What Are the DOD-Identified Vision Research Gaps?

Ground soldiers especially face numerous assaults that potentially impair visual function, including:

- Eye injuries from chemical, biohazard, laser, and environmental exposure
- Corneal (front-of-eye) and retinal (back-of-eye) injuries that are the result of direct blast injuries and are often not evaluated until a soldier’s vital signs are first assessed and which, if not stabilized, lead to vision loss
- Visual disorders as a result of Traumatic Brain Injury
- Potential long-term ocular injuries from a blast wave’s pressure differential

Due to the full spectrum of eye injuries—from superficial to blinding—as well as the military’s desire to prevent injuries and to rehabilitate soldiers with injuries, the DOD has identified at least nine vision research gaps:

1. Mitigation and treatment of traumatic injuries, war-related injuries, and diseases to ocular structures and the visual system
2. Mitigation and treatment of visual dysfunction associated with TBI
3. Ocular and visual systems diagnostic capabilities and assessment strategies
4. Eye protection and vision loss prevention strategies
5. Vision rehabilitation strategies and quality of life measures
6. Epidemiological studies of military eye trauma and TBI-related vision dysfunction
7. Vision restoration
8. Vision care education, training and simulation
9. War fighter vision readiness and enhancement

How Is the VTRP Managed and Awards Made to Vision Researchers?

The VTRP is managed by the DOD’s Telemedicine and Advanced Technology Research Center (TATRC) within the U.S. Army Medical Research and Materiel Command (USAMRMC). TATRC, located at Fort Detrick, Maryland, added VTRP management to its existing Vision Research Portfolio (VRP), which had included other past Congressionally-directed program requests.

TATRC’s VTRP Programmatic Committee, chaired by TATRC Director Colonel Karl Friedl, Ph.D. and Colonel Donald Gagliano, M.D., Director of the joint DOD/VA Vision Center of Excellence (VCE), consists of ophthalmic and optometric consultants to the Army, Navy and Air Force, as well as representatives from the National Eye Institute (NEI), the Food and Drug Administration (FDA), and stakeholders from the vision community. The Committee develops a Program Announcement that seeks research proposals from vision researchers worldwide, evaluates the applicability of proposals to the DOD-identified vision research gaps, and determines awards after matching programmatic need with scientific peer review, which is conducted externally by the American Institute for Biological Sciences (AIBS).

What is the Vision Center of Excellence’s Role in relation to the VTRP and TATRC?

The National Defense Authorization Act of 2008 [P.L. 110-181] created the joint DOD/VA Vision Center of Excellence to address the prevention, diagnosis, mitigation, treatment, research, and rehabilitation of military eye injuries and diseases, including visual dysfunction related to TBI. Although the VCE promotes collaboration, facilitates integration, and serves as an advocate for vision across the DOD and VA healthcare systems, its primary responsibility is the creation of the Defense and Veterans Eye Injury Registry. The Vision Registry will track all eye injuries, from initial treatment on the battlefield through follow-up care at the VA over a veteran’s lifetime.

The Vision Registry will be especially vital in identifying the number and types of eye injuries, especially eye conditions whose onset does not occur until well after a soldier’s exposure to environmental conditions, blast injuries, or a blast wave.

The VCE does not have intramural or extramural research funding to address DOD vision gaps. However, VCE Director Colonel Donald Gagliano, M.D. serves as the co-chair of TATRC’s VTRP Programmatic Committee and ensures appropriate VCE input.

TATRC at the ARVO Annual Meeting

Each year, TATRC representatives attend the annual meeting of the Association for Research in Vision and Ophthalmology (ARVO), the world’s largest organization for eye and vision researchers. In addition to speaking at a formal session on defense vision funding opportunities, they also meet for more than 30 hours in one-on-one sessions with researchers to discuss the DOD gaps and research that may be responsive to those needs.

Left to right: TATRC’s Robert Read, Marc Mitchell, and Francis McVeigh, O.D. meet one-on-one with ARVO President Peng Khaw, M.D., Ph.D. (Moorfields Eye Hospital, London, UK) at ARVO’s 2012 meeting. International researchers are eligible for VTRP funding.

TATRC Vision Portfolio Manager Robert Read describes plans for the Vision Research Program’s FY2011/2012 funding cycle awards

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