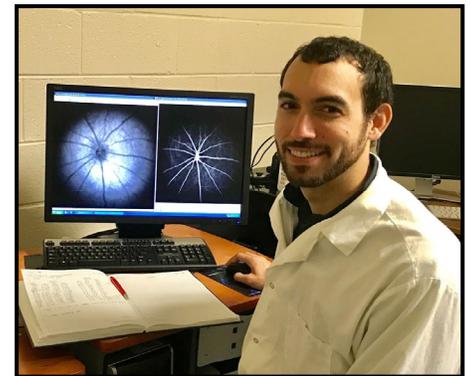


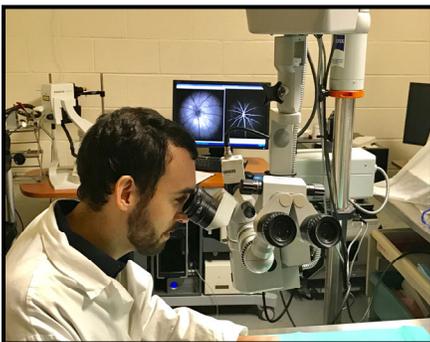
## Featured Research Project

Loss of sight is a severe disability that impact how people interact with their surroundings. Glaucoma is the second leading cause of blindness in the world, affecting over 70 million people. This disease is difficult to detect as it slowly progresses and patients are often unaware they are losing vision until it is too late. To complicate matters more, the cause of glaucoma remains unknown. Scientists and clinicians have identified some risk factors for developing glaucoma. For instance, lack of adequate estrogen levels in both genders is linked with developing glaucoma. Early menopause, where estrogen levels drop before the age of 45, may put women veterans at further risk for glaucoma. Understanding the relationship of menopause and estrogen levels to developing glaucoma is especially important given the expanding number of women Veterans. As a proactive step, the VA formed the Women's Veterans Health Research Network (WVHRN) to help garner more attention on research and clinical treatments for the increasing number of women Veterans.



**Andrew Feola, PhD**

Dr. Andrew Feola is a biomedical engineer and research biologist at the CVNR who has studied women's health issues for 12 years. Dr. Feola is examining how age and menopause influence risk factors and its progression. His work combines traditional engineering approaches with assessments of visual function and structural changes of the eye in animal models of glaucoma. Currently, 25-45% of glaucoma patients still continue to lose vision despite treatment. Therefore, Dr. Feola is mainly motivated by the need to find novel therapeutic treatments for glaucoma and will investigate the potential of estrogen as a glaucoma treatment. Dr. Feola hopes this work will lead to new targets for glaucoma treatment and future clinical studies that will eventually ease the burden of glaucoma to our Veterans, which one day will help prevent further vision loss and maintain their quality of life.



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## Participant Perspective: NEXIS

### by Thomas Bowen, Veteran



**Thomas & Martha Bowen**  
with study coordinator,  
**Jessica Kelleher, MS, CCRC**

A year ago, my wife, Martha, and I received an invitation to participate in the “Aerobic Training to Improve Energy Utilization and Antioxidant Capacity in Stroke Study (NEXIS)”. Martha and I had both suffered strokes, and were immediately attracted to the research study, because I hoped we would benefit from this program as well as providing valuable input to help others fighting to overcome the effects of this condition.

We have both worked hard to comply with the requirements of the program, and as we near completion we hope to keep improving by continuing to exercise and stretch as we have learned to do from our instructors. I can see improvement in my physical condition as the exercise demand has gotten me in better shape, and my stamina has improved. I have moved from 15 minutes on the treadmill to 40 minutes! Martha has also seen some improvements in dexterity and some reduction in pain after her stretching sessions.

We had very little difficulty with the program, except the requirement to attend three times a week, but Jessica Kelleher was very accommodating when we had to miss or change sessions. We have enjoyed our participation and feel we have made new friends at the VA. We sincerely hope our involvement will help other Vets.

## CVNR Profiles: Kevin Mammino, CPT, CCRC

Kevin Mammino is a Research Health Scientist who manages the exercise protocols, testing, and data for the CVNR's Movement Studies Lab (MSL). The MSL plays a critical role in the Physical Exercise Core to evaluate the effect of exercise on cognition, brain function and ability of exercise to improve cognition and brain function as well as aid in the regression or maintenance of certain disease states.

