

MIND & LIFE
INSTITUTE

The Mind and Life Institute presents



Mind and Life XVI

Investigating the Mind-Body Connection

The Science and
Clinical Applications
of Meditation

WITH HIS HOLINESS
THE DALAI LAMA

Wednesday, April 16, 2008
Hosted by the Department of Medicine
Mayo Clinic Rochester

Introduction to The Mind and Life Dialogues

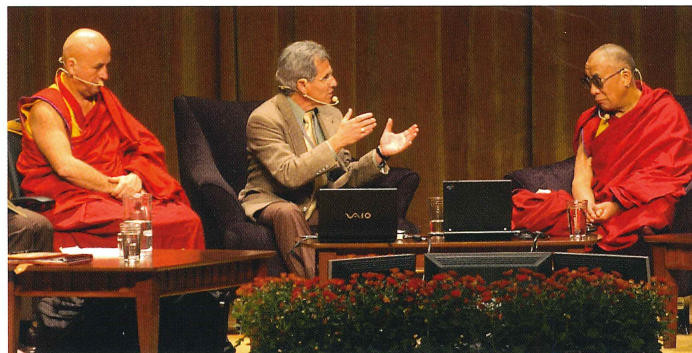
The Mind and Life Dialogues were started in 1987 as an experiment to determine whether a rigorous scientific exchange could occur between modern scientists and the Dalai Lama. The experiment was successful and over the ensuing decade, the Mind and Life Institute [MLI] was formed and six additional intimate dialogues were organized among world-renowned scientists, the Dalai Lama and other contemplatives. The proceedings of each dialogue were published in a book to share the extraordinary event with a wider audience.

In 1998, the Dalai Lama and Mind and Life scientists recognized that it was critical to complement the Mind and Life dialogues with a collaborative scientific research program between contemplatives and scientists studying the effects of meditation and mental training on brain and behavior. This research was begun in 2000.

In 2003, MLI held its first public Mind and Life Dialogue entitled Investigating the Mind: Exchanges between Buddhism and the Bio-Behavioral Sciences on How the Mind Works. This meeting, co-sponsored by MIT and held on their campus, examined the desirability and efficacy of collaborative scientific research between contemplatives and scientists. The meeting resoundingly endorsed this research effort.

In 2004, recognizing the growing interest in the scientific community in collaborative research on meditation, MLI inaugurated the Mind and Life Summer Research Institute and the Mind and Life Francisco J. Varela Research Grant Program. The ML Summer Research Institute is an annual, week-long residential "science retreat" among basic and clinical scientists, contemplative scholars and practitioners, and philosophers to catalyze the creation of new fields of science: Contemplative Neuroscience and Contemplative Clinical Science. The Varela Research Grant Program provides research grants to graduate students and post docs to investigate hypotheses developed at the ML Summer Research Institute.

In 2005, MLI held its second public meeting in Washington D.C., entitled Investigating the Mind: The Science and Clinical Applications of Meditation. This meeting was co-sponsored by the Johns Hopkins Medical University and the Georgetown University Medical Center.



Matthieu Ricard and Jon Kabat-Zinn with the Dalai Lama at Mind and Life XIII at in October, 2005

In 2006, MLI began the Mind and Life Education Research Network, a series of multi-disciplinary research meetings with supporting pilot studies, to investigate how contemplative-based practices can be developed to help cultivate increased attentional skills; emotional balance, kindness, compassion and confidence in children.

In 2007, in collaboration with Emory University, MLI sponsored a one-day public meeting, Mindfulness, Compassion, and the Treatment of Depression, with 4,000 people in attendance.

Today, MLI is happy to be joining Mayo Clinic in presenting **Mind and Life XVI, Investigating the Mind-Body Connection: The Science and Clinical Applications of Meditation.**

Investigating the Mind-Body Connection

The Science and Clinical Applications of Meditation

Can medicine and science benefit from a collaborative bi-directional dialogue with Buddhism and other contemplative traditions about 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 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. In the course of these investigations, discoveries are occurring that suggest that meditation may have specific beneficial effects for helping patients cope with certain diseases, particularly chronic illnesses, and further indicate that some of the biological processes that underlie some of these diseases may be affected in beneficial ways from the practice of meditation.

Mind and Life XVI 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.

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

PROGRAM OVERVIEW

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

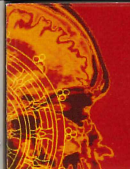
There have been concerted efforts to scientifically study the clinical application of meditative practices as well as the physiological effects of meditation in both novice and advanced practitioners. This meeting is an opportunity for scientists who have been active in this field to present their approaches 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.

Meeting participants engage in a dialogue on depression with the Dalai Lama at Mind and Life XV at Emory University in October, 2007





PROGRAM SCHEDULE and SESSION INFORMATION

Morning Session

9:00 am to 12:00 pm – April 16, 2008

■ **Welcome**

Brent A. Bauer, M.D., Mayo Clinic Rochester

■ **Introduction of Morning Participants**

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

Speakers and Presentation Titles

■ ***A Contemplative Approach to Human Flourishing: The Short and Long Term Effects of Mental Training***

Matthieu Ricard, Ph.D.

■ ***Reflections on the Origination, Development, and Scope of Mindfulness-based Stress Reduction (MBSR) Programs in Mainstream Medicine***

Jon Kabat-Zinn, Ph.D.

