



BOB WOODRUFF FOUNDATION
Helping **heroes** on the homefront

HEALING THERAPY: A New Role for Man's Best Friend



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EXECUTIVE SUMMARY

On December 4, 2013, the [Bob Woodruff Foundation](#), in collaboration with the [National Intrepid Center for Excellence \(NICoE\)](#), sponsored a convening on the expanding role of animal-assisted therapy and the use of service dogs in military medicine. The Bob Woodruff Foundation organized the convening to become better informed and better able to respond appropriately to grant requests by nonprofit service dog organizations that provide assistance animals to wounded warriors.

The convening – held on the Bethesda Naval Support Activity campus, home to Walter Reed National Military Medical Center – brought together civilian and military researchers, academics, physicians, clinicians, service members, veterans and policymakers. The organizers presented several goals for the event:

- Encourage dialogue on the use of service dogs and animal-assisted therapy for injured service members
- Share the science behind the human-animal bond
- Identify topics for future action

Given the wide consensus on the efficacy of animal-assisted therapy for individuals with physical impairments, much of the day's discussion focused on the use of service dogs to assist individuals with psychological health issues and stress disorders, topics on which there is no universal agreement. While there is substantial anecdotal evidence that service dogs can provide significant therapeutic behavioral health benefits, there is little scientific evidence.

One convening presentation explored the neurobiology of social engagement and how it might apply to treatment of post-traumatic stress disorder and traumatic brain injury; another focused on the role of the hormone oxytocin in social bonding and physical and psychological healing; other presentations reported on service dog organizations that support wounded warriors with stress disorders. One such organization, Warrior Canine Connection, is producing promising results for PTS and TBI patients through a program in which wounded warriors are responsible for training service dogs for veterans with physical impairments.

Convening Conclusions

- The human-animal bond is real and there is ample anecdotal evidence that the bond can result in emotional benefits.
- There is general agreement that service dogs can successfully assist individuals with physical impairments in hearing, vision, mobility, seizures, etc. However, no similar consensus exists regarding the therapeutic benefit of service dogs in the treatment of psychological health and stress disorders. The definition, training and therapeutic efficacy of service dogs for those with psychiatric disabilities continue to be controversial in the behavioral health community.
- There is an immediate need for further clinical research into the potential therapeutic benefit of service dogs for individuals suffering from combat stress.
- Clinicians, policymakers and the service dog industry should work together to develop universally recognized standards and criteria to include 1) definitions of the various types

of assistance dogs such as service dogs, therapy dogs, facility dogs, medical response dogs, animal-assisted activity dogs, etc. and 2) credentialing of service dog trainers and training organizations.

- Programs such as the Warrior Canine Connection in which veterans and service members suffering from combat stress train mobility service dogs for fellow wounded warriors can serve as a model for clinicians, patients and families and can complement traditional therapies.

Recommendations for specific next steps fell into three general areas:

- Research into the therapeutic efficacy of using service dogs in psychiatric and combat stress treatment protocols
- Research into the selection, training and assignment of these service dogs
- Development of policies regarding definitions and diagnoses of PTSD and TBI symptom clusters and standards for service dog training and credentialing



BACKGROUND

“Significant anecdotal evidence supports the impact of animal-assisted therapy, but scientific evaluation and quantitative evidence is in short supply.”

Dogs have been domesticated for assistance and companionship purposes since the beginning of recorded history. The extraordinary emotional and psychological bond between humans and canines has long been recognized, with dogs assisting man in hunting, agriculture and security. In the process, they have become man’s best friend. It was not until the 20th Century, however, that dogs were trained to assist individuals with physical limitations such as vision, hearing, or mobility impairments. Today, military medicine is breaking new ground in the use of canines to help service members and veterans recover from psychological injuries.

On December 4, 2013, a convening sponsored by the Bob Woodruff Foundation in collaboration with the National Intrepid Center for Excellence (NICoE) was held on the Bethesda Naval Support Activity campus, home to the Walter Reed National Military Medical Center. As a leader in the support of post-9/11 wounded, injured and ill military personnel and veterans, the Bob Woodruff Foundation wanted to gain a better understanding of the value of animal-assisted therapy and be able to respond appropriately to grant requests from service dog organizations.

The convening brought together civilian and military researchers, clinicians, service members, veterans, policymakers, medical providers and service dogs to examine the expanding role of canines in military medicine. Dr. Thomas J. DeGraba, Deputy Director and Chief of Medical Operations of NICoE, opened the convening by outlining the goals of the event:

- Encourage dialogue on the use of service dogs and animal-assisted therapy for injured service members
- Share the science behind the human-animal bond
- Identify key topics for future convenings

Although there is significant anecdotal evidence supporting the positive impact of animal-assisted therapy, scientific evaluation and quantitative evidence – particularly in regard to those suffering from stress disorders – is in short supply. In the words of one participant, the event was an attempt “to put some science behind all the positive effects we’re seeing on emotional health.”

Who doesn’t recognize the comfort and calming effect of a beloved dog? After a tough day at the office or an argument with a spouse, the gentle, nonjudgmental nuzzle of the family pet can lift our spirits and restore our perspective. Can the same interaction, perhaps more intensely applied in a therapeutic setting, help wounded warriors emerge from emotional withdrawal, recover from a psychiatric episode, and restore healthy orientation and function in the wider world? Is a specially trained dog better able to provide this solace and support than the family pet or a dog rescued from a shelter? What specific work or tasks would such a specially trained service dog be expected to perform? What criteria should be used in determining which military service member suffering from PTSD would benefit from having a service dog? What does a good dog training program look like and how would it be certified? What is the science behind the healing power of dogs? And what evidence, beyond the anecdotal, proves that animal assisted therapy really works?

There are more questions than answers. There is not even widespread agreement on what to call these dogs and the kind of assistance we expect them to provide. *Therapy dogs, emotional*

response dogs, facility dogs, companion dogs and *psychiatric service dogs* are some of the terms currently in use, are variously defined (Annex B), and are adding to the confusion regarding effective treatment. While the Americans with Disabilities Act in its 2010 revisions (Annex A) provides some clarification and establishes some definitions, there is still much to be resolved. For example, a 2004-2009 study found that 25% of recent combat veterans treated at the VA were diagnosed with post-traumatic stress (PTS) and 7% had a diagnosis of traumatic brain injury (TBI). If those findings are even approximately accurate, and if just a fraction of those sufferers seek to acquire a service dog, potentially tens of thousands of expensively trained dogs will be needed. Who will train them? Who will pay for them? Who will oversee this industry?

The convening featured presentations on the science, medicine and real-life applications of animal-assisted therapy. Participant discussion followed several of the presentations. The afternoon working groups sessions concluded with recommendations for next steps.



