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# POSTTRAUMATIC STRESSDISORDER:

Biological, Clinical, and Cultural Approaches to Trauma's Effects

University of California, Los Angeles  
Northwest Auditorium at Sunset Village  
December 12–15, 2002



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## **POSTTRAUMATIC STRESS DISORDER:** *Biological, Clinical, and Cultural Approaches to Trauma's Effects*

*The Foundation for Psychocultural Research and The University of California, Los Angeles*  
*December 12-15, 2002*  
*Northwest Auditorium, Sunset Village*  
*UCLA*

**T**his conference addresses the profound effects of traumatic experiences, which persist long after the horrifying events themselves. The tragedy of September 11, 2001 testifies to this and underscores the importance of understanding the ways in which trauma shapes and is shaped by our culture and biology.

Integrating cultural, clinical, and biological perspectives, the conference explores posttraumatic stress disorder (PTSD) and other human responses to traumatic events. The goal is to encourage the sharing of knowledge and methods in an effort to create broader, more integrative models of PTSD and other disorders whose complex sociocultural and biological determinants defy any single approach.

Following an evening address by former New York City Mayor Rudolph Giuliani, the three-day symposium thoroughly examines trauma's effects by focusing on neurobiological, psychiatric, anthropological, and historical levels of analysis. Day 1 explores both the concept of and human response to trauma. Day 2 examines trauma's effects on development, future vulnerability to psychopathology, and culture. Day 3 focuses on therapeutic issues and, more generally, on individual and sociocultural dimensions of trauma.

Each day includes presentations from scientists, clinicians, clinical researchers, anthropologists, and historians. In addition, several New York City officials who dealt with the effects of 9/11 discuss some of the formidable public policy and public health challenges of such disasters. Each day, speakers also participate in an open roundtable discussion to integrate the different perspectives of the day and answer questions from the audience.

ROBERT LEMELSON, PHD  
*President, The Foundation for Psychocultural Research*

ALLAN TOBIN, PHD  
*Director, The Brain Research Institute, UCLA*

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# SPONSOR ACKNOWLEDGMENTS

**T**he Foundation for Psychocultural Research would like to acknowledge the following sponsors and friends, without whom this conference would not have been possible.

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THE UCLA CENTER FOR HISTORY, CULTURE, AND NEUROSCIENCE

THE UCLA GRADUATE DIVISION

<http://www.gdnet.ucla.edu>

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**ALLAN TOBIN, PhD**

Director, the Brain Research Institute

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Director, The Foundation for Psychocultural Research

**SUSAN TOWNSLEY**

Special Projects  
The Graduate Division

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# PROGRAM

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## **THURSDAY EVENING, DECEMBER 12**

*At Royce Hall, UCLA*

**7:30-8:30 pm**

### **Leadership in Difficult Times**

FORMER NEW YORK CITY MAYOR RUDOLPH GIULIANI

Former Mayor Giuliani's address provides specific context for the importance of understanding and addressing trauma's effects. On September 11, 2001, Mayor Giuliani brought strength and stability to the citizens of New York at a time of great trauma.

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## **FRIDAY, DECEMBER 13 – SUNDAY, DECEMBER 15**

*All conference presentations and roundtables are scheduled to take place in the Northwest Auditorium at Sunset Village. All talks are 20 minutes + 10 minutes for Q&A..*

*The two poster sessions, from 12:15-1:30 pm on Friday, and from 12:45-2:00 on Saturday, will take place in at Covel Commons. A poster preview without the authors is not scheduled. The 26 posters will be on display from 8:00 am to 6:45 pm on Friday and Saturday. See the Poster Handbook for a complete schedule.*

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## **FRIDAY, DECEMBER 13**

**7:00-8:00 am**

### **Breakfast and Registration**

**8:15-8:20 am**

### **Opening Remarks**

CLAUDIA MITCHELL-KERNAN, Vice Chancellor, UCLA Graduate Studies, and Dean, Graduate Division

**8:20-8:25 am**

**Introduction**

ROBERT LEMELSON, PhD, President, The Foundation for Psychocultural Research;  
Lecturer, Department of Psychology, UCLA

**8:25-8:30 am**

ALLAN TOBIN, PhD, Director, The Brain Research Institute, UCLA

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**Session I: 8:30 – 10:30 am**

**Overview: PTSD Clinical Phenomenology**

Chair:

DAVID KINZIE, MD, Professor, Department of Psychiatry, Oregon Health and Science  
University; Director, OHSU PTSD Clinic; Director, Torture Treatment Center of Oregon

**8:30-9:00 am**

**The Multiple Effects of Severe Psychic Trauma: Cultural and Clinical Implications**

DAVID KINZIE, MD

**9:00-9:30 am**

**Neurobiology and Treatment of PTSD**

J. DOUGLAS BREMNER, MD, Associate Professor, Departments of Psychiatry and Radiology; Director,  
Emory Center for Positron Emission Tomography, Emory University Hospital

**9:30-10:00 am**

**From Fear and Horror to PTSD: What Determines the Longitudinal Course of Early  
Stress Responses?**

ARIEH SHALEV, MD, Chair, Department of Psychiatry, Director and Founder of the Center for Traumatic Stress, Hadassah  
University Hospital, Jerusalem, Israel

**10:00-10:30 am**

**Cognitive Behavioral Treatments for PTSD**

EDNA FOA, PhD, Professor of Clinical Psychology in Psychiatry; Director of the Center for the Treatment and Study of  
Anxiety, University of Pennsylvania

**10:30-10:45 am**

**Break**

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**Session II: 10:45 am-12:15 pm**

**Neurobiological Aspects of Fear, Anxiety, and Trauma**

Chair:

MICHAEL FANSELOW, PhD, Professor, Department of Psychology, UCLA

**10:45-11:15 am**

**Role of the Amygdala vs. Bed Nucleus of Stria Terminalis in Fear and Anxiety**

MICHAEL DAVIS, PhD, Robert W. Woodruff Professor of Psychiatry and Behavioral  
Sciences, Department of Psychiatry and Behavioral Sciences, Emory University School of Medicine

**11:15-11:45 am**

**Sex- and Hemisphere- Related Influences on Emotionally Influenced Memory**

LAWRENCE CAHILL, PhD, Assistant Professor, Department of Neurobiology and Behavior, UC Irvine

**11:45-12:15 pm**

**Neurobiological and Neuroethological Perspectives on Fear and Anxiety**

MICHAEL FANSELOW, PhD

**12:15-1:30 pm**

**Lunch Break**

**Grand Ballroom, Covel Commons**

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**Session III: 1:30-2:30 pm**

**Interdisciplinary Roundtable—I**

What is a good model for PTSD?

**Participants:** James Boehnlein, MD, J. Douglas Bremner, MD, Michael Fanselow, PhD, Melvin Konner, MD, PhD, Mark Micale, PhD, Rachel Yehuda, PhD

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**Session IV: 2:30-5:10 pm**

**Cultural Constructions of Trauma**

Chair:

LAURENCE KIRMAYER, MD, Professor and Director, Division of Social and Transcultural Psychiatry, McGill University

**2:30-3:00 pm**

**Human Resilience and Adaptive Aspects of PTSD: An Anthropological and Evolutionary View**

MELVIN KONNER, MD, PhD, Samuel Chandler Dobbs Professor of Anthropology, Emory University

**3:00-3:30 PM**

**Religion and Spirituality after Trauma**

JAMES BOEHNLEIN, MD,

Professor, Department of Psychiatry, Oregon Health and Science University; Associate Director for Education, Department of Veterans Affairs, Northwest Network Mental Illness Research, Education, and Clinical Center

**3:30-4:00 pm**

**Traumatic Pasts: Conceptual and Analytical Lessons from the Medical History of Psychotrauma**

MARK STEPHEN MICALE, PhD, Associate Professor, Department of History, University of Illinois at Urbana-Champaign

**4:00-4:10 pm**

**Break**

**4:10-4:40 pm**

**Is Traumatic Memory Synonymous with Posttraumatic Stress Disorder?**

ALLAN YOUNG, PhD, Professor of Anthropology, Departments of Social Studies of Medicine, Anthropology, and Psychiatry, McGill University

**4:40-5:10 pm**

**Failures of Imagination: The Refugee's Predicament**

LAURENCE KIRMAYER, MD

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**Session V: 5:10-6:10 pm**

**Interdisciplinary Roundtable—2**

**PTSD: Adaptation, pathology, or cultural construct?**

*Participants:* Larry Cahill, PhD, Michael Davis, PhD, Alexander Hinton, PhD, Laurence Kirmayer, PhD, Bessel van der Kolk, PhD, Allan Young, PhD

**6:10-6:45 pm**

**Reception**

**Grand Ballroom, Covell Commons**

**6:45-7:15 pm**

**Opening Address**

DENNIS CHARNEY, MD, Chief of the Mood and Anxiety Disorder Research Program and the Experimental Therapeutics and Pathophysiology Branch, National Institute of Mental Health

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**SATURDAY, DECEMBER 14**

**7:00-8:15 am**

**Breakfast**

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**Session VI: 8:30-10:30 am**

**The Persistent Biological Effects of Early Experience**

Chair:

EMERAN MAYER, MD, Professor of Medicine, Physiology, Psychiatry & Biobehavioral Sciences, David Geffen School of Medicine Director, CNS Center for Neurovisceral Sciences and Women's Health; Chair, Center for Integrative Medicine

**8:30-9:00 am**

**How Genetic Factors Can Interact with Early Experiences to Shape Stress Reactivity in Rhesus Monkeys**

STEPHEN SUOMI, PhD, Chief of the Laboratory of Comparative Ethology, National Institute of Child Health and Human Development (NICHD), National Institutes of Health (NIH)

**9:00-9:30 am**

**Maternal Care, Gene Expression, and Vulnerability for Affective Illness**

MICHAEL MEANEY, PhD, Professor, Department of Psychiatry, McGill University; Associate Director (Research), Douglas Hospital Research Centre

**9:30-10:00 am**

**Somatic Manifestations of Posttraumatic Stress**

EMERAN MAYER, MD

**10:00-10:30 am**

**Immune Sequelae of Childhood and Adult Trauma**

CHRISTOPHER COE, PHD, W.B. Cannon Professor of BioPsychology, University of Wisconsin

**10:30-10:45 am**

**Break**

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**Session VII: 10:45 am-12:45 pm**

**Trauma's Impact on the Self, Family, and Social Networks: An Overview with Examples from the World Trade Center Tragedy**

Chair:

BESSEL VAN DER KOLK, MD, Professor, Department of Psychiatry, Boston University; Clinical Director, The Trauma Center, HRI Hospital, Brookline, Mass.

