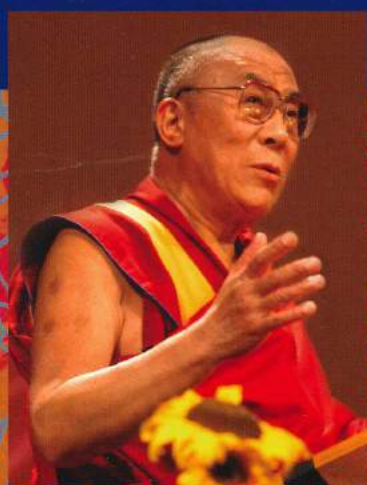




# The Mind and Life Institute Presents: Mind and Life XIII

Co-hosted by the Georgetown University Medical Center  
and the Johns Hopkins University School of Medicine

Investigating the Mind 2005



## The Science and Clinical Applications of Meditation



NOVEMBER 8, 9, & 10, 2005  
DAR CONSTITUTION HALL, WASHINGTON, DC

Conference Program

# ■ Letter from the Chairman of the Mind and Life Institute

Greetings,



On behalf of the Dalai Lama, other members of the board of the Mind and Life Institute, and the faculty and administration of the Georgetown University Medical Center and Johns Hopkins University School of Medicine, I want to welcome you to *Mind and Life XIII: The Science and Clinical Applications of Meditation*.

The Dalai Lama, Francisco Varela and I began the Mind and Life Dialogues between scientists, philosophers and the great living contemplatives in 1987, as a joint quest for a more complete understanding of the nature of reality, for investigating the mind, and for promoting well-being on the planet. Over the past 18 years these dialogues have covered many topics upon which scientists and contemplatives can enrich each others' understanding, ranging from Physics and Cosmology to Neuroplasticity; from Altruism and Ethics to Destructive Emotions.

Our work, however, is not limited to dialogue and understanding. Equally important is the need to translate this understanding into programs, interventions and tools that will bring tangible benefit into people's lives. Hence, we have begun to ask very practical questions. How do we create and maintain a healthy mind and brain? How can we cultivate more emotional balance in our lives and societies? How can we teach these self-management skills earlier in life?

Currently the Mind and Life Institute operates through four divisions, all working together to promote scientific understanding, and individual and cultural well-being:

■ **Mind and Life dialogues** set the scientific agenda by exploring which areas of science are most ripe for collaboration and how that collaboration can be implemented most effectively.

■ **Mind and Life Publications** report to the greater scientific community and interested public what has occurred at our dialogues.

■ **The Mind and Life Summer Research Institute** is an annual week-long residential symposium for researchers and practitioners in science, contemplation, and philosophy to explore how to advance this new field of scientific research on meditation and other forms of contemplative mental training.

■ **The Mind and Life Research Grant Program** provides seed research grants to investigate hypotheses formulated or explored at our Mind and Life dialogues and Research Institute.

This meeting on The Science and Clinical Applications of Meditation is our thirteenth Mind and Life dialogue. In the short time we have together over these two and a half days, we will only begin an exploration of how we can more skillfully use the techniques of meditation and other forms of mental training in clinical applications to improve health and well-being. It is our deepest desire that you become inspired to explore and expand this frontier in your own work.

I want to pay tribute to the memory of Francisco J. Varela, Ph.D., co-founder of the Mind and Life Institute, and express my deepest thanks to his legacy. Without his wisdom, dedication and commitment, we would not be here today.

Welcome, with warmest regards,  
R. Adam Engle, Chairman and CEO

## ■ Program Overview

*Can medicine and science benefit from a collaborative bi-directional dialogue with Buddhism and other contemplative traditions about attention and awareness, meditation, mindfulness, mind/body interactions, the nature of pain and suffering, the cultivation of compassion and self-compassion, and the potential for the training of human faculties for learning, growing, healing and emotion regulation across the lifespan?*

### Background

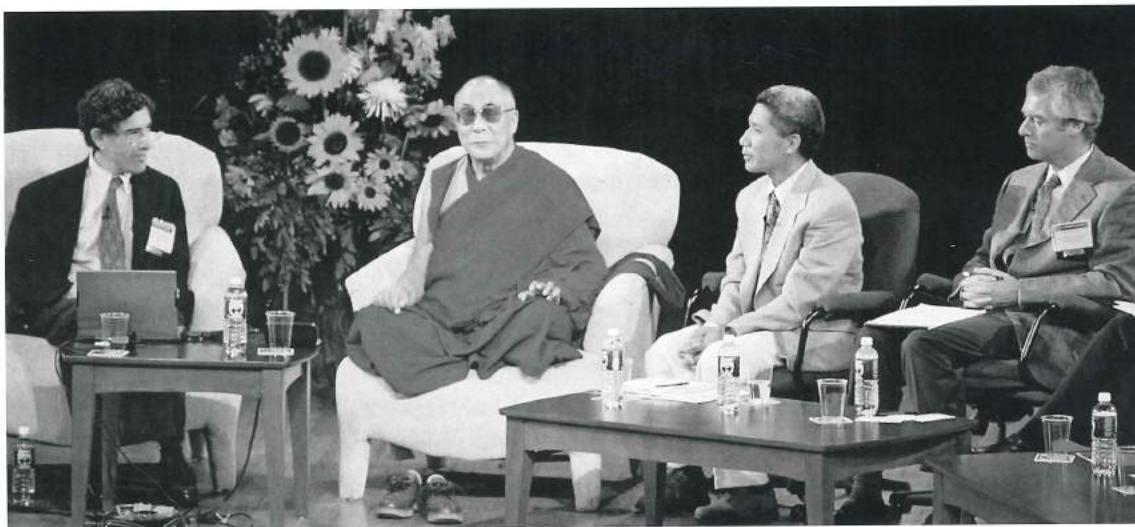
Science is the dominant paradigm in modern society for understanding the nature of reality and providing a knowledge base for improving lives and conditions on this planet. Buddhism began 2,500 years ago with largely the same goals, to understand the nature of reality and to use that understanding to improve lives and conditions on the planet.

Buddhism and other contemplative traditions use the human mind, refined through meditative practice, as its primary instrument of investigation into the nature of reality. While this method of investigation is based on observation, very rigorous logic and experimentation, science

has traditionally viewed it as subjective and at odds with the objectivity of the scientific method.

In the past twenty-five years, an extraordinary confluence has emerged, the converging of the streams of modern science and medicine on the one hand, and the venerable and long-flowing stream of meditative investigation and inquiry on the other. These streams are flowing into the greater river that is the human longing for deeper understanding of what it means to be, and to be human, to be aware, to be alive, and to be healthy and whole, to know who and what we are and how we might live in greater harmony and wisdom.

One manifestation of that convergence is the integration of meditative practices, in particular, mindfulness, into the mainstream of medicine in the form of mindfulness-based approaches for dealing with stress, pain, and chronic illness as a complement to allopathic treatment within the health care system. Another is the growth of collaborative dialogues and experimental investigations now underway involving neuroscientists and psychologists and contemplatives, catalyzed in large measure by the Mind and Life Institute and His Holiness the Dalai Lama's personal interest in science and in promoting such dialogues and investigations. These collaborative studies are beginning to elucidate the extraordinary capacity of the human brain for plasticity that may underlie the development and cultivation of positive human qualities such as compassion. Mind and Life XIII is an opportunity to review some of the work that has been unfolding in these areas over the recent past, and to map out the potential for both broadening and deepening these investigations and inquiries as a way to further our understanding of the nature of the mind itself, the mind-brain-body connection, and the potential for healing and assuaging suffering and eliminating the root causes of that suffering and its downstream consequences when possible.



The Dalai Lama discusses scientific research programs with Richard J. Davidson of the University of Wisconsin-Madison at Investigating the Mind 2003 held at MIT in Cambridge, Massachusetts.

## Meditation is becoming Mainstream in Western Medicine and Society

Applications of meditation are now common in the treatment of stress, pain, and a range of chronic diseases in both medicine and psychiatry, and some approaches are currently the subject of NIH-supported clinical trials and research studies. At the same time, the power of our non-invasive technologies have made it possible to investigate the nature of cognition and emotion in the brain as never before, and to begin to explore the interfaces between mind, brain, and body, and the implications of particular forms of meditative practices for modulating and

regulating biological pathways to restore or enhance homeostatic processes and perhaps extend the reach of both mind and body in ways that might potentially promote rehabilitation and healing as well as greater overall health and well-being.

Recent studies are showing that meditation can result in stable brain patterns and changes over both short and long-term intervals that have not been seen before in human beings and that suggest the potential for the systematic driving of positive neuroplastic changes via such intentional practices cultivated over time. These investigations may offer opportunities for understanding the basic unifying mechanisms of the brain, mind and body that underlie awareness and our capacity for effective adaptation to stressful and uncertain conditions.

