

Fostering the health and well-being of Veterans through research impacting visual and neurocognitive function

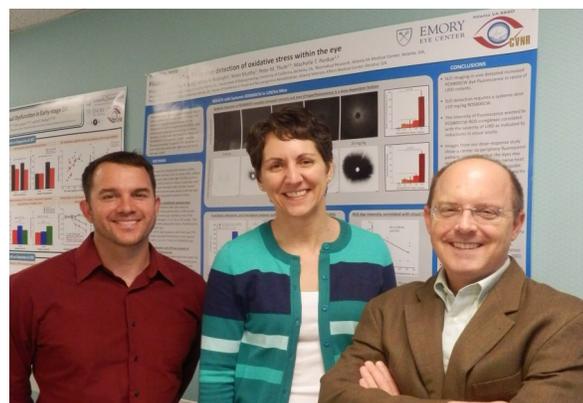
New Project Focus: Bridging Animal and Human Models of Exercise-Induced Visual Rehabilitation

By Jeffrey H. Boatright, PhD

Chalk up another benefit of exercise — it is good for your eyesight, too! We all know that exercise is good for our hearts and muscles, but can taking a walk or riding a bike protect your eyesight? Three researchers at the Center for Visual and Neurocognitive Rehabilitation (CVNR) are testing that question with the help of a group of Veterans.

Atlanta VAMC Research Scientists Joe Nocera and Keith McGregor previously discovered that riding stationary bicycles, an activity called “spinning,” improved mental capabilities of aging Veterans. Based on these findings, VA Research Career Scientist Machelie Pardue proposed testing whether aerobic exercise protects against blindness in mice with retinal degeneration. She and VA Research Biologist Jeff Boatright found that the eyes of mice that were running regularly were protected. Importantly, they found that protection of the eyes depended on brain-derived neurotrophic factor (BDNF), a blood protein known to be important in many other beneficial effects of exercise in humans and animals.

Taking their research full circle, Drs. Pardue, Nocera, and Boatright are now testing whether both mice and humans show similar increases in blood levels of BDNF during and after exercise. If so, it may be that such BDNF measures can be used to predict whether



L-R: Drs. Joe Nocera, Machelie Pardue and Jeff Boatright

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exercise will protect vision in our aging Veteran population. So far, their results and those of others in this area suggest that even modest activity can protect eyesight.

Jeffrey H. Boatright, PhD, is the Principal Investigator of the VA Rehabilitation Research and Development SPiRE Award (C1924-P) Bridging Animal and Human Models of Exercise-induced Visual Rehabilitation. For more information about participation opportunities, please contact Holly Hudson, at (404) 321-6111, x 7099. You can find links to more information about Dr. Boatright's earlier work on our website, www.varrd.emory.edu/news-events/

New Investigator: Welcome Dr. Amy Rodriguez!

We are honored to welcome Amy Rodriguez, PhD to the CVNR. Dr. Rodriguez is a speech-language pathologist and rehabilitation scientist. She joined the CVNR last summer, after completing a postdoctoral fellowship at the University of Queensland in Brisbane, Australia. Dr. Rodriguez is passionate about her research, which is aimed at developing new treatments for people with language impairment due to neurologic disorders. Currently, she is investigating the effect of exercise on word learning in healthy aging, aphasia and mild cognitive impairment. The ultimate goal of her research is to develop exercise-based treatments for word retrieval problems, which are the most common language complaints in healthy aging and neurologic disease.



Amy Rodriguez, PhD

Dr. Rodriguez's work adds a new dimension to the exercise research program within the CVNR because her current studies investigate the immediate effects of exercise rather than the long-term effects. She had this to say about her approach: "Immediate exercise paradigms will help us identify the optimal dose, timing and type of exercise that benefits learning. Making the most of a single exercise session — that is, immediate effects — will lead to future understanding about the combined effect of those single sessions over time — the long-term effects. This approach will allow us to develop exercise-based word retrieval interventions that take advantage of both the immediate and long-term benefits of exercise."

