

Working Together: Vision and Brain Research

Injuries and conditions that affect the brain may also affect vision and vice versa. Our eyes and brain are connected and work together. Health conditions that impair vision can also impair cognition. The eyes can provide windows into the brain, and understanding the brain can help us understand the eyes better.

The CVNR brings together vision and brain researchers to achieve synergies aimed at improving the health of veterans with visual or cognitive problems, or a combination of them, especially in relation to rehabilitation. In this way, the combination of innovative brain research with our long-standing experience in vision research offers the Veterans Health Administration an invaluable resource for developing evidence-based, patient-centered therapies to improve brain and visual dysfunction resulting from injury and/or disease.

We also focus on the effect aging has on vision and brain function, and the similarity of age-related diseases of the eye and brain. As our veteran population ages, research that addresses impairments in both vision and cognition can shed light on the best ways to protect, restore and optimize everyday function.



The CVNR has established Cores to facilitate collaborative interactions between researchers. Currently we have Behavioral Assessment, Neuroimaging and Molecular Biology Cores. We will introduce a Telerehabilitation Core in the next fiscal year to facilitate the expansion of our growing tele-rehab research program.



THE MISSION of the Atlanta
VAMC Rehabilitation R&D Center of
Excellence for Visual and
Neurocognitive Rehabilitation
(CVNR) is to foster the health and
well-being of Veterans through
uniquely synergistic research
impacting visual and/or
neurocognitive function.

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Center of Excellence
for
Visual and
Neurocognitive
Rehabilitation

Atlanta VA RR&D





VISION



BRAIN

EXERCISE



CAREGIVING



The CVNR is one of only 16 VA Rehabilitation Research & Development Centers of Excellence across 147 VA Medical Centers country-wide. The researchers at the CVNR are committed to fostering the best possible health and well-being of Veterans by conducting cutting-edge research in rehabilitation of visual and neurocognitive problems. We proudly serve as a resource for Veterans, their family members and the community at large.

The CVNR's Focus

The research programs at the CVNR fall under three themes:

- 1. Visual Rehabilitation**, a long-standing strength of this Center of Excellence, is led by CVNR Director, Krish Sathian, MD, PhD and targets rehabilitation of visually impaired veterans. Under this theme, we are currently focusing on spatial cognition, with the goal of developing effective methods for teaching blind Veterans how to mentally map their environment. This project uses brain imaging to investigate the effect of various training methods on the brain.
- 2. Neurocognitive Rehabilitation**, led by Bruce Crosson, PhD, studies the domains of memory, language, spatial perception and motor planning, particularly in older veterans. Under this theme, a focus on age-related neurocognitive changes seeks to determine whether there are one or multiple causes for decline in language, motor function, and spatial cognition.
- 3. Retinal and Neural Repair**, led by Machel Pardue, PhD, explores the mechanistic basis of visual and neurocognitive rehabilitation to complement studies of rehabilitative interventions in veterans. A recent study demonstrated beneficial effects of exercise on retinal degeneration, attracting considerable attention in the press.

These highly interactive programs reflect strong synergies, both within and between programs, representing natural collaborations facilitated by the Center.

The Clinical Trials Pipeline

The CVNR strives to foster the most cutting-edge research and to see it through from pre-clinical studies all the way to implementation in the community. We are uniquely positioned to mount a series of rehabilitation clinical trials based on the findings of projects in each theme. The clinical trials pipeline keeps our ultimate goal of improving veterans' health firmly in our sights.