PROGRAM

WELCOME

Captain Sarah M. Kass, M.D., Special Assistant to the Commander of WRNMMC, NICoE
James Kelly, M.D., FAAN, Director, NICoE

CONVENING OVERVIEW

Barbara Lau, Special Projects, Bob Woodruff Foundation
Ann-Marie Regan, Special Assistant for Organization Development, WRNMMC

CANINE THERAPY: THE EARLY YEARS

Dr. Elspeth (Cam) Ritchie, Chief Clinical Officer, DC Department of Mental Health

SCIENCE PANELS

THE SCIENCE OF PSYCHOLOGICAL HEALTH AND TRAUMATIC BRAIN HEALING

Chair: Dr. Thomas DeGraba, Deputy Director & Chief of Medical Operations, NICoE

Co-Chairs:

Dr. Patricia Duester, Director Consortium for Health & Military Performance, USUHS
Dr. Neil Grunberg, Professor of Medical & Clinical Psychology, USUHS

USING SERVICE DOGS TO AID WOUNDED WARRIORS: A BIOLOGICAL PERSPECTIVE

Stephen W. Porges, PhD, Professor of Psychiatry, University of North Carolina

THE HEALING POWER OF SOCIAL SUPPORT: AN OXYTOCIN HYPOTHESIS

Sue Carter, PhD, Professor of Psychiatry, University of North Carolina

USING DOGS TO HEAL & COMFORT

Captain Robert Koffman, MD, MPH, Senior Consultant, Integrative Medicine and Behavioral Health, NICoE

REAL-LIFE APPLICATIONS

WARRIOR PRESENTATION

Marshall Peters, Training Instructor, Warrior Canine Connection

WARRIOR CANINE CONNECTION

LTC Matthew St. Laurent, Chief, Occupational Therapy, WRNMMC
Rick Yount, Executive Director, Warrior Canine Connection

WORKING GROUPS

WORKING GROUP CONCLUSIONS & RECOMMENDATIONS

CLOSING REMARKS

Anne Marie Dougherty, Executive Director, Bob Woodruff Foundation

OPENING PRESENTATION

“Is the dog a bridge to a therapeutic intervention or is the dog the intervention itself?”

CANINE THERAPY: THE EARLY YEARS

Dr. Elspeth (Cam) Ritchie, Chief Clinical Officer, DC Department of Mental Health

There is a long history of the therapeutic use of canines in military medicine and psychiatry. As far back as 1859, Florence Nightingale wrote about the benefits of animals in the care of the chronically ill. By 1986, numerous animal-assisted therapy programs had been implemented throughout the Department of Defense. The past 15 years have seen significant growth in the use of service dogs and there is widespread recognition that these dogs can help individuals with physical limitations. However, far less is understood about how these animals can help those with psychological and stress disorders.

A small number of therapy dogs have been used in Iraq and Afghanistan and, while there is a strong anecdotal record of success, there are still many obstacles to be overcome such as: who would donate the dogs, how long would they remain in a military theater, and how could they be kept healthy and isolated from local feral animals. The early service dogs received about two years of training, which cost between \$25,000 and \$50,000 per animal. Policies on the use and management of these dogs were not clear and evidence-based measurement of their effectiveness was in short supply.

A 2009 Family Action Plan went on record in support of funding service dogs for wounded warriors although it left unanswered important issues such as which patients should get a dog and how many dogs might be needed. A 2009 stakeholder summit at Ft. Myers tried to set policies but had limited success. While interest in animal-assisted therapy is growing in military hospitals and at NICoE, there is no single military point of contact for service dog organizations and the data about the efficacy of canine therapy for PTS patients remains anecdotal. The April 2012 issue of the Army Medical Department Journal on the Therapeutic Use of Canines in Army Medicine (Annex 5) details some of the recent thinking in the field.

Interest is also growing beyond the military community; members of Congress, the American Psychiatric Association, Massachusetts General Hospital, Uniformed Services University and the National Institutes of Health have all expressed interest in the use of service dogs in psychiatric medicine. However, the fact remains that very little research is being done in the field and there is no common understanding of the need for, training of or efficacy of the use of service dogs for those with psychiatric disabilities.

Participant Discussion

- The US Army Medical Command is working on policies for the medical use of animals and categorizing the kinds of assistance dogs. While there is little controversy regarding the value of dogs that assist individuals with physical limitations, there is not a similarly shared understanding of the efficacy of dogs intended to assist those with psychiatric conditions. Participants noted the lack of research and standards and the difficulty in conducting high-quality, evidence-based research.
- The Veterans Administration is conducting a study on the difference between companion and service dogs, but the results are not yet in. Questions remain about the



comparative psychiatric benefit of a pet compared to that of a trained service animal as well as what conditions would justify a service animal.

- There are questions regarding if animal assisted therapy is a primary PTS treatment or a complement to more established treatment protocols. Also, it is not clear if a dog is a bridge to a therapeutic intervention or is the intervention itself.
- PTS is a complex, co-morbid condition and a variety of treatments must be considered. Many activities such as exercise, music and art therapy, acupuncture, spiritual life, etc., can help patients, but there may also be a risk in “medicalizing” such activities. Use of a public health model rather than a medical model might be more appropriate.
- Animal-assisted therapy can have unintended negative consequences. Some service members and their dogs have been evicted from military housing due to bad behavior on the part of the dog. A patient might rely exclusively on animal-assisted therapy and avoid other kinds of treatments. And, if given a service dog, some patients could conclude that their psychological condition is a chronic, lifelong illness. The loss of a beloved therapy dog could also be traumatic.

THE SCIENCE OF PSYCHOLOGICAL HEALTH AND TRAUMATIC BRAIN HEALING

Chair:

Dr. Thomas DeGraba, Deputy Director and Chief of Medical Operations, NICoE

Co-Chairs:

Dr. Patricia Duester, PhD, MPH, FACSM, Professor and Director of the Consortium for Health and Military Performance, Uniformed Services University of the Health Sciences

Dr. Neil Grunbeg, PhD, Professor of Medical and Clinical Psychology and Professor of Neuroscience in the School of Medicine and Professor of Research Graduate School of Nursing, Uniformed Services University of the Health Sciences

Dr. DeGraba opened the session by highlighting topics to be covered in the science panels:

- State of the Science: High priority of research questions, experimental design, tools and techniques of evaluation and outcome measures
- Canine Programs: Review of criteria for service dog training, clinical indication/ requirement for service dogs, dog attributes necessary for different disease states
- Health Economics: Cost effectiveness of breeding, training, maintaining service dogs for animal-assisted therapy

NICoE – an interdisciplinary hub of research, clinical care and education – was created for the kind of collaborative work of this convening. The center treats complex, co-morbid traumatic brain injury (TBI) and psychological health conditions through comprehensive and holistic care. Because the pathophysiology of TBI and PTS is not fully understood, the convening brought together a wide range of specialists to explore these challenging co-morbid conditions.

USING SERVICE DOGS TO AID WOUNDED WARRIORS: A BIOLOGICAL PERSPECTIVE

Stephen W. Porges, PhD, Professor of Psychiatry, University of North Carolina

Since both are mammals, a wounded warrior and a service dog share the biology of mammalian social behavior, which includes a neural circuit that links the regulation of facial muscles to the psychological state. This link, referred to as the face-heart connection, is embedded in mammalian interactions and is used to establish healthy, comforting relationships. Face-to-face proximity, gazing into each other's eyes, gentle vocalization and touching characterize the interaction of lovers, mother and child and man and dog. These are not learned behaviors, but rather are embedded or hard-wired in mammalian social engagement. It is the neural love code. Because PTS patients frequently have difficulty feeling "safe," being in close proximity, touching and establishing trust with humans, similar behaviors with a dog often feel less threatening.