## Scientific Studies of Meditative Practices

There have been concerted efforts to scientifically study the clinical application of meditative practices as well as the physiological effects of meditation in both novice and advanced practitioners. This meeting is an opportunity for scientists who have been active in this field to present their approaches to the Dalai Lama and a panel of other scientists and contemplatives. The Dalai Lama, scientists and other contemplatives will then review

the strengths and weaknesses of the current science and clinical approaches, and based on the intersection of these different but complementary epistemologies and traditions, identify new lines of research for potential clinical applications within medicine and psychiatry.

These exchanges will also provide an opportunity for scientists whose research is focused on basic mind-brain-body interactions to learn more about meditation

and to contribute to an ongoing dialogue about the mechanisms by which meditation may influence physical and mental health.

The assembled scholars, clinicians and contemplatives will engage in a collective inquiry about what is known within their investigative and contemplative traditions that might be relevant to a deeper understanding of mind-brain-body connections, improved clinical interventions, and future directions for research. They will also explore potential biological mechanisms through which mental training, as reflected in brain circuits, might influence peripheral biology in ways that are beneficial for health.

# ■ Introduction & Opening Remarks

Tuesday, November 8, 2005 – 9:00-9:30 AM

**R. Adam Engle**, J.D., M.B.A., CEO and Chairman, Mind & Life Institute

**Edward D. Miller**, M.D., C.E.O., Johns Hopkins Medicine, Dean, Johns Hopkins University School of Medicine

**John J. DeGioia**, Ph.D., President, Georgetown University

**Tenzin Gyatso, the XIV Dalai Lama**

# ■ Session One Meditation-Based Clinical Interventions: Science, Practice and Implementation

Tuesday, November 8, 2005 – 9:30 AM-12:00 Noon

## SPEAKERS

Ajahn Amaro, B.Sc.

Richard J. Davidson, Ph.D.

Jon Kabat-Zinn, Ph.D.

## MODERATOR

Matthieu Ricard, Ph.D.

## PANELISTS

The Dalai Lama

Ajahn Amaro, B.Sc.

Richard J. Davidson, Ph.D.

Jon Kabat-Zinn, Ph.D.

Thomas Keating, OCSO

Sharon Salzberg, R.N.

## INTERPRETERS

Thupten Jinpa, Ph.D.

B. Alan Wallace, Ph.D.

**This introductory session sets the stage for the rest of the meeting. It will establish a vocabulary and epistemology of meditative awareness stemming primarily from the teachings of the Buddha, in particular, the Four Noble Truths, and introduce well-established clinical and research programs that are exploring the interfaces between medicine and meditation for patients with chronic health conditions, and between neuroscientific approaches to mind and brain and meditative approaches stemming from the systematic cultivation of attention and awareness.**

Father Keating will offer a Christian contemplative perspective to expand the conversation beyond a Buddhist meditative framework, pointing out commonalities and differences that may be of value in developing new models for meditative interventions and investigations. Matthieu Ricard and Sharon Salzberg will offer their own unique perspectives on the interface between meditation and science and the challenges of living a full and healthy/wholesome life in these times.

## SPEAKERS

**Ajahn Amaro:** *How Buddhist meditative practices can inform our understanding of pain and suffering, the potential for healing, the relief of suffering, and the underlying nature of the human mind – and body.*

Distinctions between pain and suffering are critical and relevant within the context of Buddhist thought and practice. This talk will map out a Buddhist perspective on suffering, its ultimate causes, the possibility of liberation from suffering, and a systematic path for its realization. It will touch on what Buddhists refer to as universal qualities of the human mind that are directly accessible through the cultivation of awareness through meditation.

**Jon Kabat-Zinn:** *Some clinical applications of mindfulness meditation in medicine and psychiatry: The case of mindfulness-based stress reduction (MBSR).*

MBSR has been widely accepted, used, and studied within mainstream medicine and psychiatry for the past twenty five years. This talk will describe MBSR's approach to making mindfulness, "the foundational core of Buddhist meditation," accessible to Western medical patients in a secular form while preserving the universal dharma dimension at its heart. Results from two clinical trials will be presented, one on rates of skin clearing in psoriasis, the other on emotional processing in cortical regions of the brain, and accompanying effects of immune function. Directions in current and future research programs will be pointed out.

**Richard Davidson:** *Mind-brain-body interaction and meditation*

Many peripheral biological systems exist within a network of neural and humoral connections that mediate the influence of the brain on peripheral biological function. Afferent connections to the brain are reciprocated in most of these systems. This anatomical and functional arrangement permits the mind to influence the body and vice versa. Meditation is a form of mental training that involves the voluntary alteration of patterns of neural activity that can produce consequences for peripheral biology through these mechanisms.

Examples from recent and ongoing studies of the neural, immune and endocrine changes produced by meditation will be presented to illustrate possible mechanisms via which meditation can promote increased mental and physical health.

## ■ Session Two Possible Biological Substrates of Meditation

Tuesday, November 8, 2005 – 2:00 PM-4:30 PM

### SPEAKERS

Robert M. Sapolsky, Ph.D.  
Wolf Singer, M.D., Ph.D.

### MODERATOR

Richard J. Davidson, Ph.D.

### PANELISTS

The Dalai Lama  
Robert M. Sapolsky, Ph.D.  
Wolf Singer, M.D., Ph.D.  
Matthieu Ricard, Ph.D.  
Esther M. Sternberg, M.D.

B. Alan Wallace, Ph.D.

### INTERPRETERS

Thupten Jinpa, Ph.D.  
B. Alan Wallace, Ph.D.

**Modern scientific knowledge of how stress affects the brain and body and how the brain can become re-organized to produce states of focused attention that promote learning and change has burgeoned over the past decade.**

This session will showcase some of the latest scientific research on these topics to provide a foundation for the likely substrates upon which meditation might operate. In addition, a detailed understanding of the biological substrates of stress and plasticity will provide a framework for the design of new research that is based upon this recent understanding.

### SPEAKERS

**Robert Sapolsky:** *The neurobiology of the adaptive and the deleterious features of stress*

Few of us will succumb to cholera, smallpox or scarlet fever. Instead, we die from diseases of Westernized lifestyle, which are often diseases worsened by stress. When the stress-response is mobilized by the body because of a typical mammalian stressor (e.g., a sprint from a predator), it is highly adaptive. However, when activated in

the classic manner of Westernized humans (i.e., chronic psychosocial stress), it is pathogenic. The presentation will consider this dichotomy, as well as new directions of research needed for understanding the neurobiology of stress and stress management.

**Wolf Singer:** *Synchronization of brain rhythms as a possible mechanism for the unification of distributed mental processes*

The brain is organized in a highly distributed way and lacks a convergence center for the coherent interpretation of the numerous parallel processes that occur simultaneously within functionally specialized regions. This raises the question how subsystems are integrated so that their computational results can give rise to unified percepts. It is proposed that this integration is achieved at least in part by the synchronization of oscillatory activity in the beta- and gamma frequency range. This interpretation is in accordance with neuronal activation patterns recorded during states of focused attention and meditation, since attentional processes serve binding functions, heighten awareness, and lead to the unification of distributed processes.

## ■ Session Three Clinical Research I: Meditation & Mental Health

Wednesday, November 9, 2005 – 9:30 AM-12:00 Noon

### SPEAKERS

Helen S. Mayberg, M.D.  
Zindel V. Segal, Ph.D.

### MODERATOR

Jon Kabat-Zinn, Ph.D.

### PANELISTS

The Dalai Lama  
Jan Chozen Bays, M.D.  
Jack Kornfield, Ph.D.  
Helen S. Mayberg, M.D.  
Zindel V. Segal, Ph.D.

John D. Teasdale, Ph.D.

### INTERPRETERS

Thupten Jinpa, Ph.D.  
B. Alan Wallace, Ph.D.

**With the advent of MBSR and more recently, MBCT (mindfulness-based cognitive therapy), meditative practices have shown promise in the treatment of anxiety and depression.**

This session will review the experimental evidence for the effectiveness of MBCT in reducing relapse rates for chronic depression, and how mindfulness might be functioning in the brain to regulate depressive cognitions, affect, and behaviors. The different elements comprising the meditation practices and approaches will be examined from the contemplative perspective, and cross-cultural issues discussed regarding content and context and how they may serve to synergistically optimize meditation-based interventions in Western and Asian settings.

### SPEAKERS

**Zindel Segal:** *Mindfulness-based cognitive therapy and the prevention of relapse in recurrent depression*

The advent of effective treatments for mood disorders has provided relief for many depressed patients, yet staying well and preventing relapse are enduring challenges. The clinical application of mindfulness in this group acquaints patients with the modes of mind that often char-

acterize mood disorders while simultaneously inviting them to develop a new relationship to these modes. Thoughts come to be seen as events in the mind, independent of their content and emotional charge. They need not be disputed, fixed or changed but can be held in a more spacious awareness. The growing empirical base for this approach suggests a 50% increase in relapse prophylaxis for previously depressed patients.