Kevin grew up in sunny South Florida enjoying the outdoors and beaches. He obtained his degree in exercise physiology following study at Mercer University and University of Florida. Kevin worked in pediatric rehab before joining Research at the Gainesville VA Brain Rehabilitation Research Center. In 2013, several members and investigators transferred to Atlanta. Kevin migrated north with the group of Gators to join the newly-funded Center for Visual and Neurocognitive Rehabilitation.

Beyond the CVNR, Kevin enjoys his time with friends discovering many of the wonderful places and events that Atlanta offers. His dog, Abigail, keeps him active on the many trails and parks around North Georgia. He also stays busy with a few hobbies he has picked up along the way which include gardening, to sports, brewing, and photography.



**Kevin & Abigail**

Kevin finds the CVNR a motivating place to work, with “a great group of people who you can call friends,” and enjoys the comradery around the Center as a whole. Most satisfying of all is working with the participants. He says it is very rewarding to see someone believe in themselves and push beyond their own expectations, and even more, to hear someone say “I feel better. Thank you.”



# Ask Monica: Food for Thought

**Dear Monica**, there are many supplements on the market for "Brain Health," but I am worried about scams and false claims. What brain healthy supplements can you recommend? - **Looking for a Brain Boost**

Dear **Looking for a Brain Boost** — Great question! Supplements are generally only recommended if you have a medical condition that prevents you from absorbing nutrients or follow a diet that requires you to eliminate entire food groups (e.g., vegan). If this is not the case, opt for whole foods rather than supplements to get these "Brain Health" nutrients. Research shows that a Mediterranean-style diet rich in fish, whole grains, green leafy vegetables, and nuts helps maintain brain health. Below you'll find the role that specific nutrients in this diet play on our brain health, and suggestions for how to meet the recommendations. - **Monica**

### Omega 3s

*Found in:* fatty fish (salmon), seeds (flaxseed), nuts (walnuts).

*Recommendation:*

Eat fresh or water-packed fish (about the size of a deck of cards) 1-2 times/week.

### B Vitamins (Folate, B6, B12)

*Found in:* animal products, including meat, eggs, and milk and fortified breakfast cereals.

*Recommendation:*

Eat 5-6 servings of whole grains/day.

### Antioxidants (Vitamins C and E and Beta-carotene)

*Found in:* citrus fruits, bell peppers, broccoli, spinach.

*Recommendation:*

Strive for 7-10 servings/day of veggies and fruits.

How do they affect the brain?

Improves electrical signaling between nerve cells in the brain and reduce harmful inflammation.

Reduces homocysteine (a toxic amino acid in the body)

Improves the cell-to-cell connection in the brain

Shields the cells in your brain from destruction caused by free radicals (a process called oxidative stress).



**Monica Serra, PhD** is a Research Scientist and Registered Dietitian with the Atlanta VA Medical Center. We invite you to email your questions about nutrition and exercise to [CVNR@va.gov](mailto:CVNR@va.gov)

## Welcome New CVNR Investigators!



**Jeanie Park, MD**

The CVNR welcomes two new investigators to our family. **Dr. Jeanie Park's** research program focuses on the regulation of the sympathetic nervous system in patients at high cardiovascular risk, particularly those with chronic kidney disease, hypertension, smokers, and Post-Traumatic Stress Disorder (PTSD). **Dr. Sheila Rauch** has been conducting research & providing PTSD and Anxiety Disorders treatment for over 20 years. Her research focuses on mechanisms involved in the development and treatment of PTSD and improving access to effective interventions. Welcome!



**Sheila Rauch, PhD**

# New VA Project Funding



**Rachael Allen, PhD** continues her VA research program with her newly funded VA Rehabilitation Research & Development Career Development 2 Award "Neuroprotective Strategies for Retinopathy and Cognition in Diabetes." Dr. Allen will study the role of dopamine in Type II diabetes and investigate if dopamine restoration at the first signs of diabetic retinopathy will protect the brain and retina from diabetic complications. Diabetes affects nearly 20% of Veterans and that number is expected to rise to 35% by 2025. This project will start April 2019. Congratulations!

The CVNR introduces **Venkatagiri Krishnamurthy, PhD** who has received the VA Rehabilitation Research & Development Career Development 2 Award "Multimodal Neuroimaging: Advanced Tracking of Longitudinal Aphasia Recovery." Every year, 1/3 of the Veterans who are hospitalized with stroke develop stroke-related language disorders. Since the first few months post-stroke are important in the recovery of language function, Dr. Krishnamurthy will work to develop brain imaging methodologies so clinicians can accurately identify the parts of the brain associated with language recovery. Dr. Krishnamurthy has been collaborating with the CVNR for several years and we welcome him as a Principal Investigator in the center.