*“The mammalian
face-heart
connection is the
neural love code.”*

The polyvagal theory, which was proposed and developed by Dr. Porges, links the evolution of the autonomic nervous system to social behavior. The theory posits two functionally distinct branches of the vagus, an important cranial nerve. The two branches of the vagal nerve serve different evolutionary stress responses in mammals: one elicits immobilization behaviors (such as when a mouse caught by a cat feigns death), while the more evolved branch is linked to social communication and self-soothing. These neural pathways regulate the autonomic state and the expression of emotional and social engagement. In a PTSD patient, if the pathways that elicit the defensive fight/flight response or the immobilization response can be turned off and the self-soothing pathways turned on, defensive reactions can be dampened and the PTSD patient may then be able to perceive the environment as “safe.”

The human-canine interaction is mutually beneficial when neuroceptive cues trigger a physiological state that feels safe to both man and dog. Individuals respond differently to an environment perceived to be unsafe or life threatening: some may become hysterical, some may faint, others may simply cope. The stimulus remains the same but the physiological reactions vary from individual to individual. Individual levels of social engagement, stress and response can be measured through heart rate levels and rhythms. There is evidence that an individual’s vagal regulation, or social engagement capacity, may be depressed by a variety of factors such as autism, HIV, Fragile X Syndrome, or a history of abuse.

Presentation Summary

- Service dog Interactions provide specific “neural” exercises to help PTSD patients improve the physiological state, dampen defensive reactions and improve spontaneous social engagement
- Psychological benefits relating to the mammalian neural circuit (the “face-heart connection”) occur through the link between facial muscles and the autonomic nervous system that controls heart rate, respiration, etc.
- The face-heart connection, with its face-to-face interactions between the wounded warrior and the service dog via gaze and gentle vocalizations, efficiently dampens defensive systems
- Through the face-heart connection, the wounded warrior and the service dog mutually experience a physiological state that supports health, growth and restoration
- In mammals, the neural regulation of the autonomic nervous system is integrated with neural regulation of the facial and head muscles to provide a social engagement system that promotes health, growth and restoration
- The social engagement system is efficiently triggered by face-to-face interactions (i.e., facial expressions, gentle vocalizations, gestures)
- Human-animal interactions “exercise” the social engagement system to promote physical and mental health

“A sense of safety allows the body to grow, heal and restore itself.”

THE HEALING POWER OF SOCIAL SUPPORT: AN OXYTOCIN HYPOTHESIS

Sue Carter, PhD, Professor of Psychiatry, University of North Carolina, Chapel Hill

Mammals need social interactions to sustain physiological and behavioral balance. Social stimuli and support come from many sources to include partners, children and pets; the best relationships are reciprocal. The protective power of social bonds can best be seen in their absence. When these bonds are not present, loneliness and social isolation may result and individuals may seek substitutions such as drugs, food or alcohol.

Central to the understanding of the biology of social behavior and social bonds is oxytocin, the so-called “love hormone” associated with healing and relaxing. The sibling hormone to oxytocin is vasopressin, which is believed to play a critical role in adapting to fear and anxiety. The evolution of social behavior involves a dynamic dance between oxytocin and vasopressin, with oxytocin facilitating social engagement while vasopressin is associated with vigilance and defensiveness. Oxytocin calms the individual sufficiently so that he/she is willing to connect.

In studies of prairie voles, animals that have high levels of social contact and pair bonding as well as high levels of oxytocin, the hormone seems to be released under conditions of positive social interactions, but also under negative conditions. While oxytocin appears to serve as a component of coping strategies and a buffering against stress, its mechanisms are not yet fully understood.

In the prairie vole studies, when the highly social animal was isolated for several weeks, its heart rate increased and the animal took longer to recover from social stressors. Oxytocin treatment reversed or prevented these adverse effects of social isolation on the vole heart rate. These and other findings have indicated that at least some of the beneficial effects of oxytocin are through the autonomic (involuntary) nervous system.

This work may indicate that oxytocin, working via the autonomic nervous system, is a metaphor for “safety” and that the hormone is essential to positive social support. But in conditions of chronic high stress (in the case of the vole, social isolation) the naturally occurring levels of oxytocin may be insufficient for the animal to cope. In addition, there is some indication that the effect of oxytocin may differ in males and females and, when coping with emotional or physical isolation, males may be at a physiological disadvantage.

While oxytocin has been shown to play an important role in social bonding in animals, it is less clear whether the hormone is related to inter-species bonding. In experiments with owners and their dogs, long-gaze eye contact between the two can increase the oxytocin levels in human urine, perhaps a manifestation of attachment behavior. However, these oxytocin surges are brief making it difficult to understand and measure their actual effect.

Presentation Summary

- Oxytocin is a neuropeptide hormone produced primarily in the brain and released into the blood supply. It is also released into the brain and spinal cord where it binds



to receptors to influence behavior and physiology. The regulation of these receptors is critical to understanding the effects of oxytocin.

- Oxytocin is possibly a major factor in the body's capacity to protect and heal; it appears to heal burns and provide protection against heart attacks, osteoporosis, strokes and some mental disorders.
- Oxytocin plays a role in development and in the consequences of early experience. While the hormone is associated with positive conditions, certain kinds of intense and chronic stressors (such as isolation) can also release oxytocin. Individuals vary tremendously in the amount of oxytocin they produce.
- Because of the fundamental role of socialization in human behavior, concepts like "social support" or "social bonds" translate into a sense of safety, a concept that is at the heart of all kinds of therapies, including animal-assisted therapies. A perceived sense of safety is necessary to allow the body to grow, heal and restore itself in the face of the "stress of life." While it does not work by itself, oxytocin sits at the center of the network of neural and endocrine systems needed to feel safe.
- Nonetheless, this important neuropeptide with its broad effects on physiology and behavior is not well understood or studied, especially in humans. The effects of oxytocin are not well understood even in animal models. Further research is necessary to learn why social bonds are "good medicine" and how animal-human interactions supply many of the benefits of social support.

USING DOGS TO HEAL & COMFORT

Captain Robert Koffman, MD, MPH

Senior Consultant, Integrative Medicine and Behavioral Health, NICoE

Since its opening three years ago, NICoE has built on its vision to serve as "an instrument of hope, healing, discovery and learning" to become a model of holistic, interdisciplinary diagnostic and treatment planning. NICoE offers a "grand social engagement system" and is willing to deploy alternative approaches to help its patients. With more than 300,000 warriors struggling with PTSD, traumatic brain injury and/or other psychological health injuries, the military medical community has learned how difficult it is to successfully treat these complex, interrelated disorders. Despite the application of conventional therapies, many warriors are failing to recover.