**10:45-11:15 am**

**Understanding Intergenerational Effects of Trauma from a Psychological and Biological Perspective**

RACHEL YEHUDA, PhD, Professor of Psychiatry; Director of the Traumatic Stress Studies Division, Mount Sinai School of Medicine and Bronx Veterans Affairs Medical Center

**11:15-11:45 am**

**The Effects of Trauma on the Self**

BESSEL VAN DER KOLK, MD

**11:45-12:15 am**

**The Impact of the World Trade Center Attacks on New York City Police Officers**

CHARLES MARMAR, MD, Vice Chair and Professor of Psychiatry, UC San Francisco; Chief of Mental Health Services, San Francisco VA Medical Center

**12:15-12:45 pm**

**Reflections on Managing Trauma following the World Trade Center Attacks**

RICHARD SHEIRER, former director, New York City's Emergency Management Unit

ROSEMARIE O'KEEFE, former commissioner, New York City Mayor's Community Assistance Unit

**12:45-2:00 pm**  
**Lunch Break**  
**Grand Ballroom, Covel Commons**

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**Session VIII: 2:00-3:00**

**Interdisciplinary Roundtable-3**

Is trauma in childhood different from trauma in adulthood?

**Participants:** Gilbert Herdt, PhD, Michael Meaney, PhD, Robert Pynoos, MD, MPH, Nancy Scheper-Hughes, PhD, Stephen Suomi, PhD

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**Session IX: 3:00-5:00**

**Trauma's Effects across Cultures**

Chair:

NANCY SCHEPER-HUGHES, PhD, Professor, Department of Anthropology UC Berkeley

3:00-3:30 pm

**Cambodia's Shadow: Violence and Trauma in the Khmer Rouge Genocide**

ALEX HINTON, PhD, Assistant Professor, Department of Sociology and Anthropology, Rutgers University

3:30-4:00 pm

**Ritual Initiation, Normative Trauma, and Social Suffering: The Divergent Cultural Model of New Guinea**

GILBERT HERDT, PhD, Program Director, Human Sexuality Studies Program, San Francisco State University

4:00-4:30 pm

**Un-Doing: The Politics of Suffering, Trauma, Resentment, and Forgiveness in the New South Africa**

NANCY SCHEPER-HUGHES, PhD

4:30-5:00pm

**The Politics of Memory: The Social and Psychological Effects of Forgetting and Recalling Indonesia's Traumatic History**

BYRON GOOD, PhD, Professor of Medical Anthropology, Department of Anthropology, Harvard University; Chair, Department of Social Medicine, Harvard Medical School

DEGUNG SANTIKARMA, PhD, Visiting Fellow, UCLA

LESLIE DWYER, PhD, Visiting Fellow, UCLA

**5:00-5:10 pm**

**Break**

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**Session X: 5:10-6:10 pm**

**Survivors Roundtable Roundtable—4**

Moderators:

DAVID KINZIE, MD and ROBERT JAY LIFTON, MD, Visiting Professor of Psychiatry, Harvard Medical School and Cambridge Hospital

Discussants:

ROSEMARIE O'KEEFE, Former Commissioner, New York City's Community Assistance Unit

LUH KETUT SURYANI, MD, Professor, Department of Psychiatry, Udayana University, Bali

BOUN Sung KHAMKEO, THERESA LUGANO and HALIMA MOHAMED ((Interpreter)

MINA NOORISTANI and BEJIAT SEDIGHI (Interpreter)

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**SUNDAY, DECEMBER 15**

**7:00-8:15 am**

**Breakfast**

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**Session XI: 8:30-10:00 am**

**The Biology of Behavior Therapy—Extinction of Fear**

Chair:

MARK BARAD, MD, PhD, Assistant Professor, Department of Psychiatry and Biobehavioral Sciences, UCLA

**8:30-9:00 am**

**Context, Ambiguity, and Unlearning: Sources of Relapse after Behavioral Extinction**

MARK E. BOUTON, PhD, Professor, Department of Psychology, University of Vermont

**9:00-9:30 am**

**Learning Not to Fear: The Medial Prefrontal Cortex and Extinction of Conditioned Fear**

GREGORY QUIRK, PhD, Associate Professor, Department of Physiology, Ponce School of Medicine, Ponce, Puerto Rico

**9:30-10:00 am**

**Learning to Feel Safe: Different Rules, Different Molecules**

MARK BARAD, MD, PhD

**10:00-10:15 am**

**Break**

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**Session XII: 10:15-11:15 am**

**Trauma's Impact on Society and Culture**

Chair:

ROBERT PYNOOS, MD,MPH, Professor of Psychiatry, Department of Psychiatry and Biobehavioral Sciences, UCLA;  
Co-Director of the National Center for Child Traumatic Stress; Director of the UCLA Trauma Psychiatry Service

**10:15-10:45 am**

**Trauma and Violence—Americans as Survivors**

ROBERT JAY LIFTON, MD

**10:45-11:15 am**

**The Four Dimensional World of Traumatic Expectations: Brain, Mind, Culture, and Time**

ROBERT PYNOOS, MD, MPH

**11:15-11:30 am**

**Break**

**11:30-12:30 pm**

**Interdisciplinary Roundtable—5**

**Preparing for the Future**

Moderator:

ALLAN TOBIN, PhD

Participants: Mark Barad, MD, PhD, Mark Bouton, PhD, Gregory Quirk, PhD, Charles Marmar, MD, Arieh Shalev MD,  
Richard Sheirer

**12:30-12:45 pm**

**Closing Remarks**

ALLAN TOBIN, PhD

**12:45 pm**

**Bag Lunch**

**Grand Ballroom, Covell Commons**

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# ABSTRACTS OF PAPERS

*By*

Mark Barad

James Boehnlein

Mark E. Bouton

Christopher Coe

Michael Davis

J. Douglas Bremner

Michael S. Fanselow

Byron Good, Degung Santikarma, and Leslie Dwyer

Gilbert Herdt

Laurence Kirmayer

Bessel van der Kolk

Emeran Mayer

Michael Meaney

Mark S. Micale

Gregory Quirk

Nancy Scheper-Hughes

Arieh Shalev

Stephen Suomi

Rachel Yehuda

Allan Young

## **Learning to Feel Safe: Different Rules, Different Molecules**

**Mark Barad<sup>1,3</sup>, Chris Cain<sup>2</sup>, Tokuzo Matsui<sup>1</sup>**

**<sup>1</sup>Department of Psychiatry and Biobehavioral Sciences, <sup>2</sup>Interdepartmental Program in Neuroscience and Neuropsychiatric Institute and <sup>3</sup>Brain Research Institute, UCLA, Los Angeles, CA.**

Extinction of conditional fear is important both as a paradigm of inhibitory learning and as the explicit model for the development of behavior therapy for human anxiety disorders, including post-traumatic stress disorder. We have been studying the learning rules and the molecules that govern extinction of conditional fear in mice. We have found that unlike most forms of learning, extinction is more effective with temporally massed than with spaced exposures, perhaps because spaced exposures induce acute immediate increases of fear (incubation) that block extinction. Furthermore, extinction of conditional fear, but not its acquisition or expression, depends on L-type voltage-gated calcium channels. Finally, we have found that certain drugs appear to facilitate extinction in a variety of exposure protocols, apparently because they block incubation.

## **Religion and Spirituality After Trauma**

**James Boehnlein, MD, Oregon Health and Science University**

Traumatic events often leave survivors with a number of challenging questions long after the initial shock and horror are processed. These questions and concerns cut to the heart of a person's individual, cultural and social identity, and involves a consideration of life's meaning and purpose. Frequently, regardless of a person's religious background or orientation, these questions center around religious and spiritual belief systems that are a part of the person's cultural milieu. Issues that trauma survivors frequently struggle with include grief and mourning, the encounter with death, the encounter with evil, and questioning the existence of God. This presentation will focus on these commonly encountered issues in clinical work with trauma survivors, including how they are dealt with during the process of healing and recovery. The role of culture and ethnicity will be discussed in the context of medical healing and psychotherapy, along with the challenges of interpersonal and social reintegration for the survivor.

## **Context, Ambiguity, and Unlearning: Sources of Relapse after Behavioral Extinction**

**Mark E. Bouton, PhD, University of Vermont**

Extinction is one of the most fundamental of all learning processes, and it is presumably involved in many therapies designed to reduce the pathological cognitions, emotions, or behaviors that can result from traumatic experiences. This presentation will review some basic behavioral research on classical fear conditioning and its extinction in animals with a goal of understanding how extinction actually serves to reduce anxiety or fear. Although it is tempting to assume that extinction simply destroys the original learning, even Pavlov knew this isn't true. Instead, extinction generates new learning. One implication is that it leaves fear cues with two available "meanings" in the memory store. Therefore, like responding to an ambiguous word, fear after extinction depends crucially on the current context, whether context is defined as physical background, interoceptive state, or time.

Several phenomena (reinstatement, renewal, spontaneous recovery, and rapid reacquisition) follow directly from this perspective and provide important potential mechanisms for lapse and relapse. We will consider those mechanisms and their possible implications for building better behavior therapies.