**Joe Nocera, PhD** received funding for his first VA Rehabilitation Research & Development Merit Award. Dr. Nocera's project, "Graded Intensity Aerobic Exercise to Improve Cerebrovascular Function and Performance in Aged Veterans," will utilize fMRI to evaluate two primary measures that show the effect of various intensities of exercise on cerebrovascular health. These measures will help determine the impact of aerobic exercise on brain health in aging Veterans. Congratulations Dr. Nocera!

We celebrate **Machelle Pardue, PhD's** many achievements in science with the award of the VA Rehabilitation Research & Development Senior Research Career Scientist Award. This award recognizes a select group of non-clinician scientists nationally for their VA research. It recognizes the VA researchers who are international leaders in their field, and have shown their commitment to VA research through scientific productivity, committee participation, teaching and mentoring, and taking a pivotal role in helping the Veterans Healthcare system fulfill its primary mission. Congratulations Dr. Pardue! Thank you for all you do to help our Veterans.



# Investigator Spotlight: Machele Pardue, PhD

## Partnering with VA research to treat eye disease

My first job after graduate school was a postdoctoral fellowship at Hines VA Medical Center in Chicago. At that time, I had no inkling that the VA would support my work for the next two decades. This consistent VA support would allow me to pursue impactful partnerships and lead to meaningful research that could bring lasting changes in the field. My postdoctoral work was cutting edge: testing whether implanting a small device into the eye could restore vision to Veterans that were blind! This area was totally different from my graduate work on how different birds focus their eyes. I was eager to embark on a new journey that had such obvious potential to help patients – patients I continue to see in the halls of the Atlanta VA Hospital every day.

After my postdoctoral fellowship, I was awarded a VA Career Development Award but one year into that work, my husband accepted a job in Atlanta, Georgia. Again the VA was there to support my career, since I could move my funding through the national VA system to the Atlanta VA. Moving to the Atlanta VA was even more fortuitous, because it had the only VA Rehabilitation Research Center in the US focused on vision loss. In the next few years, the VA funded my work on the protective effects produced by low level electrical stimulation in the eye. These grants were the first to support my passion for neuroprotective treatments for retinal disease that I have been pursuing for over 17 years.



**Machele Pardue, PhD**

Currently, my lab is focused on finding ways to slow the progression of vision loss caused by retinal disease. Using animal models of retinal diseases, we have tested rehab methods like electrical stimulation therapy to the eye and physical exercise, as well as oral medications like synthetic bile acids and dopamine-associated drugs. We have also developed new ways to detect diabetic retinopathy prior to the currently available clinical methods so that treatments can be started sooner and slow progression. I am excited that we have two ongoing clinical trials to translate our work to patients: exercise interventions for patients who suffer from age-related macular degeneration and dopamine treatments for early stage diabetic retinopathy.

Along this journey, I have been continuously supported by VA funding and have recently received the VA Senior Research Career Scientist Award, a competitive award that recognizes international leaders in their field who have made significant research contributions, which impact healthcare for Veterans. I am humbled to have received this prestigious award. I look forward to continuing my partnership with the VA to slow the progression of vision loss and help Veterans and their families maintain the best possible quality of life.

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## CVNR Research featured in new television series

Georgia Public Broadcasting (GPB) will air their new series, *Your Fantastic Brain*, featuring compelling stories on brain-related health and wellness this month. The research of three CVNR investigators, Madeleine Hackney, Keith McGregor, and Joe Nocera, will be featured in this series. The weekly series will begin airing on January 28th at 8pm on GPB.

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



**Upcoming Event**

**Ninth Annual Bettye Rose Connell Memorial Lecture Series**

SPONSORED BY THE CENTER FOR VISUAL AND NEUROCOGNITIVE REHABILITATION (CVNR)  
AND THE EMORY CENTER FOR HEALTH IN AGING

**Patricia Parmelee, PhD**, Director, Alabama Research Institute on Aging  
Professor, Department of Psychology, University of Alabama  
Tuesday, April 23, 2019

Visit our website for more information — <http://www.varrd.emory.edu/seminars>

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