



Annual Report for Fiscal Year 1998

[From the Executive Director](#)

[About the National Center for PTSD](#)

[Research](#)

[Education](#)

[Consultation](#)

[Looking to the Future](#)

[Publications](#)

[IN-press Publications](#)

From the Executive Director

I am pleased to present the ninth Annual Report of the Department of Veterans Affairs National Center for Post-Traumatic Stress Disorder. Research and education on stress, trauma, PTSD, and related disorders has changed remarkably since our first Annual Report was published, and it is clear that the Center has been at the forefront of this progress in all three of our areas of endeavor.

As the major PTSD **research** institution in the world, we have helped to set the global research agenda on PTSD, pioneered psychological and pharmacological treatments, and established the facts that PTSD affects brain structure and function.

Our **educational programs** have been designed to support both clinicians providing treatment and investigators who seek to discover new therapies for PTSD. Activities include training programs, the world's largest bibliographic database on traumatic stress, and a website that serves veterans, the lay public, policy makers, and journalists, in addition to the professional and scientific communities.

Consultation has emerged as our third major area of activity as the stress/PTSD field grows and as our expertise has been established. Consultation activities serve many audiences — from individual veterans to VA policy makers, federal research program directors, military leaders, and officials from foreign governments and international organizations.

This report describes our history and mission, and the key accomplishments in FY 1998, in these three areas. A series of tables at the back of the document provides details on research grants, publications, and educational activities for those who want them, as well as more detailed reports of activities at each of our seven sites.

I believe that our list of accomplishments is consonant with our congressional mandate to be at the forefront of research and education on PTSD. I also believe that Center initiatives not only support the VA's overall mission but lead the way toward cost-effective and compassionate treatment for veterans with PTSD. As we look toward the future, our top priority remains the discovery and dissemination of the best diagnostic tools and treatments for PTSD.

The National Center for PTSD has tried to be responsive to the needs of veterans, to the clinicians who treat them, to the scientists conducting research on PTSD, and to executives and policy makers who seek our consultation. I hope you agree that we have continued to carry out our Congressionally mandated mission successfully.

About the National Center for PTSD

Scientific and clinical interest in Post-Traumatic Stress Disorder (PTSD) has grown exponentially in the past 20 years. No longer considered an isolated problem for Vietnam veterans, PTSD is now recognized as a major public and behavioral health problem for all military veterans and active-duty personnel, given their heightened exposure to the traumatic stress of war, dangerous peacekeeping operations, and interpersonal violence. Moreover, the surprisingly high prevalence of disaster, severe accidents, and violence in the civilian arena makes PTSD a serious public health problem in the general population that may affect more than 15 million American men and women at some point in their lives.

Burgeoning research and clinical evidence also shows that trauma and PTSD often occur in combination with, or can significantly exacerbate, many other psychiatric and addictive disorders and physical illnesses. Information is needed not only about PTSD but about a very complex array of related personal, familial, and social problems with grave psychological, physical health, and economic costs. The synthesis of research and clinical findings across this broad spectrum of issues is in great demand, and requires an integrative information source.

The National Center for PTSD, a world leader in research and education programs focusing on PTSD and other psychological and medical consequences of traumatic stress, aims to be that source, through its research and education programs and consultative services.

For example, the figure below indicates the integration of Center activities with respect to the treatment of PTSD. An advantage of the Center's multidisciplinary framework is the opportunity for specialists in research, clinical care, program evaluation, and education to work collectively on an issue within the same organizational structure.



History

In 1989, a new program was created within the Department of Veterans Affairs (VA) in response to a congressional mandate to address the needs of veterans with military-related PTSD. Under this mandate, the new program was charged with "carry[ing] out and promot[ing] the training of health-care and related personnel in, and research into, the causes and diagnosis of PTSD and the treatment of veterans for PTSD." In its operations, the agency would "serve as a resource center for, and promote and seek to coordinate the exchange of, information regarding all research and training activities carried out by the Veterans Administration, and by other Federal and non-Federal entities, with respect to PTSD."

Thus was the National Center for Post-Traumatic Stress Disorder born, with the ultimate purpose of improving the well-being, status, and understanding of veterans in American society. After a VA-wide competition determined that no single VA site could adequately serve this unique mission, the Center was established as a consortium of five VA centers of excellence in PTSD, each distinguished by a particular area of expertise while also sharing common interests and concerns. Two Divisions have been added since 1989, bringing the number of sites to seven (Biographical information about all Division Directors is contained in the Appendix.)



Mission

The mission of the National Center for PTSD is:

To advance the clinical care and social welfare of America's veterans through research, education, and training in the science, diagnosis, and treatment of PTSD and stress-related disorders.

This mission parallels that of the VA in general, as laid out in the VA's strategic plan, "A Prescription for Change." The VA's mandate calls for it to promote excellence in health care, education, and research, and to be an employer of choice. While the Center's mandate does not call for it to provide direct clinical care, the Center's research, educational, and consultation initiatives have unquestionably had a positive impact on the clinical treatment of veterans with PTSD and have contributed to the world's most comprehensive body of literature on stress, trauma, PTSD, and related disorders.

Since its inception, in fact, the Center has made significant progress in furthering the understanding and treatment of PTSD both within the VA and in society at large. Its growth is due primarily to two factors: increased interest in trauma and PTSD, especially since the Gulf War, and the Center's proven ability to develop and implement relevant programs and to compete successfully for research funds. As a central authority on PTSD, the Center serves and collaborates with many different agencies and constituencies, including:

- Veterans and their families and veterans' service organizations.
- VA clinicians, researchers, educators, program directors, and policy-makers.
- Members of Congress and non-VA governmental departments.
- Faculty and trainees at professional schools, universities, and colleges.
- Scientific and professional societies and scholars from around the world.
- Lay public and media.
- Areas of Activity

In its first decade of operation, the Center has come to be regarded as *the* clearinghouse for all information and activity related to PTSD, and is widely sought out for its research, education, and consultation expertise.

Research. The Center has emerged as one of the foremost PTSD research programs in the world. Through its research publications, methodological breakthroughs, development of new assessment strategies, multisite projects, and promotion of innovative and collaborative research, it plays a major role in setting the agenda for the entire field of research on trauma and its aftermath. A key aspect of Center research programs is their integration with education and consultation activities, which increases their direct relevance to VA clinical programs, thereby improving the care of veterans throughout the system. Thus, in addition to advancing the scientific understanding of PTSD, Center research seeks to promote effective preventive strategies, cost-effective assessment and treatment protocols, and specialized training and consultation to practitioners working with PTSD.

Education. The ultimate objective of the Center's educational efforts is to enhance the quality and cost-effectiveness of PTSD care for both veterans and civilians. The primary product is accurate and timely information about treatment, etiology, diagnosis, and prevention of PTSD. The Center's educational initiatives aim to assimilate information and

coordinate communication among top scientists in the field of PTSD, and to bring that information to clinicians and policymakers both inside and outside the VA. Information is rapidly disseminated through multiple channels and can be accessed by a diverse group of users through publications, presentations, consultation, training, teleconferences, satellite broadcasts, and the Center's database and website.

Consultation. As the severity and prevalence of PTSD and its consequences demand greater attention, Center expertise has been increasingly sought by the top leadership, policy makers, and program directors in the VA and in other government agencies and branches. Such consultation has helped shape services for Vietnam, Gulf War, women, minority, and older veterans, and veterans of tomorrow. In recent years PTSD also has become recognized as a major public health problem within the United States, affecting not just military personnel but survivors of many types of trauma. As the recognized expert in the field, the Center has been called upon for consultation by a growing number of academic and non-governmental organizations. And, since PTSD is a global problem, Center consultation has been sought by the United Nations as well as many specific governments, some of whom have requested help to establish similar centers of excellence in their countries.

Fiscal year 1998 marked the Center's ninth year of operation, and saw the success of several important PTSD initiatives. This annual report chronicles the major achievements of an important year for the Center and puts forth an ambitious plan for advancing the understanding and treatment of PTSD into the new millennium.

RESEARCH

In FY 1998, as in previous years, Center research activity was broadly focused on the assessment and diagnosis, causes and consequences, and treatment of trauma-related problems in military veterans and active-duty personnel, as well as evaluation research. Many projects studied veterans of all eras, while some projects specifically targeted Gulf War veterans, women veterans, veterans who are members of ethnic minorities, and active-duty personnel and peacekeepers. A complete listing of Center researchers' 127 professional publications, 133 in-press articles, and 129 scientific presentations is included in Tables 1-2 at the back of this document.

Assessment and Diagnosis

For the past nine years, the Center has focused its research efforts on developing and refining measures to improve diagnostic accuracy and to assess traumatic exposure. Most of this work is conducted under the leadership of the Center's Behavioral Science Division, which has developed some of the most widely used measures in the world, such as the Mississippi Scale for Combat-Related PTSD, the PTSD Checklist, and the Clinician Administered PTSD Scale (CAPS). During the past year, the CAPS and the PTSD Checklist were translated from English into eight other languages.

Another research focus in FY 1998 was the development and testing of brief, cost-effective PTSD screening measures to be used in primary-care settings. These measures will assist health care providers in identifying and providing appropriate care for veterans who are reluctant to seek PTSD treatment from mental health services. The Center also continued to focus on measurement of trauma exposure, including the evaluation of state-of-the-art methods for collecting information from individuals about their lifetime experiences with trauma and serious psychological stressors.

Causes and Consequences

Because individuals with PTSD show a variety of changes in memory and attention, as well as changes in brain structures and functioning, psychobiology is an important part of the Center's research program. Most of this work is conducted at or coordinated by the Clinical Neurosciences Division.

In recent years, one line of investigation has focused on the hippocampus, a key brain structure that plays a significant role in learning and memory. This research has revealed less hippocampal volume and greater memory deficits in male Vietnam veterans with PTSD, and during FY 1998, the Division found that these results also apply to women. An ongoing study is examining the effect of PTSD on hippocampal volume in Gulf War veterans, and a study will take place in FY 1999 that will explore the effects of stress on the benzodiazepine receptor in the hippocampus and prefrontal cortex of Vietnam and Gulf War veterans with PTSD. The Behavioral Science and Education Divisions are collaborating on a related study that combines neuroimaging, electrophysiological, and behavioral methods to study the hippocampus in individuals with PTSD.

In the past year, the Clinical Neurosciences Division generated findings that point to a dysfunction, under conditions of acute stress, in the PTSD-affected brain's regulation of one of its major stress response systems, the hypothalamic-pituitary-adrenal axis. This information will be useful in planning treatment strategies and drug therapies. The Division is also examining the cellular mechanisms through which stress leads to atrophy and cell death in specific brain areas and is investigating specific drugs that may help block or reverse these effects. In addition, the Sleep Laboratory at

the Education Division is conducting ongoing laboratory and ambulatory sleep research protocols aimed at understanding the sleep complaints, particularly trauma-related nightmares, of PTSD patients.

The Behavioral Science Division has been at the forefront of state-of-the-art research design and statistical approaches to the study of stress and trauma. This research aims to understand the origins of PTSD, the nature of the disorder, and its implications for physical health and functioning. During FY 1998, Division staff, in collaboration with staff from the Women's Health Sciences Division, reported on the impact of premilitary, war-zone, and postmilitary factors as they related to the severity of PTSD symptoms in Vietnam veterans. This work points to the importance of examining exposure to multiple stressful events over an extended period of time rather than concentrating on the impact of a single traumatic event. Other areas of investigation for the Behavioral Science Division look at how psychological trauma affects interpersonal relationships, such as marriage, and the link between PTSD and perpetration of violence.

The Executive, Behavioral Science, and Women's Health Sciences Divisions also investigated the physical health consequences associated with trauma and PTSD in women veterans and veterans of all eras, from World War II to the Gulf War. To date, this work has shown that PTSD is associated not just with emotional difficulties, but with physical problems as well. In FY 1998, research focused on identifying the specific physical health problems that are associated with PTSD and on investigating the biological and behavioral mechanisms through which PTSD affects physical health.

Treatment

The development and evaluation of new treatments for PTSD has always been a significant focus of the Center's research activity. The Executive Division led the primary study on treatment in FY 1998, VA Cooperative Study #420, a 10-site randomized clinical trial of trauma focus group therapy for combat-related PTSD in male Vietnam veterans. The study, which is the largest PTSD treatment study ever funded by the VA, is expected to be completed in June, 2000.

