

# Joining Forces on the Road to Discovery:

*Advancing the PTSD and TBI Research Agenda*



## Daily Highlights

### September 22, 2016

- **Investor Steven A. Cohen and Cohen Veterans Bioscience President & CEO Dr. Magali Haas** welcomed attendees with calls to advance the PTSD and TBI research agenda in the face of an invisible epidemic, noting that more than a million service members and veterans, and more than 9 million civilians, have been diagnosed with these conditions. Mr. Cohen has committed more than \$300 million to support Cohen Veterans Network and Cohen Veterans Bioscience.



**VA Undersecretary for Health David Shulkin, FDA Commissioner Robert Califf, and Jonathan Woodson, Faculty Director of the Institute for Health System Innovation at Boston University,** emphasized the necessity for collaboration and innovation. Mr. Shulkin reported strides in suicide prevention, improved access to mental health care, and recent adoption of innovative solutions to treating veterans at the VA. Dr. Califf emphasized the importance of developing biomarkers for PTSD and TBI so that we can measure the benefits from treatments, and predicted that technological advancements

like wearable biosensors will soon lead to exciting new diagnostic devices. Dr. Woodson highlighted the need to institute smart policies in parallel with advancing medical research.



## Cohen Veterans Care Summit



- **As a combat veteran who served in Afghanistan and Iraq**, Garret Combs shared his own experience of PTSD and delivered an unexpected message: “Don’t thank me for my service,” he said, because putting vets on a pedestal only intensifies feelings of difference, isolation and an inability to relate to one’s community.

- **Cohen Veterans Network President and CEO Dr. Anthony Hassan** reported overwhelming demand for services at the five clinics the organization has opened so far, and projected that eventually there would be 20 or more sites around the US. CVN provides mental health care to veterans and their families at no charge, regardless of discharge status.



**A wide-reaching federal plan** to improve access to mental health services for veterans, service members, and military families is moving forward. The National Research Action Plan (NRAP), established in 2013, is building collaborations to standardize, integrate, and share data as appropriate, build new tools and technologies, and work to maximize the impact of research findings.

- **PTSD goes back 3,000 years**, said Dr. Charles Marmar of New York University. The earliest PTSD-like case in medical history was a Syrian soldier who lived in 1300 B.C. Similar conditions have been recognized repeatedly over the centuries, usually after a war and called by names like “soldier’s heart,” “battle fatigue,” and “shell shock.” But the symptoms have remained consistent — nightmares, memory problems, insomnia, withdrawal.



**Women’s higher rate of PTSD** may be due in part to sex-related differences in how their brains respond to trauma, said Dr. Eric Kandel (left), Nobel Laureate and professor at Columbia University. In a mouse model of conditioned fear, female — but not male — mice without the TIA-1 gene exhibit stress-induced PTSD-like phenotypes. In contrast, increasing TIA-1 aggregation enhances its protective function, leading to a reduction in fear-related behaviors.

**We understand cancer much better than neurodegeneration** because we know why cells proliferate, but we really don’t know why they die. To make progress in TBI and related diseases, said Dr. Kenneth Kosik of UC Santa Barbara, we need to better understand how misfolded versions of proteins like tau, which is involved in TBI, escape cellular degradation.





- **Wearable devices** will soon provide medical-grade data for research and treatment of PTSD and other conditions. Ruben de Francisco of the nanoelectronic research institute Imec demonstrated an electrode-studded cap, wristband, and skin patch that can collect data on heart and brain activity, skin conductance, physical activity and other factors.

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- **Fear is a natural response** — and one critical for the survival of an organism. PTSD is thought to arise from changes in how the brain processes fear and fear-related behaviors. A number of models have been developed to explore neural circuits that underlie PTSD symptoms. Dr. Israel Liberzon of the University of Michigan argued that the brain's capacity to put fears in context — its ability to react differently to a lion in the zoo and a lion in your backyard — is key to understanding PTSD.

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- **Numbers are key** to identifying genes associated with neuropsychiatric conditions. Early efforts by the Psychiatric Genomics Consortium (PGC) to identify genetic risk factors underlying schizophrenia failed for one simple reason, said Dr. Karestan Koenen of the Harvard School of Public Health — sample size. It took 9,000 patients to find a genetic variant in the MHC gene that contributes to increased schizophrenia risk. In PTSD, a partnership between Cohen Veterans Bioscience and PGC expects to have 25,000 cases analyzed by the end of 2016.

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