Dr. Rodriguez's grandfather was a Veteran of the Korean War, and she values the opportunity to honor him and give back to other Veterans through her research. Outside of work, Dr. Rodriguez enjoys singing and taking on physical challenges such as the US Marine Corps Mud Run, OxFam 100K, and walks with her spirited American Bulldog, Herbie.

Amy Rodriguez, Ph.D., is a Research Scientist with the Department of Veterans Affairs. She is the Principal Investigator of Effects of Aerobic Exercise on Word Learning in Older Adults. For more information about this study, please contact Holly Hudson, at (404) 321-6111, x 7099.

Participant Perspective: SLEEP-E Dyads

by David L. Barlow

I learned about the sleep study from one of my VFW buddies. As a Vietnam Veteran with a service related hearing problem that interferes with my sleep, I felt this would be a good opportunity to learn about the possibility of improving my sleep. My precious bride, Cherie, agreed!

The things I liked about the program are the efforts to do things for older Veterans who are typically overlooked. The activities were fun and the exercise part was excellent. It's the kind of stuff that anyone can do. It was clear that the

researchers were trying to increase activity levels among older people. There were many choices, so if you didn't like something, you had other options — we did not get bored! We really enjoyed the research staff visits. They were very professional and made the program more personal. The two FaceTime calls with Dr. Griffiths were a lot of fun. This was our first time using FaceTime, so it was a great opportunity to try it out.

“...they are trying to do things for older Veterans who are typically overlooked..”

Overall, the SLEEP-E Dyads program was extremely easy to use. It was Cherie's first time using an iPad. Everything was picture-driven and she found it easy to use. I learned a lot about my sleep habits. The videos showed us a variety of ways to improve our sleep. We were very pleased to learn that our lifestyle has contributed positively to the quality of our life. We do not drink or smoke, we are moderately active, and we do not have TV or other electronic devices in our bedroom. I cannot emphasize enough the value of sharing my life with the woman I love. Our love of being together transcends any difficulty the world presents and we encourage all couples to give of their time to each other and enjoy the life God has given them.

I would absolutely recommend SLEEP-E Dyads to Veterans, caregivers or anyone, really. I went around bragging about the program and even put it on my Facebook page! There is such a tremendous population of Veterans that need to be reached. It is remarkable that a program of this magnitude is doing so.



David and Cherie Barlow

Patricia Griffiths, PhD is the Principal Investigator of Improving Sleep in Veterans and Their Family Caregivers (SLEEP-E Dyads), VA Rehabilitation Research and Development Career Development Award (E7249W).



**For information about participating
in research at our Center,
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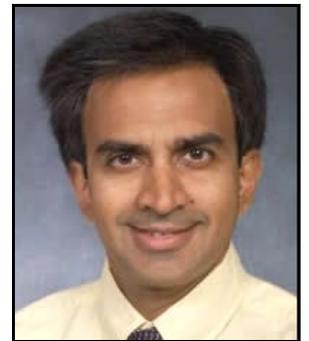
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A Word from Our Director

The Atlanta VA Center for Visual and Neurocognitive Rehabilitation (CVNR) comprises three interwoven programs of research, focusing on Retinal and Neural Repair; Visual Rehabilitation; and Neurocognitive Rehabilitation. The CVNR continues to evolve dynamically. We now have two active Cores supporting our research programs — a Neuroimaging Core directed by Dr. Bruce Crosson and a Molecular Biology Core directed by Dr. Jeffrey Boatright — and are preparing to add two more Cores, one on Physical Exercise and one on Tele-rehabilitation. These Cores each consolidate particular areas of expertise in order to facilitate collaborative research in pursuit of our mission to enhance the health of Veterans with visual and/or neurocognitive problems. We are particularly excited about the arrival of our new iPads to be used in our Tele-rehabilitation programs!



Krish Sathian, MD, PhD
Executive Director

On behalf of the CVNR, I would like to personally thank the Veterans and all our research participants who help to make our scientific discoveries possible.

CONGRATULATIONS !



New Funding –



April Maa, MD is one of four recipients nationally of a VA Center of Innovation Spread Grant. The grant is titled "Expansion of Technology-based Eye Care Services (TECS)." TECS is a successful tele-ophthalmology program, which screens Veterans in their Community-Based Outpatient Clinic, dramatically improving their access and diagnosis of disease at an earlier stage. This grant will spread TECS to the national level by instituting two new sites at other VAs in the country.