Across the divisions, a variety of projects in FY 1998 focused on other forms of psychotherapy for treating PTSD. One study evaluated a structured, brief group treatment that targets ambivalence about changing PTSD symptoms and comorbid problem behaviors in male Vietnam veterans. An ongoing project is examining effective treatments for anger in veterans with PTSD. Additional studies address PTSD problems from nonmilitary stressors affecting veterans, such as childhood abuse and adult domestic violence. One such project is a randomized clinical trial of exposure and cognitive restructuring for treating PTSD in adult female survivors of childhood sexual abuse. Another, conducted in conjunction with the Department of Defense (DoD), is a randomized clinical trial to evaluate a cognitive approach to treating female victims of spousal battering.

The Clinical Neurosciences Division is the primary site for the study of drug treatments. The Division recently began an innovative study of rape victims that will use the beta-blocker propranolol; it is expected that propranolol administered within the first 24 hours after a rape will help to lessen the intensity and frequency of traumatic memories. The Division also expanded a double-blind, placebo-controlled clinical trial of clonidine, which is not a beta-blocker but, like propranolol, reduces acute stress-induced neurotransmitter changes.

Evaluation Research

Few other aspects of VA care have been as closely monitored or as firmly rooted in outcome data as PTSD treatment. Since 1988, the Northeast Program Evaluation Center has served as the Evaluation Division of the Center and has monitored the performance of specialized treatment for PTSD at medical centers across the entire VA system.

In 1998, the Evaluation Division issued the third report of the National Mental Health Program Performance Monitoring System. These reports evaluate all mental health care, including PTSD treatment, provided at each VA Medical Center (VAMC) and in each of VA's 22 Veterans Integrated Service Networks (VISNs). The performance monitoring system, an effort endorsed by the Under Secretary for Health, generates an annual "report card" for every VA mental health program and every VISN based on the accessibility of services, quality of care, efficiency of service delivery, and veterans' satisfaction.

The Evaluation Division also issued the third report on the treatment outcomes of specialized PTSD inpatient programs dealing with veterans' PTSD symptoms, alcohol abuse, drug abuse, violence, and work. These data are used widely in making programmatic changes as part of VA's commitment to continuous improvement in the cost-effectiveness of service delivery. Individual monitors have been selected from both sets of reports by the Veterans Health Administration to serve as measures for the annual performance evaluation of VA's Special Emphasis Programs for PTSD.

Close attention to maintaining clinical focus and maximizing efficiency has resulted in a doubling in the number of veterans receiving specialized PTSD treatment at VAMCs, from 33,015 in 1995 to 66,625 in 1998. Because some facilities closed their specialized programs, markedly reducing the availability of such services, the Division has been a

major force in preserving and expanding VA's capacity to provide the highest-quality specialized services for veterans with PTSD at a time of major system change.

Special Populations

In addition to the research projects examining veterans in general, some research efforts were aimed at understanding and dealing with the unique circumstances of special populations.

Gulf War Veterans. The Center began studying approximately 3,000 male and female veterans who served in the Gulf War shortly after these veterans returned home in 1991. In one study, veterans who were processed through Fort Devens, MA, were assessed five days after returning to the United States and have been studied periodically since that time. The fourth wave of data collection was completed in FY 1998.

During the year, the research team, located at the Women's Health Sciences Division, developed reports on sexual harassment and on the prevalence of psychiatric disorders among Gulf War veterans. The Division also continued to be extensively involved in the Boston VA Environmental Hazards Center, one of three VA centers across the country where VA, public, and environmental health specialists collaborate to investigate Gulf War illnesses.

The Clinical Neurosciences Division continued its work on another longitudinal study of Gulf War veterans. This project is unique in its study of memory, capitalizing on the Division's expertise in this area. Also in the realm of neurobiology, the Education and Behavioral Science Divisions received funding to assess the physiological aspects of combat-related PTSD in both Vietnam and Gulf War veterans. This study will use simultaneous measurement of brain structure and function through advanced brain imaging techniques.

Women Veterans. Since its inception, the Center has demonstrated a strong commitment to studying women veterans, which was formalized in 1994 by the creation of a separate division devoted exclusively to the needs of women veterans. Center research integrates women into general research projects whenever possible, while selected projects focus exclusively on women.

During FY 1998, for example, the Women's Health Sciences Division continued to disseminate findings from the completed survey, funded by VA Health Services Research & Development (HSR&D), of women veterans' perceptions and experiences in accessing VA health care services. This study provides a model of the institutional and individual characteristics associated with women veterans' access to care, including health outcomes. A follow-up study of women veterans who use VA care is currently proposed to examine the factors associated with a prevalent history of sexual assault among these women.

In another study, the Evaluation Division assessed the influence of military and sexual trauma in the etiology of PTSD among women veterans who sought treatment. This study confirmed results from an earlier study of female Vietnam veterans, but broadened the eras of service to include women from World War II through the Gulf War. In this clinical sample, sexual trauma in the military was four times as influential as duty-related non-sexual trauma in contributing to the development of PTSD.

Ethnic Minorities. The Center has been active in research that addresses the needs of veterans from ethnocultural minority groups. All research projects aim, whenever possible, to examine the effects of race or ethnic group, and some projects are specifically focused on this topic. In FY 1998, the Center continued its analysis of data from the Matsunaga Vietnam Veterans Project, a large epidemiological study modeled on the National Vietnam Veterans Readjustment Study (NVVRS), that targeted Vietnam veterans of American Indian and Asian/Pacific Islander ethnic backgrounds.

During the year, the Executive Division undertook projects focused on ethnocultural differences in PTSD and other psychosocial outcomes, and on physical health and PTSD. In addition, the Pacific Islands Division continued its effort to develop and validate a questionnaire for assessing race-related events with Asian American Vietnam veterans. Data are being collected in Hawaii, Northern California, and Guam.

Active Duty Personnel and Peacekeepers. The Center continues to expand its investigations into the effects of active duty-related stressors, including peacekeeping functions. During FY 1998, the Women's Health Sciences Division entered its second year of the DoD-funded research on women in the Marine Corps and their adjustment to first-term enlistment. The results of the investigation will be used to inform policy makers and clinicians concerned with improving retention of Marine Corps women and optimizing their adaptation to military service.

The Clinical Neurosciences Division, in collaboration with DoD, is investigating the biological and psychological effects of high-intensity military training. To date, results show that high-intensity training has profound effects on neurohormones in some, but not all, trainees. Prospective longitudinal studies of PTSD are underway to determine if it is possible to identify subgroups of trainees who are more resilient and those who are more vulnerable.

The Behavioral Sciences Division has been at the forefront of investigating the psychological consequences of peacekeeping and peace-enforcement missions for U.S. military personnel. An initial project found that peacekeeping and peace-enforcement in Somalia involved stressors that differed from those encountered during traditional combat. The Division also is continuing its investigation of the long-term mental health of peacekeepers deployed to Somalia and, more recently, of those sent to Bosnia.

The study of military personnel in Bosnia, conducted in collaboration with Walter Reed Army Institute of Research (WRAIR), is a landmark effort: for the first time, mental health status prior to deployment was assessed, so that it will be possible to determine the psychological impact of military deployment in this specific region.

Education

In keeping with its goal to enhance the quality and cost-effectiveness of PTSD care, the Center made great strides during FY 1998 in accurate and timely distribution of information about PTSD via three types of educational products: research and clinical publications, specialized educational and training programs and workshops, and the PTSD Resource Center.

Research and Clinical Publications

In addition to the numerous scholarly publications, books, and chapters Center staff generate in connection with their own research activities, the Center publishes its own material to support the VA's educational mission. The Center edits and publishes two of the primary research publications in the field of PTSD; both are unparalleled sources of scientific and clinical information. Each has a circulation of more than 5,000 and is distributed to all VAMCs and Vet Centers, departments of clinical psychology and psychiatry in academic institutions across the United States, as well as to government and private-sector sources that shape research, clinical practice, and policy concerning traumatic stress; in addition, the *Research Quarterly* is distributed to all members of the International Society for Traumatic Stress Studies (ISTSS).

The *National Center for PTSD Clinical Quarterly* addresses the needs of practicing clinicians and program administrators, providing them with an overview of the major clinical, theoretical, and programmatic developments in the field. FY 1998 issues included articles on startle response in individuals with PTSD, neuroimaging studies, specialized care for chronic complex PTSD, pharmacotherapy, assessment and intervention for somatic symptoms associated with PTSD in women, and the biological impact of exposure to situations of life threat.

The *PTSD Research Quarterly* is a guide to the scientific literature on traumatic stress and PTSD. Some of the topics for FY 1998 included: psychophysiological assessment of PTSD, forensic issues, group treatment of PTSD, and motor vehicle accident survivors and PTSD.

The Center also produces state-of-the-art tools aimed at clinicians involved in the treatment of people with PTSD. A major project in FY 1998 was the completion of *Disaster mental health services: A guide for clinicians and administrators*. This comprehensive manual addresses prevention and management of disaster-related mental health problems and is being enthusiastically received by individuals and organizations involved in disaster response.

Center staff are currently working on a number of manuals to assist clinicians, including treatment manuals for the individual and group treatment of PTSD; a resource guide for primary care providers on screening, referral, and health care of patients with histories of trauma; and a companion Best Practices Guide designed to enhance clinician utilization of the evidence-based technical recommendations from ISTSS. The Executive, Clinical Neurosciences, Education, and Behavioral Sciences Divisions participated actively in the ISTSS initiative to formulate evidence-based practice guidelines for the treatment of PTSD.

The Center has begun disseminating research and clinical information through video products as well as more traditional published documents. During FY 1998, the Center continued the development on three major video projects: the Native American Video series, addressing the unique cultural needs of Native Americans exposed to trauma; a video on PTSD and anger; and a video project giving an overview of the VA and disaster mental health. Also in FY 1998, the National Center collaborated with the Texas Department of Mental Health and Retardation, the Federal Emergency Management Agency (FEMA), and the Center for Mental Health Services, to co-direct a video about helping communities recover from disasters.

Training Programs and Workshops

The Center conducts a wide range of programs that provide face-to-face training opportunities in PTSD. These programs cover a broad range of specialization and intensity, including clinician training programs and workshops specifically in PTSD; internships and fellowships for medical interns, residents, and postdoctoral candidates; and specialized workshops provided within the context of more general medical and mental health conferences.

Specialized Training Programs. The Education Division's Clinical Training Program is recognized as one of the nation's top training programs for the treatment of PTSD. The program provides practitioners with a unique mix of educational presentations and observation of on-site clinical activities. In FY 1998, 83 clinicians from 16 states and 5 countries attended the program. Trainees included psychologists and psychiatrists, social workers, nurses, drug counselors, marriage and family counselors, chaplains, hospital administrators, researchers, and other professionals.

The Women's Health Sciences Division was instrumental in the development of a proposal for a "mini-residency" in women's mental and physical health. This mini-residency provided in-depth, hands-on training for a select group of VA primary care providers from across the country who have made a commitment to working with women veterans.

In conjunction with collaborators at each of the VA facilities in the Sierra Pacific Network, the Education Division has received approval to create one of the nation's Mental Illness Research, Education, and Clinical Centers (MIRECC) with core components focusing on PTSD and dementia. The primary objective of the Sierra Pacific MIRECC is to improve clinical care through the development and integration of complementary research, education, and clinical programs that bridge the scientist-practitioner gap.

Internships and Fellowships. All divisions offered a variety of traineeships to men and women enrolled in post-graduate programs in preparation for careers as professionals in psychiatry, psychology, social work, nursing, and other disciplines. In addition, the Behavioral Sciences Division continued their highly acclaimed National Institute of Mental Health (NIMH)-funded post-doctoral research program _ one of the few in the country specializing in PTSD research _ with three fellows completing training in the second year of the program. An outstanding class of four new fellows joined the program at the end of the fiscal year.

Workshops and Presentations. During FY 1998, Center investigators presented a total of 64 workshops, training sessions, and papers in a number of educational settings, with major emphasis on disaster and critical incident debriefing, special needs of women veterans, and the role of PTSD in primary care. Following are some of the highlights of these activities.

The Disaster Mental Health training series, launched in FY 1998 in partnership with the Readjustment Counseling Service (RCS) and consisting of on-site two-day workshops that include presentations, debriefing demonstrations, and simulation exercises. It was delivered to VA audiences in Denver, Memphis, Minneapolis, Philadelphia, Pittsburgh, Augusta, GA, and Portland, OR.