## **Neurobiology and Treatment of Posttraumatic Stress Disorder**

**J. Douglas Bremner, MD, Emory University Hospital**

Studies in animals and humans suggest that stress is associated with long-term alterations in brain function and structure. These findings are relevant to understanding the neurobiology of posttraumatic stress disorder (PTSD) and in the development of treatments for this disabling disorder. Studies in animals showed long-term dysregulation in stress-responsive systems, including the nor-epinephrine and hypothalamic-pituitary-adrenal (HPA) axis systems. These findings have been extended to PTSD, with, for example, findings of increased noradrenergic responsivity in PTSD. The HPA axis and cortisol systems have been shown to be dysregulated in PTSD, and glucocorticoids, which are released during stress, were shown in animal studies to be associated with atrophy to neurons of the hippocampus, a brain area that plays an important role in learning and memory. These findings were extended to PTSD, with findings of smaller hippocampal volume measured with magnetic resonance imaging (MRI) in patients with both childhood abuse and combat-related PTSD, with associated deficits in hippocampal-based declarative memory. Using positron emission tomography (PET) we showed in several studies both dysfunction of the hippocampus and the medial prefrontal cortex, an area that plays an important role in regulation of emotion. Animal studies recently found that treatment with serotonin reuptake inhibitor medications reverses deficits in hippocampal morphology associated with stress and actually promotes the growth of neurons. We recently found improvements of symptoms of PTSD and hippocampal-based verbal declarative memory deficits following one year of treatment with paroxetine. Other findings related to the treatment of PTSD will be reviewed. These results begin to map out a functional neuroanatomy and neurophysiology of PTSD which may be applicable to future treatment directions.

## **Facilitation of Fear Extinction in Rats via Activation of NMDA Receptors: Relevance to Exposure Therapy for the Treatment of PTSD or Phobia**

**Michael Davis, PhD, Emory University**

Traumatic events (childhood abuse, rape, combat, severe auto accidents) lead to vivid fear memories. These fear memories often come to mind (flashbacks), leading to distraction, loss of sleep, loss of concentration and distress. Exposure therapy (extinction) can be effective in reducing these fear memories but takes time and sometimes is only partially successful or of limited duration. Hence, treatments are needed that could improve the efficacy of exposure therapy in post-traumatic stress disorders (PTSD) or phobias. Animal studies indicate that conditioned fear (pairing a stimulus - conditioned stimulus) with shock) provides a model system to analyze traumatic fear conditioning. These studies show that extinction (repeated presentation of a conditioned stimulus in the absence of shock) models processes involved in exposure therapy in humans. Extinction does not erase fear memories but instead is an active learning process leading to associations that compete with or sup-

press fear memories. Extinction is a fragile process that depends on the place where extinction and fear assessment take place that can be disrupted by stress or the passage of time. Animal studies show that extinction requires activation of a particular brain protein (the N-methyl-D-aspartate (NMDA) type glutamate receptor) in the amygdala, a brain area critically involved in fear and anxiety. Compounds that block this receptor block the development of extinction. NMDA receptor function can be enhanced by a compound called D-cycloserine. In rats systemic administration or local infusion into the amygdala of D-cycloserine dose-dependently facilitates the rate of extinction of conditioned fear. This requires concomitant exposure to the conditioned stimulus and involves NMDA receptors. This compound has been used in humans for other purposes and is well tolerated with no serious side effects. Clinical trials are underway to evaluate whether D-cycloserine will provide an effective pharmacological adjunct to exposure therapy in phobic patients or patients with PTSD.

## **Neurobiological and Neuroethological Perspectives on Fear and Anxiety**

**Michael S. Fanselow**

**Department of Psychology & Brain Research Institute  
University of California, Los Angeles**

In this talk I will describe fear as a Functional Behavior System and thereby illustrate the organization of defensive behaviors using rodents as a model. There are different components or modules of defense within the defensive system. Each module consists of its own specific fear-related behaviors and they are activated by different stimuli. Additionally, each module is mediated by different neural circuits. I will evaluate some of the relationships between these modules of defense and relate them to fear states and anxiety in humans. Finally, I will show that past trauma can affect the future expression of these modules.

## **The Politics of Memory: The Social and Psychological Effects of Forgetting and Recalling Indonesia's Traumatic History**

**Byron J. Good, Harvard Medical School**

**Degung Santikarma, Visiting Fellow, UCLA**

**Leslie Dwyer, Visiting Fellow, UCLA**

In 1965-66, an offensive against the left, led by the military, resulted in the killings, disappearances, incarcerations and exile of hundreds of thousands of Indonesians. Bali experienced some of the most intense violence, with 80,000 -100,000 people, or 5-8% of the population, murdered. Throughout the Soeharto era, these killings and incarcerations were justified by the state by espousing a particular historical interpretation of the events of September 30, 1965 (which the Soeharto regime claimed was an attempted Communist coup) and by the vilification of any persons claimed to be 'Communists' who were said to threaten the religious, moral and political integrity of the nation. Only since the fall of Soeharto in 1998 have scholars, activists and communities across Indonesia been able to reconsider the historical events of 1965-66 and to attempt to come to terms with the killings and their aftermath in local Indonesian communities.

Studies of trauma and post-traumatic stress disorder are above all studies of memory and its effects—of the terrible impact on individuals and families of violence and terror, of efforts to forget the trauma and the intrusions of painful memories, of the consequences for individual psychological development and functioning of these memories, and of their sequelae in the social functioning of those traumatized. Such studies often focus rather narrowly on individuals and individual psychological functioning. However, in recent years, scholars of diverse disciplines have begun to look closely at processes of forgetting or repressing of memories and of remembering or recalling *as social processes*. Scholars have discussed how ‘societies remember’ or how they refuse to recall, and have investigated specific social mechanisms—such as truth and reconciliation commissions — established to reconsider history and bring to open discussion traumatic memories of individuals and groups in societies.

Putting together studies of individual lives of persons who have suffered trauma with research on social processes of forgetting and remembering remains quite difficult. On the one hand, clinical research on trauma and trauma disorders often fails to consider how traumatic memories and their effects are embedded in social life—to take seriously the on-going effects of traumatic events on families and communities, the continuing violence in which memory is embedded, the political dimensions of repression and recall, and the social consequences of the traumatization of individuals. On the other hand, writing about ‘how societies remember’ often fails to take seriously what is known from clinical (and basic science) research about the psychological effects on individuals of trauma, how traumatic memories are stored and processed, and how they shape psychological and emotional functioning. Bringing together these perspectives remains a significant and difficult challenge.

It is not our intention to propose a conceptual solution to this challenge in the short presentation we will give, but to introduce some basic data that must be considered if both the personal and the social/political dimensions of traumatic memory are to be integrated into our analyses. We will do so through consideration of the forgetting and remembering of the events of 1965 in Indonesia. First, we will argue that forgetting and remembering, in cases such as this, must be understood in the context of on-going social relationships among those who participated in the traumatic events—those involved in carrying out killings within the community and those whose family members were killed, those who participated in violence and betrayals, as well as those who were suspected, imprisoned, or intimately related to those marked as leftists. Second, we will argue that forgetting and remembering must be understood in the context of 30 years of political repression—of the repression of memories and the on-going portrayal of the events of 1965 and of ‘communists’ through the organization of state media in a way that justified the killings and the continued repression of political activists or those who would recall those events from an alternative perspective. Third, we will discuss efforts to recall those events in the context of social and political reform that followed the fall of Soeharto, and the personal and social effects of returning to those traumatic events. Throughout, we will argue for the importance of bringing together an understanding of individual lives and social, cultural and political processes of forgetting and remembering if we are to develop an adequate understanding of trauma and its effects.

## **Ritual Initiation, Normative Trauma, and Social Suffering: The Divergent Cultural Model of New Guinea**

**Gilbert Herdt, San Francisco State University**

Ritual is one of the oldest of all learning constructs in the history of the human condition and it has long been recognized as a major mechanism for dealing with loss, death, and for coping with trauma. In the precolonial New Guinea context, ritual performed multiple functions that enabled: 1) childhood separation from the nuclear family, 2) coercive sexual initiation into the men's society or sexual relations at large, and 3) warfare vigilance and aggression. Seen from the perspective of contemporary psychiatry, the psychosocial impact of childhood separation, sexual initiation, and warfare induced trauma. Ritual also provided a coping mechanism for post-traumatic stress disorder (PTSD) type symptoms. This presentation reviews and reconsiders these symptoms and their normative shape in New Guinea.

## **Failures of Imagination: The Refugee's Narrative in Psychiatry**

**Laurence Kirmayer, MD, McGill University**

Refugees coming from war-torn areas sometimes face misunderstanding and frank incredulity when they encounter the psychiatric system. This failure of the clinical imagination reflects both reluctance to confront the enormity of patients' loss and cultural differences in self-presentation, self-understanding, memory and identity. In this presentation, I explore some ways in which the intrapsychic dynamics of refugees' suffering and remembering interact with the larger social dynamics that constitute refugee communities and host societies. The pivot between the realms of the social and the psychological is the narrative construction of the self. Self-narratives may be organized through culturally diverse forms built on specific root metaphors. I discuss some of the root metaphors for the self implicit in psychiatric narratives that may stand in the way of fuller understanding of the refugee's predicament. Recognition of the self as a cultural construction, means that clinicians must rethink the nature of their everyday practice and accept the inherently political nature of medical diagnosis and intervention.

## **The Effects of Trauma on the Self**

**Bessel van der Kolk, MD, The Trauma Center and Boston University**

Psychological trauma affects the capacity to form trusting relationships and to find ways of making meaning out of a chaotic world. Early traumatizing relationships affect issues of self-esteem, and the capacity to identify and negotiate personal needs. Since alternative ways of relating to others are often simply not known, life may consist of a frequent repetition of re-traumatizing relationships. This talk will explore the effects of childhood trauma on development of the self, and in relationships to others, and discuss how individual and group psychotherapies can be helpful in dealing with the interpersonal effects of traumatization.