Each month, 20 active duty service members arrive at NICoE for 30 days of intensive, integrated assessment and treatment planning. They usually have been referred from other settings where they have not responded to treatment; they are "the sickest of the sick." Some of these warriors experienced a near-death experience in Iraq in 2003 and then went on to repeat the experience four or five more times in subsequent deployments. Their neural networks and autonomic nervous system have become disordered, resulting in a condition that is extremely complex

“At NICoE, complementary and alternative medicine therapies help patients become empowered.”

and persistent. Because traumatic brain injury and other psychological injuries are often accompanied by at least one and sometimes several other disorders, such as hyper arousal, avoidance, anxiety, depression, sleep problems, survivor guilt, misuse of medications, alcohol abuse, etc., patients are offered a “schema of stacked care” at NICoE. Teams of nutritionists, physical therapists, neurologists, psychiatrists, chaplains, clinical pharmacists and many other clinicians work with one another and with the patient to find the tools and the environment that will promote long-term healing.

Complementary and alternative medicine touches each patient differently and the NICoE program seeks to develop a unique mix of therapies for each individual. In the NICoE setting of holistic care, complementary and alternative medicine therapies, including the Warrior Canine Connection, are helping patients become empowered and many are leaving the program believing they have finally found alternatives to multiple, high-powered medications. NICoE clinicians and researchers are now engaged in follow-up studies to measure the effectiveness of their programs.

Dr. Koffman was accompanied to the podium by his Labrador, Ron, who is a NICoE facility dog. Ron attends Dr. Koffman’s therapy sessions with warriors and serves as his “psych tech.”

Participant Discussion

Led by **Dr. Patricia Duester & Dr. Neil Grunberg**

The state of current science on using service dogs for psychological healing was compared to that of early research on nicotine addiction. At a time where there was no good science on why people smoked, the Robert Wood Johnson Foundation started asking about the effects of tobacco in the same way that the Bob Woodruff Foundation is now asking about the effects of canine therapy: are these therapeutic relationships that we are seeing between dogs and PTS patients real or are these simply placebo effects?

Some participants believe NICoE offers excellent resources and infrastructure to serve as a platform for further research. Others expressed concern that an exclusively military population might not be a representative sample since military training might shift an individual’s psychological response. A significant proportion of service members have reported a history of abuse prior to entry into the military that might also skew research results. Also, younger, computer-savvy populations may have more on-screen social interactions than face-to-face interactions than occur in the population as a whole. It was generally acknowledged that research would not be able to control for all variables.

There was wide agreement on the need to establish baselines, but many questions related to research:

- What are the most important data to collect and measure?
- What is the current state of the science in service dog programs?
- What are the clinical indications of the need for service dogs?



- How much more benefit does a trained service dog provide than a family pet?
- Is the social bond determined by the amount of time the patient is exposed to the service dog?
- Can the calming response be generalized? Does it last?
- If the patient returns to a stressful environment (the battlefield, for example) is the therapeutic benefit lost?
- What kind of patient evaluation would determine the right kind of dog?
- What are the appropriate dog attributes for different disease states?
- What health economics studies are necessary to evaluate the cost effectiveness of service dogs?

Discussion of the dog training industry focused on the need to establish universally recognized standards for assistance dogs and certification of dog trainers and training organizations. Assistance Dogs International (ADI) is only one of several industry credentialing organizations. The resulting variety of standards and accreditation programs creates confusion and uncertainty, particularly since some of the organizations themselves are not operating to the highest standards.

Questions regarding accreditation follow:

- Is there potential benefit for DOD and VA to partner with industry organizations to set common standards and accreditation criteria?
- Is there a role for clinical experts to certify the certifiers?
- Who would enforce the standards and accreditation policies?

REAL-LIFE APPLICATIONS

“As they learn to train puppies, both the warrior and the dog learn that the world can be a safe place.”

WARRIOR PRESENTATION

Marshall Peters, Service Dog Training Program Instructor, Warrior Canine Connection

Marshall Peters served as a medical corpsman in Afghanistan in 2009-2010, a particularly violent period of this conflict. When he returned home he suffered PTS and severe insomnia, waking in the morning “feeling like a burnt match stick.” A Golden Retriever puppy – named Lundy in honor of Peters’ friend who was killed in Afghanistan – helped pull him out of depression. Now, Peters works with other service members and veterans as they train Warrior Canine Connection dogs. Both a clinician and trained dog-handling instructor, Peters recounted several compelling anecdotes revealing the healing power of dogs.

WARRIOR CANINE CONNECTION

LTC Matthew St. Laurent, Chief, Occupational Therapy

Walter Reed National Military Medical Center

Rick Yount, MS, LSW, Executive Director, Warrior Canine Connection

Warrior Canine Connection (WCC) is a nonprofit organization that has developed an innovative therapy program in which service members and veterans suffering from combat stress train service dogs for fellow warriors with mobility impairments. These service members do not themselves rely on service dogs for psychological assistance. Rather, as they learn to praise, reward and train WCC puppies, both the warrior and dog learn that the world can be a safe place. Warrior Canine Connection is the brainchild of social worker Rick Yount; the program was inaugurated at the Palo Alto Veterans Administration Men’s Trauma Recovery Program in Menlo Park, CA. The program came to Walter Reed Army Medical Center’s Warrior Transition Brigade in 2009 and is now part of PTS and TBI research and treatment mission at NICoE. Several hundred service men and women have participated in the dog training program.

The purpose-bred WCC Golden and Labrador Retrievers are socially responsive and have gentle, low-arousal temperaments. Patients coping with PTS symptoms such as withdrawal, numbing, and re-experiencing must overcome their own negative responses in order to train the dog. Patients who have isolated themselves must venture out into the wider world to socialize the dog in the community; individuals who respond to loud noises with an exaggerated startle and flashback must teach the dog to calmly accept the same sounds; and those who confront the world with anger and irritability must sound happy and playful as they praise the dog and offer treats.

The dog serves as a social lubricant, attracting friendly contact with strangers and passersby, thus making isolation no longer an option for the handler. Patients develop a sense of purpose knowing that they are training a service dog for a fellow veteran; the program triggers their warrior ethos of not letting a fellow warrior down. The dogs require a daily schedule, which



gives the patient a reason to get up in the morning, and the training requires patients to use their communication skills and positive emotions. Patients have to at least pretend to be happy as they praise the dogs, in other words, “faking it until they make it.”

Below is a list of clinical observations of the Warrior Canine Connection intervention:

- Improved emotional regulation and patience
- Improved family dynamics and parenting skills
- Re-established sense of purpose
- Reintegration into the community
- Reduced social isolation
- Relaxed hyper-vigilance
- Reduced need for pain medications
- Improved sleep patterns

WORKING GROUPS

Convening participants divided into three groups to consider the following questions in light of the convening discussions thus far:

- What are the areas of agreement in use of service dogs in psychological health treatment protocols?
- Where are the gaps and conflicts in knowledge that do not allow for standardization?
- What are the key research topics and who are the stakeholders for next steps?
- What are the strategies to develop credentialing criteria for service dog training in psychological health patients? Who are the stakeholders?
- What are the next steps for developing common data elements in PTS research? Who are the stakeholders?
- What are your hopes and concerns?