Presentations on disaster and critical incident disaster mental health were made at specialist conferences sponsored by the National Disaster Medical System (NDMS), DoD, Public Health Service (PHS), VA, University of Pittsburgh School of Social Work, and the Disaster Mental Health Institute, University of South Dakota.

Bruce Young of the NC-PTSD Education Division accepted the invitation from the Disaster Mental Health Institute, University of South Dakota, to be a key speaker at their annual disaster conference and to co-present (with Dr. Anne Wilson, VAMC Pittsburgh) "CISD in the Workplace" sponsored by the University of Pittsburgh, School of Social Work, Continuing Education Program for Employee Assistance Providers.

The Education and Executive Divisions provided the mental health track for the week-long "Disaster/Critical Incident Mental Health Training: Leadership Training Module" of the "1998 Consequence Management," a Federal Response Plan mass-casualty medical training and exercise that took place in Augusta, GA, sponsored by the DoD, VA, and PHS.

In conjunction with the Center for Mental Health Services, the Center developed a two-day mental health track for the "1998 Life Saving Intervention" national conference of NDMS, which includes DoD, VA, and PHS, as well as organizations such as the American Red Cross.

The Executive Division worked together with the nursing administration of Dartmouth-Hitchcock Medical Center to train a pilot group of nurses in critical incident stress debriefing, initiating a very successful program that capitalizes on local opportunities to develop a model for the national VA system.

Executive Division staff chaired the VA Employee Education System's national task force on Mental Health Primary Care, collaborating with a number of other VA agencies to organize and present a three-day national training conference attended by more than 100 VA medical, nursing, and mental health providers.

Teleconferencing. In addition to face-to-face programs and workshops, the Center has also begun to take advantage of teleconferencing and multi-site conference calls as a cost-effective way of delivering educational presentations. Some of the teleconference and conference call presentations offered during FY 1998 included: educational conference calls jointly offered by the Evaluation and Education Divisions, which reach staff of all PTSD programs across the United States; disaster mental health conference calls for participants receiving training from the

Center; research presentation teleconference calls to educate center members about current research being conducted at different divisions; and cross-site conference calls for all specialized PTSD programs.

Resource Center

The PTSD Resource Center houses the largest single collection of traumatic stress literature in the world. Over twenty-five languages are represented among the 15,000 papers in the Resource Center collection, which contains a copy of every publication indexed in the Center's database except for doctoral dissertations. The book collection has grown to nearly 1,000 volumes.

The Center's database of Published International Literature On Traumatic Stress (PILOTS) contained 13,662 citations in FY 1998, up from 12,264 the previous year. Dartmouth College Library statistics record that nearly 17,000 connections were made to PILOTS during the year, almost double the number recorded during FY 1997. A "PILOTS Update" column, published in the *PTSD Research Quarterly* and on the website, kept users informed about improvements to the database and changes in access procedures. Work began in FY 1998 on a new edition of the *PILOTS Database User's Guide*.

Since the Center's website (www.dartmouth.edu/dms/ptsd), was launched in November 1995, the range and extent of the information posted there has increased steadily. During FY 1998, a particular effort was made to add material directed at clinicians. The first of a new series of Clinician's Updates was posted, along with a list of recommended books for PTSD clinicians. The first entire issue of the *Clinical Quarterly* was posted on the website, and 10 articles from back issues were posted as well. A new edition of the *PILOTS Database Instruments Authority List*, which lists all the assessment instruments used in published studies indexed in PILOTS, was also published and posted on the website.

For the lay public, the website was expanded in FY 1998 to include "fact sheet" summaries of topics such as disaster mental health, veteran's issues, gender issues, and treatment for trauma survivors; schedules of upcoming training events; and links to other websites on trauma issues. Professional positions and training opportunities were also posted on the website, and considerable effort was expended in keeping the content of the entire site up-to-date.

The Center has continued to receive many favorable comments from Web users, and has been listed on an increasing number of directories of recommended web sites produced by libraries, mental health organizations, and commercial publishers. The Center has continued to make extensive use of other Internet resources, including discussion lists and electronic mail, to improve communication with professionals and lay persons interested in traumatic stress.

Consultation

In FY 1998, Center staff were involved in consultation in many arenas, including advising on matters of policy, support for research initiatives outside the Center, assistance to clinicians involved in treatment, and work with governments and agencies outside the United States.

Policy

During FY 1998, the National Center worked closely with VA's Mental Health Strategic Healthcare Group (MHSHG), consulting on clinical, research, and educational policy through participation on its Field Advisory Board, New Knowledge Committee, and other strategic planning committees. Other key ongoing policy-related consultative activities involving top VA leadership include Readjustment Counseling Service (RCS), Medical Research Service, Women Veterans, Emergency Medical Preparedness Office, Gulf Veterans, and Minority Veterans.

In the aftermath of the Gulf War, the VA, DoD, and Department of Health and Human Services have been collaborating to prepare a Presidential Research Directive, aimed at promoting the health and well-being of active-duty military personnel involved in UN (United Nations)/NATO (North Atlantic Treaty Organization) peacekeeping deployments, and Executive Division staff have participated in this initiative during the past year. The Division also consulted with DoD to develop a screening protocol for all military recruits that would provide a valuable medical database for all military personnel that would be made available to VA when they became veterans.

Research Support

In addition to conducting its own research, the Center supports many other ongoing PTSD research activities. Center staff served on national research review boards, such as the Medical Research Advisory Group for VA (Dr. Charney), VA Merit Review (Dr. Southwick), NIMH (Dr. Friedman), and the Scientific Advisory Board of the Anxiety Disorder Association of America (Dr. Charney). Staff also served as members of specially constituted boards (such as Special Emphasis Panels for NIMH), on local research review boards, and as reviewers for all of these organizations.

During FY 1998, Center staff had a wide assortment of special research-related consultative assignments at

organizations such as NIMH, VA, and the Institute of Medicine. During the past year Dr. Charney consulted with both VA and NIMH on the restructuring of their research programs. In another notable effort, Dr. Keane chaired an international working group at the request of the Director of NIMH that prepared a report for the South African Truth and Reconciliation Commission on the psychological, social, and economic consequences of exposure to torture and related trauma. Drs. Friedman and Southwick also participated in this effort.

A particular focus in recent years has involved consultation to DoD. During FY 1998, Dr. Wolfe continued her appointment as Guest Scientist at WRAIR. Center investigators consulted on the health of active-duty military personnel and on the psychological impact of UN/NATO peacekeeping deployments. Dr. Miyahira led the initiative to develop collaborative research programs between the National Center and Tripler Army Medical Center in Honolulu. She also launched another initiative with DoD's Center for Excellence in Disaster Management and Humanitarian Assistance, located at the Pacific Regional Medical Command of Tripler Army Medical Center, to identify a series of joint education and research projects.

Finally, an important aspect of research support is the service of Center staff as members of journal editorial boards, or as consulting editors or ad hoc reviewers. The journal editorial roles filled by Center staff members in FY 1998 are included in Table 5.

Treatment Support and Consultation

The Center is frequently called upon to consult with clinicians involved in the treatment of people with PTSD. Center staff expertise can help to improve the knowledge and skills of practitioners, disseminate treatment innovations, and create a process through which clinical practice is informed by new theoretical developments and results of empirical research. Center staff act as a conduit among clinicians, educators, and researchers throughout VA and the world, providing information about PTSD and training in the delivery of comprehensive, cost-effective, state-of-the-art treatment. Examples of significant activities in the area of treatment support and consultation during FY 1998 included the following:

The Evaluation Division's "report card" for VA PTSD programs, a sophisticated array of performance monitors, continued to be used by top VA leadership for reassessing clinical program policy, structure, and outcomes.

The Education Division is frequently called upon by HQ and VISN officials to conduct site visits and other consultative assistance to PTSD programs that are having difficulties. Such interventions range from PTSD service redesign, administrative adjustments, or education and training for practitioners.

The Executive Division provided consultation to MSHSG regarding Best Practice Guidelines for PTSD treatment in the VA. A related effort, chaired by Drs. Keane and Friedman along with Dr. Edna Foa of the University of Pennsylvania, involved a panel of international experts working under the auspices of the ISTSS to develop a Best Practice Guideline for PTSD treatment worldwide.

The Women's Health Sciences Division provided telephone and face-to-face consultation to other VA comprehensive Women's Health Centers nationally and to staff of VA's three other Women's Stress Disorders Treatment Teams, all located in different regions of the country.

The Women's Health Sciences Division also consulted to senior VA management and VA and university health professionals on the Boston Model, a unique system for implementation of state-of-the-art primary and mental health care for women. The Boston Model is aimed at risk reduction and improved health prevention through interdisciplinary team management and patient involvement, and emphasizes behavioral health and well-being.

International

Exposure to trauma is a part of the human condition. Therefore, psychotraumatology is a global initiative. As the leader in this field, the Center has consulted in a wide variety of international contexts. Foremost among these is the ISTSS, whose membership consists of clinicians and scholars from around the world who are dedicated to this field. Drs. Keane and Friedman are past presidents of ISTSS and other Center personnel have served in key leadership positions.

The Australian National Centre for War-Related Post-traumatic Stress Disorder has collaborated closely with its American counterpart since its inception. Other governments have sought Center consultation, some with the expectation of establishing similar organizations within their own countries; these include Canada, Japan, Croatia, and Kuwait. International military cooperation on a variety of UN/NATO deployments has resulted in ongoing consultation between Center experts and colleagues in Canada, Norway, Sweden, United Kingdom, the Netherlands, and Australia.

In FY 1998, the United Nations requested Center leadership for an International Working Group to address the global impact of trauma among many populations at risk, including survivors of war, genocide, and forced migration; victims

of interpersonal violence, social deprivation, and neglect; and UN personnel serving on humanitarian missions or military peacekeeping operations. Drs. Keane and Friedman are co-chairs of this initiative.

Looking to THE FUTURE

In its first ten years the Center has established a far-reaching reputation as the world's authority on PTSD. At the same time, it has established a strong base from which to grow and expand its influence: the infrastructure and products are in place; networks and relationships have been forged; the Center's reputation for excellence in research, education, and other activities is secure.

Looking forward, the Center's strategy for carrying its mission forward into the next century entails leveraging this base — that is, maximizing the reach and impact of the Center's existing resources to improve the prevention and treatment of PTSD. This will be accomplished through expanded dissemination of Center knowledge and tools, targeted Center research, and applying Center knowledge in areas of special focus.

Some of the specific areas of focus for the future include:

Improving treatment and prevention of PTSD. The Center is involved in all the steps along the path from research to education, development of treatment protocols, and monitoring of treatment, and will work to strengthen effectiveness at all points along that path.

Strengthening collaboration between PTSD and primary care services. The Center will continue to strengthen its relationships with a wide range of organizations involved in the diagnosis and treatment of PTSD. Special effort will be aimed at encouraging better screening for trauma-related disorders and undertaking collaborative efforts to provide effective treatment.

Utilizing Center resources for disaster mental health care. Disaster mental health care is a key component of the overall mission of the VA. The Center has an opportunity to support the VA in its mission through research and training in effective intervention strategies.

Working with the Department of Defense on behalf of tomorrow's veterans. The Center has worked very productively with DoD on a variety of projects during its history. Looking forward, the Center hopes to be able to conduct joint research, educational, and consultation programs. Examples of collaborative efforts might include, for example, developing predeployment screening protocols and acute intervention strategies.

Publications by National Center Staff

Abi-Dargham, A., Innis, R.B., Wisniewski, G., Baldwin, R.M., Neumeyer, J.L., & Seibyl, J.P. (1997). Human biodistribution and biodosimetry of iodine-123-fluoroalkyl analogs of α -CIT. *European Journal of Nuclear Medicine*, *24*, 1422-1425.

Adams, B.W., & Moghaddam, B. (1998). Corticolimbic dopamine neurotransmission is temporally dissociated from the cognitive and locomotor effects of phencyclidine. *Journal of Neuroscience*, *18*, 5545-5554.

Baldwin, R.M., Tan, P.Z., van Dyck, C.H., Al-Tikriti, M., Amici, L., Roth, B., Khan, N., Soufer, R., Charney, D.S., & Innis, R.B. (1998). Radiometabolites of α - ^{18}F altanserin in rats and humans: 4-(p- α - ^{18}F fluorobenzoyl) piperidine and α - ^{18}F altanserinol. *Journal Labeled Compared Radiopharmacology*, *41*, 133-135.