## **Somatic Manifestations of Posttraumatic Stress**

**Emeran A. Mayer, M.D., Lin Chang, M.D., Bruce Naliboff, Ph.D. and Steve Berman, Ph.D**  
**Center for Neurovisceral Sciences & Women's Health, UCLA**

Syndromes characterized by somatic and/or visceral pain and discomfort are commonly observed in individuals with a history of traumatic stress. For example, irritable bowel syndrome and fibromyalgia are more common in patients with a history of abuse, and similar symptoms have been reported by soldiers following most wars (post Gulf War Syndrome). Aversive early life events increase the vulnerability of individuals to develop viscerosomatic pain syndromes during stressful situations in adult life, presumably by permanently increasing stress responsiveness. While acute stress induced inhibition of somatic pain perception has been well characterized in rodents, the mechanisms underlying stress-induced enhancement of visceral and somatic pain perception are not known. However, a series of observations in patients with IBS and FM support a role for altered responsiveness of central stress systems in the development of stress-induced hyperalgesia: they include preattentive hyperresponsiveness to auditory stimuli, increased activation of attentional mechanisms, including the anterior cingulate cortex, increased emotional responses to stressors increase central levels of stress mediators such as corticotropin releasing factor (CRF) and substance P (SP), and altered activity of the hypothalamic pituitary adrenal (HPA) axis. Several of these findings seen in human patients, can also be demonstrated in animal models of enhanced stress responsiveness. Aversive early life events in terms of postnatal maternal stressors permanently alter the expression of central stress mediators, endogenous pain modulation systems, central opioid mechanisms, HPA axis responsiveness and produce anxiety like behaviors in the adult animal. Pharmacologic inhibition of central stress mediators such as CRF and SP can reverse some of these abnormalities. A better understanding of the role of genetic factors as well as early life aversive experiences as vulnerability factors for the development of viscerosomatic pain syndromes will help to develop preventive interventions in susceptible individuals.

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## **Maternal Care, Gene Expression, and the Transmission of Individual Differences in Stress Reactivity across Generations**

**Michael J. Meaney, PhD, McGill University**

Naturally occurring variations in maternal care alter the expression of genes that regulate behavioral and endocrine responses to stress, as well as hippocampal synaptic development. These effects form the basis for the development of stable, individual differences in stress reactivity and certain forms of cognition. Maternal care also influences the maternal behavior of female offspring, an effect that appears to be related to oxytocin receptor gene expression, and which forms the basis for the intergenerational transmission of individual differences in stress reactivity. Patterns of maternal care that increase stress reactivity in offspring are enhanced by stressors imposed on the mother. These findings provide evidence for the importance of parental care as a mediator of the effects of environmental adversity on neural development.

## **Traumatic Pasts: Conceptual and Analytical Lessons from the Medical History of Psychotrauma**

**Mark S. Micale, University of Illinois**

In recent years, the historical study of psychological trauma has emerged as a rapidly growing field of interest among professional historians. This paper briefly surveys the major areas of scholarly work constituting recent historical trauma studies. It then attempts to abstract several “lessons of history” from this recent scholarship that are relevant to the current-day study of traumatic experience. These lessons concern: the great variety of causes and settings of past traumatic events; the role of a range of socio-cultural determinants in traumatic experience; continuity and discontinuity within the history of trauma; sources of psychological subjectivity in traumatogenesis; and the epistemological and ontological status of trauma as an object of historical study.

## **Learning Not to Fear: The Medial Prefrontal Cortex and Extinction of Conditioned Fear**

**Gregory J. Quirk, PhD, Ponce School of Medicine, Ponce, Puerto Rico**

Following a traumatic event, most people undergo a transient period of fear and anxiety, but are able to return to normal functioning. PTSD sufferers, however, exhibit prolonged fear and anxiety reactions to reminders of the traumatic event long after danger has passed. One theory about PTSD patients is that they are unable to extinguish fear responses to stimuli that have been associated with the traumatic event through classical conditioning. Since Pavlov, we have known that extinction (repeated presentation of the CS without the US) does not erase the original conditioned association but is new learning. How does the brain learn not to fear? We use classical auditory fear conditioning, where rats learn to freeze to a tone that has been paired with footshock. Repeated presentation of the tone alone extinguishes freezing. Following initial reports of LeDoux and colleagues, we have shown that lesions of the medial prefrontal cortex (mPFC) prevent recall of extinction training after a 24-hr delay, suggesting that mPFC may consolidate or store extinction memory. Consistent with this, single neurons in the infralimbic subdivision of the mPFC are activated by tones only when rats are recalling extinction. Finally, stimulation of infralimbic cortex that mimics extinction-induced tone responses reduces freezing, effectively simulating extinction memory. Together with other findings, these data suggest that consolidation of fear extinction potentiates inputs to mPFC via an NMDA receptor-dependent mechanism, which suppresses fear via feed-forward inhibition of the amygdala. Potentiating mPFC either with stimulation or pharmacologically may form the basis of future therapies for PTSD.

## **Un-doing: The Politics of the Impossible**

**Nancy Scheper-Hughes, University of California, Berkeley**

Reparation and healing have emerged as master narratives of our times as individuals, communities, and entire nations struggle to overcome legacies of violence and suffering ranging from the everyday experiences of domestic violence to the atrocities of global terrorism, “dirty wars”, genocides, and ethnic cleansings. In recent years, these processes have been absorbed into highly institutionalized forms of collective bereavement, such as the international tribunals and truth

commissions following periods of state and/or communal violence. In contrast to the popular notion of “settling accounts” (with its subtext of “getting even”), I refer, instead, to Hannah Arendt’s (1958) more ironic use of the term, *un-doing*, to convey the near impossibility of the task at hand. In *The Human Condition*, Arendt grappled with the “burden of irreversibility”, and with deeds that one can never un-do because the process that any single human act sets into play “is never [fully] consummated”. The only escape from the “predicament of irreversibility”, of being unable to undo what one has done is through a kind of grace implied in the power of forgiveness along with the human faculty for making and keeping new covenants.

While anthropological/ethnographic references to vengeance, blood feuds, counter-sorcery, and witch-hunts are many, descriptions of individual and collective rituals of remorse, repentance, and reconciliation are few indeed. The lacunae suggests either an appalling oversight by anthropologists, or it alerts us to the very modernist and western nature of these concepts, a topic I shall visit with respect to the South African TRC (Truth and Reconciliation Commission). Based on ethnographic research conducted during several periods in South Africa between 1993–1999 my talk explores what needs to be gotten over in that fraught social and political context. What is entailed in “making sense”—not only of one’s own suffering—but of the suffering of others? Whose pain is privileged? Whose suffering is ignored? How is grief put into the service of rebuilding a new and “beloved community?” How are deeply embodied memories—those of victims, perpetrators, collaborators and by-standers alike—captured and put to work in the process of reconciliation and new nation building? What needs to be remembered? And, despite our present obsessions with memory, what needs to be “forgotten”? The South African experience offers one example of “getting over” that avoids the hidden traps of chronic injury (and patienthood) that overly-medicalized and biologized concepts of PTSD can sometimes represent.

## **From Fear and Horror to PTSD: What Determines the Longitudinal Course of Early Stress Responses**

**Arieh Shalev, MD, Hadassah University Hospital**

The drama of violent events captures the imagination of victims and helpers, often to the point of attributing the resulting psychological impairment mainly to the fact of exposure. Yet it is during the following and less heroic weeks that prolonged diseases of mind incubate. Drawing from experience with victims of terrors in Israel, this presentation outlines the composite picture of early responses and their eventual transformation into post-traumatic stress disorder. It is argued that exposure is but a trigger to a sequence of psychological events, each of which essentially adaptive and deeply embedded in bodies, minds and cultures, and all of which capable of going wrong. Such view clarifies the confusion— indeed the overlap—between ‘normal’ and ‘abnormal’ responses. Most importantly, it suggest that the road to recovery is widely open in the early aftermath of even the most horrendous events. Resources should be allocated to rescue survivors from the murky waters of subsequent loneliness, helplessness, depression, self-absorption and disease.

## **How Genetic Factors Can Interact with Early Experiences to Shape Stress Reactivity in Rhesus Monkeys**

**Stephen J. Suomi, PhD, Laboratory of Comparative Ethology, National Institute of Child Health and Human Development**

Recent research has disclosed marked individual differences in patterns of stress reactivity in rhesus monkeys throughout the lifespan. For example, approximately 5 to 10% of rhesus monkeys growing up in the wild consistently exhibit impulsive and/or inappropriately aggressive responses to mildly stressful situations throughout development; those same individuals also show chronic deficits in their central serotonin metabolism. These characteristic patterns of biobehavioral stress response emerge early in life and remain remarkably stable from infancy to adulthood. Laboratory studies have demonstrated that although these characteristics are highly heritable, they are also subject to major modification by specific early experiences, particularly those involving early social attachment relationships. For example, a specific polymorphism in the serotonin transporter gene is associated with deficits in serotonin metabolism, extreme aggression, and excessive alcohol consumption among monkeys who have experienced insecure early attachment relationships but not in monkeys who have developed secure attachment relationships with their mothers during infancy. Other examples of specific gene-environment interactions will be presented, and their implications for understanding the development of individual differences in stress reactivity will be discussed.

## **Understanding Intergenerational Effects of Trauma from a Psychological and Biological Perspective**

**Rachael Yehuda, PhD, Mount Sinai School of Medicine and Bronx Veteran Affairs Medical Center**

Our studies have demonstrated that children of trauma survivors constitute a high risk group for posttraumatic stress disorder (PTSD) because they have a greater prevalence of lifetime PTSD compared to demographically similar persons who have experienced equivalent numbers and types of DSM-IV traumatic events. Adult children of trauma survivors also show a greater prevalence of mood and other anxiety disorders. In a sample for which PTSD could be evaluated directly in parents and children, PTSD was present in children of Holocaust survivors with chronic PTSD, but not in children of parents who either never developed PTSD or had recovered from it within several years after World War II. More recently we have examined neuroendocrine parameters in the putative high risk group of adult children of Holocaust survivors. This presentation will describe results of all these studies, but will particularly focus on assessment of urinary and plasma cortisol over the diurnal cycle in adult children with and without parental PTSD, and with and without their own PTSD, and comparison subjects. The results will show that low cortisol levels are associated with both parental PTSD and lifetime PTSD, whereas having a current psychiatric diagnoses other than PTSD is associated with higher cortisol levels in offspring. The risk of PTSD and low cortisol also appears to be different between offspring with one vs. two Holocaust parents. Furthermore, there are significant interactions among variables associated with risk for PTSD and cortisol levels. Findings will be interpreted as suggesting that some neuroendocrine alterations may reflect risk factors for PTSD that determines responsiveness to subsequent trauma, whereas other parameters may be

more true measure of the consequent traumatic stress. These data may have consequences for understanding individual differences in, and particularly genetic contributions to, the human response to extreme stress.