CONCLUSIONS

Following an hour of discussion, each working group reported out to all participants. The main points generated by the convening presentations and breakout sessions follow:

- The human-animal bond is real and there is ample anecdotal evidence that the bond can result in emotional benefits.
- There is general agreement that service dogs can successfully assist individuals with physical limitations, such as impairments in hearing, vision, mobility, seizures, etc. However, no similar consensus exists regarding the therapeutic benefit of service dogs for treatment of psychological health and stress disorders. The definition, training and therapeutic efficacy regarding the use of service dogs as a treatment protocol for psychiatric disabilities continue to be controversial.
- There is an immediate need for further clinical research into the potential therapeutic benefit of service dogs for individuals suffering from combat stress.
- Clinicians, policymakers and the service dog industry should work together to develop universally recognized standards and criteria to include 1) definitions of the various types of service dogs such as therapy dogs, facility dogs, medical response dogs, activity dogs, etc. and 2) credentialing of service dog trainers and training organizations.
- Programs in which veterans and service members suffering from combat stress train mobility service dogs for fellow wounded warriors can serve as a model for clinicians, patients and families and can complement traditional therapies.



RECOMMENDATIONS

Research on the Therapeutic Efficacy of Service Dogs in Treatment Protocols for Patients with Psychiatric Disabilities

- Using validated metrics and quantitative questions, assess therapeutic efficacy on psychosocial, cognitive, behavioral and physical function. Research areas include the following:
 - Collection of granular, descriptive data to develop subgroup populations
 - Application of biomarker features to help describe biological factors to assist with diagnoses
 - Identification of symptoms that qualify for psychiatric service dog therapy and patients who are candidates for such therapy
 - Correlation of patient symptoms to the most appropriate type of dog and its level of training
 - Identification of the specialized tasks expected from a psychiatric service dog (recognizing that providing emotional comfort in itself cannot be considered a task)
 - Comparison of therapeutic benefits of various types of service dogs (companion dog, therapy dog, etc.)
 - Measurement of psychosocial outcomes for patient and family
 - Measurement of the relationship of therapeutic benefit to the length of exposure to the service dog
 - Measurement of psychological benefit that can be obtained with animals other than dogs (cats, horses, etc.)
 - Measurement of short-term versus long-term symptom reduction
- Expand canine stress disorder treatment programs to additional locations
- Assess potential negative effects of service dog therapy, e.g., the impact of the death or removal of the dog

Research on the Selection, Training and Assignment of Service Dogs in Treatment Protocols for Patients with Psychiatric Disabilities

- Identify tasks that would be required of this kind of service dog and the relevant specialized training needed
- Measure the benefit of a highly trained service dog for those with psychiatric disabilities compared to that of another kind of assistance dog or to a family pet

POLICY DEVELOPMENT RECOMMENDATIONS

- Work with the American Psychiatric Association on definitions, diagnosis and co-morbid symptom clusters of PTS and TBI as listed in the Diagnostic and Statistical Manual of Mental Disorders.
- Seek clarity on Department of Justice interpretation of the Americans with Disabilities Act regarding the regulation of psychiatric service dogs.
- Support collaboration between policymakers and clinicians to seek agreement on research goals and efficacy measures.
- Initiate collaboration among clinicians, Department of Defense, the Veterans Administration and recognized private and nonprofit service dog certification organizations to seek agreement on service dog definitions and training and credentialing standards of service dog trainers and service dog training organizations.

STAKEHOLDERS

- Service members and veterans
- Department of Defense
- Veterans Administration
- Policymakers
- Assistance Dogs International (ADI) and other credentialing and training organizations
- Physicians
- Clinicians
- Caregivers
- Academic research centers



ANNEX 1 – Americans with Disabilities Act

In 2011, the U.S. Justice Department issued new regulations that basically limit the types of animals that qualify as service animals under ADA to dogs; the regulations also clarify the different definitions and legal entitlements of service dogs versus emotional support dogs.

Effective March 15, 2011, service animal means any dog that is individually trained to do work or perform tasks for the benefit of an individual with a disability to include a physical, sensory, psychiatric, intellectual, or other mental disability. Other species of animals, whether wild or domestic, trained or untrained, are not service animals for the purposes of this definition. The work or tasks performed by a service animal must be directly related to an individual's disability. Examples of work or tasks include, but are not limited to, assisting those who are blind or have low vision with navigation and other tasks; alerting those who are deaf or hard of hearing to the presence of people or sounds; providing non-violent protection or rescue work; pulling a wheelchair; assisting individuals during a seizure; alerting individuals to the presence of allergens; retrieving items such as medicine or the telephone; providing physical support and assistance with balance and stability to those with mobility disabilities; and helping persons with psychiatric and neurological disabilities by preventing or interrupting impulsive or destructive behaviors. The crime deterrent effects of an animal's presence and the provision of emotional support, well-being, comfort, or companionship do not constitute work or tasks for the purposes of this definition.

Existing policies that were clarified or formalized include the following:

- Dogs whose sole function is "the provision of emotional support, well-being, comfort, or companionship" are not considered service dogs under the ADA
- The use of service dogs for psychiatric and neurological disabilities is explicitly protected under the ADA
- The crime deterrent effects of an animal's presence do not qualify that animal as a service animal and an animal trained to provide aggressive protection, such as an attack dog, is not considered a service animal

Service dogs must be under the control of a handler and must show appropriate manners (i.e., be housebroken and in control, unless prohibitive to function, of a harness, leash or other tether). Service dog tasks include the following:

- assisting sight-impaired persons with navigation or other tasks
- alerting hearing-impaired persons to the presence of people or sounds
- providing non-violent protection or rescue work
- pulling a wheelchair
- assisting an individual during a seizure
- alerting an individual to the presence of allergens
- retrieving items such as medicine or the telephone
- providing physical support/assistance with balance and stability to individuals with mobility impairments
- helping persons with psychiatric and neurological disabilities by preventing or interrupting impulsive or destructive behaviors

ANNEX 2 – Glossary

Please note: The following definitions have been gleaned from a variety of sources, to include ADA and its revisions. They do not reflect the official position of any of the participants in this convening.

SERVICE DOG refers to any dog that is individually trained to do work or perform tasks for the benefit of an individual with physical, sensory, psychiatric, intellectual, or other mental disabilities. The work or tasks performed by a service dog must be directly related to the handler’s disability. Dogs have been trained to work with people who use wheelchairs, have balance issues, have autism, need seizure response, need to be alerted to other medical issues or have psychiatric conditions. These specially trained dogs can assist individuals who are blind or vision impaired with navigation and other tasks; alert individuals who are deaf or hard of hearing to the presence of people or sounds; provide non-violent protection or rescue work; pull a wheelchair; assist during a seizure; alert to the presence of allergens; retrieve items such as medicine or a telephone; provide physical support and assistance with balance and stability; and help persons with psychiatric and neurological disabilities by preventing or interrupting impulsive or destructive behaviors.