Berman, R., & Charney, D.S. (1997). Editorial: Current thinking on treatment-refractory depression. *Depression and Anxiety*, *5*, 153.

Birnbaum, S., & Davis, M. (1998). Modulation of the acoustic startle reflex by infusion of corticotropin releasing hormone into the nucleus reticularis pontis caudalis. *Brain Research*, *782*, 318-323.

Bremner, J.D. (1998). Neuroimaging of posttraumatic stress disorder. *Psychiatric Annals*, *28*, 445-450.

Bremner, J.D. (1998). Traumatic memories lost and found: Can lost memories of abuse be found in the brain? In L. Williams & V. Banyard (Eds.), *Trauma and memory* (pp. 217-228). Thousand Oaks, CA: Sage.

Bremner, J.D., Krystal, J.H., Putnam, F., Marmar, C., Southwick, S.M., Lubin, H., Charney, D.S., & Mazure, C.M. (1998). Measurement of dissociative states with the Clinician Administered Dissociative States Scale (CADSS). *Journal of Traumatic Stress*, *11*, 125-136.

- Bremner, J.D., & Marmar, C. (Eds.). (1998). *Trauma, memory and dissociation*. Washington, DC: American Psychiatric Press.
- Bremner, J.D., Southwick, S.M., & Charney, D.S. (1997). Neuroanatomical correlates of the effects of stress on memory: Relevance to the validity of memories of childhood abuse. In P. Appelbaum, L. Uyehara, & M. Elin (Eds.), *Trauma and memory: Clinical and legal controversies* (pp. 61-82). New York: Oxford University Press.
- Bremner, J.D., Vermetten, E., Southwick, S.M., Krystal, J.H., & Charney, D.S. (1998). Trauma, memory, and dissociation: An integrative formulation. In J.D. Bremner & C. Marmar (Eds.), *Trauma, memory and dissociation* (pp. 365-402). Washington, DC: American Psychiatric Press.
- Carlson, E.B., Armstrong, J., & Loewenstein, R. (1997). Reported amnesia for childhood abuse and other traumatic events in psychiatric inpatients. In D. Read & S. Lindsay (Eds.), *Recollections of trauma: Scientific research and clinical practice* (pp. 395-401). New York: Plenum Press.
- Carlson, E.B., Armstrong, J., Loewenstein, R., & Roth, D. (1998). Relationships between traumatic experiences and symptoms of posttraumatic stress, dissociation, and amnesia. In J.D. Bremner & C. Marmar (Eds.), *Trauma, memory, and dissociation* (pp. 229-251). Washington, DC: American Psychiatric Press.
- Charney, D.C., Davidson, J.R.T., Friedman, M., Judge, R., Keane, T., McFarlane, S., Martenyi, F., Mellman, T.A., Petty, F., Plewes, J., Putnam, F., Romano, S., Van der Kolk, B.A., Yehuda, R., & Zohar, J. (1998). The hidden epidemic of modern times. *International Journal of Neuropsychiatric Medicine*, 7 (Suppl 2), 6-10.
- Charney, D.S., Grillon, C., & Bremner, J.D. (1998). The neurobiological basis of anxiety and fear: Circuits, mechanisms and neurochemical interactions (Part I). *The Neuroscientist*, 4, 35-44.
- Charney, D.S., Grillon, C., & Bremner, J.D. (1998). The neurobiological basis of anxiety and fear: Circuits, mechanisms, and neurochemical interactions (Part II). *The Neuroscientist*, 4, 122-132.
- Cramer, J., & Rosenheck, R.A. (1998). Compliance with medication regimens for psychiatric and medical disorders. *Psychiatric Services*, 49, 196-201.
- Cubells, J.F., van Kammen, D.P., Kelley, M.E., Anderson, G.M., O'Connor, D.T., Price, L.H., Malison, R., Rao, P.A., Kobayashi, K., Nagatsu, T., & Gelernter, J. (1998). Dopamine beta-hydroxylase: Two polymorphisms in linkage disequilibrium at the structural gene DBH associate with biochemical phenotypic variation. *Human Genetics*, 102, 533-540.
- Davis, M. (1997). Neurobiology of fear responses: The role of the amygdala. *Journal of Neuropsychiatry and Clinical Neurosciences*, 9, 382-402.
- Davis, M. (1997). The neurophysiological basis of acoustic startle modulation: Research on fear motivation and sensory gating. In P. Lang, R. Simons, & M. Balaban (Eds.), *Attention and orienting: Sensory and motivational processes* (pp. 69-96). Hillsdale, NJ: Lawrence Erlbaum.
- Davis, M., & Lee, Y. (1997). Fear and anxiety: Possible roles of the amygdala and bed nucleus of the stria terminalis. In R. Davidson (Ed.), *Cognition and emotion* (pp. 277-306). Philadelphia: Psychology Press.
- Davis, M., Walker, D.L., & Lee, Y. (1997). Amygdala and bed nucleus of the stria terminalis: Differential roles in fear and anxiety measured with the acoustic startle reflex. *Philosophical Transactions of the Royal Society: Biological Sciences*, 352, 1675-1687.
- Druss, B., Rohrbaugh, R., Kosten, T., Hoff, R., & Rosenheck, R.A. (1998). Alternative medicine use in depression. *Psychiatric Services*, 49, 1397.
- Duman, R.S. (1997). Neurochemical theories of depression. In D.S. Charney, E.J. Nestler, & B.J. Bunney (Eds.), *Neurobiological basis of psychiatric disorders* (pp. 173-194). New York: Oxford University Press.
- Fontana, A.F., & Rosenheck, R.A. (1998). Duty-related and sexual stress in the etiology of PTSD among women veterans who seek treatment. *Psychiatric Services*, 49, 658-662.
- Fontana, A.F., & Rosenheck, R.A. (1998). Effects of compensation-seeking on treatment outcomes among veterans with posttraumatic stress disorder. *Journal of Nervous and Mental Disease*, 186, 223-230.
- Fontana, A.F., & Rosenheck, R.A. (1998). Psychological benefits and liabilities of traumatic exposure in the war zone. *Journal of Traumatic Stress*, 11, 485-503.

- Fontana, A.F., Rosenheck, R.A., & Horvath, T. (1997). Social support and psychopathology in the war zone. *Journal of Nervous and Mental Disease, 185*, 675-681.
- Ford, J.D., Greaves, D., Chandler, P., Thacker, B., Shaw, D., Sennhauser, S., & Schwartz, L. (1997). Time-limited psychotherapy with Operation Desert Storm veterans. *Journal of Traumatic Stress, 10*, 655-664.
- Ford, J.D., & Kidd, P. (1998). Early childhood trauma and disorders of extreme stress as predictors of treatment outcome with chronic PTSD. *Journal of Traumatic Stress, 11*, 553-571.
- Ford, J.D., Shaw, D., Chandler, P., Thacker, B., Greaves, D., Sennhauser, S., & Schwartz, L. (1998). Family systems therapy after Operation Desert Storm: European Theater veterans. *Journal of Marital and Family Therapy, 24*, 243-251.
- Fox, K., Bienenstock, E., Bonhoeffer, T., Byrne, J.H., Davis, M., Fregnac, Y., Gierer, A., Huebener, M., Mauk, M.D., Shatz, C.J., & Stryker, M.P. (1998). To what extent are activity-dependent processes common to development and learning? In T. Carew, R. Menzel, & C. Shatz (Eds.), *Mechanistic relationships between development and learning* (pp. 163-188). Chichester: Dahlem Workshop Reports, John Wiley and Sons.
- Foy, D.W., Glynn, S.M., Ruzek, J.I., Riney, S.J., & Gusman, F.D. (1997). Trauma focus group therapy for combat-related PTSD. *In Session: Psychotherapy in Practice, 3*(4), 59-73.
- Foy, D.W., Wood, J.L., King, D.W., King, L.A., & Resnick, H.A. (1997). Los Angeles Symptom Checklist: Psychometric evidence in an adolescent sample. *Assessment, 4*, 377-384.
- Freyberger, H.J., Spitzer, C., Stieglitz, R.D., Kuhn, G., Magdeburg, N., & Carlson, E.B. (1998). Fragebogen zu dissoziativen Symptomen (FDS). Deutsche adaptation, reliabilität und validität der amerikanischen Dissociative Experiences Scale (DES). *Psychotherapie Psychosomatik Medizinische Psychologie, 48*, 223-229.
- Friedman, M.J. (1998). Current and future drug treatment for PTSD. *Psychiatric Annals, 28*, 461-468.
- Gallagher, J.G., Riggs, D.S., Byrne, C.A., & Weathers, F.W. (1998). Female partner's estimations of male veterans' combat-related PTSD severity. *Journal of Traumatic Stress, 11*, 367-374.
- Gelernter, J., Kranzler, H., Coccaro, E., Siever, L., New, A., & Mulgrew, C.L. (1997). D4 dopamine-receptor (DRD4) alleles and novelty seeking in substance-dependent, personality-disorder, and control subjects. *American Journal of Medical Genetics, 61*, 1144-1152.
- Gelernter, J., Kranzler, H., & Cubells, J.F. (1997). Serotonin transporter protein (SLC6A4) allele and haplotype frequencies and linkage disequilibria in African- and European-American and Japanese populations and in alcohol-dependent subjects. *Human Genetics, 101*, 243-246.
- Gelernter, J., Kranzler, H., Cubells, J.F., Ichinose, H., & Nagatsu, T. (1998). DRD2 allele frequencies and linkage disequilibria, including the -141Cins/Del promoter polymorphism, in European-American, African-American, and Japanese subjects. *Genomics, 51*, 21-26.
- Gewirtz, J.C., McNish, K.A., & Davis, M. (1998). Lesions of the bed nucleus of the stria terminalis block sensitization of the acoustic startle reflex produced by repeated stress, but not fear-potentiated startle. *Progress in Neuro-Psychopharmacology and Biological Psychiatry, 22*, 625-648.
- Golier, J.A., Yehuda, R., & Southwick, S.M. (1998). Memory and posttraumatic stress disorder. In P. Applebaum, L. Uyehara, & M. Elin (Eds.), *Trauma and memory: Clinical and legal controversies* (pp. 225-242). London: Oxford University Press.
- Grillon, C., & Ameli, R. (1998). Effects of threat of shock, shock electrode placement and darkness on startle. *International Journal of Psychophysiology, 28*, 223-231.
- Grillon, C., Morgan, C.A., Davis, M., & Southwick, S.M. (1998). Effect of darkness on acoustic startle in Vietnam veterans with PTSD. *American Journal of Psychiatry, 155*, 812-817.
- Hoff, R.A., & Rosenheck, R.A. (1998). Female veterans use of VA health care services. *Medical Care, 36*, 1114-1119.
- Hoff, R.A., & Rosenheck, R.A. (1998). Long-term patterns of service use and cost among patients with both psychiatric and substance abuse disorders. *Medical Care, 36*, 835-843.
- Hoff, R.A., & Rosenheck, R.A. (1998). The use of VA and non-VA mental health services by female veterans. *Medical*

Hoff, R.A., & Rosenheck, R.A. (1997). Utilization of mental health services by women in a male-dominated environment, the VA experience. *Psychiatric Services, 48*, 1408-1414.

Hoff, R.A., Rosenheck, R.A., Wilson, N., & Meterko, M. (1998). Quality of VA mental health service delivery to male and female veterans. *Administration and Policy in Mental Health, 26*, 214-218.

Humphreys, K., & Rosenheck, R.A. (1998). Treatment involvement and outcomes for four subtypes of homeless veterans. *American Journal of Orthopsychiatry, 68*, 285-294.

Kasprow, W.J., & Rosenheck, R.A. (1998). Substance use and psychiatric problems of homeless Native American veterans. *Psychiatric Services, 49*, 345-350.

Kaufman, J., Birmaher, B., Brent, D., Dahl, R., Bridges, J., & Ryan, N. (1998). Psychopathology in the relatives of depressed-abused children. *Child Abuse and Neglect, 22*, 204-213.

Kaufman, J., Birmaher, B., Clayton, S., & Retano, A. (1997). Trauma related hallucinations in children. *Journal of the American Academy of Child and Adolescent Psychiatry, 36*, 1602-1605.

Kaufman, J., Birmaher, B., Perel, J., Dahl, R., Moreci, P., Nelson, B., Wells, W., & Ryan, N. (1997). The corticotropin releasing hormone challenge in depressed abused, depressed non-abused and normal control children. *Biological Psychiatry, 42*, 669-679.