## **PTSD, Traumatic Memory and the Lessons of History**

**Allan Young, PhD, McGill University**

### **I. PSYCHIATRY, CULTURE AND HISTORY**

**Culture and psychiatry: DSM-IV, Appendix I**

**Culture of psychiatry: taken-for-granted knowledge**

PTSD and the indispensable traumatic memory

**Why history counts**

### **2. VARIETIES OF PSEUDO-HISTORY**

**Misdiagnosing the Past**

**A Manichaeon History of PTSD**

Example: Judith Herman in Trauma and Recovery

**Science is a Self-Correcting Process**

The epistemic cultures of medical science

### **3. LESSONS FROM HISTORY**

**Post-combat Symptom Clusters**

Boer War to the Gulf War

*Cluster 1: debility syndrome without psychological or cognitive symptoms*

*Cluster 2: somatic syndrome focused on the heart*

*Cluster 3: neuropsychiatric syndrome*

Symptoms remain constant over time; change = how they are reported and interpreted.

Memory is not a consistent feature or focus of Cluster 3.

**Vulnerability**

The epidemiological puzzle

Diathesis versus character/personality: e.g., traumatic hysteria vs. traumatic neurasthenia (WHR Rivers)

**“Traumatic Memory” and “Traumatic Time”**

Traumatic time: event - memory - syndrome

Varieties of memory: iconic, attributed, belated, factitious, fictitious

Malleability and multiplicity

**The Consequences of Diagnosis**

Inter-war debates in Great Britain and Germany: cutting the Gordian knot

## **4. DSM-III AND FREUD'S TRAUMATIC NEUROSIS**

### **PTSD Falls into the Psychoneurosis Cluster**

The distinctiveness of PTSD: A and B criteria

### **Freud's Traumatic Neurosis**

A + B + polymorphous adaptation to anxiety

### **DSM-III'S Kraepelinian Mission**

Purging American psychiatry of its neurosis; the history of an exception

## **5. FORWARD INTO THE PAST: 1995-2002**

### **Remembering and Forgetting the Varieties of Traumatic Memory**

Ref. Southwick et al. 1997

### **Rediscovering Vulnerability**

From normality to abnormality

Diathesis: from Charcot to hypocortisolism, the diminished hippocampus, SNS reactivity

Neuroticism

## **6. HOW TO IGNORE HISTORY**

The "looping effect" in the clinic

The "prototype effect"

The moral and clinical consequences of skepticism

Neuroticism as a "risk factor"

## **7. HAS BIOLOGICAL PSYCHIATRY OUTFLANKED THE MEMORY PROBLEM?**

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## SPEAKERS PROFILES

### **Mark Barad, MD, PhD**

Mark G. Barad, M.D., Ph.D. is Assistant Professor of Psychiatry and Biobehavioral Sciences at the University of California, Los Angeles. He is the recipient of National Institutes of Health Medical Scientist Training Program, Young Investigator Award from the National Alliance for Research on Schizophrenia and Depression, and the Forest Junior Faculty Research Award from the West Coast College of Biological Psychiatry. He is also The Tennenbaum Family Center Scholar at UCLA's Neuropsychiatric Institute. Dr. Barad's research has investigated the cellular basis of learning and memory, especially understanding the cellular and molecular mechanisms underlying the extinction of Pavlovian fear conditioning. His current research and writing further explores the development of adjunctive treatments to accelerate and facilitate the behavioral psychotherapy of anxiety disorders. In addition to his research and teaching, Dr. Barad has supervised at the UCLA Anxiety Disorders Clinic and the UCLA General Outpatient Psychiatry Clinic. He also has a private practice as a psychiatrist.

### **James Boehnlein, MD**

James Boehnlein, MD, is Professor of Psychiatry, Assistant Dean for Curriculum Oregon Health and Science University and Associate Director for Education, Department of Veterans Affairs Northwest Network Mental Illness Research, Education, and Clinical Center (MIRECC).

Dr. Boehnlein received his psychiatry training at the Oregon Health and Science University (OHSU) and was a Robert Wood Johnson Scholar at the University of Pennsylvania before he took his current faculty position at OHSU in 1987. During the past 15 years he has been a staff psychiatrist in OHSU's Intercultural Psychiatric Program, where he has treated Cambodian and Central American refugees and has worked with colleagues in clinical research that has studied long-term adjustment of traumatized refugees from a biopsychosocial perspective. Over the same period he has also been a clinician in the mental health clinic of the Portland VA Medical Center, treating veterans with PTSD and chronic psychosis. He is board certified in both general and forensic

psychiatry. Dr. Boehnlein also has been extensively involved in various areas of medical education and curriculum reform and is currently Director of Medical Student Education in OHSU's Department of Psychiatry and the medical school's Assistant Dean for Curriculum. He also has responsibility for ongoing continuing education for the VA's multidisciplinary mental health professionals in Oregon, Washington, Idaho and Alaska as Director of Education for the VA's regional mental health research center. He is currently President of the Society for the Study of Psychiatry and Culture, an international association of psychiatric and social science researchers and educators that has as its mission the enhancement of research, education, and culturally competent clinical care in cross-cultural psychiatry.

### **Mark E. Bouton, PhD**

Mark E. Bouton, Ph.D. is Professor of Psychology at the University of Vermont, where he has been teaching since 1980. For most of those years, Dr. Bouton's research has investigated the relationships between context, conditioning, and memory and has had an impact on our understanding of extinction, one of the most basic behavior change processes. His current research and writing further explores the connections between associative learning theory and neuroscience, timing processes, and cognitive behavioral therapy. He is also finishing a textbook on Learning Theory for Sinauer Associates (Sunderland, Massachusetts). Dr. Bouton's research has been supported by the National Science Foundation since 1981, and more recently by the National Institute of Mental Health. He has been a Fulbright Scholar (United Kingdom), a James McKeen Cattell Scholar, a University Scholar at the University of Vermont, and a Fellow at the Center for Advanced Study in the Behavioral Sciences (Stanford). He is a Fellow of the American Psychological Association and the American Psychological Society, and is currently Editor of the *Journal of Experimental Psychology: Animal Behavior Processes* and on the editorial board of *Behavioral Neuroscience*.

### **J. Douglas Bremner, MD**

J. Douglas Bremner, M.D. is Director of the Emory Center for Positron Emission Tomography (PET). He completed his Psychiatry and Nuclear Medicine residencies at Yale School of Medicine. He was a VA Biological Psychiatry Fellow and VA Career Development Awardee for Level I and Level II. He was Assistant Professor and then Associate Professor of Radiology and Psychiatry, Yale University School of Medicine, and Director of the Yale Trauma Research Program. Dr. Bremner's current research includes a study of the effects of treatment with serotonin reuptake inhibitors and phenytoin on hippocampal atrophy in PTSD. Other projects in PTSD related to abuse and combat used a variety of symptom inducing tasks to demonstrate decreased function in hippocampus and medial prefrontal cortex, and decreased benzodiazepine receptor binding in frontal cortex. Dr. Bremner has authored or co-authored over 100 peer reviewed articles and book chapters, and written or edited three books, most recently *Does Stress Damage the Brain? Understanding Trauma-Related Disorders from a Neurological Perspective* published by W.W. Norton & Co. (2002).

## **Larry Cahill, Ph.D.**

Larry Cahill, Ph.D. is Assistant Professor of Neurobiology and Behavior and a fellow of the Center for the Neurobiology of Learning and Memory at UC Irvine. Dr. Cahill's research focuses on neural mechanisms of memory formation for emotionally arousing events, addressing these issues with both human and infra-human subject work. His research suggests that interactions between peripheral stress hormones and the amygdala in humans are critical for enhanced conscious ("declarative") memory associated with emotional arousal. Collectively, Dr. Cahill's research challenges several prevailing views of the role of the amygdala in memory, and provides strong confirmation of the view, derived from prior animal research, that endogenous catecholamines and the amygdala influence memory storage for emotionally significant events.

Dr. Cahill's current research directions include examining conditions under which post-learning stimulation of the sympathetic nervous system enhances memory consolidation in humans, and identifying pathways in the human brain through which amygdala activity influences memory formation. His most recent research highlights influences of both cerebral hemisphere and subject sex on neural mechanisms of emotionally influenced memory. Finally, he is pursuing the clinical implications of this work for the prevention and treatment of disorders of memory for emotional events, such as Posttraumatic Stress Disorder.

## **Dennis Charney, MD**

Dennis S. Charney is the Chief of the Mood and Anxiety Disorder Research Program and the Experimental Therapeutics and Pathophysiology Branch at the National Institute of Mental Health. This program is located in the NIMH intramural research division and is the nation's largest research group devoted to identifying the etiology of these disorders and discovering more effective treatment. Prior to coming to NIMH in September 2000 he was Professor Psychiatry and Deputy Chair of Academic and Scientific Affairs at the Yale University School of Medicine.

Dr. Charney is one of the nation's foremost investigators in the neurobiology and treatment of mood and anxiety disorders. He has made fundamental contributions to our understanding of neural circuits, neurochemistry and functional neuroanatomy of the regulation of mood and anxiety. In addition his research group is focused on the discovery of novel and more effective treatments. Dr. Charney has been a highly successful extramural NIMH and VA grantee and has extensive experience directing large multidisciplinary research teams. He was the Principal Investigator of the VA National Center for Posttraumatic Stress Disorder and the NIMH Yale Mental Health Clinical Research Center. Dr. Charney has served on numerous national committees in the service of advancing our understanding of the causes and treatment of psychiatric disorders. He has been a member of the Food and Drug Administration Psychopharmacologic Drug Advisory Committee. Dr. Charney has chaired the Board of Scientific Counselors for the National Institute of Mental Health and currently chairs the Scientific Advisory Board of the Anxiety Disorders Association of America (ADAA) and the National Depressive and Manic Depressive Association (NDMDA). He is President of the council of the American College of Neuropsychopharmacology and is on the council of the Scientific Advisory Board of the National Association for Research in Schizophrenia and Affective Disorders (NARSAD). Dr. Charney has published over 400 original papers and chapters. He has edited a major textbook, *Neurobiology of Mental Illness*, published by Oxford Press. Dr.