**Helen Mayberg:** *Paths to recovery - neural substrates of cognitive and mindfulness-based interventions for the treatment of depression*

Functional neuroimaging has established that both non-pharmacological and pharmacological treatments for depression both change the brain, though they change the brain in different ways. This presentation will present findings from positron emission tomography and functional magnetic resonance imaging studies of functional brain changes mediating depression remission using cognitive behavioral therapy. Differences between cognitive and pharmacological interventions will be discussed in the context of limbic-cortical network model of depression. Implications of this work for understanding the impact of mindfulness meditation as an intervention in the treatment of depression will be considered.

# ■ Session Four Clinical Research II: Meditation & Physical Health

Wednesday, November 9, 2005 – 2:00 PM-4:30 PM

## SPEAKERS

David S. Sheps, M.D.  
John F. Sheridan, Ph.D.

## MODERATOR

Esther M. Sternberg, M.D.

## PANELISTS

The Dalai Lama  
Jan Chozen Bays, M.D.  
Richard J. Davidson, Ph.D.  
Joan Halifax, Ph.D.  
Margaret E. Kemeny, Ph.D.  
David S. Sheps, M.D.  
John F. Sheridan, Ph.D.

## INTERPRETERS

Thupten Jinpa, Ph.D.  
B. Alan Wallace, Ph.D.

As scientific research establishes that many "physical diseases" are modulated by psychological processes such as stressful life events and emotions, the mechanisms underlying these interactions have been targets for scientific research. As the mechanisms become more well-understood, the rationale for using meditation as an intervention for certain types of physical illnesses becomes more compelling and more solidly grounded in modern scientific research.

This session will showcase modern research on the application of meditation-based interventions to cardiovascular disease and to diseases that include a primary immune component.

## SPEAKERS

**David Sheps:** *Mindfulness-based stress reduction and cardiovascular disease*

Psychological stress can markedly decrease blood flow to the heart, dramatically elevating the risk of dying. This talk will

describe the protocol of an ongoing NIH funded study of the impact of Mindfulness-Based Stress Reduction on blood flow responses to mental stress in cardiac patients using cardiac imaging, and on their quality of life.

**John Sheridan:** *Neural-immune interaction*

Various forms of stress affect specific brain systems and through alterations in these circuits, profound changes in immune function can arise. This talk will present an overview of modern research on the impact of different kinds of stress on specific immune processes. The mechanisms through which these effects are produced will be described.

This corpus of research can then be used to consider the mechanisms by which meditation may operate to influence diseases of the immune system.

# ■ Session Five Integration & Final Reflections

Thursday, November 10, 2005 – 9:30 AM-12:00 Noon

## SPEAKERS

Wolf Singer, M.D., Ph.D.  
Ralph Snyderman, M.D.

## MODERATOR

Bennett M. Shapiro, M.D.

## PANELISTS

The Dalai Lama  
Richard J. Davidson, Ph.D.  
Jon Kabat-Zinn, Ph.D.  
Thomas Keating, OCSO  
Matthieu Ricard, Ph.D.  
Sharon Salzberg, R.N.  
Ralph Snyderman, M.D.

## INTERPRETERS

Thupten Jinpa, Ph.D.  
B. Alan Wallace, Ph.D.

In this session, Drs. Singer and Snyderman will reflect on the major themes elucidated during the various presentations and dialogues.

## SPEAKERS

**Wolf Singer**

Research over the past two decades has identified specific features of neural oscillations and synchrony that appear to participate in perceptual processes and consciousness. These may be among the mechanisms that are affected by meditation. This set of reflections will consider the application of basic research on neural oscillations and synchrony to the understanding of changes that may be produced by meditation and related forms of mental practice.

**Ralph Snyderman**

Medicine is moving inexorably toward a more integrative perspective on many fronts, as emerging technologies and expanded epistemologies are incorporated into how medicine is practiced. This set of reflections will consider the ways in which what has been presented from both the clinical and basic science perspectives might contribute to this ongoing development in medical care, medical education, and medical research, and its potential for giving rise to more rational institutional approaches to health and well-being, as well as elucidating a larger role for engaged participation on the part of individuals in furthering their own health.

## Conference Speakers and Panelists



**TENZIN GYATSO**, the XIV Dalai Lama, is the leader of Tibetan Buddhism, the head of the Tibetan government-in-exile, and a spiritual leader revered worldwide. He was born on July 6, 1935 in a small village called Taktser in northeastern Tibet. Born to a peasant family, he was recognized at the age of two, in accordance with Tibetan tradition, as the reincarnation of his predecessor, the XIII Dalai Lama. The Dalai Lamas are manifestations of the Buddha

of Compassion, who choose to reincarnate for the purpose of serving human beings. Winner of the Nobel Prize for Peace in 1989, he is uni-

versally respected as a spokesman for the compassionate and peaceful resolution of human conflict.

He has traveled extensively, speaking on subjects including universal responsibility, love, compassion and kindness. Less well known is his intense personal interest in the sciences; he has said that if he were not a monk, he would have liked to be an engineer. As a youth in Lhasa it was he who was called on to fix broken machinery in the Potola Palace, be it a clock or a car. He has a vigorous interest in learning the newest developments in science, and brings to bear both a voice for the humanistic implications of the findings, and a high degree of intuitive methodological sophistication.



**AJAHN AMARO** is co-abbot of Abhayagiri Buddhist Monastery in northern California. He received a B.Sc. with Honours from London University in psychology & physiology. In 1977 he took up residence in a forest meditation monastery in the lineage of Ven. Ajahn Chah in Northeast Thailand. He returned to England to join Ven. Ajahn Sumedho at a newly founded forest monastery in Sussex. In 1983, he journeyed

830 miles on foot to a branch monastery in Northumberland. In 1985 he came to Amaravati Buddhist Centre and helped with teaching and administration for ten years, serving as vice-abbot for the last two years. He started coming to the USA in 1990, spending a few months

each year teaching here. In 1996 Abhayagiri Monastery was opened.

The main focus of his life is practicing as a forest monk, and teaching and training others in that same tradition. Since 1988 he has taken part in numerous conferences and seminars, including two in Dharamsala and one in California with the Dalai Lama and a group of Western Buddhist teachers. In 1994 in London he was also involved in a seminar, "The Good Heart", that the Dalai Lama led where he was giving commentaries on the Christian gospels. He has published four books: *Tudong-the Long Road North*, *Silent Rain*, *The Pilgrim Kamanita* (ed.) and *Small Boat, Great Mountain-Theravadan Reflections on the Natural Great Perfection*. Another book is forthcoming (a companion to *Small Boat*) *The Island-An Anthology of the Buddha's Teachings on Nirvana*.

<http://www.abhayagiri.org>



**JAN CHOZEN BAYS** is a pediatrician specializing in the evaluation of children for possible abuse and neglect. After graduating from Swarthmore College she received medical training at U.C. San Diego. For ten years she served as medical director of the Child Abuse Response and Assessment Center (CARES NW) at Legacy Children's Hospital in Portland, Oregon where over 1,000 children and families are seen each

year for concerns of abuse and neglect.

She has written a number of articles for medical journals and also book

chapters on aspects of child abuse including substance abuse and child abuse, child abuse by poisoning, and conditions mistaken for child abuse.

Jan Chozen Bays has studied and practiced Zen Buddhism since 1973. She was ordained as a Zen priest under Taizan Maezumi Roshi and given authorization to teach in 1983. With her husband, Hogen Bays, she teaches at Zen Community of Oregon and Great Vow Zen Monastery, a residential center for intensive Zen training in Clatskanie, Oregon. She has published articles about Zen in *Tricycle* and *Buddhadharma* magazines. Her book, *Jizo Bodhisattva, Modern Healing and Traditional Buddhist Practice* (Tuttle Publishing, 2002), has been re-issued in paperback as *Jizo Bodhisattva, Guardian of Children, Women and Other Voyagers* by Shambhala Publishing.



**RICHARD J. DAVIDSON** is the Director of the Laboratory for Affective Neuroscience and the W.M. Keck Laboratory for Functional Brain Imaging and Behavior at the University of Wisconsin at Madison. He was educated at New York University and Harvard University, where he received his B.A. and Ph.D., respectively, in psychology. Over the course of his research career he has focused on the relationship between brain and emotion. He is

currently the William James Professor and Vilas Research Professor of Psychology and Psychiatry at the University of Wisconsin. He is co-author or editor of thirteen books, the most recent being *Visions*

*of Compassion: Western Scientists and Tibetan Buddhists Examine Human Nature* and *The Handbook of Affective Science*.

Professor Davidson has also written more than 200 chapters and journal articles. He is the recipient of numerous awards for his work, including the Research Scientist Award from the National Institute of Mental Health, the Distinguished Scientific Contribution Award from the American Psychological Association and election to the American Academy of Arts and Sciences. He was a member of the Board of Scientific Counselors of the National Institute of Mental Health. In 1992, as a follow-up from previous Mind and Life meetings, he was a member of a scientific team doing neuroscientific investigations of exceptional mental abilities in advanced Tibetan monks.

## ■ Conference Speakers and Panelists



**JOHN J. DeGIOIA** became the 48th president of Georgetown University on July 1, 2001. He has served the university both as a senior administrator and a faculty member since 1979. Georgetown University is a distinctive educational institution, rooted in the Catholic faith and Jesuit tradition, and therefore committed to spiritual inquiry, engaged in the public sphere, and invigorated by religious and cultural pluralism.

