



Research and development to improve the everyday function and quality of life of aging Veterans with vision loss and their caregivers.

New Project Focus: Activities of Daily Living – Training for Veterans and Caregivers

As we grow older, many of us will experience limitations in our mobility making the most basic activities of daily living (ADLs) difficult to perform safely and efficiently. The presence of a caregiver in the home can help immensely. However, without the necessary equipment and training, daily tasks such as bathing, dressing, and getting in and out of bed can result in injury for the Veteran and/or their caregiver. The CAREGIVER ASSESSMENT OF SKILLS SETS AND INDIVIDUALIZED SUPPORT THRU TRAINING, or “CG ASSIST” program, was designed to help older Veterans and their caregiver with daily care activities.



Patricia C. Griffiths, PhD

CG ASSIST has recently undergone feasibility testing in a pilot study. The intervention consists of 1) assistive technology and simple home modifications to support ADLs, and 2) training on the appropriate use of the devices using standardized protocols that are customized to the needs and preferences of the couple and the environmental features of the home.

The objective of the study is to document the effects of the program on caregiving practices (e.g., proper lifting and moving techniques for the caregiver) and outcomes (e.g., reducing injuries). Secondary objectives are to determine the effects of the program on well-being (depression, quality of life) and to compare the traditional in-person approach and real-time interactive tele-video conferencing.

Supporting and assisting caregivers in providing care for Veterans to help them age in place has important implications for the safety, dignity, and quality of life of the Veterans we serve.

Patricia C. Griffiths, PhD, is the Principal Investigator for “Evaluating the CG ASSIST Program for Veterans and their Caregivers.” This study is supported by the VHA Rehabilitation R&D Service. For more information, call Eunhye Kim at (404) 321-6111, ext. 7093.

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David Ross Makes the Smart Phone Even Smarter



David Ross, MEd, MSEE

When you have a visual impairment, finding your way around unfamiliar as well as familiar places can be confusing and frustrating. As you lose vision, you lose the ability to read signs and recognize landmarks that you once used to find your way and to know where you are. As an investigator at the Atlanta VA Rehabilitation R&D Center, David Ross has developed technologies that provide information equivalent to these signs and landmarks which veterans may no longer be able to see as they lose their vision.

For indoor wayfinding, such as in VA Medical Centers, Mr. Ross is placing Radio Frequency Identification (RFID) tags under floor tiles and in signs to implement a navigation system.

Many newer cell phones will be able to read these tags and provide the information they contain. To make the developed system as easy to use as possible, Mr. Ross is also working to make cell phones more accessible to people with a visual impairment. He recruited a group of visually impaired persons to evaluate the accessibility of a variety of cell phones, asking what things made the phones either easy or hard to use. He used this information to write a set of best practices for cell phone accessibility and has developed an example phone to show how a truly accessible phone should work.

Using this new cell phone, veterans can call a special number and ask for directions to a particular location, receive turn-by-turn directions as they move along the route to that location, and hear about points of interest in the surroundings.

Mr. Ross, a biomedical engineer, has been in the Rehabilitation R&D Center for more than 27 years. His research is devoted to the design of assistive technology for veterans experiencing vision loss. For more information about Mr. Ross and his research, please visit our web site at www.varrd.emory.edu.

Brain Fitness by Andrew Butler, PhD, PT

Our brain is more flexible and adaptable than ever imagined! The discovery of **brain plasticity** has resulted in an amazing awakening to who we are and why we are here as human beings. **There are many factors that influence brain plasticity with motivation and novelty** being key. Life lived with enthusiasm, passion, and joy keeps us motivated to learn new things. So...



- **avoid ruts** – drive a different route to the mall, shop at different grocery stores, try some new recipes.
- **take up new challenges** – learn a new task or skill, like a new language, sport, or craft.
- **push your boundaries** – improve existing skills and keep your activities demanding enough to be stimulating but fun.