Charney is the editor of the journal *Biological Psychiatry*. Since 1992, Dr. Charney has been listed in every edition of the “Best Doctors in America.” His work has been honored by numerous awards, including the Efron Award from the American College of Neuropsychopharmacology, the Anna Monika Foundation Award for Research in Affective Disorders, Edward J. Sacher Award from Columbia University, the Edward A. Strecker Award from Pennsylvania Hospital and the University of Pennsylvania, the Gerald L. Klerman Lifetime Achievement Award from the National Depressive and Manic Depressive Association, and the American Psychiatric Association Award for Research. In 2000, Dr. Charney was elected to the Institute of Medicine.

### **Christopher Coe, PhD**

Christopher Coe is the W.B. Cannon Professor of BioPsychology at the University of Wisconsin. He is a leader in the field of psychoneuroimmunology, and investigates the relationship between early life events, emotions, and immunity. Dr. Coe’s research program encompasses animal models, which focus on the antecedents of disease beginning in fetal life, and also includes human studies on several illnesses. For example, his group has investigated the influence of school stress on immune responses in asthmatic students, and currently is evaluating the biological correlates of pain in women with fibromyalgia. His presentation will review immune alterations associated with childhood and adult trauma. Dr. Coe was the President of the PsychoNeuroImmunology Research Society during 2001, and is a faculty investigator in the UW Mind/Body Center, Institute on Aging, and Women’s Health Center.

### **Michael Davis, PhD**

Michael Davis, Ph.D. is the Robert W. Woodruff Professor of Psychiatry and Behavioral Sciences at Emory University School of Medicine. He is the leading researcher in the neurobiology of emotion. He is on the editorial boards for the *Behavioral Neuroscience*, *Behavioral and Neural Biology*, *Psychonomic Bulletin and Review*, *Learning and Memory*, *Anxiety*, *Journal of Neuroscience*, *Biological Psychology*, and *Neuropsychopharmacology*.

Dr. Davis is on the advisory board for Anxiety Disorders Association of America. He is a fellow of American Psychological Association; American Psychological Society; American Association for the Advancement of Science; Academia, Medicinae & Psychiatriae Foundation; and American College of Neuropsychopharmacology. Dr. Davis has published more than 250 articles and reviews. His recent work examines the physiological bases of learning and memory and brain areas involved in fear, anxiety, and stress, particularly the role of various second messenger systems in the amygdala in fear conditioning. Dr. Davis’ research has been supported by the National Institute of Mental Health and the National Institutes of Health.

### **Edna Foa, PhD**

Edna B. Foa, Ph.D. is a Professor of Clinical Psychology in Psychiatry at the University of Pennsylvania and Director of the Center for the Treatment and Study of Anxiety. She received her Ph.D. in Clinical Psychology and Personality, from University of Missouri, Columbia, in 1970. Dr. Foa de-

voted her academic career to study the psychopathology and treatment of anxiety disorders, primarily obsessive-compulsive disorder (OCD), post traumatic stress disorder (PTSD), and social phobia and is currently one of the world leading experts in these areas. Dr. Foa was the chair of the DSM-IV Subcommittee for OCD and Co-Chairs the DSM-IV Subcommittee for PTSD. She has also been the chair for the Treatment Guidelines Task Force of the International Society for Traumatic Stress Disorders. Dr. Foa has published several books and over 250 articles and book chapters and has lectured extensively around the world. Her work has been recognized with numerous awards and honors. Among them are: Distinguished Professor Award under the Fulbright Program for International Exchange of Scholars; Distinguished Scientist Award from the American Psychological Association, Society for a Science of Clinical Psychology; First Annual Outstanding Research Contribution Award presented by the Association for the Advancement of Behavior Therapy; Distinguished Scientific Contributions to Clinical Psychology Award from the American Psychological Association; and Lifetime Achievement Award presented by the International Society for Traumatic Stress Studies.

### **Gilbert Herdt, PhD**

Gilbert Herdt, Ph.D. is Director and Professor of Human Sexuality Studies Program and Professor of Anthropology at San Francisco State University. He is also founder of an interdisciplinary institute, Institute on Sexuality, Inequality and Health and Director of National Sexuality Resource Center at San Francisco State University. He has served on more than 10 international committees or agencies, 8 major national committees and academic committees (NIMH, SSRC), and approximately 15 departmental and university-wide committees at 4 American universities.

Dr. Herdt's is the recipient of various awards and research grants, including William Simon Henry Guggenheim Memorial Fellowship and Pre-doctoral Fulbright Scholarship to Australia. Dr. Herdt's research has been supported by the National Institute of Mental Health, Ford Foundation, Spencer Foundation and Rockefeller Foundation. He is a fellow of American Anthropological Association, International Academy of Sex Research, and Royal Anthropological Institute (UK). Dr. Herdt's current works include *Sexual Inequalities: Subjectivities, Agency and Social Change* and *Sexual Inequality, Youth Empowerment, and the GSA: A Community Study in California*. Dr. Herdt is a general editor of *Worlds of Desire*, and an associate editor of *Journal of Culture, Sexuality, and Health*; *Journal of Men and Masculinities*; and *Transaction: Journal of Social Science and Modern Society*. Dr. Herdt has authored 7 books and published more than 45 journal articles. His book *Guardians of the Flutes* is now in its third edition, and his recent publications include: *Sambia Sexual Culture: Essays From the Field*, *Something to Tell You: The Road Families Travel With a Gay Child* (translated into Portuguese and Spanish), and *Same Sex, Different Cultures* (translated into Japanese). His new book, *Secrecy and Cultural Reality* will be published in 2003.

### **Alexander Hinton, PhD**

Alex Hinton is Assistant Professor of Anthropology at Rutgers University. He is the editor of *Bio-cultural Approaches to the Emotions* (Cambridge, 1999), *Genocide: an Anthropological Reader* (Blackwell, 2002), and *Annihilating Difference: The Anthropology of Genocide* (California, 2002). He is currently completing an ethnohistorical study of the Cambodia Genocide, entitled *Cambodia's Shadow: Cultural Dimensions of Genocide*.

## David Kinzie, MD

J. David Kinzie, M.D. is Professor of Psychiatry and Director of PTSD Clinic at Oregon Health Sciences University. He completed his psychiatry residency at the University of Washington, and his fellowship in transcultural psychiatry at the University of Hawaii in Honolulu. He is a Life Fellow of the American Psychiatric Association. He is also Director of Torture Treatment Center of Oregon at Oregon Health and Science University. As a psychiatrist, he is involved in hospital psychiatry, psychiatric treatment of refugees, posttraumatic stress disorder and depression. Dr. Kinzie is the recipient of various awards, including the Gold Achievement from the American Psychiatric Association, the Certificate of Recognition for Excellence in Medical Student Education by American Psychiatric Association, and listed in Best Doctors in America. Dr. Kinzie is a book reviewer of *Community Mental Health*, *American Journal of Psychotherapy* and the Board of Directors at Chinese Social Service Center, as well as on the Advisory Board and Consultant at Indochinese Health Care Projects. Dr. Kinzie's current research includes a study of cortisol in PTSD Patients, a long-term study of Cambodians with PTSD, and the prevalence of diabetes and hypertension in patients with PTSD. Dr. Kinzie has published more than 100 articles and book reviews. Recent work by Dr. Kinzie et al. includes a published article entitled, "The Effects of 9-11 on Traumatized Refugees: Reactivation of Posttraumatic Stress Disorder" (*Journal of Neuro and Mental Disease*, 2002), and "Psychotherapy for Massively Traumatized Refugees: The Therapist Variable" (*American Journal of Psychotherapy*, 2001).

## Laurence Kirmayer, MD

Laurence J. Kirmayer, M.D. is Professor and Director, Division of Social and Transcultural Psychiatry, Department of Psychiatry, McGill University and Editor-in-Chief of Transcultural Psychiatry. He also directs the Culture and Mental Health Research Unit at the Department of Psychiatry, Sir Mortimer B. Davis Jewish General Hospital in Montréal where he conducts research on the mental health of Aboriginal peoples; mental health services for immigrants and refugees; consultation-liaison psychiatry; and the anthropology of psychiatry. Dr. Kirmayer's past research includes studies on: concepts of mental health and illness in Inuit communities; risk and protective factors for suicide among Inuit youth in Nunavik; barriers to mental health care for immigrants; somatization in primary care; the comparative study of psychiatry in Canada and Japan; and the role of metaphor in psychiatric theory. He directs the annual Summer Program and Advanced Study Institute in Social and Cultural Psychiatry at McGill. He is co-editor of the volumes, *Current Concepts of Somatization* (American Psychiatric Press, 1991), *Healing Traditions: The Mental Health of Canadian Aboriginal Peoples* (University of British Columbia Press, in press). Dr. Kirmayer's current projects include suicide prevention for Aboriginal peoples; the use of the cultural formulation in clinical assessment and cultural consultation; and the cross-national comparative study of mental health services for cultural diverse populations.

## Melvin Konner, MD, PhD

Melvin Konner, M.D., Ph.D. is the Samuel Candler Dobbs Professor of Anthropology and an associate professor of Psychiatry and Neurology at Emory University. He studied at Brooklyn College, CUNY, earned a Ph.D. in biological anthropology at Harvard University, and did postdoctoral work at the Laboratory of Neuroendocrine Regulation, MIT. He has an M.D. but does not practice medicine. Dr. Konner spent a total of two years doing fieldwork among the Kalahari San or Bushmen, studying infant development and the hormonal mechanism of lactational infertility. After six years on the Harvard faculty, he attended Harvard Medical School and subsequently moved to Emory as department chair. He has held NIMH and NSF research grants, and been a Fellow of the Center for Advanced Study in the Behavioral Sciences, the John Simon Guggenheim Memorial Foundation, the Social Science Research Council, and the Foundations Fund for Research in Psychiatry. More recently, he has spent time advocating single-payer health reform, and has testified twice at U.S. Senate hearings. Dr. Konner's book, *The Tangled Wing: Biological Constraints on the Human Spirit*, was nominated for the American Book Award (Science).