As the first lay president of a Jesuit university, Dr. DeGioia places special emphasis on sustaining and strengthening Georgetown's Catholic and Jesuit identity and its responsibility to serve as a voice and an instrument for justice. He is a member of the Order of Malta,

a lay religious order of the Roman Catholic Church dedicated to serving the sick and the poor. Dr. DeGioia has been a strong advocate for interreligious dialogue.

To prepare young people for leadership roles in the global community, Dr. DeGioia has expanded opportunities for both interreligious and intercultural dialogue, welcomed world leaders to campus, and convened international conferences to address challenging issues. He is a member of the U.S. National Commission of UNESCO and Chair of its Education Committee, and he represents Georgetown at the World Economic Forum and on the Council on Foreign Relations. Dr. DeGioia remains a Professorial Lecturer in the Department of Philosophy, and recently taught "Ethics and Global Development." He earned a bachelor's degree in English from Georgetown University in 1979 and his Ph.D. in Philosophy from the University in 1995.



**R. ADAM ENGLE**, Mind and Life Institute Chairman and CEO, is a lawyer, businessman, and entrepreneur who has divided his professional life between the for-profit and non-profit sectors. In the for-profit sector, he began his career as a lawyer, practicing for 10 years in Beverly Hills, Albuquerque, Santa Barbara, and Teheran. After leaving the practice of law, he formed an investment management firm, focusing on global portfolio management on behalf

of individual clients. He also started several business ventures in the United States and Australia.

Mr. Engle co-founded the Mind and Life dialogues in 1983 with Francisco Varela, and formed the Mind and Life Institute in 1990. In 1993, he co-founded the Colorado Friends of Tibet, a statewide Tibetan support group based in Boulder. He also founded a speakers' series at the Stanford Business School entitled "Integrity and Compassion in Business." He was a founding member of the Social Venture Network, and is a member of the World Business Academy. He received his J.D. degree from the Harvard Law School and his M.B.A. from the Stanford Graduate School of Business.



**JOAN HALIFAX** is a Buddhist teacher, Zen priest, anthropologist, and author. She is Founder, Abbot, and Head Teacher of Upaya Zen Center, a Buddhist monastery in Santa Fe, New Mexico. She received her Ph.D. in medical anthropology in 1973. She has lectured on the subject of death and dying at many academic institutions, including Harvard Divinity School and Harvard Medical School, Georgetown Medical School, University of

Virginia Medical School, Duke University Medical School, University of Connecticut Medical School, among many others. From 1972-1975, she worked with psychiatrist Stanislav Grof at the Maryland Psychiatric Research Center on pioneering work with dying cancer patients, using LSD as an adjunct to psychotherapy. After the LSD

project, she has continued to work with dying people and their families and to teach health care professionals as well as lay individuals on compassionate care of the dying.

She is Director of the Project on Being with Dying and Founder and Director of the Upaya Prison Project that develops programs on meditation for prisoners. For the past twenty-five years, she has been active in environmental work. She studied for a decade with Zen Teacher Seung Sahn and was a teacher in the Kwan Um Zen School. She received the Lamp Transmission from Thich Nhat Hanh, and was given Inka by Roshi Bernie Glassman. A Founding Teacher of the Zen Peacemaker Order, her work and practice for more than three decades has focussed on applied Buddhism. Her books include: *The Human Encounter with Death* (with Stanislav Grof); *Shamanic Voices*; *Shaman: The Wounded Healer*; *The Fruitful Darkness*; *Simplicity in the Complex: A Buddhist Life in America*, *Being with Dying*, *Wisdom Beyond Wisdom* (with Kazuaki Tanahashi).



**THUPTEN JINPA** was educated in the classical Tibetan monastic academia and received the highest academic degree of Geshe Lharam (equivalent to a doctorate in divinity). Jinpa also holds a B.A. in philosophy and a Ph.D. in religious studies, both from the University of Cambridge, U.K, where he also worked as a research fellow. Since 1985, he has been the principal translator to the Dalai Lama, accompanying him to the United States, Canada,

and Europe. He has translated and edited many books by the Dalai Lama, including the recent *New York Times*' bestseller *Ethics for the*

*New Millennium*, *The Universe in a Single Atom: Convergence of Science and Spirituality*, and *Transforming the Mind*.

His published works include also scholarly articles on various aspects of Tibetan culture, Buddhism and philosophy, including the entries on Tibetan philosophy for *Routledge Encyclopedia of Asian Philosophy*, *Songs of Spiritual Experience: Tibetan Poems of Awakening and Insight* (co-authored) and *Self, Reality and Reason in Tibetan Philosophy*. He is currently the president of the Institute of Tibetan Classics, a non-profit educational organization dedicated to editing and translating key classical Tibetan texts into contemporary languages, and the editor-in-chief for the Institute's Library of Tibetan Classics. Jinpa also teaches as an adjunct professor at McGill University, Montreal.



## Conference Speakers and Panelists



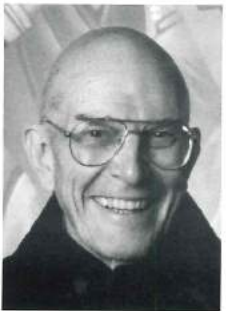
**JON KABAT-ZINN** is founder and former executive director of the Center for Mindfulness in Medicine, Health Care, and Society and Professor of Medicine Emeritus at the University of Massachusetts Medical School. He is also the founder and former director of the Stress Reduction Clinic. He is the author of *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain and Illness; Wherever You Go, There You Are:*

*Mindfulness Meditation in Everyday Life*; co-author, with his wife Myla, of *Everyday Blessings: The Inner Work of Mindful Parenting*; and author of *Coming to Our Senses: Healing Ourselves and the World Through Mindfulness*. He received his Ph.D. in molecular biology from MIT in 1971 in the laboratory of the Nobel Laureate Salvador Luria.

His research since 1979 has focused on mind/body interactions for

healing and on the clinical applications and cost-effectiveness of mindfulness meditation training for people with chronic pain and stress-related disorders, including a work-site study of the effects of mindfulness-based stress reduction (MBSR) on the brain and how it processes emotions, particularly under stress, and on the immune system (in collaboration with Dr. Richard Davidson). He has trained groups of judges, business leaders, lawyers, Catholic priests, and Olympic athletes (the 1984 Olympic Men's Rowing Team) in mindfulness, as well as directed multi-year programs in the inner city and in the Massachusetts state prison system.

He also conducts professional training retreat programs in MBSR for health professionals around the world. He has received several awards from educational and medical centers for his work. He is a Founding Fellow of the Fetzer Institute, a Fellow of the Society of Behavioral Medicine, and the founding convener of the Consortium of Academic Health Centers for Integrative Medicine.



**THOMAS KEATING** received his B.A. from Fordham University, and entered the Cistercian Order in Valley Falls, Rhode Island in January 1944. He was appointed Superior of St. Benedict's Monastery, Snowmass, Colorado in 1958, and was elected abbot of St. Joseph's Abbey, Spencer, Massachusetts in 1961. He returned to Snowmass after retiring as abbot of Spencer in 1981, where he established a program of ten-day intensive retreats in the practice of Centering Prayer, a contemporary form of the Christian contemplative tradition.

He is one of the architects of the Centering Prayer movement begun

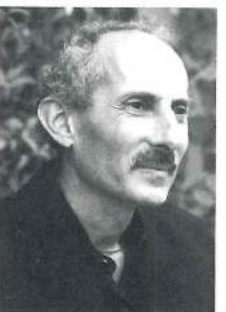
in Spencer Abbey in 1975 and founder in 1984 of Contemplative Outreach, Ltd., now an international, ecumenical organization that teaches Centering Prayer, Lectio Divina, and the Christian contemplative tradition and provides a support system for those on the contemplative path through a wide variety of resources, workshops, and retreats. He helped to found the Snowmass Interreligious Conference in 1982 and is a past president of the Temple of Understanding and of the Monastic Interreligious Dialogue among other interreligious activities. He is the author of many books and video/audio tape series. His books include *Open Mind, Open Heart, The Mystery of Christ, Invitation to Love, Intimacy with God, The Human Condition, The Better Part, and The Fruits and Gifts of the Spirit*.



**MARGARET E. KEMENY** is Professor of Psychiatry and Director of the Health Psychology Program at the University of California San Francisco. After spending her undergraduate years at UC Berkeley, she received her Ph.D. in health psychology from UCSF and completed a four-year post-doctoral fellowship in immunology at UCLA. Dr. Kemeny's research has focused on identifying the links between psychological factors, the immune system and health and ill-

ness. She has made important contributions to our understanding of the ways in which the mind –one's thoughts and feelings – shapes biological responses to stress and trauma.

Over the past 20 years, she has examined the effects of psychological factors on physiology and disease, particularly HIV infection and inflammation. Her research centers on the impact of cognition and emotion on physiology and health, as well as the effects of psychological interventions on cognitive, emotional and physiological responses. She is particularly interested in the impact of social factors on one's sense of self, self-conscious emotions and physiology.