GUIDE DOGS assist the blind and visually impaired to avoid obstacles, stop at curbs and steps, and negotiate traffic. The harness and U-shaped handle fosters communication between the dog and the handler. In this partnership, the handler provides directional commands, while the dog insures the team’s safety even if this requires disobeying an unsafe command. Guide dogs are carefully bred, socialized and raised for over one year by volunteers, then trained for 4 to 6 months by professional trainers before being placed with blind and visually impaired handlers.

HEARING DOGS assist deaf and hearing impaired individuals by alerting to a household sounds such as a door knock or doorbell, alarm clock, oven buzzer, telephone, baby cry, name call or smoke alarm. Hearing dogs are trained to make physical contact and lead their handlers to the source of the sound. Hearing dogs are generally mixed breeds acquired from animal shelters and are small to medium in size. Prior to formal audio response training, younger dogs are raised and socialized by volunteer puppy raisers.

MEDICAL RESPONSE DOGS are trained to alert to medical conditions or attend their handlers in the event of heart attack, stroke, diabetes, etc. Many medical response dogs “alert” their handlers to conditions before they occur. Service dogs partnered with diabetics can be trained to detect when blood sugar levels become too high or too low. Medical response dogs are often trained to help their handlers manage their symptoms by bringing them medications or a telephone, providing bracing and other mobility assistance and a variety of other tasks.

SEIZURE RESPONSE DOGS are specifically trained to help those with epilepsy or seizure disorders. Due to differing needs, every seizure dog receives specialized training in tasks such as summoning help; removing dangerous objects; blocking; attempting to rouse; carrying medical information and medication.; and staying with the handler until the seizure subsides.

PSYCHIATRIC SERVICE DOGS are trained to perform specific work or tasks such as reminding the handler to take medicine, providing safety checks or room searches for persons with Posttraumatic Stress Disorder (PTSD), interrupting self-mutilation and removing disoriented individuals from dangerous situations. If a dog is used to “ground” a person with a psychiatric disorder, this qualifies as a service animal if the dog has been trained 1) to recognize that a person is about to have a psychiatric episode, and 2) to respond by nudging, barking or removing the person to a safe location until the episode subsides. Dogs trained to provide aggressive protection (i.e., attack dogs) do not qualify as service dogs.

THERAPY DOGS are not service animals and do not have public access privileges. The main distinction between therapy or activity dogs and service dogs is that the former provide services to people with or without disabilities under the direction of a



handler. Therapy dogs are given basic obedience training and then tested for obedience and temperament. If they pass a therapy dog test with their partner, they can be registered with a therapy dog organization.

FACILITY DOGS are partnered with a working professional facilitator and are trained to maintain a calm manner and good social behavior in a variety of environments. They must become accustomed to interacting with different types of people including those with physical and/or developmental disabilities.

COMPANION DOGS provide emotional support, a sense of well-being, comfort and companionship. These are wonderful qualities but they do not constitute task-specific functions and these dogs do not qualify as service dogs.

ANIMAL ASSISTED THERAPY (AAT) is part of a goal-directed, individualized healthcare treatment plan for individuals with physical, social, emotional, or cognitive dysfunction whereby the AAT intervention is documented in the patient's health record. AAT is conducted on scheduled visits at a regular interval and delivered by a professional within the practice scope of a health/human service provider. Animal-assisted therapy animals may or may not have previous formal assistance/service dog training. Examples of AAT may include patients with a balance dysfunction using a trained dog wearing a rigid-handled harness to assist with gait training or the use of trained dogs in military combat stress control units for behavioral health interventions.

ANIMAL ASSISTED ACTIVITIES (AAA) are "meet and greet" activities without specific treatment goals. Unlike a therapy program, AAA visits and activities can be spontaneous, of any length or frequency, and conducted by any handler.

ANNEX 3 – Speaker Bios

Sue Carter, PhD

Dr. Sue Carter is a professor of psychiatry at the University of North Carolina; Professor Emerita of Psychiatry at the University of Illinois at Chicago; and formerly held the position of Distinguished University Professor of Biology at the University of Maryland. Prior to that, she was a professor in the Departments of Psychology and Ecology, Ethology and Evolution at the University of Illinois, Urbana-Champaign. Dr. Carter is past president of the International Behavioral Neuroscience Society and holds fellow status in that Society and in the American Association for the Advancement of Science. She has authored over 275 publications, including editing five books. The most recent of these is *Attachment and Bonding; A New Synthesis* (MIT Press). Research from Dr. Carter's laboratory documented the role of oxytocin and vasopressin in social bond formation. Her most recent work focuses on the developmental consequences of oxytocin, including perinatal exposure to synthetic oxytocin, and the protective role of this peptide in the regulation of behavioral and autonomic reactivity to stressful experiences.

Dr. Thomas DeGraba

Dr. Thomas DeGraba is Deputy Director and Chief of Medical Operations at the National Intrepid Center of Excellence (NICoE). A leader in the field of neurology with a focus on traumatic brain injury and stroke, Dr. DeGraba has served as a neurological consultant for the Office of the Attending Physicians at the U.S. Capitol and the White House Medical Unit. He earned a bachelor's degree in biochemistry at Catholic University of America, his M.D. from Georgetown University, completed his internship at the Washington Hospital Center, his neurology residency at Georgetown University Hospital, and pursued a post-doctoral fellowship in Cerebrovascular Disease at the University of Texas Medical Center in Houston. He currently holds an appointment as an Associate Professor of Neurology at USUHS. As the Deputy Director of the NICoE, Dr. DeGraba is the co-author of NICoE's Concept of Operations, an advanced standard of care in the delivery of patient and family centric care to warriors with complex unremitting combat-related TBI and psychological health issues.

Patricia A. Deuster, PhD, MPH, FACSM

Dr. Patricia Deuster is a Professor and Director for the Consortium for Health and Military Performance (CHAMP), a Defense Center of Excellence for Human Performance Optimization (HPO) Translation at the Uniformed Services University of the Health Sciences (USU) School of Medicine in the Department of Military and Emergency Medicine; she is also on the faculty for the Neuroscience program. Dr. Deuster has over 30 years of experience in human research and more than 180 publications focused on integrative health and neuroendocrine responses to stress. Dr. Deuster has led many projects relating to differential stress reactivity within various populations, to include patients with depression, seasonal affective disorder, fibromyalgia, obesity, and chronic fatigue syndrome. In addition, her group is interested in how various integrative health strategies may regulate/activate the hypothalamic-pituitary adrenal axis and modify overall psychological health. Dr. Deuster was key in developing the integrative health concept of Total Force Fitness in the Department of Defense and serves on several DoD committees, to include the Food and Nutrition Committee, the Human Performance Optimization Health Sciences Advisory Committee, and she chairs the Dietary Supplement Subcommittee.