Keane, T.M. (1998). Treatment research. In E. Gerrity (Ed.), *Proceedings of survivors of torture: Improving our understanding* (pp. 49-52). Washington, DC: National Institute of Mental Health.

King, L.A., & King, D.W. (1998). Sex-Role Egalitarianism Scale. In C. Davis, W.L. Yarber, R. Bauserman, G. Schreer, & S.L. Davis (Eds.), *Handbook of sexuality-related measures* (pp. 211-212). Thousand Oaks, CA: Sage.

King, L.A., King, D.W., Fairbank, J.A., Keane, T.M., & Adams, G.A. (1998). Resilience/recovery factors in posttraumatic stress disorder among female and male Vietnam veterans: Hardiness, postwar social support, and additional stressful life events. *Journal of Personality and Social Psychology, 74*, 420-434.

King, D.W., Leskin, G.A., King, L.A., & Weathers, F.W. (1998). Confirmatory factor analysis of the Clinician-Administered PTSD Scale: Evidence for the dimensionality of posttraumatic stress disorder. *Psychological Assessment, 10*, 90-96.

Kleespies, P.M., Deleppo, J.D., Mori, D.L., & Niles, B.L. (1998). The emergency interview. In P.M. Kleespies (Ed.), *Managing emergencies in mental health* (pp. 41-74). New York: Guilford Press.

Kleespies, P.M., Niles, B.L., Mori, D.L., & Deleppo, J.D. (1998). Emergencies with suicidal patients: The impact on the clinician. In P.M. Kleespies (Ed.), *Managing emergencies in mental health* (pp. 379-397). New York: Guilford Press.

Krystal, J.H., Bremner, J.D., Southwick, S.M., & Charney, D.S. (1998). The emerging neurobiology of dissociation: Implications for the treatment of PTSD. In J.D. Bremner & C. Marmar (Eds.), *Trauma, memory and dissociation* (pp. 321-364). Washington, DC: American Psychiatric Press.

Krystal, J.H., Karper, L.P., Bennett, A., D'Souza, C., Abi-Dargham, A., Morrissey, K., Abi-Saab, D., Bremner, J.D., Bowers, M.B. Jr., Suckow, R.F., Stetson, P., Heninger, G.R., & Charney, D.S. (1998). Interactive effects of subanesthetic ketamine and subhypnotic lorazepam in humans. *Psychopharmacology, 135*, 213-229.

Krystal, J.H., Nagy, L.M., Rasmusson, A., Morgan, A., Cottrol, C., Southwick, S.M., & Charney, D.S. (1998). Initial clinical evidence of genetic contributions to posttraumatic stress disorder. In Y. Danieli (Ed.), *International handbook of multigenerational legacies of trauma* (pp. 657-667). New York: Plenum Press.

Krystal, J.H., Petrakis, I.L., Webb, E., Cooney, N.L., Karper, L.P., Namanworth, S., Stetson, P., Trevisan, L.A., & Charney, D.S. (1998). Dose-related ethanol-like effects of the NMDA antagonist, ketamine, in recently detoxified alcoholics. *Archives of General Psychiatry, 55*, 354-360.

Lam, J., & Rosenheck, R.A. (1998). Effect of victimization on clinical outcomes among homeless persons with serious mental illness. *Psychiatric Services, 49*, 678-683.

Laruelle, M., Gelernter, J., & Innis, R.B. (1998). D2 receptor binding potential is not affected by Taq1 polymorphism at the D2 receptor gene. *Molecular Psychiatry, 3*, 261-265.

- Lee, Y., & Davis, R. (1997). Role of the hippocampus, bed nucleus of the stria terminalis and amygdala in the excitatory effect of corticotropin releasing (CRH) hormone on the acoustic startle reflex. *Journal of Neuroscience*, *17*, 6434-6446.
- Lee, Y., & Davis, R. (1997). Role of the septum in the excitatory effect of corticotropin releasing (CRH) hormone on the acoustic startle reflex. *Journal of Neuroscience*, *17*, 6424-6433.
- Lehman, A.F., Steinwachs, D.M., Dixon, L.B., Goldman, H.H., Osher, F., Scott, J.E., Thompson, J.W., Fahey, M., Fisher, P., Kasper, J.A., Lyles, A., Skinner, E.A., Carpenter, W.T., Levine, J., McGlynn, E.A., Rosenheck, R.A., & Zito, J. (1998). At issue: Translating research into practice: The schizophrenia patient outcomes research team (PORT) treatment recommendations. *Schizophrenia Bulletin*, *24*, 1-10.
- 70, Lipschitz, D.S., Rasmusson, A.M., & Southwick, S.M. (1998). Childhood posttraumatic stress disorder: A review of neurobiologic sequelae. *Psychiatric Annals*, *28*, 452-457.
- Litz, B.T., Schlenger, W.E., Weathers, F.W., Caddell, J.M., Fairbank, J.A., & LaVange, L.M. (1997). Predictors of emotional numbing in post-traumatic stress disorder. *Journal of Traumatic Stress*, *10*, 607-617.
- Macklin, M.L., Metzger, L.J., Litz, B.T., McNally, R.J., Lasko, N.B., Orr, S.P., & Pitman, R.K. (1998). Lower pre-combat intelligence is a risk factor for posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology*, *66*, 323-326.
- Mann, J.J., Malone, K.M., Nielsen, D.A., Goldman, D., Erdos, J., & Gelernter, J. (1997). Possible association of a polymorphism of the tryptophan hydroxylase gene with suicidal behavior in depressed patients. *American Journal of Psychiatry*, *154*, 1451-1453.
- Mayes, C.M., Grillon, C., Granter, R., & Schottenfeld, R. (1998). Regulation of arousal and attention in preschool children exposed to cocaine prenatally. *Annals of the New York Academy of Sciences*, *846*, 126-143.
- McMackin, R., Morrissey, C., Newman, E., Erwin, B., & Daley, M. (1998). Perpetrator and victim: Understanding and managing the traumatized young offender. *Corrections Management Quarterly*, *2*, 36-45.
- McNish, K.A., Gewirtz, J.C., & Davis, M. (1997). Evidence of contextual fear conditioning following lesions of the hippocampus: A disruption of freezing but not fear-potentiated startle. *Journal of Neuroscience*, *17*, 9353-9360.
- McNish, K.A., Gewirtz, J.C., & Davis, M. (1998). Reply to "The startled seahorse: Is the hippocampus necessary for contextual fear conditioning?" *Trends in Cognitive Sciences*, *2*, 42-43.
- Morgan, C.A., & Grillon, C. (1998). Acoustic startle in individuals with posttraumatic stress disorder. *Psychiatric Annals*, *28*, 430-434.
- Morgan, C.A., Kingham, P., Nicolaou, A., & Southwick, S.M. (1998). Anniversary reactions in veterans of Operation Desert Storm: A naturalistic inquiry 2 years after the Gulf War. *Journal of Traumatic Stress*, *11*, 165-171.
- New, A.S., Gelernter, J., Yovell, Y., Trestman, R.L., Nielsen, D.A., Silverman, J., Mitropoulou, V., & Siever, L.J. (1998). Tryptophan hydroxylase genotype is associated with impulsive-aggression measures: A preliminary study. *American Journal of Medical Genetics*, *81*, 13-17.
- Pelton, G.H., Lee, Y., & Davis, M. (1997). Repeated stress, like vasopressin, sensitizes the excitatory effects of corticotropin releasing factor on the acoustic startle reflex. *Brain Research*, *778*, 381-387.
- Putnam, F.W., & Carlson, E.B. (1998). Hypnosis, dissociation and trauma: Myths, metaphors, and mechanisms. In J.D. Bremner & C. Marmar (Eds.), *Trauma, memory, and dissociation* (pp. 29-60). Washington, DC: American Psychiatric Press.
- Rasmusson, A.M., Southwick, S.M., Hauger, R.L., & Charney, D.S. (1998). Plasma neuropeptide Y (NPY) increases in humans in response to the α_2 antagonist yohimbine. *Neuropsychopharmacology*, *19*, 95-98.
- Riggs, D.S., Byrne, C.A., Weathers, F.W., & Litz, B.T. (1998). The quality of the intimate relationships of male Vietnam veterans: Problems associated with posttraumatic stress disorder. *Journal of Traumatic Stress*, *11*, 87-102.
- Roemer, L., Litz, B.T., & Orsillo, S.M. (1997). Consistency of traumatic memories [Letter to the editor]. *American Journal of Psychiatry*, *154*, 1628.
- Roemer, L., Litz, B.T., Orsillo, S.M., Ehlich, P., & Friedman, M.J. (1998). Increases in retrospective accounts of war-

zone exposure over time: The role of PTSD symptom severity. *Journal of Traumatic Stress, 11*, 597-607.

Roemer, L., Orsillo, S.M., Borkovec, T.D., & Litz, B.T. (1998). The relationship between reports of emotional response at the time of a potentially traumatizing event and PTSD symptomatology: A preliminary retrospective analysis of the DSM-IV Criterion A-2. *Journal of Behavior Therapy and Experimental Psychiatry, 29*, 123-130.

Rosenheck, R.A., Armstrong, M., Callahan, D., Dea, R., Del Vecchio, P., Flynn, L., Fox, R.C., Goldman, H.H., Horvath, T., & Munoz, R. (1998). The obligation to the least well off in setting mental health service priorities. *Psychiatric Services, 49*, 1273-1274.

Rosenheck, R.A., & Cicchetti, D. (1998). A mental health program report card: A multidimensional approach to performance monitoring in public sector programs. *Community Mental Health Journal, 34*, 85-106.

Rosenheck, R.A., Cramer, J., Xu, W., Grabowski, J., Douyon, R., Thomas, J., Henderson, W., & Charney, D.S. (1998). Multiple outcome assessment in a study of the cost-effectiveness of clozapine in the treatment of refractory schizophrenia. *Health Services Research, 33*, 1235-1259.

Rosenheck, R.A., & Fontana, A.F. (1998). Transgenerational effects of abusive violence on the children of Vietnam combat veterans. *Journal of Traumatic Stress, 11*, 731-742.

Rosenheck, R.A., & Fontana, A.F. (1998). Warrior fathers and warrior sons: Intergenerational aspects of trauma. In Y. Danieli (Ed.), *Multigenerational legacies of trauma* (pp. 225-242). New York: Plenum Press.

Rosenheck, R., Harkness, L., Johnson, B., Sweeney, C., Buck, N., Deegan, D., & Kosten, T. (1998). Intensive community-focused treatment of dually diagnosed veterans. *American Journal of Psychiatry, 155*, 1429-1433.

Rosenheck, R., & Horvath, T. (1998). Impact of VA reorganization on patterns of mental health care. *Psychiatric Services, 49*, 56.

Rosenheck, R.A., & Kizer, K.W. (1998) Hospitalizations and the homeless (letter to the editor). *New England Journal of Medicine, 339*, 1166.

Rosenheck, R.A., & Lam, J. (1997). Individual and community-level variation in intensity and diversity of service utilization by homeless persons with serious mental illness. *Journal of Nervous and Mental Disease, 185*, 633-638.

Rosenheck, R., Lawson, W., Crayton, J., Cramer, J., Xu, W., Thomas, J., & Charney, D. (1998). Predictors of differential response to clozapine and haloperidol. *Biological Psychiatry, 44*, 475-482.

Rosenheck, R.A., Leda, C., Frisman, L.K., & Gallup, P. (1997). Homeless mentally ill veterans: Race, service use and treatment outcome. *American Journal of Orthopsychiatry, 67*, 632-639.

Rosenheck, R.A., Morrissey, J., Lam, J., Calloway, M., Johnsen, M., Goldman, H.H., Calsyn, R., Teague, G., Randolph, F., Blasinsky, M., & Fontana, A. (1998). Service system integration: Access to services and housing outcomes in a program for homeless persons with severe mental illness. *American Journal of Public Health, 88*, 1610-1615.

Rosenheck, R.A., & Neale, M.S. (1998). Cost-effectiveness of intensive psychiatric community care for high users of inpatient services. *Archives of General Psychiatry, 55*, 459-466.

Rosenheck, R.A., & Neale, M.S. (1998). Inter-site variation in the impact of intensive psychiatric community care on hospital use. *American Journal of Orthopsychiatry, 68*, 191-200.

Rosenheck, R.A., & Seibyl, C.L. (1998). Costs of homelessness: Health service use and cost. *Medical Care, 36*, 1256-1264.