**JACK KORNFIELD** was trained as a Buddhist monk in Thailand, Burma, and India, and has taught meditation around the world since 1974. He is one of the main teachers to introduce Theravada Buddhist practice to the West. His work has been focused on integrating Eastern spiritual teachings in a way that is accessible to Western society. He graduated from Dartmouth College in Asian Studies and holds a Ph.D. in Clinical

Psychology from Saybrook Institute. His doctoral dissertation was

one of the first to explore the psychology of mindfulness meditation. Jack is a husband and father, and a founding teacher of two of the largest meditation centers in the West, the Insight Meditation Society and Spirit Rock Meditation Center.

He has published a number of articles on the interface of Eastern and Western psychology, and his books include *Living Dharma; Seeking the Heart of Wisdom; A Still Forest Pool; Stories of the Spirit, Stories of the Heart; Buddha's Little Instruction Book; A Path with Heart; After the Ecstasy, the Laundry; and The Art of Forgiveness, Loving-Kindness and Peace*.

## ■ Conference Speakers and Panelists



**HELEN S. MAYBERG** is Professor of Psychiatry and Neurology at Emory University School of Medicine. She received her B.A. in Psychobiology from University of California, Los Angeles and the M.D. degree from the University of Southern California. Following an internship in Internal Medicine at the Los Angeles County-USC Medical Center, and a Residency in Neurology at the Neurological

Institute, Columbia University College of Physicians and Surgeons in New York, she completed a post-doctoral fellowship in Nuclear Medicine at Johns Hopkins. Dr. Mayberg has held academic positions at Johns Hopkins, the University of Texas Health Sciences Center in San Antonio, and was the first Sandra Rotman Chair in

Neuropsychiatry at the Rotman Research Institute and the University of Toronto.

The central theme of her research program is the use of functional neuroimaging methods to define critical neural pathways mediating normal and abnormal mood states in health and disease. Converging findings from a series of studies has led to a neural systems model of major depression. This model provides the foundation for ongoing experiments examining mechanisms of standard antidepressant treatments such as cognitive behavioral therapy and pharmacotherapy as well as development of novel surgical interventions for treatment resistant patients. Since her move in 2004 to Atlanta, these studies have been expanded to further address neurobiological markers predicting treatment response, relapse and resistance as well as depression vulnerability, with a goal towards developing imaging-based algorithms that will discriminate patient subgroups



**EDWARD D. MILLER** was named Chief Executive Officer of Johns Hopkins Medicine, the 13th Dean of The Johns Hopkins University School of Medicine and Vice President for Medicine of The Johns Hopkins University in January 1997. His appointment followed a year-long national search for the first-ever CEO of Johns Hopkins Medicine, a new organization which formally integrates operations and planning of the School of Medicine with The Johns

Hopkins Health System and Hospital to ensure their continued preeminence in education, discovery and patient care. He received his A.B. from Ohio Wesleyan University and his M.D. from the University of Rochester School of Medicine and Dentistry. He was a Surgical Intern at University Hospital in Boston, Chief Resident in Anesthesiology at Peter Bent Brigham Hospital in Boston, and a Research Fellow in Physiology at the Harvard Medical School.

In 1981-82, he spent a sabbatical year as Senior Scientist in the Department of Pharmacology and Physiology of Hôpital Necker in Paris. An anesthesiologist who has authored or co-authored more than 150 scientific papers, abstracts and book chapters, Dr. Miller joined Hopkins in 1994 as Professor and Chairman of the Department of Anesthesiology and Critical Care Medicine, a post he held until May 1999. He was named Interim Dean of the School of Medicine in 1996. He came to Hopkins after eight years at Columbia University in New York, where he served as Professor and Chairman of the Department of Anesthesiology in the College of Physicians and Surgeons.

Prior to that, he spent 11 years at the University of Virginia in Charlottesville, where he rose from Assistant Professor to Professor of anesthesiology and surgery and Medical Director of the Surgical Intensive Care Unit. Under his aegis, both The Johns Hopkins Hospital and School of Medicine continue to be ranked among the very best in the nation by *U.S. News & World Report*, and the School continues to rank at the top in NIH research funding.



**MATTHIEU RICARD** is a Buddhist monk at Shechen Monastery in Kathmandu and French interpreter since 1989 for His Holiness the Dalai Lama. Born in France in 1946, he received a Ph.D. in Cellular Genetics at the Institut Pasteur under Nobel Laureate Francois Jacob. As a hobby, he wrote *Animal Migrations* (Hill and Wang, 1969). He first traveled to the Himalayas in 1967 and has lived there since 1972. For fif-

teen years he studied with Dilgo Khyentse Rinpoche, one of the most eminent Tibetan teachers of our times.

With his father, the French thinker Jean-François Revel, he is the author of *The Monk and the Philosopher* (Schocken, New York, 1999), and of *The Quantum and the Lotus* with the astrophysicist Trinh Xuan Thuan (Crown, New York, 2001). He has translated several books from Tibetan into English and French. As a photographer, he has published several albums, including *The Spirit of Tibet* (Aperture, New York) and *Buddhist Himalayas* (Abrams, New York).



**SHARON SALZBERG** has been teaching meditation retreats worldwide for almost 30 years. She is a co-founder of the Insight Meditation Society in Barre, Massachusetts, The Barre Center for Buddhist Studies and The Forest Refuge, a new center for long term meditation practice.

Sharon is the author of *Faith: Trusting Your Own Deepest Experience*, published by Riverhead Books, *Lovingkindness: The Revolutionary Art of Happiness* and *A Heart as Wide as the World*, both published by Shambhala Publications.

## ■ Conference Speakers and Panelists



**ROBERT SAPOLSKY** is John A. and Cynthia Fry Gunn Professor of Biological Sciences, Neurology and Neurological Sciences at Stanford University, and is a research associate at the Institute of Primate Research, National Museums of Kenya. His work is in four broad areas: a) how stress and stress hormones damage the nervous system and

compromise the ability of neurons to survive neurological insults; b) the design of gene therapy strategies to save neurons from such insults; c) the design of gene therapy strategies to protect against animal models of psychiatric disorders; d) long-standing studies of wild baboons in East Africa, examining the relationships among dominance rank, social behavior, personality, and patterns of stress-related disease. Sapolsky is the author of 5 books and of some 350 technical papers.



**ZINDEL V. SEGAL** is the Morgan Firestone Chair in Psychotherapy in the Department of Psychiatry at the University of Toronto. He is Head of the Cognitive Behaviour Therapy Unit at the Centre for Addiction and Mental Health and is a Professor in the Departments of Psychiatry and Psychology at the University of Toronto. He received his undergraduate training in Psychology at McGill University and completed his graduate work at Queen's University.

Dr. Segal's research focuses on cognitive mechanisms of relapse

vulnerability in affective disorder, especially the way in which transient dysphoria can (re)evolve depressive knowledge structures in semantic memory. He is currently conducting a 5-year NIMH funded study to evaluate the sequencing of pharmacological remission in depression with mindfulness-based prophylaxis for the prevention of depressive relapse and recurrence.

Dr. Segal is a member of the NIMH Interventions Review Committee and has served as an associate editor for *Cognitive Therapy and Research*. He has published over 150 scientific articles and 7 books including: *Mindfulness-Based Cognitive Therapy for Depression* (with Williams and Teasdale) which advocates for the relevance of mindfulness-based clinical care in psychiatry and mental health.



**BENNETT M. SHAPIRO** is a consultant in biotechnology. He was previously Executive Vice President, Worldwide Licensing and External Research, where he directed Merck's research relationships with the academic and industrial biomedical research community. He joined Merck Research Laboratories in September of 1990 as Executive Vice President, Basic Research, Merck Research Laboratories. In this position he was responsible for all the basic and preclinical research activities at Merck worldwide.

Earlier, he was Professor and Chairman of the Department of Biochemistry at the University of Washington. He is the author of

over 120 papers on the molecular regulation of cellular behavior and the biochemical events that integrate the cascade of cellular activations at fertilization.

Shapiro received his bachelor's degree in chemistry from Dickinson College and his doctor's degree in medicine from Jefferson Medical College. Following an Internship in Medicine at the University of Pennsylvania Hospital, he was a Research Associate at the NIH, then a Visiting Scientist at the Institut Pasteur in Paris and returned to the NIH as Chief - Section on Cellular Differentiation in the Laboratory of Biochemistry, prior to joining the University of Washington. Dr. Shapiro has been a Guggenheim Fellow, a Fellow of the Japan Society for the Promotion of Science and a Visiting Professor at the University of Nice.