Neil E. Grunberg, PhD

Dr. Neil Grunberg is Professor of Medical & Clinical Psychology and Professor of Neuroscience in the School of Medicine and Professor of Research in the Graduate School of Nursing at the Uniformed Services University (USU) of the Health Sciences, Bethesda, Maryland. He also is a member of the Executive Committee of the Consortium for Health and Military Performance (CHAMP), a DoD Center of Excellence. Dr. Grunberg earned a BS in Medical Microbiology from Stanford University; MA (1977),



M.Phil. (1979) and PhD (1980) degrees in Physiological and Social Psychology from Columbia University; and completed doctoral training in Pharmacology at Columbia University's College of Physicians & Surgeons. He has been on the USU faculty for 34 years where he trains medical and graduate students and conducts biopsychosocial research on stress, drug use and behavioral health. He has published more than 150 scientific papers and has been recognized for his contributions by the U.S. Surgeon General, Centers for Disease Control, Food & Drug Administration, American Psychological Association, Society for Behavioral Medicine, and Uniformed Services University. Recently, Dr. Grunberg and his research team have focused on mTBI, PTSD, and nonpharmacological treatments to include Service Dog Training programs.

Alan Peterson, PhD, ABPP

Dr. Alan Peterson is a board certified clinical health psychologist, Professor, and Chief of the Division of Behavioral Medicine at the University of Texas Health Science Center at San Antonio. He is the Director of the STRONG STAR Consortium, which includes over 150 research collaborators and 20 institutions worldwide. He served previously as the Chair of the Department of Psychology and the Director of the Clinical Health Psychology Postdoctoral Fellowship Program at Wilford Hall Medical Center. He retired from the U.S. Air Force in 2005 after 21 years of active duty service including deployments in support of Operations Noble Eagle, Enduring Freedom, and Iraqi Freedom. He has clinical and research expertise in the areas of PTSD, psychological resiliency, and military health psychology. He has over 300 scientific publications and presentations and has obtained over \$100 million in peer-reviewed federal research funding.

Stephen W. Porges, PhD

Dr. Stephen Porges is a professor of psychiatry at the University of North Carolina; professor emeritus of psychiatry at the University of Illinois at Chicago where he directed the Brain-Body Center; and professor emeritus at the University of Maryland where he served as Chair of the Department of Human Development and Director of the Institute for Child Study. He is a former president of the Society for Psychophysiological Research and also of the Federation of Behavioral, Psychological, and Cognitive Sciences. A recipient of a National Institute of Mental Health Research Scientist Development Award, Dr. Porges has published more than 200 peer-reviewed scientific papers in disciplines including anesthesiology, critical care medicine, ergonomics, exercise physiology, gerontology, neurology, obstetrics, pediatrics, psychiatry, psychology, space medicine, and substance abuse. In 1994, he proposed the Polyvagal Theory, linking the evolution of the vertebrate autonomic nervous system to the emergence of social behavior. The theory, which provides insights into the mechanisms mediating symptoms observed in several behavioral, psychiatric, and physical disorders, has stimulated research and treatments emphasizing the importance of physiological state and behavioral regulation in several psychiatric disorders and gives a theoretical perspective to the treatment of stress and trauma. He is the author of *The Polyvagal Theory: Neurophysiological foundations of Emotions, Attachment, Communication, and Self-regulation* and is currently writing *Clinical Applications of the Polyvagal Theory: The Transformative Power of Feeling Safe*.

Ann-Marie Regan, MSOD

Ann-Marie Regan is the Special Assistant for Organization Development at the Walter Reed National Military Medical Center. In this capacity she plans and designs strategy development and implementation, leads change management efforts, coaches executives and teams, and organizes retreats. She supports senior military healthcare leaders in the National Capital Area through complex systems change and transition. Career highlights include Baldrige National Quality Program Award, which recognizes performance excellence in business, health care, education and non-profit organizations; leadership development and training with United Technologies Corporation; and organizational effectiveness with the University of North Carolina at Chapel Hill. Ms. Regan holds a Master's Degree in Organization Development from American University/NTL Applied Behavioral Science and a Bachelor's Degree in Business Administration from St. Joseph College.

COL (Ret) Elspeth Cameron Ritchie, MD, MPH

Dr. Cam Ritchie is the Chief Clinical Officer, Department of Mental Health, for the District of Columbia. She retired from the Army in 2010, after holding numerous Army Medicine leadership positions to include Psychiatry Consultant. She trained at Harvard, George Washington, Walter Reed and the Uniformed Services University of the Health Sciences (USU), and has completed fellowships in forensic and preventive and disaster psychiatry. She is Professor of Psychiatry at USU and at Georgetown University. An internationally recognized expert, she brings a unique public health approach to the management of disaster and combat mental health issues. She has over 200 publications, mainly in the areas of forensic, disaster, suicide, ethics, military combat and operational psychiatry and women's health issues. Major publications include the Military Medicine Textbook on "Combat and Operational Behavioral Health"; "The Mental Health Response to the 9/11 Attack on the Pentagon"; "Mental Health Interventions for Mass Violence and Disaster"; "Humanitarian Assistance and Health Diplomacy: Military-Civilian Partnership in the 2004 Tsunami Aftermath"; and a 2013 series on The Use of Complementary and Alternative Medicines for the Treatment of PTSD. She is senior editor of the forthcoming "Forensic and Ethical Issues in Military Mental Health" and "Women at War."

Marni N. Silverman, PhD

Dr. Marni N. Silverman is a senior scientist (Henry M. Jackson Foundation) at the Consortium for Health and Military Performance (CHAMP), a Defense Center of Excellence for Human Performance Optimization Translation at the Uniformed Services University of the Health Sciences (USU) School of Medicine, Dept. of Military and Emergency Medicine. She is also the scientific advisor for the Human Performance Laboratory within CHAMP. Dr. Silverman received her PhD in neuroscience at Emory University (Dept. of Psychiatry and Behavioral Sciences, Laboratory of Neuroendocrine Immune Interactions) and was a postdoctoral fellow at the National Institutes of Health, National Institute of Mental Health (NIMH), Section on Neuroendocrine Immunology and Behavior, starting out as a recipient of the National Center for Complementary and Alternative Medicine (NCCAM) Director's Fellowship. Her research interests include studying how dysregulated neuroendocrine-immune interactions contribute to the high comorbidity between chronic stress- and inflammatory-related illnesses (e.g., autoimmune disease, traumatic brain injury, metabolic syndrome, obesity, type 2 diabetes, cardiovascular disease, posttraumatic stress disorder, and depressive, pain and fatigue disorders). She is also investigating the biological mechanisms underlying the therapeutic effectiveness of mind-body (integrative health) interventions in alleviating stress- and inflammation-induced symptomatology, as well as enhancing psychological and physical resilience.

LTC Matthew St. Laurent, MS, OTR

LTC Matthew St. Laurent is Chief of Occupational Therapy, Department of Rehabilitation at Walter Reed National Military Medical Center. A military occupational therapist, LTC St. Laurent obtained a BA in Psychology and a BS in Occupational Therapy from the University of New Hampshire and an MS in Occupational Therapy from the Medical College of Georgia. He held several clinical positions as a young military officer and clinician and in 2003 was awarded the first ever Army Medical Specialist Corps, Chief of Excellence Award. In the early years of the Iraq and Afghanistan wars, St. Laurent transferred to Walter Reed Army Medical Center to support critically wounded war casualties. While at Walter Reed, he served in multiple capacities to include a 7-month deployment to Iraq and as Assistant and Acting Chief of Integrated OT Services. He was also selected to be an Interagency Fellow attached to the Veteran's Health Administration, Rehabilitation Services. LTC St. Laurent chaired the Deployment and Operations Cabinet, which provided OT training and personnel deployment recommendations to the Army Surgeon General. His military awards include the Army Meritorious Service Medal, the Army Commendation Medal, and the Army Achievement Medal.