Rosenheck, R.A., & Seibyl, C.L. (1998). The experience of black and white veterans in a residential treatment and work therapy program for substance abuse. *American Journal of Psychiatry, 155*, 1029-1034.

Rosenheck, R.A., & Stolar, M. (1998). Access to public mental health services: Determinants of population coverage. *Medical Care, 36*, 503-512.

Rosenheck, R., Tekall, J., Peters, J., Cramer, J., Fontana, A., Xu, W., Thomas, J., Henderson, W., & Charney, D. (1998). Does participation in psychosocial treatment augment the benefit of clozapine? *Archives of General Psychiatry, 55*, 618-625.

Rosenheck, R.A., Wilson, N., & Meterko, M. (1997). Influence of patient and hospital factors on consumer satisfaction with inpatient mental health treatment. *Psychiatric Services, 48*, 1553-1561.

- Roth, S., & Friedman, M.J. (1998). Childhood trauma remembered: A report on the current scientific knowledge base and its applications. *Journal of Child Sexual Abuse, 7*, 83-109.
- Roth, S., & Friedman, M.J. (1998). *Childhood Trauma Remembered: A Report on the Current Scientific Knowledge Base and its Applications*. Northbrook, IL: ISTSS.
- Schnurr, P.P. (1998). Statistical review: An approach to common methodological and statistical problems. *Journal of Traumatic Stress, 11*, 405-412.
- Schnurr, P.P. & Friedman, M.J. (1997). An overview of research on the nature of posttraumatic stress disorder. *In Session: Psychotherapy in Practice, 3*(4), 11-25.
- Schnurr, P.P., Spiro, A., III, Aldwin, C.M., & Stukel, T.A. (1998). Physical symptom trajectories following trauma exposure: Longitudinal findings from the Normative Aging Study. *Journal of Nervous and Mental Disease, 186*, 522-528.
- Sharkansky, E.J., & Finn, P.R. (1998). Effects of outcome expectancies and disinhibition on ad lib alcohol consumption. *Journal of Studies on Alcohol, 59*, 198-206.
- Soufer, R., Bremner, J.D., Arrighi, J.A., Cohen, I., Zaret, B.L., Burg, M.M., & Goldman-Radic, P. (1998). Cerebral cortical hyperactivation in response to mental stress in patients with coronary artery disease. *P.N.A.S., 95*, 6454-6459.
- Southwick, S.M., Yehuda, R., & Wang, S. (1998). Neuroendocrine alterations in posttraumatic stress disorder. *Psychiatric Annals, 28*, 436-442.
- Steiner, J.L., Hoff, R.A., Moffet, C., Reynolds, H., Mitchell, M., & Rosenheck, R.A. (1998). Preventive health care for mentally ill women: A pilot study. *Psychiatric Services, 49*, 696-698.
- Uzunova, V., Sheline, Y., Davis, J., Rasmusson, A., Uzunova, D., Costa, E., & Guidotti, A. (1998). Increase in the cerebrospinal fluid content of neuro-steroids in patients with unipolar major depression who are receiving fluoxetine or fluvoxamine. *Proceedings of the National Academy of Science, 95*, 3239-3244.
- Verma, A., & Moghaddam, B. (1998). Regulation of striatal dopamine release by metabotropic glutamate receptors. *Synapse, 28*, 220-226.
- Vermetten, E., Bremner, J.D., & Spiegel, D. (1998). Dissociation and hypnotic susceptibility: Similarities and differences. In J.D. Bremner & C. Marmar (Eds.), *Trauma, memory and dissociation* (pp.107-160). Washington, DC: American Psychiatric Press.
- Walker, D.L., Cassella, J.V., Lee, Y., deLima, T.C.M., & Davis, M. (1997). Opposing roles of the amygdala and dorsolateral periaqueductal gray in fear-potentiated startle. *Neuroscience and Biobehavioral Reviews, 21*, 743-753.
- Walker, D.L., & Davis, M. (1997). Double dissociation between the involvement of the bed nucleus of the stria terminalis and the central nucleus of the amygdala in light-enhanced versus fear-potentiated startle. *Journal of Neuroscience, 17*, 9375-9383.
- Wang, S. (1997). Traumatic stress and attachment. *Acta Physiologica Scandinavica, 161*(Suppl 640), 164-169.
- Weine, S.M., Becker, D.F., Vojvoda, D., Hodzic, E., Sawyer, M., Hyman, L., Laub, D., & McGlashan, T.H. (1998). Individual change after genocide in Bosnian survivors of "ethnic cleansing": Assessing personality dysfunction. *Journal of Traumatic Stress, 11*, 147-153.
- Weine, S.M., Vojvoda, D., Becker, D.F., McGlashan, T.H., Hodzic, E., Laub, D., Hyman, L., Sawyer, M., & Lazrove, S. (1998). PTSD symptoms in Bosnian refugees 1 year after resettlement in the United States. *American Journal of Psychiatry, 155*, 562-564.
- Wolfe, J., Proctor, S., Davis, J.D., Sullivan, M., & Friedman, M. (1998). Health symptoms reported by Gulf War veterans two years after return. *American Journal of Industrial Medicine, 33*, 104-113.
- Wolfe, J., Sharkansky, E.J., Read, J., Dawson, R., Martin, J., & Ouimette, P.C. (1998). Sexual harassment and assault as predictors of PTSD symptomatology among U.S. female Persian Gulf War personnel. *Journal of Interpersonal Violence, 13*, 40-57.
- Young, B.H., Ford, J.D., Ruzek, J.I., Friedman, M., & Gusman, F.D. (1998). *Disaster mental health services: A guide*

for clinicians and administrators. Department of Veterans Affairs Employee Education System, National Media Center: St. Louis, MO.

IN PRESS Publications by National Center Staff

Abi-Dargham, A., Krystal, J.H., Anjivel, S., Scanley, E., Zoghbi, S., Baldwin, R.M., Rajeevan, N., Seibyl, J., Charney, D.S., Laruelle, M., & Innis, R.B. Alterations of benzodiazepine receptors in type II alcoholics measured with SPECT and ^{123}I iomazenil. *American Journal of Psychiatry*.

Alvaro, J.D., & Duman, R.S. Chronic cocaine administration up-regulated MC4-R expression and function in brain. *Journal of Neuroscience*.

Blake, D.D., & Weathers, F.W. The assessment and diagnosis of post-traumatic stress disorder. In D.J. Miller (Ed.), *Handbook of post-traumatic stress disorders*. New York: Plenum Press.

Bremner, J.D. Does stress damage the brain? *Biological Psychiatry*.

Bremner, J.D., Bronen, R.A., de Erasquin, G., Vermetten, E., Staib, L., Ng, C.K., Soufer, R., Charney, D.S., & Innis, R.B. Development and reliability of a method for using magnetic resonance imaging for the definition of regions of interest for positron emission tomography. *Clinical Positron Imaging*.

Bremner, J.D., Innis, R.B., White, T., Fujita, M., Silbersweig, D., Goddard, A., Staib, L.H., Stern, E., Capiello, A., Woods, S., Baldwin, R., & Charney, D.S. SPECT [^{123}I]iomazenil measurement of the benzodiazepine receptor in panic disorder. *Biological Psychiatry*.

Bremner, J.D., & Narayan, M. The effects of stress on memory and the hippocampus throughout the life cycle: Implications for childhood development and aging. *Development & Psychopathology*.

Bremner, J.D., Staib, L., Kaloupek, D., Southwick, S.M., Soufer, R., & Charney, D.S. Positron emission tomographic (PET)-based measurement of cerebral blood flow correlates of traumatic reminders in Vietnam combat veterans with and without posttraumatic stress disorder (PTSD). *Biological Psychiatry*.

Carlson, J.G., & Chemtob, C.M. Cognitive-behavioral theory, research, and treatment of disorders due to stressful trauma. In D.T. Kenny, J.G. Carlson, F.J. McGuigan, & J.L. Sheppard (Eds.), *Stress and health: Research and clinical applications*. New York: Academic Press.

Charney, D.S., Nagy, L.M., Bremner, J.D., Goddard, A.W., Yehuda, R., & Southwick, S.M. Neurobiological mechanisms of human anxiety. In B.S. Fogel, R.B. Schiffer, & S.M. Rao (Eds.), *Neuropsychiatry: A comprehensive textbook*. Baltimore: Williams & Wilkins.

Chemtob, C.M. Delayed uses of debriefing interventions after disaster. In B. Raphael & J. Wilson (Eds.), *Stress debriefing: Theory, practice, and challenge*. London: Cambridge University Press.

Chen, J., Kelz, M.B., Zeng, G., Steffen, C., Shockett, P.D., Picciotto, M., Lazova, R., Duman, R.S., & Nestler, E.J. Transgenic animal models for inducible, targeted gene expression in brain. *Molecular Pharmacology*.

Corcoran, C.B., Green, B.L., Goodman, L.A., & Krinsley, K.E. The complex task of assessing trauma history: Data from two instrument development studies. In A. Shalev, R. Yehuda, & A. McFarlane (Eds.), *International handbook of human responses to trauma*. New York: Plenum Press.

Cramer, J., & Rosenheck, R.A. Enhancing medication compliance for people with serious mental illness. *Journal of Nervous and Mental Disease*.

Dalenberg, C., & Carlson, E. Ethical issues in the treatment of recovered memory trauma victims and patients with false memories of trauma. In S. Bucky (Ed.), *The comprehensive textbook of ethics and law in the practice of psychology*. New York: Plenum Press.

Davis, M. Neural circuits of anxiety and fear. In D.S. Charney, E.J. Nestler, & B.J. Bunney (Eds.), *Neurobiological foundation of mental illness*. New York: Oxford University Press.

Davis, M., & Lee, Y. Neurophysiology and neuropharmacology of startle and its affective modification. In M. Dawson, A. Schell, & A. Bohmelt (Eds.), *Startle modification: Implication for neuroscience, cognitive science, and clinical science*. London: Cambridge University Press.

- Druss, B.G., & Rosenheck, R.A. Health care costs of mental disorders in a national sample. *Psychiatric Services*.
- Druss, B.G., & Rosenheck, R.A. Mental disorders and access to health care in the US. *American Journal of Psychiatry*.
- Druss, B.G., Rosenheck, R.A., & Rohrbaugh, R.M. Depressive symptomatology and health care costs in older medical patients. *American Journal of Psychiatry*.
- Duman, R.S. Early gene responses. In S.J. Enna & M. Williams (Eds.), *Current protocols in pharmacology*. New York: John Wiley & Sons.
- Duman, R.S. Novel therapeutic approaches beyond the 5-HT receptor. *Biological Psychiatry*.
- Duman, R.S., & Nestler, E.J. Cyclic nucleotides in the nervous system. In G.J. Siegel, B.W. Agranoff, R.W. Albers, & P.B. Mollnoff (Eds.), *Basic neurochemistry*. New York: Raven Press.
- Duman, R.S., Nibuya, M., & Vaidya, V. A role for CREB in the action of antidepressant treatments. In P. Skonick (Ed.), *Current trends and future directions in antidepressant therapy*. Totowa: The Humana Press.
- Eisen, M., & Carlson, E. Individual differences in suggestibility: Examining the influence of dissociation, absorption, and a history of childhood abuse. *Applied Cognitive Psychology*.
- Elsworth, J.D., Brittan, M.S., Taylor, J.R., Sladek, J.R., Redmond, D.E., Innis, R.B., Zea-Ponce, Y., & Roth, R.H. Upregulation of striatal D2 receptors in the MPTP-treated vervet monkey is reversed by grafts of fetal ventral mesencephalon: An autoradiographic study. *Brain Research*.
- Fairbank, J., Friedman, M.J., & Basoglu, M. Psychosocial models. In T.M. Keane, E. Gerrity, & F. Tuma (Eds.), *Mental health consequences of torture and related violence and trauma*. New York: Guilford Press.
- Fairbank, J., Friedman, M.J., & Southwick, S.M. Veterans of armed conflicts. In T.M. Keane, E. Gerrity, & F. Tuma (Eds.), *Mental health consequences of torture and related violence and trauma*. New York: Guilford Press.
- Flack, W.F., & Keane, T.M. Post-traumatic stress disorder in adults. In G.P. Koocher, J.C. Norcross, & S.S. Hill, III (Eds.), *DR: The psychologist's desk reference*. New York: Oxford University Press.
- Flack, W.F., & Laird, J.D. (Eds.). *Emotions in psychopathology: Theory and research*. New York: Oxford University Press.
- Flack, W.F., Laird, J.D., & Cavallaro, L.A. Emotional expression and feeling in schizophrenia: Effects of expressive behavior on emotional experience. *Journal of Clinical Psychology*.
- Flack, W.F., Laird, J.D., Cavallaro, L.A., & Miller, D.R. Emotional expression and experience: A psychosocial perspective on schizophrenia. In W.F. Flack, Jr. & J.D. Laird (Eds.), *Emotions in psychopathology: Theory and research*. New York: Oxford University Press.
- Flack, W.F., Litz, B.T., & Keane, T.M. Cognitive-behavioral treatment of combat-related PTSD. In V.M. Follette, J.I. Ruzek, & F.R. Abueg (Eds.), *Trauma in context: A cognitive-behavioral approach*. New York: Guilford Press.
- Foa, E.B., Keane, T.M., & Friedman, M.J. *Treatment of post-traumatic stress disorder: Critical reviews and treatment guidelines*. New York: Guilford Press.
- Follette, V.M., Ruzek, J.I., & Abueg, F.R. A contextual analysis of trauma: Assessment and treatment. In V.M. Follette, J.I. Ruzek, & F.R. Abueg (Eds.), *Cognitive-behavioral therapies for trauma*. New York: Guilford Press.
- Follette, V.M., Ruzek, J.I., & Abueg, F.R. *Cognitive-behavioral therapies for trauma*. New York: Guilford Press.
- Fontana, A.F., & Rosenheck, R.A. A model of war zone stressors and posttraumatic stress disorder. *Journal of Traumatic Stress*.
- Fontana, A., & Rosenheck, R. The role of war-zone trauma and PTSD in the etiology of antisocial behavior. In D.J. Miller (Ed.), *Handbook of post-traumatic stress disorders*.
- Ford, J.D. PTSD and disorders of extreme stress following warzone military trauma: Comorbid but distinct syndromes? *Journal of Consulting and Clinical Psychology*.
- Ford, J.D., & Kidd, P. Early childhood trauma and disorders of extreme stress as predictors of treatment outcome with chronic PTSD. *Journal of Traumatic Stress*.