**DAVID S. SHEPS** received his M.D. from the University of North Carolina (1969), completed his residency in the Department of Medicine at Mount Sinai Hospital (1972) and completed a fellowship in cardiology at Yale University School of Medicine (1974). He has an MSPH in Epidemiology from the University of North Carolina (1988). Dr. Sheps is Professor and Associate Chair in the Division of Cardiology at the University of Florida College of Medicine and is a staff cardiologist at the Gainesville VA Medical

Center. He is Director of Nuclear Cardiology at the University of Florida. Effective January 2002, Dr. Sheps was recognized for his accomplishments in behavioral medicine by being appointed as Editor-in-Chief of the *Psychosomatic Medicine Journal*.

Dr. Sheps is a well-recognized expert in the field of the effects of psychological stress in patients with coronary artery disease and mental stress ischemia and has a strong track record of publications and grants in this area. Dr. Sheps has been principal investigator on numerous grants funded by the NIH, the Health Effects Institute, the US Environmental Protection Agency, and pharmaceutical groups.

## ■ Conference Speakers and Panelists



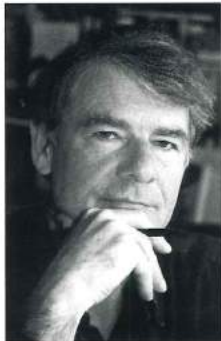
**JOHN F. SHERIDAN** is Professor of Immunology and Director of the Comprehensive Training in Oral and Craniofacial Biology program. He currently holds the George C. Paffenbarger Alumni Endowed Research Chair, and is the Associate Director of the Institute for Behavioral Medicine Research at the Ohio State University. He received a B.S. degree from Fordham University, and M.S. and Ph.D. degrees from the Waksman Institute

of Microbiology at Rutgers University.

He did postdoctoral training in microbiology/immunology at the Duke

University Medical Center and the Johns Hopkins School of Medicine.

He is a founding member and past president of the Psychoneuroimmunology Research Society. His major research interests include neuroendocrine regulation of gene expression in inflammatory and immune responses, stress-induced susceptibility to infectious disease, viral pathogenesis and host immunity. Current studies seek to define key cellular and molecular mechanisms by which social behavior affects immunity and resistance to infectious disease. To date, these studies have demonstrated the importance of the hypothalamic-pituitary-adrenal axis in viral pathogenesis, resistance to infectious disease, effectiveness of vaccination, and tissue repair/wound healing.

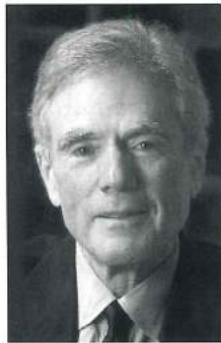


**WOLF SINGER** is Director at the Max Planck Institute for Brain Research in Frankfurt and Founding Director of the Frankfurt Institute for Advanced Studies (FIAS). He studied medicine at the Universities of Munich and Paris, received his M.D. from the Ludwig-Maximilians-University and his Ph.D. from the Technical University in Munich. Until the mid-eighties his research interests were focused on the experience-dependent development of the cerebral cortex and on mechanisms of use-dependent synaptic plasticity.

Subsequently, his research concentrated on the binding problem that arises from the distributed organization of the cerebral cortex. The hypothesis forwarded by Professor Singer is that the numerous and widely distributed subprocesses which constitute

the basis of cognitive and executive functions are coordinated and bound together by the precise temporal synchronization of oscillatory neuronal activity.

Professor Singer has signed more than 254 articles in peer-reviewed journals, contributed more than 191 chapters to books, has written numerous essays on the ethical and philosophical implications of neuroscientific discoveries, and published 2 books. He is the recipient of numerous awards including the IPSEN Prize for Neuronal Plasticity, the Ernst Jung Prize for Medicine, the Zülch Prize for Brain Research, and the Communicator Prize of the German Research Foundation. He is member of numerous national and international academies, including the Pontifical Academy of Sciences. He served as President of the European Neuroscience Association, as Chairman of the Board of Directors of the Max Planck Society, and as member of numerous Advisory Boards of scientific organizations and editorial boards of journals.



**RALPH SNYDERMAN** is Chancellor Emeritus, Duke University and James B. Duke Professor of Medicine in the Duke University School of Medicine. He is currently a visiting professor in the Global Health Science Center of the University of California at San Francisco. From 1989 to July 2004, he served as Chancellor for Health Affairs and Dean of the School of Medicine. During this period, he oversaw the development of the Duke University Health System, one of the few

fully integrated academic health systems in the country, and served as its Chief Executive Officer. The health system provides not only leading edge care, but is also developing tomorrow's models of health care delivery.

Dr. Snyderman has been a leading proponent of a new approach to health called "Prospective Care." This model envisions each individual receiving a personalized health plan based on their own risks and needs. This will give people far more control of and responsibility for their own health as well as opportunities to improve it. Prospective Care combines the best in science and technology with humanistic medical practice and relies on integrative medicine to do this.

Dr. Snyderman is the recipient of numerous honors, including the highest awards in the field of inflammation research, the Lifetime Achievement Award from the Arthritis Foundation and the first Bravewell Leadership Award for outstanding achievements in the field of integrative medicine. He is a member of the Institute of Medicine and American Academy of Arts & Sciences, past chair of the Association of American Medical Colleges and immediate past president of the American Association of Physicians.

## ■ Conference Speakers and Panelists



**ESTHER M. STERNBERG** received her M.D. and Rheumatology training at McGill University, Montreal, Canada, and was on the faculty at Washington University, St. Louis, MO, before joining the National Institutes Health in 1986. Currently Chief of the Section on Neuroendocrine Immunology and Behavior at the National Institute of Mental Health, Dr. Sternberg is also Director of the Integrative Neural Immune Program, NIMH/NIH and Co-Chair of the NIH Intramural Program on Research in Women's Health.

Dr. Sternberg is internationally recognized for her discoveries in brain-immune interactions and the brain's stress response in diseases including arthritis: the science of the mind-body interaction. She publishes numerous original scientific articles, reviews and textbook chapters in leading scientific journals and authored the popular book

*The Balance Within: The Science Connecting Health and Emotions.*

She has received the Public Health Service Superior Service Award; Arthritis Foundation William R. Felts Award; U.S. Department of Health and Human Services PHS Staff Recognition Award; FDA Commissioner's Special Citation; NIMH Director's Merit Award; was elected to the American Society for Clinical Investigation and a committee of the Institute of Medicine; testified before Congress; was a World Health Organization Advisor and member of the National Library of Medicine's Literature Selection Technical Review (Medline) Committee.

Dr. Sternberg lectures and chairs conferences nationally and internationally, including the Smithsonian Institution (Washington, D.C.), Nobel Forum (Karolinska Institute, Stockholm); is past-President of the International Society for Neuroimmunomodulation; co-directed the NLM Exhibition on "Emotions and Disease" (1996) and is featured in the NLM's Exhibition on Women in Medicine (2004-05).



**JOHN TEASDALE** received his first degree in psychology from the University of Cambridge. Subsequently, he studied for his Ph.D. in abnormal psychology, and trained as a clinical psychologist, at the Institute of Psychiatry, University of London, where he then taught for a number of years. After working as a National Health Service clinical psychologist in the University Hospital of Wales, he began a thirty year period of full-time research, supported by the Medical Research Council, first in the Department of Psychiatry, University of Oxford, subsequently in the MRC Cognition and Brain Sciences Unit, Cambridge.

The continuing focus of this research has been the investigation of basic psychological processes and the application of that under-

standing to the relief of emotional disorders. Initially this involved the development and evaluation of behavioral therapies for anxiety disorders, subsequently the exploration of cognitive approaches to understanding and treating major depression, and, most recently, the development of mindfulness-based cognitive therapy, a program that is effective in substantially reducing future risk of major depression through an integration of mindfulness training and cognitive approaches.

Dr. Teasdale has published more than a hundred scientific papers and chapters, and co-authored three books. He has received a Distinguished Scientist Award from the American Psychological Association, and has been elected Fellow of both the British Academy and the Academy of Medical Sciences. He is currently retired, pursuing personal interests in meditation and mindfulness training.



**B. ALAN WALLACE** is president of The Santa Barbara Institute for Consciousness Studies. He trained for many years as a monk in Buddhist monasteries in India and Switzerland. He has taught Buddhist theory and practice in Europe and America since 1976 and has served as interpreter for numerous Tibetan scholars and contemplatives, including H. H. the Dalai Lama. After graduating summa cum laude from Amherst College, where he studied physics and the philosophy of science, he earned his M.A. and Ph.D. in religious studies at Stanford University. He has edited, translated,

authored, and contributed to more than thirty books on Tibetan Buddhism, medicine, language, and culture, and the interface between science and religion.

His published works include *Choosing Reality: A Buddhist View of Physics and the Mind* (Snow Lion, 1996), *The Taboo of Subjectivity: Toward a New Science of Consciousness* (Oxford, 2000), and *Buddhism and Science: Breaking New Ground* (Columbia University Press 2003), *Balancing the Mind: A Tibetan Approach to Refining Attention* (Snow Lion, 2005), and *Genuine Happiness: Meditation as the Path to Fulfillment* (John Wiley & Sons, 2005).