## Robert Jay Lifton, MD

Robert Jay Lifton is a visiting professor of psychiatry at Harvard Medical School and Cambridge Hospital and a former distinguished professor of psychiatry and psychology at the Graduate School University Center and director of The Center on Violence and Human Survival at John Jay College of Criminal Justice at The City University of New York. He had previously held the Foundations' Fund Research Professorship of Psychiatry at Yale University for more than two decades. He has been particularly interested in the relationship between individual psychology and historical change, and in problems surrounding the extreme historical situations of our era. He has taken an active part in the formation of the new field of psychohistory. Dr. Lifton was born in New York City in 1926, attended Cornell University, and received his medical degree from New York Medical College in 1948. He interned at the Jewish Hospital of Brooklyn in 1948-49, and had his psychiatric residence training at the Downstate Medical Center, Brooklyn, New York in 1949-51. He was an Air Force psychiatrist serving in the United States, Japan, and Korea from 1951-53. He was research associate in psychiatry at Harvard from 1956-61, where he was affiliated with the Center for East Asian Studies; and prior to that was a member of the faculty of the Washington School of Psychiatry. From mid-1995, he has been conducting psychological research on the problem of apocalyptic violence, focusing on Aum Shinrikyo, the extremist Japanese cult which released poison gas in Tokyo subways. His book, *Destroying the World to Save It: Aum Shinrikyo, Apocalyptic Violence, and the New Global Terrorism* was published by Metropolitan Books in October, 1999. His writings on Nazi Doctors (on their killing the name of healing) and the problem of genocide; nuclear weapons and their impact on death symbolism; Hiroshima survivors; Chinese thought reform and the Chinese Cultural Revolution; psychological trends in contemporary men and women; and on the Vietnam War experience and Vietnam veterans, have appeared in a variety of professional and popular journals. He has developed a general psychological perspective around the paradigm of death and the continuity of life and a stress upon symbolization and "formative process," and on the malleability of the contemporary self. Recent books include *Hiroshima in America: Fifty Years of Denial*, (Putnam and Avon Books, 1995) (with Greg Mitchell) which explores the impact of Hiroshima on our own coun-

try; and *The Protean Self; Human Resilience in an Age of Fragmentation*, (Basic Books, 1993) which describes the contemporary “protean” self and its expressions of fluidity and change as its possible relationship to species consciousness and a “species self” (related importantly to one’s connection to humankind).

## **Charles Marmar, MD**

Charles Marmar, M.D., is Vice Chair and Professor of Psychiatry at the University of California, San Francisco. He is also Associate Chief of Staff for Mental Health, San Francisco VA Medical Center. He completed his psychiatry residency at the University of Toronto, and a research fellowship in psychiatry and traumatic stress at the University of California, San Francisco.

Dr. Marmar’s current studies include a five-year prospective study of posttraumatic stress in police officers in three American cities, a randomized controlled trial of cognitive behavior therapy for rescue workers who responded to the WTC attacks, a longitudinal study of 747 New York and Bay Area police officers assessed before and after 9/11, a clinical trial of guanfacine for chronic combat PTSD, and an open trial of luvoxamine in female rape survivors. Dr. Marmar and his colleagues are studying electrophysiological abnormalities and hippocampal structure and function in individuals with PTSD, and studies of the relationship of hypothalamic-pituitary-adrenal axis activity with polysomnography in PTSD. Dr. Marmar’s research has been supported by the NIMH, Veterans Administration, and Upjohn, Solvay and Forest Pharmaceuticals.

## **Emeran Mayer, MD**

Dr. Mayer is a Professor in the Departments of Medicine, Physiology and Psychiatry & Biobehavioral Sciences at UCLA, and has more than 15 years of experience in the study of clinical and neurobiological aspects of brain gut interactions in health and disease. He has published more than 110 original peer-reviewed articles, 60 chapters and reviews, co-edited two books, and organized several interdisciplinary symposia in the area of visceral pain and mind body interactions. He has made seminal contributions to the characterization of physiologic alterations in patients with functional disorders, particularly in the area of interoceptive mechanisms, including visceral pain and altered brain responses in humans. Specifically, his research efforts include the study of cellular and molecular mechanisms of chemo- and mechanotransduction of primary afferent nerves; animal studies on stress modulation of visceral pain and associated autonomic responses; human physiology studies on cerebral, autonomic, neuroendocrine, and perceptual responses to visceral stimulation; and health outcomes, quality of life, and epidemiological studies in populations suffering from chronic gastrointestinal disorders.

He has two active R01 grants, one on basic mechanisms of NMDA receptors in visceral nociception, the other on brain and perceptual responses to visceral stimulation. He is P.I. on a subcontract of another R01 grant on the role of proteinase-activated receptors in neuronal activation. He has served on the editorial boards of the leading journals in digestive diseases, including *Gastroenterology*, *Gut*, *Digestion* and the *American Journal of Physiology*, and has served as reviewer for a wide range of medical and neuroscience journals, as an ad hoc reviewer for national and international funding agencies, and on ad hoc NIH study sections.

Dr. Mayer is Co-Director of the CURE Digestive Diseases Research Center and Chair of the UCLA Center for Integrative Medicine, a multidisciplinary and interdepartmental clinical and research program related to different aspects of Integrative and Mind Body Medicine.

### **Michael Meaney, PhD**

Michael Meaney received his Ph.D. from Concordia University in Montreal and did his postdoctoral studies at The Rockefeller University in New York City. He is currently James McGill professor of Medicine and full professor in the Departments of Psychiatry and Neurology and Neurosurgery. He is also Director, Program for the study of Behavior, Genes and Environment at McGill University.

### **Rosemarie O’Keefe**

Rosemarie C. O’Keefe is a community activist and the former Commissioner of New York City’s Community Assistance Unit for the former NYC mayor Giuliani. As a member of Mayor Rudolph W. Giuliani’s cabinet and his Primary advisor on issues affecting New York City’s many and varied multicultural communities, O’Keefe worked directly with the Deputy Mayors, agency commissioners, elected official, civic leaders, clergy and neighborhood organizations to develop and manage new initiatives to resolve longstanding community problems, and broker partnerships between communities and government. Mayor Giuliani relied exclusively on Commissioner O’Keefe to respond to emergency situations impacting on the quality of life of city residents, businesses and tourists in order to meet their needs for assistance quickly, thoroughly, and compassionately, which earned her the respect of her colleagues in government for having a proactive “can do” attitude and became known by many New York City residents and visitors for her sensitivity and humanity. As Commissioner, Rosemarie led the recovery efforts for many large scale tragedies including the TWA Flight 800, Swiss Air Flight 111, Egypt Air Flight 990 and American Airlines Flight 587 crashes and the tremendous task of planning, implementing and managing the NYC Family Assistance Center (FAC), a one-stop service, support and advocacy center for the families of the victims of the September 11, 2001 World Trade Center terrorist attacks, the largest disaster assistance response center in the United States. The 130,000 square foot facility housed more than 60 public and private agencies, providing services ranging from grief counseling, pet therapy, social service entitlements to DNA testing and the preparation of death certificate affidavits. Under her direction, the FAC provided services for 60,000 family members and 250,000 individuals that were directly affected by the tragedy. She also planned large-scale public ceremonies for memorial ceremonies for the World Trade Center Attack and the crash of Flights 800, 587, 990 and 111.

### **Robert Pynoos, MD, MPH**

Robert S. Pynoos, M.D., M.P.H., is Professor of Psychiatry in the UCLA Department of Psychiatry and Biobehavioral Sciences. He is Co-Director of the National Center for Child Traumatic Stress, Director of the UCLA Trauma Psychiatry Service and Executive Director of the UCLA Anxiety Disorders Section. Dr. Pynoos is a graduate of Harvard University and Columbia University Schools of

Physicians & Surgeons and Public Health. Over the past two decades, he has made significant contributions to understanding the impact of children's exposure to violence and disaster, and to elevating the standards of mental health care for child victims and witnesses. He has written extensively on child development and child traumatic stress, the neurobiology of child and adolescent trauma, and public mental health approaches for children and families after disaster, war and community violence. He has edited several widely respected books on posttraumatic stress in children and adolescents. He is past President of the International Society for Traumatic Stress Studies and the 2001 recipient of the Lifetime Achievement Award. Dr. Pynoos has served as Chair for the William T. Grant Consortium on Adolescent Bereavement and for the MacArthur Foundation Network Study Group on Children's Responses to Traumatic Stress. He served as a consultant to the United States Department of Education after the Oklahoma City bombing, to the Springfield Oregon Public School District after the Thurston High School shooting, to Jefferson County Mental Health after the Columbine High School tragedy and to Santana High School, Santee, California. He has been a consultant to UNICEF for Kuwait after the Gulf War, has a long-standing collaborative relationship with UNICEF to conduct a long-term post-war recovery program for adolescents in Bosnia-Herzegovina, and worked for years with the Armenian Relief Society in their decade-long post-earthquake recovery efforts. Dr. Pynoos was an invited participant to the 1999 White House Strategy Session on Children, Violence and Responsibility. He has received the American Psychiatric Association Bruno Lima Award for excellence in disaster psychiatry. Dr. Pynoos has extensive experience in work with the Institute of Medicine, serving from 1994-1997 on the Committee on Evaluation of the Department of Defense Persian Gulf Comprehensive Clinical Evaluation Protocol. He has also served as an Institute of Medicine reviewer to the work of other committees, including the IOM Chemical and Biological Terrorism R & D Needs to Improve Civilian Medical Response. In November 2001, he was also an invited speaker to the IOM Board on Health Promotion and Disease Prevention to review critical issues in public mental health planning for readiness, response and recovery to catastrophic acts of terrorism. In response to September 11, he has served as a consultant to the New York State Office of Mental Health and to the New York City Department of Health, as well providing assistance to the New York City Board of Education and U.S. Department of Education outreach to the private school community. Through recommendation of the National Institute of Mental Health, Dr. Pynoos provided consultation to the First Lady, Laura Bush, in regard to publicly addressing children and families in the aftermath of September 11.

