

# ATLANTA VA REHABILITATION RESEARCH & DEVELOPMENT



CENTER FOR VISUAL AND NEUROCOGNITIVE REHABILITATION

FALL 2020

## Meet the CVNR Director, Dr. A.M. Barrett



I first became involved with stroke and right brain research during my undergraduate years. I was lucky to be mentored by Steven Kosslyn, who taught me many things and convinced me that the right brain had an important role in spatial computations. I investigated this role in my senior thesis work, and Steve and I collaborated with a group to eventually publish this study, an exciting event that got me hooked on doing research. I also had the opportunity as an undergraduate to study turning behaviors in rats whose brain systems had been altered to study changes in spatial behavior. The changes I saw in the rats are very similar to those experienced by my stroke patients who have spatial neglect, a disorder that affects reporting,

responding to and turning towards things that are on the side opposite to their brain injury. Like many visual and cognitive disabilities, spatial neglect is an “invisible disability” that has negative functional consequences. Like many people considering cognitive neurology as a career, I was also fascinated by aphasia, a language disorder that can occur following stroke. I’ve spent a great deal of time interacting with people with aphasia individually, in conversation groups, and in collaboration with another mentor, Martha Sarno, who studied the functional life consequences of speech and language disorders. Martha was one of the leaders of the Academy of Aphasia, and through that group I met many charismatic researchers in the Jamaica Plains VA, including Howard Gardner, who wrote a fascinating book about his experience there called “The Shattered Mind”. I still quote from this book when teaching, and highly recommend it.

Returning to the VA feels in many ways like experiencing the clinical-research environment in Jamaica Plains again: a dynamic group of active minds, building on each other’s ideas.

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When the previous CVNR Director, Krish Sathian, first told me about the Center many years ago, I knew I had to meet this group of investigator-collaborators. I found it very exciting that a Center was developing research in the basic processes of vision, and investigating cognitive neuropsychological mechanisms of functional disability, and even integrating principles of movement and rehabilitation science. I am confident this is a place where my colleagues will push me to develop excellent research across the translational continuum for spatial neglect and spatial function.

As the new Executive Director of the CVNR, I look forward to expanding the mission by

knitting together the invisible disabilities of vision and cognition that we study. These two areas of emphasis are united by a path to functional recovery. Can we rapidly diagnose visual and cognitive disorders, and deliver treatments effectively to veterans everywhere? Can we identify plasticity, whether it is in the visual, motor, language or cognitive systems? And can we add to the traditional approaches to improve function in menopause, diabetes, stroke, Parkinson's, traumatic brain injury, and aging? The CVNR represents a true, diverse matrix of team-based science. I look forward to moving the CVNR forward into the 2020s, where I know our team will generate many new discoveries.

## CVNR Profile: Gabriell Champion

Gabriell Champion (Gabi) is a research coordinator who manages recruitment, testing, and imaging data for Dr. Keith McGregor and Dr. Amy Rodriguez. Currently she works on Dr. Rodriguez's "Transcranial Direct Current Stimulation (tDCS) as an Adjuvant to Phonomotor Treatment for Aphasia" study, in which non-invasive brain stimulation is paired with aphasia treatment to see if it improves outcomes.

Gabi was born and raised in Marietta, GA, but went to college in Spartanburg, SC, at Wofford College. At Wofford she received a B.S. in Psychology and German in 2018. Outside of the CVNR, Gabi enjoys playing tennis, listening to true crime podcasts, and spending time with friends. Recently she has been keeping extra busy taking care of her new German Shepard/Husky puppy, Billy.



Gabi has said her favorite part about working at the VA is her interactions with participants. She appreciates the kind of research we conduct at the CVNR because of its potential to impact individuals' lives. She enjoys the opportunity

to visualize that impact first-hand and how it not only affects the individual, but also how it affects people around them. It is her greatest reward to know that she has helped someone.

## CVNR Profile: CJ Walters

Courtney (CJ) Walters Jr is a research assistant, who works with Keith McGregor, Ph.D. and Joe Nocera, Ph.D. on their merit-awarded studies entitled "Effects of Aging on Cortical Excitability During Motor Learning" and "Graded Intensity Aerobic Exercise to Improve Cerebrovascular Function and Performance in Aged Veterans." Together, they study how exercise therapy improves cognitive and motor functions in sedentary older adults.

CJ was born and raised in Kennesaw, GA. He attend Vanderbilt University in Nashville where he graduated with a Bachelor of Arts degree in Neuroscience and with a minor in Managerial Studies: Corporate Strategy. In his free time, CJ enjoys exercising, which is fitting considering the work he does with the participants! He likes to run and play soccer and basketball with friends.

Following his quick year with the Center for Visual and Neurocognitive Rehabilitation, he will attend Loma Linda University School of Medicine in the fall. During his time with us he really enjoyed learning about exercise's therapeutic effect on the brain and interacting with our participants during the exercise classes. We are sure he will one day utilize this clinically-relevant research in his work with future patients!





# Welcome New CVNR Atlanta Advisory Board Members

**Dr. Walter Royal III** joins the CVNR advisory board with a significant expertise and research experience in neuroanatomy, neuroimmunology, and the aging brain. He is Professor and Chair of the Department of Neurobiology and the Director of the Neuroscience Institute at Morehouse School of Medicine. His research, including studies performed in animal models and patient cohorts, has been supported by the National Institutes of Health, the Veterans Administration, the National Multiple Sclerosis Society, and private industry. At the Atlanta VA, Dr. Royal is a staff neurologist and coordinates recruitment for the Historically Black Colleges and Universities Research Scientist Training Program and helps to mentor early career scientists in the program.



