Systems)

2011 - Editorial Board, Frontiers in Behavioral and Psychiatric Genetics 2016
Graduate Dean's Excellence in Mentorship Award, UAB

Publications

1. Maniglia, M., Jogin, R., *Visscher, K.M., and *Seitz, A.R. (2020). We don't all look the same; detailed examination of peripheral looking strategies after simulated central vision loss. J. Vis. 20, 5.

2. Maniglia, M., *Visscher, K.M., and *Seitz, A.R. (2020). A method to characterize compensatory oculomotor strategies following simulated central vision loss. J. Vis. 20, 15.

NAME Linda Wadiche		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
North Park Uni, Chicago, IL	B.S.	1992	Biology
Northwestern Uni, Chicago, IL		1997	
Vollum Institute, Oregon Health	PhD	2004	

Positions
2019 – present Professor, Department of Neurobiology, UAB
2011 – 2019 Associate Professor, Department of Neurobiology, UAB
2006 - 2011 Assistant Professor (primary), Department of Neurobiology, UAB 2006-present Investigator, Evelyn F. McKnight Brain Institute
2005 - 2006 Assistant Research Professor, Vollum Institute, Oregon Health & Sciences University, Portland, OR

Biographical Sketch
Linda Overstreet Wadiche received a BS in Biology from North Park University in Chicago, IL. In 1997 she received her Ph.D. from the Department of Physiology at Northwestern University Medical School under the mentorship of Dr. N. Traverse Slater. From 1998-2004 she was a postdoctoral fellow with Dr. Gary Westbrook at the Vollum Institute, Oregon Health & Science University. Dr. Wadiche became a Research Assistant Professor at the Vollum Institute in 2004. In June of 2006 she joined the Department of Neurobiology at UAB as an Assistant Professor.

Research Interest
Most neurons in the brain are generated during embryogenesis. However, neural stem cells in discrete regions of the adult continuously produce newborn neurons that can functionally integrate by forming synapses with the existing neural circuitry. One of the regions where adult neurogenesis occurs is the dentate gyrus, an area that is involved learning and memory. My laboratory focuses on the mechanisms underlying functional maturation and synaptogenesis of newborn granule cells, the principal neurons in the dentate gyrus. We use a variety of techniques to explore how newborn neurons survive and integrate, and how these processes are modified by aging, exercise and disease.

Publications in peer reviewed journals
1. Gao Y, Shen M, Gonzalez JC, Dong Q, Kannan S, Hoang J, Eisinger BE, Chang Q, Wang D, Overstreet-Wadiche L, Zhao X (2020) RGS6 mediates effects of voluntary running on adult hippocampal neurogenesis. Cell Reports 32(5):107997. PMC7450532
2. Vaden RJ, Gonzalez JC, Tsai MC, Niver AJ, Fusilier AR, Griffith CM, Kramer RH, Wadiche JI, Overstreet-Wadiche L* (2020) Parvalbumin interneurons provide spillover to newborn and mature dentate granule cells. eLife 9:e54125. PMC7326496
3. McMeekin LJ, Bartley AF, Bohannon AS, Adlaf EW, van Groen T, Boas SM, Fox SN, Detloff PJ, Crossman DK, Overstreet-Wadiche LS, Hablitz JJ, Dobrunz LE, Cowell RM (2020) A Role for PGC-1α in Transcription and Excitability of Neocortical and Hippocampal Excitatory Neurons. Neuroscience. 435:73-94. PMC7325608

NAME Scott Wilson		POSITION TITLE Associate Professor	
EDUCATION/TRAINING			
INSTITUTION/LOCATION	DEGREE	YEAR(S)	FIELD OF STUDY
University of South Florida	B.S.	1986	Biology
University of South Florida	M.S.	1989	Microbiology
University of Florida	PhD	1996	Molecular Genetics
National Cancer Institute	Postdoc	2002	Genetics

Positions

1990-1991 Instructor, Introductory Biology, Hillsboro Community College, Tampa, Florida

1992-1996 Graduate student in the laboratory of Maurice Swanson, Department of Molecular Genetics and Microbiology, University of Florida College of Medicine, Gainesville, Florida

1997-2002 Postdoctoral Fellow in the laboratory of Drs. Neal Copeland and Nancy Jenkins, National Cancer Institute, Frederick, MD.

8-02 to present Assistant Professor, Department of Neurobiology, University of Alabama at Birmingham, Birmingham, AL,

03 to present Secondary Appointment in the Department of Biochemistry and Molecular Genetics

04 to present Secondary Appointment in the Department of Genetics

2006-present Investigator, Evelyn F. McKnight Brain Institute

6-06 to present Director of Summer Program in Neuroscience

10-06 to present Director of Molecular Recombineering Core. NIH Blueprint Core facility.

8-10 to presentAssociate Professor, Department of Neurobiology, University of Alabama at Birmingham, Birmingham, AL