### **Gregory Quirk, PhD**

Gregory Quirk is an Associate Professor of Neuroscience at Ponce School of Medicine, in Puerto Rico. Quirk did his undergraduate studies at Northwestern University in Evanston, IL. He received his doctorate in Neuroscience in 1990 from State University of New York Health Sciences Center in Brooklyn, NY, working on the spatial firing on neurons in the hippocampal formation in the laboratory of Robert Muller. Departing from the usual career track, he obtained a Fulbright grant to establish the first laboratory of neuroscience in Honduras, at the National Medical School in Tegucigalpa. His work in Honduras also included a study of the traumatic effects of political repression on the mental health of victims' families. From 1993-97, he worked in the laboratory of Joseph LeDoux at NYU studying the activity of neurons in the amygdala and related structures during fear learning. His work provided important physiological support for LeDoux's hypothesis that the amygdala learns fear associations (between tones and shocks) via direct subcortical projections

from the thalamus (LeDoux's "low road" to the amygdala). At that time, he also became interested in extinction of fear, or how conditioned fear is reduced. In keeping with his interests in spurring science in developing countries, Quirk joined the faculty at Ponce School of Medicine 1997, and decided to focus exclusively on the question extinction. After learning to become afraid of something, how do we learn to stop being afraid once the danger is gone? His group has shown that the medial prefrontal cortex is critical for remembering extinction, and that prefrontal cells signal extinction memory. Furthermore, electrical stimulation of this area in rats can strengthen extinction memory, suggesting that the medial prefrontal cortex may be a useful target for future therapies for PTSD, in which fear extinction is compromised. Quirk's research is funded by National Institute of Mental Health. In 1999, he received the Presidential Early Career Award for Scientists and Engineers, from President Bill Clinton, for his work on extinction of fear.

## **Nancy Scheper-Hughes, PhD**

As a critical medical anthropologist Nancy Scheper-Hughes researched and written extensively on Ireland, Brazil and South Africa. In particular, she is concerned with the violence of everyday life from an existentialist, feminist, and politically engaged perspective. Her first anthropological study in County Kerry, rural Ireland (to which she returned in 1999) concerned the social and cultural dimensions of mental illness among bachelor farmers in rural Ireland. Later in Boston she undertook a study of the deinstitutionalization of those with severe mental ill-health. Between 1982-1990 Scheper-Hughes conducted extensive field research in the shantytowns of Northeast Brazil on infant mortality, the 'madness of hunger,' the medicalization of social and political trauma, and the experience of motherhood, deprivation, and moral thinking and practice. She has also researched and published on AIDS, the social body, and sexual citizenship in Cuba and Brazil, and on the role of violence, truth and reconciliation during the transition to democracy in South Africa. Most recently, she has written on subjects ranging from the cultural politics of international adoption, Munchausen-by-Proxy as a weapon the weak, to the execution of Brazilian street children, the global traffic in human organs and the use of living unrelated donors in human transplant surgery as a form of sacrificial violence. Scheper-Hughes's examination of structural, "everyday", and political violence has encouraged her to develop a unique style of critical theory and reflexive ethnography, which has been broadly applied to medicine, psychiatry, and to the practice of anthropology. In 1999 she founded, with Prof. Lawrence Cohen, Organs Watch, a programme created to investigate human rights violations in the harvesting, sale, and distribution of human organs and tissues.

## **Arieh Shalev, MD**

Arieh Shalev, M.D., was born in Israel and earned his medical degree from the University of Montpellier in France. Dr. Shalev is currently Chair of the Department of Psychiatry at Hadassah University Hospital. He is the founding Director of the Center for Traumatic Stress at the Hadassah University Hospital in Jerusalem. He is the editor and co-founder of Sihot 'Dialogue', in the *Israel Journal of Psychotherapy*. Dr. Shalev's research concerned posttraumatic stress disorders in adults: etiology, course and treatment. His research has been supported by NIH/NIMH, US-Israel Bination Science Foundation, the Chief Scientist-Ministry of Health, Israel and other sources.

## **Richard Sheirer**

Mr. Sheirer is currently Senior Vice President with Giuliani Partners in New York City. In this capacity, Mr. Sheirer advises public and private sector clients on emergency planning and communications issues. Mr. Sheirer was appointed director of the New York City Mayor's Office of Emergency Management (OEM) in 2000. OEM is the on-scene coordinator of multiple agency incidents and directs the City of New York's overall emergency response planning and specialized planning response to chemical, biological and nuclear-related incidents. After serving 28 years with New York City Fire Department and rising to deputy commissioner in 1994, he was appointed deputy commissioner for administration and chief of staff for the New York Police Department (NYPD) in 1996. He monitored the NYPD's compliance with federal, state and local regulations and was responsible for the formulation, planning and implementation of policies, procedures and programs. He also served as liaison to the Mayor's Office, City Council, Mayor's Criminal Justice Coordinator, various law enforcement agencies, as well as branches of the U.S. Armed Forces and other government and private concerns. In addition, as chief of staff, he was responsible for recommendations regarding all confidential intelligence and the preparation of testimony for the commissioner before government bodies. He holds a BA in political science from Saint Francis College.

## **Stephen Suomi, PhD**

Stephen J. Suomi is Chief of the Laboratory of Comparative Ethology at the National Institute of Child Health and Human Development (NICHD), National Institutes of Health (NIH) in Bethesda, Maryland. He also holds appointments as Research Professor at the University of Virginia (Psychology), the University of Maryland, College Park (Human Development), and The Johns Hopkins University (Mental Hygiene), and is an Adjunct Professor at Pennsylvania State University (Human Development) and the University of Maryland, Baltimore County (Psychology). Dr. Suomi studied Psychology as an undergraduate at Stanford University, then continued his studies as a graduate student at the University of Wisconsin-Madison, receiving his Ph.D. in Psychology in 1971. Dr. Suomi then joined the Psychology faculty at the University of Wisconsin-Madison, where he eventually attained the rank of Professor. In 1983 he left Wisconsin to join the NICHD when he began his present position. Dr. Suomi has received international recognition for his extensive research on biobehavioral development in rhesus monkeys and other primate species. His initial post-doctoral research successfully reversed the adverse effects of early social isolation, previously thought to be permanent in rhesus monkeys. His subsequent research at Wisconsin led to his election as a Fellow in the American Association for the Advancement of Science for "major contributions to the understanding of social factors that influence the psychological development of nonhuman primates." Since joining the NICHD he has identified heritable and experiential factors that influence individual biobehavioral development, characterized both behavioral and physiological features of distinctive rhesus monkey phenotypes, and demonstrated the adaptive significance of these different phenotypes in naturalistic settings. His present research focuses on three general issues: the interaction between genetic and environmental factors in shaping individual developmental trajectories, the issue of continuity vs. change and the relative stability of individual differences throughout development, and the degree to which findings from monkeys studied in captivity generalize not only to monkeys living in the wild but also to humans living in different cultures.

Throughout his professional career Dr. Suomi has been the recipient of numerous awards and honors. To date, he has authored or co-authored more than 300 articles published in scientific journals and chapters in edited volumes. He has also delivered more than 300 invited colloquia, symposium and workshop presentations, and convention papers in the U.S. and in 12 foreign countries.

### **Bessel van der Kolk, MD**

Bessel van der Kolk, M.D. is a well-known teacher, researcher and clinician in the area of posttraumatic stress. His work integrates developmental, biological, psychodynamic and interpersonal aspects of the impact of trauma and its treatment. He was co-principal investigator of the DSM IV Field Trials for Post Traumatic Stress Disorder. His current research concentrates on how trauma affects memory processes, comparing direct biological treatment interventions with EMDR, and on brain imaging studies of PTSD. He is past President of the International Society for Traumatic Stress Studies, a professor of psychiatry at Boston University and Medical Director of the HRI Trauma Center in Boston. He has taught at universities and hospitals around the U.S. and Europe, as well as Russia, Australia, Israel, Turkey and China and has published more than 100 scientific articles. He is the author of *Psychological Trauma* and co-editor of *Traumatic Stress, the Effects of Overwhelming Experience on Mind, Body and Society*.

### **Rachel Yehuda, PhD**

Rachel Yehuda is Professor of Psychiatry at the Mount Sinai School of Medicine, and is Director of the Traumatic Stress Studies Division at the Mount Sinai School of Medicine and Bronx Veterans Affairs Medical Center. She is an active researcher in the field of posttraumatic stress and has authored more than 150 articles and edited several books on this topic. She has numerous professional memberships such as the American College of Neuropsychopharmacology and International Society for Traumatic Stress, and has served on many scientific advisory and journal editorial boards. Dr. Yehuda served as a delegate for the White House Conference on Mental Health in 1999 and was recognized in the Congressional Record for her work with Holocaust survivors. Dr. Yehuda is one of four Executive Directors on the New York Times Consortium for Trauma Treatment, founded in response to the World Trade Center Disaster in New York. Dr. Yehuda received her Ph.D. in Psychology and Neurochemistry and her M.S. in Biological Psychology from the University of Massachusetts at Amherst and completed her postdoctoral training in Biological Psychiatry in the Psychiatry Department at Yale Medical School.

### **Allan Young, PhD**

Allan Young is Professor of Anthropology at McGill University in Montreal. He is chairman of the Department of Social Studies of Medicine, and a member of the Departments of Anthropology and Psychiatry. His Ph.D. is from the University of Pennsylvania (1970). His earliest ethnographic research was in highland Ethiopia, and concerned traditional medical practices. He later conducted research in Nepal, focused on the efforts of the Nepali government's integrate Ayurvedic medicine

into its national health programme. In 1986, he was invited to conduct ethnographic research at the newly created National Center for Stress Recovery, a psychiatric unit mandated by the US Congress for the treatment of traumatized veterans of the Vietnam War. A book based on this research, *The Harmony of Illusions*, published in 1995. For this work, he was awarded the book received the Wellcome Medal for Research in Anthropology as Applied to a Medical Subject. His forthcoming research focuses on the transfer and transformation of bioscience knowledge (among genetic researchers, clinical psychiatrists, pharmaceutical companies, and lay populations) concerning gene-based vulnerability to psychiatric disorders. He is on the editorial board of several journals, including the *Journal of Nervous and Mental Disease*, *Transcultural Psychiatry*, and *Culture, Medicine and Psychiatry*.

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