<http://www.alanwallace.org>

## ■ CME and CE Credits

■ **CME Credit** – This activity has been planned and implemented in accordance with the Essential Areas and policies of Accreditation Council for Continuing Medical Education through the joint sponsorship of Georgetown University Hospital and the Center for Functional and Molecular Imaging. Georgetown University Hospital is accredited by the ACCME to provide continuing medical education for physicians.

Georgetown University Hospital designates this educational activity for a maximum of 12.5 hours in category 1 credit toward the Physician's Recognition Award of the American Medical Association. Each physician should claim only those hours he/she actually spent in the activity.

If you are interested in earning CME credits for participating in

this meeting, please sign in and pick up your application form at the CME Accreditation table at the DAR Constitution Hall the morning of November 8.

■ **CE Credit** – This program has been reviewed and approved for CE credit for psychologists by the American Psychological Association's Continuing Education Committee. This program offers 12.5 CE credits for psychologists. The provider maintains responsibility for the delivery of the program. Approval #05-013.

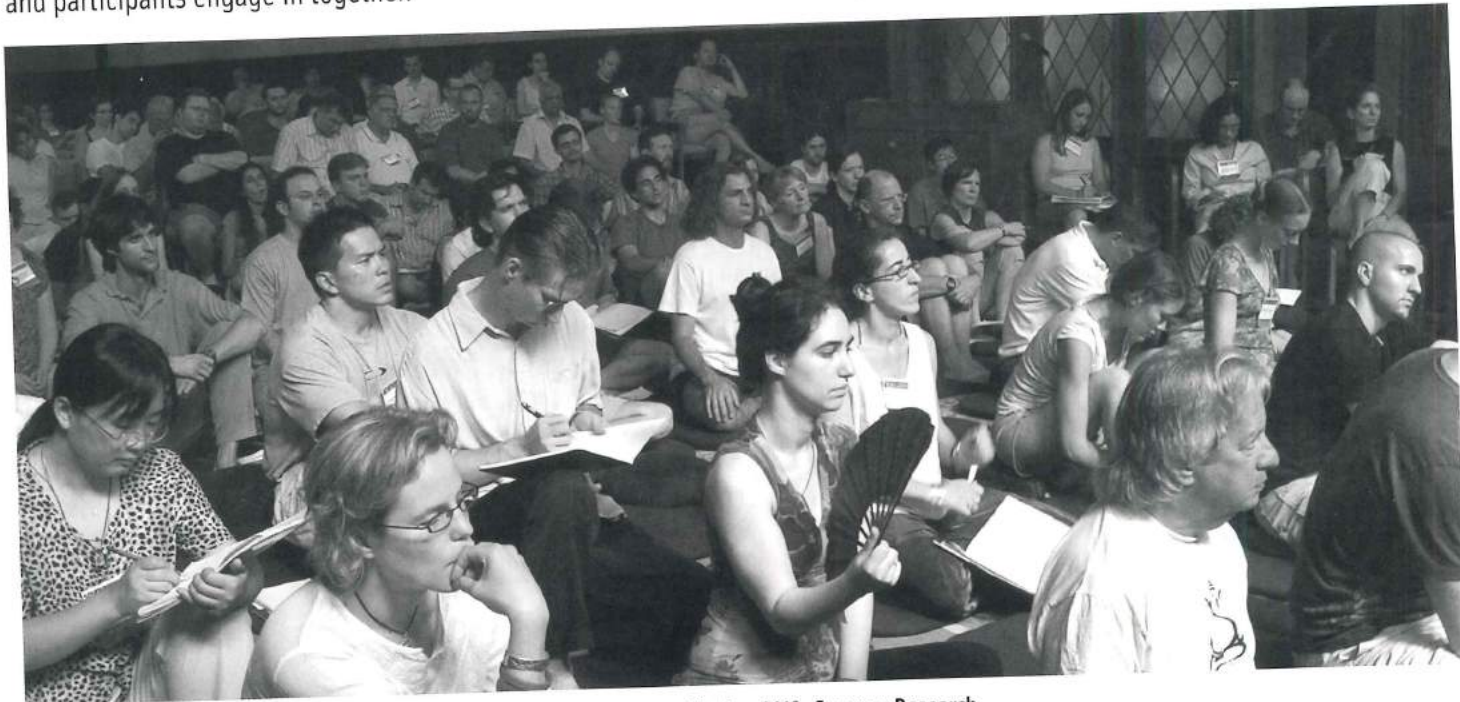
If you are interested in earning CE credits for participating in this meeting, please sign in and pick up your application form at the CE Accreditation table at the DAR Constitution Hall the morning of November 8.

## ■ The Mind & Life Summer Research Institute

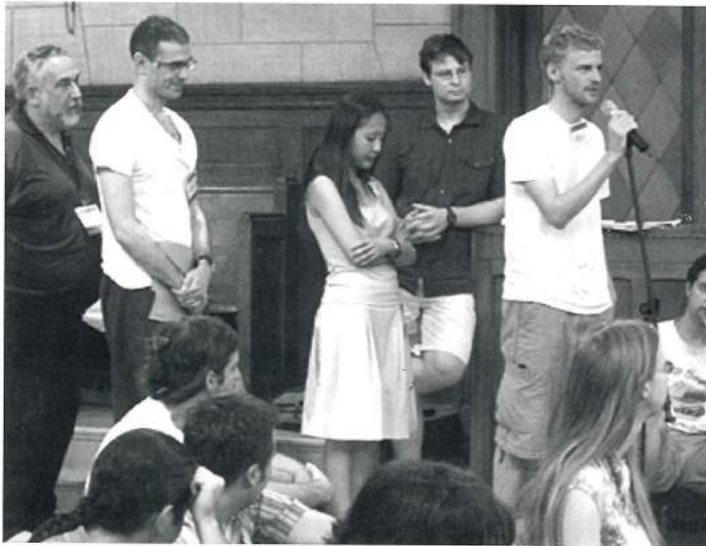
*The Mind and Life Summer Research Institute [MLSRI] was begun in June, 2004 as an annual program to advance the training of a new generation of cognitive/affective neuroscientists, clinicians, and contemplative scholars/practitioners interested in exploring the influence of contemplative practices on mind, behavior, and brain function, including the potential role of contemplative methods for characterizing human experience and consciousness, and the treatment of disease.*

This vibrant, week-long (7-day) residential program includes daily sessions of meditation instruction and practice; presentations of science, philosophy, and contemplative theory and research; discussion and dialogue; small group meetings; faculty office hours; and a day long "mini-retreat" that faculty and participants engage in together.

The scientific emphasis is on developing rigorous experimental designs to evaluate both state and trait effects of contemplative practice, and investigating potential strategies for incorporating "first-person" contemplative methods into cognitive/affective neuroscience research on consciousness. For such an exploration to occur, it is important for the participants



Senior Investigators and Research Fellows attend a session at the 2005 Mind and Life Summer Research Institute held at the Garrison Institute in upstate New York.



Dialogue between faculty, panelists, Senior Investigators and Research Fellows is an important aspect of the Mind and Life Summer Research Institute program.

to appreciate the theoretical commonalities and differences between contemplative and modern scientific perspectives. Hence attention is given to epistemological issues that inherently arise in studying the mind.

**The specific goals of this program are:**

**1) to nurture strategic dialogue** between modern experimental psychologists, clinicians, neuroscientists, cognitive scientists, on the one hand, and contemplative practitioner/scholars on the other, in order to develop research protocols to enhance investigation of human mental activity and its potential effects on health and well being;

**2) to encourage and mentor a cadre of nascent scientists** (graduate students and post-doctoral fellows) and young contemplative practitioners and scholars in an effort to develop the next generation of scientists and clinicians interested in innovation at the mind-brain-behavior interface;

**3) in the process, to advance a research program** to study the influence of contemplative practices on the mind, on behavior, and on brain function by informed collaboration with individuals who have, through intensive training and practice, developed a high degree of intimacy with and control over their own mental functioning.

The MLSRI is held in a rural contemplative conference facility at the Garrison Institute, one hour from New York City. Participants are chosen based on submitted applications as either Research Fellows (graduate students and post-doctoral fellows) or Senior Investigators. Attendance is limited and favors Research Fellows, as innovative and interdisciplinary scientific advances are more likely to succeed in a small meetings of committed researchers and scholars; and new fields can be dramatically shaped by providing training opportunities for young scholars who are in the very early stages of their careers or who are still in training.

Graduates of the MLSRI are also invited to apply for Mind and Life Francisco Varela Research Awards to investigate hypotheses developed at the Institute.