- Ford, J.D., & Stewart, J. (1998). Group psychotherapy for war-related PTSD with military veterans. In B. Young & D. Blake (Eds.), *Approaches to group psychotherapy with PTSD*. San Francisco: Taylor & Francis.
- Foy, D.W., Schnurr, P.P., Weiss, D.S., Wattenberg, M.S., Glynn, S.M., Marmar, C.R., & Gusman, F.D. Group psychotherapy for posttraumatic stress disorder. In J.P. Wilson, M.J. Friedman, & J. Lindy (Eds.), *Core approaches for the treatment of PTSD*. New York: Guilford Press.
- Friedman, M.J. Comments and reflections on risk factors for PTSD. In R. Yehuda & A.C. McFarlane (Eds.), *Risk factors for posttraumatic stress disorder*. Washington, DC: American Psychiatric Association (Progress in Psychiatry Series).
- Friedman, M.J. (Guest Editor). Progress in psychobiological research on PTSD. *Seminars in Clinical Neuropsychiatry*.
- Friedman, M.J. Pharmacotherapy for posttraumatic stress disorder: A status report. *Psychiatry and Clinical Neurosciences*.
- Friedman, M.J. Post-traumatic stress disorder. In W. Carpenter, A. Deutch, J. Greden, M. Linoilla, S. Paula, M. Thase, & S. Watson (Eds.), *ACNP fourth generation of progress*. Philadelphia, PA: Lippincott-Raven.
- Friedman, M.J. PTSD in victims of violent crimes. In K. Tardiff (Ed.), *Violence: Causes & medical management*. New York: Marcel Dekker.
- Friedman, M.J., Davidson, J.R.T., Mellman, T.A., & Southwick, S.M. Practice guidelines for pharmacotherapy of PTSD. In E.B. Foa, T.M. Keane, & M.J. Friedman (Eds.), *Practice guidelines for the treatment of post-traumatic stress disorder*. New York: Guilford Press.
- Gelernter, J., Kranzler, H., & Satel, S. No association between D₂ dopamine receptor (DRD2) alleles or haplotypes and cocaine dependence or severity of cocaine dependence in European and African Americans. *Biological Psychiatry*.
- Gelernter, J., Southwick, S., Goodson, S., Morgan, A., Nagy, L., & Charney, D.S. No association between D₂ dopamine receptor (DRD2) "A" system alleles, or DRD2 haplotypes, and posttraumatic stress disorder (PTSD). *Biological Psychiatry*.
- Gewirtz, J.C., & Davis, M. Application of Pavlovian higher-order conditioning to the analysis of the neural substrates of learning and memory. *Neuropharmacology*.
- Grillon, C. Effects of threat and safety signals on startle during anticipation of aversive shocks, sounds, and airblasts. *Journal of Psychophysiology*.
- Grillon, C., & Morgan, C.A. Fear-potentiated startle conditioning to explicit and contextual cues in Gulf War veterans with posttraumatic stress disorder. *Journal of Abnormal Psychology*.
- Grillon, C., Morgan, C.A., Davis, M., & Southwick, S.M. Effects of experimental context and explicit threat cues on acoustic startle in Vietnam veterans with posttraumatic stress disorder. *Biological Psychiatry*.
- Henry, J.P., & Wang, S. Effects of early stress on adult affiliative behavior. *Psychoneuroendocrinology*.
- Hiroi, N., Brown, J.R., Ye, H., Saudou, F., Vaidya, V.A., Duman, R.S., Greenburg, M.E., & Nestler, E.J. Essential role of the FosB gene in chronic actions of electroconvulsive seizures. *Journal of Neuroscience*.
- Jaranson, J., Kinzie, D., Friedman, M.J., Ortiz, S.D., Friedman, M.J., Southwick, S.M., Kastrup, M., & Mollica, R. Assessment, diagnosis and treatment. In T.M. Keane, E. Gerrity, & F. Tuma (Eds.), *Mental health consequences of torture and related violence and trauma*. New York: Guilford Press.
- Johnson, D.R., Lubin, H., Rosenheck, R.A., Fontana, A., Southwick, S., & Charney, D.S. Comparison of outcome between homogeneous and heterogeneous treatment environments in combat-related PTSD. *Journal of Nervous and Mental Disease*.
- Kasprow, W., Rosenheck, R.A., & Frisman, L.K. Homeless veterans' satisfaction with residential treatment. *Psychiatric Services*.
- Kasprow, W.J., Rosenheck, R., Frisman, L., & DiLella, D. Residential treatment of dually diagnosed homeless veterans: A comparison of program types. *American Journal of Addictions*.
- Kaufman, J., Birmaher, B., Perel, J., Dahl, R., Stull, S., Brent, D., Trubnick, L., & Ryan, N. Serotonergic functioning in depressed abused children: Clinical and familial correlates. *Biological Psychiatry*.

- Kaufman, J., & Henrich, C. Exposure to violence and early childhood trauma. In C. Zeanah (Ed.), *Handbook of infant development*. New York: Guilford Press.
- Keane, T.M. Psychological effects of military combat. In B. Dohrenwend (Ed.), *Adversity, stress and psychopathology*. Washington, DC: American Psychiatric Press.
- Keane, T.M., Kolb, L.C., Kaloupek, D.G., Orr, S.P., Blanchard, E.B., Thomas, R.G., Hsieh, F.Y., & Lavori, P.W. Utility of psychophysiological measurement in the diagnosis of post-traumatic stress disorder: Results from a Department of Veterans Affairs cooperative study. *Journal of Consulting and Clinical Psychology*.
- Kendall, P.C., Flannery-Schroeder, E.C., & Ford, J.D. Therapy outcome research methods. In P. Kendall, J. Butcher, & R. Holmbeck (Eds.), *Handbook of research methods in clinical psychology* (2nd Ed.). New York: John Wiley & Sons.
- Kennan, R.P., Scanley B.E., Innis, R.B., & Gore, J.C. Physiological basis for BOLD MR signal changes due to neuronal stimulation: Separation of blood volume and magnetic susceptibility effects. *Magnetic Resonance Medicine*.
- Kimble, M.O., Riggs, D.S., & Keane, T.M. Cognitive-behavioral treatment for complicated cases of post-traumatic stress disorder. In N. Tarrier, A. Wells, & J. Haddock (Eds.), *Cognitive-behavioral therapy for complex cases: An advanced guidebook for the practitioner*. Sussex, England: John Wiley & Sons.
- King, D.W., King, L.A., Foy, D.W., Keane, T.M., & Fairbank, J.A. Posttraumatic stress disorder in a national sample of female and male Vietnam veterans: Risk factors, war-zone stressors, and resilience-recovery variables. *Journal of Abnormal Psychology*.
- King, L.A., & King, D.W. Sex-Role Egalitarianism Scale – BB & Sex-Role Egalitarianism Scale—KK. [CD-ROM]. [ONLINE]. *Abstracts from Knowledge Access, Ovid Technologies. Health and Psychosocial Instruments*.
- King, L.A., Mattimore, L.K., King, D.W., & Adams, G.A. Family Support Inventory for Workers (FSIW). In J. Touliatos, B.F. Perlmutter, & G.W. Holden (Eds.), *Handbook of family measurement techniques*. Thousand Oaks, CA: Sage.
- Kubany, E.S. Cognitive therapy for trauma-related guilt. In V.M. Follette, J.I. Ruzek, & F.R. Abueg (Eds.), *Cognitive-behavioral therapies for trauma*. New York: Guilford Press.
- Lam, J., & Rosenheck, R. Social support and service use among homeless persons with serious mental illness. *International Journal of Social Psychiatry*.
- Leskin, G.A., Kaloupek, D.G., & Keane, T.M. Treatment for traumatic memories: Review and recommendations. *Clinical Psychology Review*.
- Li, Z., Vaidya, V.A., Alvaro, J.D., Hsu, R., Hoffman, G., Fitzgerald, L.R., Curran, P.K., Machida, C.A., Fishman, P.H., & Duman, R.S. Phorbol ester-mediated down-regulation of α_1 -adrenergic receptor gene expression in C6 glioma cells. *Journal of Biological Chemistry*.
- Lipschitz, D.S., Winegar, R., Nicolaou, A., Hartnick, E, Wolfson, M.A., & Southwick, S.M. Abuse and neglect as risk factors for suicidal behavior in adolescents. *Journal of Nervous and Mental Disease*.
- Malison, R.T., Price, L.H., Berman, R., Pelton, G.H., Carpenter, L., Sanacora, G., Owens, M., Nemeroff, C.B., Rajeevan, N., Baldwin, R.M., Seibyl, J.P., Innis, R.B., & Charney, D.S. Reduced brain serotonin transporter availability in major depression as measured by [¹²³I]MPP -CIT. *Biological Psychiatry*.
- Meloni, E.G., & Davis, M. The dorsal cochlear nucleus contributes to a high intensity component of acoustically elicited startle but is not involved in background noise facilitation, habituation, prepulse inhibition or facilitation or fear potentiated startle in rats. *Hearing Research*.
- Moghaddam, B., & Adams, B.W. Reversal of phencyclidine effects by a group II metabotropic glutamate receptor agonist in rats. *Science*.
- Morgan, C.A., & Grillon, C. Deviant mismatch negativity of the ERPs women with sexual assault related PTSD. *Biological Psychiatry*.
- Morrow, B.A., Elsworth, J.D., Rasmusson, A.M., & Roth, R.H. The role of mesocortical dopamine neurons in the acquisition and expression of conditioned fear in the rat. *Neuroscience*.
- Nestler, E.J., Duman, R.S. G proteins. In G.J. Siegel, B.W. Agranoff, R.W. Albers & P.B. Mollnoff (Eds.), *Basic*

neurochemistry. New York: Raven Press.

Newton, T.L., Bane, C.M., Flores, A., & Greenfield, J. Dominance, gender, and cardiovascular reactivity during social interaction. *Psychophysiology*.

Niles, B.L., Newman, E., & Fisher, L. Obstacles to assessment of PTSD in longitudinal research. In A. Shalev, R. Yehuda, & A.C. McFarlane (Eds.), *International handbook of human response to trauma*. New York: Plenum Press.

Niles, B.L., Newman, E., Fisher, L., Erwin, B., Kaloupek, D.G., & Keane, T.M. Stability and fluctuation of veterans' reports of combat exposure. In L. Williams & V. Banyard (Eds.), *Trauma and memory*. Beverly Hills, CA: Sage.