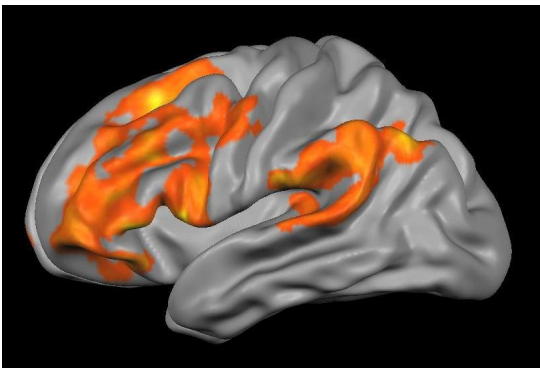
The brain will unwire old habits and begin laying down new circuits. Over time this process increases your ability to learn new things. When an activity becomes second nature, it is time to take steps to keep it challenging or add a new interest. Along with brain fitness, you gain new skills that energize your zeal for engaged and active living.

Why I Participated in Memory Rehabilitation Research: A Study Participant's Perspective

When a colleague of mine told me about a research project regarding memory and the brain, I replied, "Where do I sign up?" What a feeling knowing that my contribution may someday change how we improve memory! I wanted to be a part of the VA/Emory study that used a research MRI machine to gather data from the brain as well as learning strategies to recall information. This was my chance to donate my brain, while alive, to make a difference for future advancements on memory as we age. The best part — I was able to learn more about the MRI machine, its purpose, and how it can detect brain abnormalities. My dad is in his last stages of Alzheimer's. This was my pay-it-forward moment to help others.

Justin was my researcher, who guided me through the process, along with Randall, who was the MRI technician. The two week process began with initial testing followed up with an MRI day filled with various tests, three training sessions, and finally the last MRI testing. Wow! It was the most incredible experience knowing that while I am thinking and answering questions, they are collecting data and watching my brain at work! While I was in the MRI machine, I pretended to be a NASA astronaut while going through some of the necessary tests. I did this all for the love of brain science.

"What a feeling knowing that my contribution may someday change how we improve memory!"



A sample functional Magnetic Resonance Imaging (fMRI) scan. fMRI measures the blood flow in the brain that is associated with neural activity. Active brain regions are shown in orange in the image to the left. fMRI is widely used for brain imaging because of its relatively low invasiveness, absence of radiation exposure, and greater availability.

This study, "Memory Rehabilitation of Patients with Mild Cognitive Impairment," is a collaboration between Benjamin Hampstead, PhD and Krish Sathian, MD, PhD. For more information about this study, contact Justin Hartley at (404) 712-0936.

For information about participating in research at our Center, call (404) 728-5064.



**1670 Clairmont Road
Decatur, GA 30033**

**Telephone
404-728-5064
Toll-free
1-800-944-9726
Ext. 5064**

www.varrd.emory.edu



Atlanta VA Rehabilitation R&D Center of Excellence

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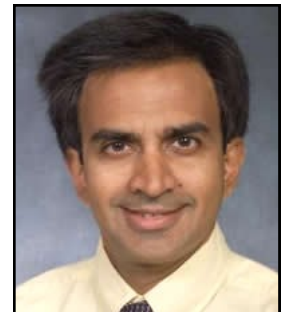
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A Word from Our Director

The main focus this past spring for our Center of Excellence was developing and preparing our competing renewal application. The process catalyzed energetic discussions that spawned new research projects, collaborations, and recruitments to the Center. It is clear that the Center of Excellence has emerged as a critical research hub for visual and neurological rehabilitation in the Atlanta area, involving Center investigators and collaborators at the VA, Emory and Georgia Institute of Technology.

Dr. Machele Pardue is now Associate Director for Scientific Projects. Outreach and education activities continue to be a major priority, and Dr. Katharina Echt is now Assistant Director for these efforts.

We hope you enjoy reading this newsletter!



**Krish Sathian, MD, PhD
Director**