Rick Yount, BS, LSW

Rick Yount, executive director of the Warrior Canine Connection, brings 25 years of social work experience and service dog knowledge and training to a therapeutic model of intervention designed to help military personnel with PTS and TBI. The Warrior Canine Connection program engages service members suffering from PTS and TBI in the training of service dogs for veterans with mobility impairments. The program addresses the three core symptoms of combat related PTS -- re-experiencing, avoidance/numbing, increased arousal -- and helps those with TBI to regulate emotions and relearn communication skills. The program was first implemented in July 2008 as part of the VA Palo Alto Health Care System's Trauma Recovery Program, Rick has worked with hundreds of veterans and active duty military personnel being treated for PTS. In addition to the Palo Alto VA, the program is now offered at Walter Reed National Military Medical Center, Ft. Belvoir and at NeuroRestorative in Germantown, MD.

ANNEX 4 – Convening Participants

NAME	TITLE	ORGANIZATION
Erin Barry, MS	Research Associate	USUHS
Patricia Barry	Dog Assistance Therapy Program Coordinator	WRNMMC
Meredith Beck	Charitable Investments	Bob Woodruff Foundation
Ann Berger	Chief, Pain and Palliative Care	NIH
Joseph Bleiberg, PhD	Senior Scientist	NICoE, WRNMMC
Ashley Bunce	Community Relations & Communications	Bob Woodruff Foundation
Phil Carter	Senior Fellow	CNAS
Sue Carter, PhD	Professor of Psychiatry	University of North Carolina
Ed Castellon	DON Disability Program Manager	Department of the Navy
CDR Michail Charissis, MD	Director, Deployment Health	BUMED
COL Perry Chumley	Chief, Human Animal Bond Programs	DOD Veterinary Services Activity
COL Ted Cieslak, MD	Staff Physician	US Army Medical Command
Chris Crowe, PhD	VA Senior Mental Health Consultant/Liaison	Department of Veterans Affairs
Chris DeBatt	Senior Analyst	Office of Warrior Care Policy
Dr. Thomas DeGraba	Deputy Director, Chief, Medical Operations	NICoE
Patricia Deuster, PhD, MPH	Professor, Department of Military & Emergency Medicine	USUHS
Patricia Dorn, PhD	Director, Rehabilitation Research & Development Service	Department of Veterans Affairs
Anne Marie Dougherty	Executive Director	Bob Woodruff Foundation
Joyce Edmondson	Program Manager	Veterans Health Administration
Col John Forbes, MD	Director, Psychological Health	AFMSA
Major Nicole Fuller, LCSW	Chief, Deployment Mental Health	AFMSA
Pamela Giza	Department Chief, Education & Training	NICoE
Jon Gordon	Wounded Warrior	Warrior Canine Connection
Neil Grunberg, PhD	Professor of Medical & Clinical Psychology and Neuroscience	USUHS
CAPT Sara Kass, MD	Special Assistant to the Commander	NICoE
Nancy Kaywood	Special Projects	Bob Woodruff Foundation
Stephen King	Director of Disability Programs	OSD
CAPT Robert Koffman, MD, MPH	Senior Consultant Integrative Medicine and Behavioral Health	NICoE



NAME	TITLE	ORGANIZATION
Barbara Lau	Special Projects	Bob Woodruff Foundation
Laura Lawson	Program Director, Office of EEO & Diversity Management	Department of the Navy
Denise Liebowitz	Writer	Bob Woodruff Foundation
Sandra Mason, LMSW	Acting Director, Recovery Coordination Program	Office of Warrior Care Policy
Dr. Una McCann	Professor of Psychiatry & Behavioral Sciences	Johns Hopkins School of Medicine
Jonathan Morris	Recovery Coordination Program Operations	Office of Warrior Care Policy
Maj Elisha Parkhill	Social Work Policy Fellow	AFMSA/SG30Q
Dr. Paul Pasquina	Chair, Department of Physical Medicine & Rehabilitation	USUHS
Marshall Peters	Service Dog Training Program Instructor	Warrior Canine Connection
Alan Peterson, PhD	Professor & Consortium Director	UTHSCSA
Stephen W. Porges, PhD	Professor of Psychiatry	University of North Carolina
Ann-Marie Regan	Special Assistant for Organization Development	WRNMMC
Dr. Elspeth Cameron Ritchie	Chief Clinical Officer	DC Department of Mental Health
Diana Sermanian, PsyD	Assistant Director, Civilian Training Programs	Center for Deployment Psychology
Marni Silverman, PhD	Senior Scientist	CHAMP/USUHS
LTC Matthew St. Laurent	Chief, Occupational Therapy	WRNMMC
Phil Thornton	Senior Analyst	Office of Warrior Care Policy
Jeanne White	EEO Command Deputy	Military Sealift Command
Cindy Wilson, PhD	Professor of Family Medicine	USUHS
Stacey Young-McCaughan, PhD	Professor of Psychiatry	UTHSCSA
Rick Yount, BS, LSW	Executive Director	Warrior Canine Connection

ANNEX 5 – Selected Readings

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ANNEX 6 – Sponsors

Bob Woodruff Foundation

<http://bobwoodrufffoundation.org/>

The Bob Woodruff Foundation (BWF) serves post-9/11 injured service members, veterans, their families, and the caregivers and communities who support them. We navigate a maze of more than 40,000 nonprofits serving this population to find, fund and shape innovative programs meeting challenges in three key areas: employment and education, rehabilitation and recovery, and quality of life.

The Bob Woodruff Foundation was co-founded in 2006 by award-winning television news anchor Bob Woodruff and his family after he sustained serious injuries while covering the Iraq war. Their experiences inspired them to help make sure our nation's heroes have access to the high level of support and resources they deserve, for as long as they need them. Since its inception, BWF has invested \$20 million in programs serving more than one million service members, veterans and their families; 87¢ of every dollar donated to BWF goes directly to programs.

NICoE

<http://www.nicoe.capmed.mil/>

The National Intrepid Center of Excellence (NICoE) is a DoD institute dedicated to providing cutting-edge evaluation, treatment planning, research and education for service members and their families dealing with the complex interactions of mild traumatic brain injury (TBI) and psychological health (PH) conditions.

NICoE was created to focus the collected wisdom and knowledge of our military, federal, academic and private industry partners to define the pattern of the disease state, identify definitive diagnostic criteria, advance novel treatments and share that knowledge with each other. Ultimately, together we can return our wounded, ill and injured service members back to productive lives.

NICoE aims to be a leader in advancing traumatic brain injury and psychological health treatment, research and education. With its dedicated staff, NICoE seeks to be an instrument of hope, healing, discovery and learning for service members recovering from TBI and PH conditions.



BOB WOODRUFF FOUNDATION

Helping **heroes** on the homefront