Novaco, R.W., & Chemtob, C.M. Anger and trauma: Conceptualization, assessment, and treatment. In V.M. Follette, J.I. Ruzek, & F.R. Abueg (Eds.), *Cognitive-behavioral therapies for trauma*. New York: Guilford Press.

Orsillo, S.M., Roemer, L., Litz, B.T., Ehlich, P., & Friedman, M.J. Psychiatric symptomatology associated with contemporary peacekeeping: An examination of post-mission functioning among peacekeepers in Somalia. *Journal of Traumatic Stress*.

Ouimette, P.C., & Riggs, D.S. Testing a model of sexually aggressive behavior in nonincarcerated perpetrators. *Violence and Victims*.

Prigerson, H.G., Shear, M.K., Jacobs, S.C., Reynolds, C.F., Maciejewski, P.K., Rosenheck, R., Davidson, J.R.T., Pilkonis, P.A., Wortman, C.B., Williams, J.B.W., Widiger, T.A., Weiss, R., Beery, L.C., Rynearson, E.K., Frank, E., Kupfer, D., & Zisook, S. Consensus criteria for traumatic grief: A rationale and preliminary empirical test. *British Journal of Psychiatry*.

Proctor, S.P., Heeren, T., White, R.F., Wolfe, J., Borgos, M.S., Davis, J.D., Pepper, L., Clapp, R., Sutker, P.B., Vasterling, J.J., & Ozonoff, D. Health status of Persian Gulf War veterans: Study design, self-reported symptoms and environmental exposures. *International Journal of Epidemiology*.

Rajeevan, N., Zupal, I.G., Ramsby, S.Q., Zoghbi, S.S., Seibyl, J.P., & Innis, R.B. Significance of nonuniform attenuation correction in quantitative brain SPECT imaging. *Journal of Nuclear Medicine*.

Rasmusson, A.M., & Charney, D.S. Peptidergic modulation of anxiety: A role for peptide ligands in the treatment of anxiety disorders? In U. Halbreich (Ed.), *Hormonal modulation of brain and behavior*. Washington, DC: American Psychiatric Press.

Roemer, L., Molina, S., Litz, B.T., & Borkovec, T.D. A preliminary investigation of the role of potentially traumatizing events in the development of generalized anxiety disorder. *Anxiety*.

Rosen, M.I., & Rosenheck, R.A. Substance use and the assignment of representative payees. *Psychiatric Services*.

Rosenheck, R., Dunn, L., Peszke, M., Cramer, J., Xu, W., Thomas, J., & Charney, D. Impact of clozapine on negative symptoms and on the deficit syndrome in refractory schizophrenia. *American Journal of Psychiatry*.

Rosenheck, R.A., Evans, D., Herz, L., Cramer, J.A., Xu, W., Thomas, J., Henderson, W., & Charney, D. How long to wait for a response to clozapine: A comparison of time course of response to clozapine and conventional antipsychotic medication in refractory schizophrenia. *Schizophrenia Bulletin*.

Rosenheck, R.A., Fontana, A., & Stolar, M. Assessing quality of care: Administrative indicators and clinical outcome measures. *Medical Care*.

Rosenheck, R.A., Frisman, L.K., & Kasprov, W. Improving access to disability benefits among homeless persons with mental illness: An agency-specific approach to services integration. *American Journal of Public Health*.

Rosenheck, R., Harkness, L., Johnson, B., Sweeney, C., Buck, N., Deegan, D., & Kosten, T. Intensive community-focused treatment of dually diagnosed veterans. *American Journal of Psychiatry*.

Ruzek, J.I., Polusny, M.A., & Abueg, F.R. Cognitive-behavioral treatment of comorbid PTSD and substance abuse. In V.M. Follette, J.I. Ruzek, & F.R. Abueg (Eds.), *Cognitive-behavioral therapies for trauma*. New York: Guilford Press.

Saigh, P., & Bremner, J.D. *Posttraumatic stress disorder: A comprehensive text*. New York: Allyn & Bacon.

Saxe, G.N., & Wolfe, J. Gender and PTSD. In P.A. Saigh & J.D. Bremner (Eds.), *Posttraumatic stress disorder: A comprehensive approach to research and treatment*. Boston, MA: Allyn & Bacon.

- Schnurr, P.P., & Spiro, A., III. Combat exposure, PTSD, and health behaviors as predictors of self-reported physical health in older military veterans. *Journal of Nervous and Mental Disease*.
- Schnurr, P.P., & Vielhauer, M. Personality as a risk factor in the development of PTSD. In R. Yehuda (Ed.), *Risk factors for PTSD*. Washington, DC: American Psychiatric Association.
- Sheikh, J.I., & Swales, P.J. Somatization in young versus old female panic disorder patients. *International Journal of Psychiatry*.
- Sheikh, J.I., & Swales, P.J. Treatment of panic disorder in older adults: A pilot study comparison of alprazolam, imipramine, and placebo. *International Journal of Psychiatry in Medicine*.
- Southwick, S., & Friedman, M.J. Neurobiological models of posttraumatic stress disorder. In T.M. Keane, E. Gerrity, & F. Tuma (Eds.), *Mental health consequences of torture and related violence and trauma*. New York: Guilford Press.
- Spitzer, C., Freyberger, H.J., Stieglitz, R.D., Carlson, E.B., Kuhn, G., Magdeburg, N., & Kessler, C. Adaptation and psychometric properties of the German version of the Dissociative Experiences Scale. *Journal of Traumatic Stress*.
- Stamm, B.H. Empirical perspectives on contextualizing death and trauma. In C.R. Figley (Ed.), *Traumatology of grieving*. London: Taylor & Francis.
- Stamm, B.H. Measuring compassion satisfaction as well as fatigue: Developmental history of the Compassion Fatigue and Satisfaction Test. In C.R. Figley (Ed.), *Treating compassion fatigue*. London: Taylor & Francis.
- Stamm, B.H. Theoretical perspectives on contextualizing death and trauma. In C.R. Figley (Ed.), *Traumatology of grieving*. London: Taylor & Francis.
- Stamm, B.H., & Friedman, M.J. Transcultural aspects of PTSD. In A.Y. Shalev, R. Yehuda, & A.C. McFarlane (Eds.), *International handbook of human response to trauma*. New York: Plenum Press.
- Stamm, B.H., & Rudolph, J.M. Changing frontiers of health care: Improving rural and remote practice through professional conferencing on the Internet. *Journal of Rural Community Psychology*.
- Stamm, B.H., & Stamm, H.E. Ethnocultural aspects of trauma and loss in native North America. In K. Nader, N. Dubrow, & B.H. Stamm (Eds.), *Cultural issues in the treatment of trauma & loss: Honoring differences*. Philadelphia: Brunner/Mazel.
- Streigel-Moore, R.H., Garvin, V., Dohm, F., & Rosenheck, R.A. Eating disorders in a national sample of hospitalized female and male veterans: Prevalence and psychiatric comorbidity. *International Journal of Eating Disorders*.
- Streigel-Moore, R.H., Garvin, V., Dohm, F., & Rosenheck, R.A. Psychiatric co-morbidity of eating disorders in men: A national study of hospitalized veterans. *International Journal of Eating Disorders*.
- Swales, P.J., & Sheikh, J.I. Shared symptoms of panic disorder in an elderly couple. *American Journal of Geriatric Psychiatry*.
- Taft, C.T., King, L.A., King, D.W., Leskin, G.A., & Riggs, D.S. Partners' ratings of combat veterans' PTSD symptomatology. *Journal of Traumatic Stress*.
- Taft, C.T., Stern, A.L., King, L.A., & King, D.W. Modeling physical health and functional health status: The role of combat exposure, posttraumatic stress disorder, and personal resource variables. *Journal of Traumatic Stress*.
- Takahata, R., & Moghaddam, B. Glutamatergic regulation of basal and stimulus-activated dopamine release in the prefrontal cortex. *Journal of Neurochemistry*.
- Tan, P.Z., Baldwin, R.M., Soufer, R., Garg, P.K., Charney, D.S., & Innis, R.B. A complete remote control system for reliable routine production of α - ^{18}F altanserin, radioligand for imaging 5-HT_{2A} receptors in brain with positron emission tomography. *Journal of Applied Radiation and Isotopes*.
- Tan, P.Z., Baldwin, R.M., Soufer, R., van Dyck, C.H., Charney, D.S., & Innis, R.B. Application of the deuterium isotope effect to enhance PET signal by impeding tracer metabolism: Synthesis of deuterium and fluorine-18 dual-labeled altanserin and its nitro precursor. *Journal of Compounds and Radiopharmaceuticals*.
- Vaidya, V.A., Siuciak, J., Du, F., & Duman, R.S. Mossy fiber sprouting and synaptic reorganization induced by chronic administration of electroconvulsive seizure: Role of BDNF. *Journal of Neuroscience*.

Walsh, S.E., Penk, W.E., Bitman, D., Keane, T.M., Wickis, J., & LoCastro, J. MMPI/MMPI-2 comparisons among substance abusers. *Psychological Assessment*.

Wang, S., & Mason, J. Elevations of serum T3 levels and their association with symptoms in World War II veterans with combat-related posttraumatic stress disorder: Replication of findings in Vietnam combat veterans. *Psychosomatic Medicine*.

Weathers, F.W., & Keane, T.M. Psychological assessment of traumatized adults. In P.A. Saigh & J.D. Bremner (Eds.), *Posttraumatic stress disorder: A comprehensive approach to research and treatment*. Needham Heights, MA: Allyn & Bacon.

Wolfe, J., & Melia, K. History of post-military service adjustment. In *The encyclopedia of psychology*. Washington, DC: American Psychological Association.

Wolfe, J., Proctor, S.P., White, R.F., & Friedman, M.J. PTSD in Gulf War Veterans. [Letter to the Editor]. *American Journal of Epidemiology*.

Wu, J.C., Amen, D., & Bracha, H.S. Neuro-imaging in clinical practice. In H. Kaplan, B.J. Sadock, & J. Grebb (Eds.), *Comprehensive textbook of psychiatry* (7th ed.). New York: Williams & Williams.

Young, B.H., & Blake, D.D. (Eds.). *Cognitive-behavioral group treatment for disaster-related PTSD*. New York: Taylor & Francis.

Young, B.H., Ruzek, J.I., & Ford, J.D. An integrative group treatment model for disaster-related PTSD. In B.H. Young & D.D. Blake (Eds.), *Cognitive-behavioral group treatment for disaster-related PTSD*. New York: Taylor & Francis.

Young, B.H., Ruzek, J., Ford, J.D., & Foy, D. (1998). Beyond debriefing: Time-limited cognitive-behavioral group treatment for disaster survivors with diagnosed PTSD. In B. Hiley-Young & D.D. Blake (Eds.), *Approaches to group psychotherapy with PTSD*. San Francisco: Taylor & Francis.

Youngren, K.D., Inglis, F.M., Pivrotto, P.J., Jedema, H.P., Bradberry, C.W., Goldman-Rakic, P.S., Roth, R.H., & Moghaddam, B. Clozapine preferentially increases dopamine release in the rhesus monkey prefrontal cortex compared with the caudate nucleus. *Neuropsychopharmacology*.

Zoghbi, S.S., Baldwin, R.M., Seibyl, J., Charney, D.S., & Innis, R.B. A radiotracer technique for determining apparent pKa of receptor-binding ligands. *Journal of Compounds and Radiopharmaceuticals*.

[Top](#) | [Format for printing](#)

[Español](#) | [VA Forms](#) | [Facilities Locator](#) | [Contact the VA](#) | [Frequently Asked Questions \(FAQs\)](#)
[Privacy Policy](#) | [Web Policies & Important Links](#) | [Annual Performance and Accountability Report](#)
[Freedom of Information Act](#) | [Small Business Contacts](#) | [Site Map](#)
[FirstGov](#) | [White House](#) | [USA Freedom Corps](#)

The information on this Web site is presented for educational purposes only. It is not a substitute for informed medical advice or training. Do not use this information to diagnose or treat a mental health problem without consulting a qualified health or mental health care provider.

All information contained on these pages is in the public domain unless explicit notice is given to the contrary, and may be copied and distributed without restriction.

For more information call the PTSD Information Line at (802) 296-6300 or send email to ncptsd@ncptsd.org. This page was last updated on Thu Jul 20 17:00:54 2006.