**Dr. Salina Waddy** also joins the CVNR advisory board as the current director of Stroke and Neuro-Hospital Services at the Atlanta VA Health Care System. Her research focuses on many components of neurological disease, namely the discovery of genetic variants and application of genetics to improve neurological health, as well as the racial/ethnic disparities found in common neurobiological disorders. Welcome to the CVNR! We look forward to working with you!



# Mental Health Corner

The COVID-19 pandemic is unprecedented in its reach around the world. Everyone has been impacted by it, whether it has had a direct impact on you or your family, we understand how much life has changed. Eventually, society will undergo a natural recovery and we will all move on to a new normal. During this trying time, we need to look out for not only our physical health, but also pay attention to our mental health. Know that we will get through this. During this pandemic try to ensure that you take care of yourself and your community by eating healthy, getting plenty of sleep, staying informed, and managing stress.

During times like these it is common to experience symptoms of stress such as:

- Feeling fearful
- Angry
- Tired
- Tense muscles
- Numb or uncaring
- Trouble concentrating

Here are some strategies to help monitor your stress:

- Utilize exercise, yoga, prayer, etc.
- Avoid using alcohol and drugs to cope
- Make time for relaxation
- Explore new or former hobbies
- Connect with other people using the phone or new technologies
- Focus on what you can control

During this time, clinicians are more than willing to help you through this abnormal pandemic. If you are currently utilizing mental health services at the VA or elsewhere, please contact your provider to set up a telephone or video chat appointment where they can help you through any of the issues you may be experiencing.

Please stay safe and healthy. Take care of yourself and of others!

## Ways To Reduce Stress



Exercise



Sleep Well



Eat Healthy



Relax



Be Social

If you are experiencing a mental health emergency please call 911 right away

If you would like to access VA mental health services, please call:

- Dial 1-800-273-8255 and Press 1 to talk to someone.
- Send a text message to 838255 to connect with a VA responder.
- Start a confidential online chat session at <http://VeteransCrisisLine.net/Chat>.



## Featured Research Project

Over 25 million U.S. citizens (8.3% of the population) have diabetes, and an estimated 79 million have prediabetes (CDC 2011 National Diabetes Fact Sheet). Diabetes is of great importance to the VA patient population specifically as nearly 20% of Veterans in the VA system have diabetes (over twice that of the national average). In diabetes, chronic high blood glucose levels can cause pathologic changes in circulation, leading to vascular damage in the brain, heart, nerves, kidney, and retina. One of the most common complications, diabetic retinopathy (DR), is the leading cause of blindness in adults 20 to 74 years of age. In addition, DR is likely related to other diabetic complications, for example, cognitive decline and microvascular changes in the brain. Drugs to treat the retina in diabetes are only used when vascular changes are visible and require multiple injections into the eye; not a practical long-term treatment for diabetic patients. Thus, there is a genuine and urgent need to identify early-stage DR so that earlier detection and intervention methods can be developed.

**Dr. Rachael Allen** is a neuroscientist and research biologist at the CVNR who has 16 years of research experience with over a decade in vision research. She is interested in the eye as a window to the brain, with current projects ranging from diabetes to traumatic brain injury to Alzheimer's disease. Dr. Allen's work seeks to leverage the retina to diagnose diseases earlier and track their progression, to better understand their pathophysiology, and to develop treatments and therapies. Her first Career Development Award determined that early retinal function deficits in diabetes



appeared prior to cognitive and motor deficits and later stage retinal vascular disease. Dr. Allen's second Career Development Award examines the role of dopamine in the diabetic retina and brain as well as the use of dopamine-targeted treatments to delay disease progression. Dr. Allen hopes that her research will allow us to delay or even prevent vision loss and other complications of diabetes and other diseases in our Veterans.

## New VA Funding

**Dr. Amy Rodriguez** continues to expand her VA research program with a newly funded VA Rehabilitation Research & Development SPiRE award. Some patients with left brain stroke suffer from spatial, motor, and sensory impairments in addition to language and memory impairments. Without information on how to make assessment and treatment procedures more accessible to this population, clinicians may find it difficult to follow stroke guidelines and provide the best care to our Veterans. This study is being done to test how spatial, motor and sensory (pain) assessments and spatial retraining treatment procedures should be adapted for patients with language and memory impairment. The information gathered will prepare us for a larger study focused on a multi-target treatment for patients with stroke, which could significantly improve functioning and independence in thousands of Veterans.



## CVNR Participation in COVID-19 Response

In keeping with the guidance from the CDC, the Atlanta VA has implemented a screening process for all staff and patients, which includes a series of questions and temperature checks. All VA services have been asked to participate in this process on a rotation. The CVNR has dutifully provided staff to assist with this screening process.

The CVNR has contributed almost 200 hours to screening patients entering the hospital. Thank you to all those who participated!





**Center for Visual &  
Neurocognitive Rehabilitation**

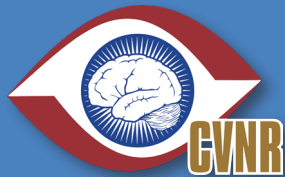
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**VA**



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**Thank you, participants!  
You make every discovery possible!**

For information about participating in research call us at  
(404) 728-5064 or visit our website at <http://www.varrd.emory.edu/>



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Active VA  
patient-centered  
research studies



**124**

New participant  
volunteers



**49**

Publications from  
patient-centered  
research studies

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HUMAN STUDIES ACCOMPLISHMENTS IN 2019**