*The 2006 MLSRI will be held June 11-17, 2006. Applications open in January 2006. For more information, please go to <http://www.mindandlife.org/ml.summer.institute.html>*



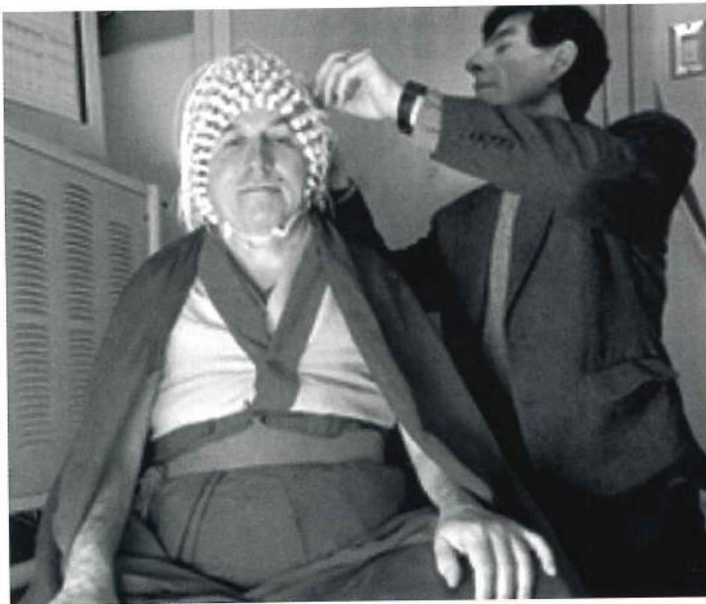
2005 Mind and Life Summer Research Institute faculty and panelists discuss meditation research with Senior Investigators and Research Fellows.

## ■ Mind and Life Research Programs

*Recognizing that all new areas of scientific research must first develop pilot data, the Mind and Life Institute has developed a multi-tiered research initiative to stimulate research looking at whether meditation and mental training are effective and beneficial.*

### University of Wisconsin

A study on neuroscientific research on meditation was begun by a team led by Richard Davidson, Matthieu Ricard and Antoine Lutz, at the University of Wisconsin during the Mind and Life IX meeting held there in 2001. Their research is designed to examine the impact of different forms of meditation on neural systems implicated in emotion and attention. These studies have been conducted in both relatively naïve individuals who are just learning to meditate as well as those who have years of practice and are generally considered to be adepts. In both groups of individuals, they have found that meditation changes the brain.



Richard J. Davidson, Director of the Laboratory for Affective Neuroscience and the W.M. Keck Laboratory for Functional Brain Imaging and Behavior at the University of Wisconsin at Madison, prepares Matthieu Ricard for a neuroscientific research experiment.

One paper reporting on this research has been published in the Proceedings of the National Academy of Sciences and other papers are forthcoming.

The laboratory is currently embarked on two other longitudinal studies. One is of practitioners in a three-month vipassana retreat measuring brain function and neuroendocrine activity before and after the three-month retreat. The other is continued research on mindfulness-based stress reduction, examining neural and neuroendocrine changes associated with the regulation of responses to pain and stressful experiences.

### University of California, San Francisco

The Cultivating Emotional Balance (CEB) project, at the University of California, San Francisco, was initiated by Paul Ekman at the Mind and Life VIII meeting on Destructive Emotions in 2000. The project, now headed by Margaret Kemeny, involves the development of an intensive, 8-session training program integrating meditation/contemplative practices with information and techniques derived from emotion research. The clinical trial, which is currently underway, was designed to determine whether the training is capable of enhancing the trainees' ability to deal with destructive emotions within themselves and in others, while promoting prosocial responses such as empathy and compassion, and physical health. Trainees are female school teachers.

In contrast to most protocols for assessing psychological changes as a result of an intervention, CEB assessments focus on changes in emotional and social behavior and their physiological correlates rather than relying on self-reports of changes. The results are expected to be reported in 2006.

A sub-study of CEB called The Classroom Project is also underway to evaluate changes in emotional and social behavior in the classrooms of participants to determine if changes in teachers' behavior as a result of the training translate into changes in the social and emotional responses of students. This sub-study is headed by CEB Project Director and MLSRI Fellow Patricia Jennings.

### Mind and Life Research Grants

Mind and Life research grants have also been given to investigators at laboratories at Princeton; Harvard; Reed College; Columbia; Stanford; University of California, Berkeley, San Diego and Davis; and the Universities of Arizona, Maryland, Pittsburgh and Toronto.

**The Mind and Life Institute is actively seeking funding to expand this research program.**



## ■ Science for Monks

Each winter approximately 60 monks from nine monasteries all over India have been investigating physical phenomena in hands-on curriculum that allow monks to develop their ideas about physical phenomena. The monks are guided by Western physicists, neuroscientists, geneticists and mathematicians. All participate in a ground breaking program to teach science to Buddhist monks from Tibetan monasteries in exile. The idea is as much to expose Western science to the philosophical rigors of Buddhism as to broaden the horizons of the monks, and it came right from the Dalai Lama as a result of his work with the Mind and Life Institute.

In 1998, the Tibetan spiritual leader asked the Director of the Library of Tibetan Works and Archives, Achok Rinpoche,

to establish the program and asked Bobby Sager and the Sager Family Foundation to fund it. Since then, there have been six workshops.

Although this is the first time that these Tibetan Buddhists have been directly exposed to Western science, the program falls within a Buddhist tradition of philosophical inquiry. Achok Rinpoche points out that as far back as the 6th century Buddhists were debating with Hindu philosophers at the great Buddhist university at Nalanda in Northern India. The tradition of Nalanda continues.

Website: [www.scienceformonks.org](http://www.scienceformonks.org)

## ■ Event Sponsors

### **The Mind and Life Institute**

The Mind and Life Institute (MLI) was co-founded in 1987 by the Dalai Lama, neuroscientist Francisco J. Varela, and entrepreneur Adam Engle for the purpose of creating a rigorous dialogue and research collaboration between modern science, Buddhism and other contemplative traditions as a joint quest for a more complete understanding of the nature of reality, for investigating the mind, and for promoting well-being on the planet.

The Mind and Life Institute operates through four divisions:

- Meetings and Dialogues
- Publications
- Mind and Life Summer Research Institute
- Research Grants and Sponsorship

Since 2000, a primary focus of MLI has been the creation of a new interdisciplinary field of science that asks and answers questions such as: How do we create and maintain a healthy mind and brain? How can we cultivate more emotional balance in our lives and societies? and How can we teach these self-management skills earlier in life?

Please see the Mind and Life Institute website at <http://www.mindandlife.org> for more information.

*Co-Hosted by:*

### **Johns Hopkins School of Medicine**

Johns Hopkins is one of the world's premier centers for scholarship, research and patient care. The university and The Johns Hopkins Health System are separate, but closely allied, institutions. Founded in Baltimore, they now reach across the Baltimore Washington area, with additional facilities in China,

Italy and Singapore and partnerships around the world. The university comprises eight schools, a research and development division called the Applied Physics Laboratory and a number of institutes and centers.

The Health System, which has its origins in the founding of the world famous Johns Hopkins Hospital, now comprises three hospitals, as well as other elements of an integrated system, from a community physicians group to home care. Johns Hopkins Medicine, established in 1995 to unite Hopkins' biomedical research, clinical, teaching and business enterprises, brings together The Johns Hopkins University School of Medicine and its faculty with the facilities and programs of The Johns Hopkins Health System.

The \$2.7 billion enterprise is one of the largest employers in Maryland. Its components consistently are named at the top of national rankings for best hospital and best school of medicine, and its faculty consistently win the largest share of NIH research funds. Results of this research continue to advance efforts to diagnose, treat and prevent many diseases.

### **Georgetown University Medical Center**

Georgetown University Medical Center is an internationally recognized academic medical center with a three-part mission of research, teaching and patient care (through partnership with MedStar Health). The mission is carried out with a strong emphasis on public service and a dedication to the Catholic, Jesuit principle of *cura personalis*, or "care of the whole person." The Medical Center includes the School of Medicine and the School of Nursing and Health Studies, both nationally ranked, and the world renowned Lombardi Comprehensive Cancer Center.

## ■ Financial Support

*The Mind and Life Institute would like to thank the following individuals and foundations and organizations for their generous support:*

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- 2004: *Neuroplasticity: The Neuronal Substrates of Learning and Transformation*
- 2003: *Investigating the Mind: Exchanges between Buddhism and the Biobehavioral Sciences on How the Mind Works*
- 2002: *The Nature of Matter, The Nature of Life*
- 2001: *Transformations of Mind, Brain and Emotion*
- 2000: *Destructive Emotions*
- 1998: *Epistemological Questions in Quantum Physics and Eastern Contemplative Sciences*
- 1997: *The New Physics and Cosmology*
- 1995: *Altruism, Ethics, and Compassion*
- 1992: *Sleeping, Dreaming, and Dying*
- 1990: *Emotions & Health*
- 1989: *Dialogues between Buddhism and the Neurosciences*
- 1987: *Dialogues between Buddhism and the Cognitive Sciences*

### Books Published by the Mind and Life Institute

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- *Investigating the Mind: Buddhism and Science on How the Mind Works*, from Mind and Life XI in 2003. (in preparation)
- *The Nature of Matter; The Nature of Life*, from Mind and Life X in 2002. (in preparation)
- *Destructive Emotions: A Scientific Dialogue With the Dalai Lama*, from Mind and Life VIII in 2002
- *The New Physics and Cosmology: Dialogues with the Dalai Lama*, from Mind and Life VI in 1997
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