On April 1, **Andrew Butler, PhD, MBA, MPT**, started a new Office of Rural Health project entitled "National Rural Stroke Telerobotic Rehabilitation Headquarters for the Enterprise Wide Expansion of Rural Stroke Telerobotic Rehabilitation Access." The project aims to establish a Headquarters in Atlanta, GA to coordinate, train, and promote Telerobotic rehabilitation for stroke survivors living in our rural communities. In addition to current sites in Alabama and Georgia, other sites around the country will be added. The National Rural Stroke Robotic Tele-rehabilitation Initiative is expected to treat 150 rural Veterans in three years, saving an estimated 600,000 driving miles!



Erica Duncan, MD, received a *perfect* score on her Rehabilitation Research & Development Small Projects in Rehabilitation Research (SPiRE) grant focusing on "Aerobic Exercise for Cognition in Schizophrenia." The study began in February and will continue for the next two years. Well done!

Rachael Allen, PhD has received funding for a Career Development Award "Neuroprotective Strategies for Retinopathy and Cognition in Diabetes." Dr. Allen will look to identify an earlier treatment window for diabetes — a disease that affects nearly 20% of Veterans in the VA system — to develop early clinical treatments prior to obvious signs and symptoms.



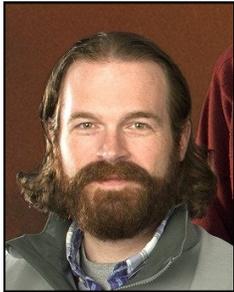
Joe Nocera, PhD and **Keith McGregor, PhD** have been awarded an Office of Rural Health grant to develop an exercise prescription/activity tracking app for use by Veterans living in rural areas. Their project, "Improving Mobility in Rural Veterans Using the Apple Watch," aims to improve physical fitness in Veterans by providing customized exercise plans that can be interactively tracked via the app to assist them in starting and maintaining a regular aerobic exercise routine. The project has been selected to be part of the VA Innovators Network Accelerator program — one of 20 such projects nationally.



CONGRATULATIONS !



New Endeavors –



Chris Mizelle, PhD, a Career Development Awardee in the CVNR, accepted a position last fall as Assistant Professor in the Department of Kinesiology in the College of Health and Human Performance at East Carolina University. We wish you all the best in your future endeavors, Chris!



Our long-standing CVNR Research Coordinator, **Aaron Bozzorg, MS**, who has worked on a variety of our studies, will depart to the Medical College of Georgia to begin medical school in Fall 2016. Aaron has contributed his many talents to studies ranging from adapted tango and neuroimaging to dual sensory loss psychoeducational peer groups. Good luck Aaron!

WELCOME NEW COLLEAGUES!

Paul Weiss, MS, is the CVNR's new Statistician! Paul has been on the faculty at Emory University's Rollins School of Public Health for 16 years. During that time he has collaborated on a variety of different projects and taught thousands of students. His favorite project to date was one in which he collaborated with art historians and architects at an archaeological dig in Greece. We enthusiastically welcome Paul's expertise.



Jeananne Elkins, DPT, PhD, is an Advanced Fellow in Geriatrics at the Birmingham/Atlanta Geriatric Research and Education Clinical Center (GRECC), an affiliate of the CVNR. She holds dual appointments in the Emory University Division of General Medicine and Geriatrics and the Division of Physical Therapy as an Assistant Professor. Dr. Elkins is currently working with Dr. Patricia Griffiths' Veteran's Caregiver Support Studies at the CVNR. Dr. Elkins' research seeks to better understand the fit of the environment and person.

Ryan Bailey, PhD, OTR/L, is a Movement Scientist and holds Masters degrees in Occupational Therapy and Clinical Investigation. His research has examined cultural perceptions of physical disability, quality of life after peripheral nerve injury, and motor learning after stroke. As a GRECC Advanced Fellow in Geriatrics, his current research projects examine the relationship between psychosocial factors and physical activity in Veteran-Caregiver dyads and adults with stroke.