■ ***Mind-Brain-Body Interaction and Meditation***

Richard J. Davidson, Ph.D.

■ ***Break: 10:15 am to 10:45 am***

■ ***Mindfulness-Based Stress Reduction Programs for Patients and Families Living with Cancer: Overview of a Program of Research***

Linda E. Carlson, Ph.D., R.Psych.

■ ***Compassionate and Mindful End-of-Life Care: A Relational-Contemplative Approach for Clinicians***

Roshi Joan Halifax, Ph.D.

■ ***Audience Questions***

Daniel Goleman, Ph.D.

■ ***Lunch: 12:00 pm to 1:30 pm***

Afternoon Session

1:30 pm to 4:00 pm – April 16, 2008

■ ***Introduction of Afternoon Participants***

Glenn S. Forbes, M.D., CEO, Mayo Clinic Rochester

Speakers and Panelists

■ ***Compassion in Medicine***

The Dalai Lama

■ ***Summary of Morning Presentations***

Daniel Goleman, Ph.D.

■ ***Panel Discussion***

The Dalai Lama, Glenn S. Forbes, M.D., CEO, Mayo Clinic Rochester, Daniel Goleman, Ph.D., and Geshe Thupten Jinpa, Ph.D.

■ ***Audience Questions***

Daniel Goleman, Ph.D., Moderating

■ ***Closing by Glenn S. Forbes, M.D., CEO, Mayo Clinic Rochester***

■ ***Closing Remarks***

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



Presentation Abstracts

A Contemplative Approach to Human Flourishing: The Short and Long Term Effects of Mental Training

Matthieu Ricard, Ph.D.

Everyone seeks some kind of happiness and sense of fulfillment in life. However, one usually looks for the source of happiness, as well as unhappiness, in the external world. From a contemplative perspective, such an external search appears not, in the long term, to produce a lasting happiness or to reduce suffering. Rather, a contemplative analysis suggests that the source of happiness and suffering lies not in primarily external conditions, but rather in the qualities of mind that serve to translate outer conditions into happiness or suffering. Though it may not be easy to transform the mind, and thereby one's sense of happiness and fulfillment, the insights of the world's contemplative traditions suggest that such transformations do indeed lie within human reach.

In fact, from a contemplative perspective, one of the most important goals of life for a human being is to identify the inner conditions that lead to genuine happiness and human flourishing, and those that preclude them. First, one needs to apply mindfulness and gain insight into the nature of mind. Secondly, one must cultivate the states of mind that favor authentic happiness; and eliminate those that undermine it. Both aims require practice, determination and perseverance. The whole process of inquiry and transformation is called "mind training" in contemplative traditions such as Tibetan Buddhism. In the short term, mind training helps one to deal with afflictive thoughts and emotions. In the long term, such training transforms one's very way of being, the platform upon which one stands in life. The Tibetan Buddhist contemplative perspective on mind training has been and will continue to be subject to scientific investigation with the aim of documenting the significant transformative potentials of contemplative practice for human well-being and flourishing.

Reflections on the Origins, Development, and Scope of Mindfulness-Based Stress Reduction (MBSR) Programs in Mainstream Medicine

Jon Kabat-Zinn, Ph.D.

MBSR as a clinical outpatient intervention model for groups of patients with a broad spectrum of diagnoses and conditions has been increasingly accepted, utilized, and studied within mainstream medicine and psychiatry over the past 29 years. It has also given rise to or paved the way for other, more recent mindfulness-based interventions for more narrowly targeted conditions, particularly on the psychiatry/psychology side. This presentation will describe MBSR's approach to making mindfulness, often spoken of as the heart of Buddhist meditation, accessible to Western medical patients in a secular form that preserves the universal dharma dimension at its core. Evidence will be presented that significant medical and psychological benefits across a wide spectrum of diagnoses derive from engaging in such programs and practices as a form of participatory medicine, complementing other forms of treatment and health care.

In this growing field, the term mindfulness is used in a broad-brush, umbrella sense that subtends both the methods of meditative cultivation and potential outcomes in the form of greater awareness, compassion, and wisdom. These capacities of mind and heart are explicitly cultivated as part of MBSR programs. The cultivation of mindfulness requires significant motivation and relatively intensive meditative practice, both formal and informal. It includes greater awareness of and compassion for our tendency to strongly self-identify with particular thoughts and emotions and conditions, and to ignore our habitual impulses toward grasping, clinging, and aversion. The understanding of mindfulness as a practice rather than merely as a good idea is particularly important for developing appropriate standards for clinical competencies in the training of health care professionals interested in delivering mindfulness-based interventions.

Mind-Brain-Body Interaction and Meditation

Richard J. Davidson, Ph.D.

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 bidirectional interactions among neural, immune and endocrine processes will be discussed and will provide a foundation for understanding the possible mechanisms by which meditation, through its direct effects on the brain, may influence peripheral biological processes in ways that are health-promoting.

Mindfulness-Based Stress Reduction Programs for Patients and Families Living with Cancer: Overview of a Program of Research

Linda E. Carlson, Ph.D.

Living with a diagnosis of cancer affects patients and their families on a number of levels, including the physical, psychological and existential. Physically, symptoms of cancer and its treatment can include fatigue, pain, nausea, insomnia and discomfort. Psychologically, symptoms of fear, sadness, anger, grief, loss of control and uncertainty about the future can plague patients throughout the cancer journey. The patient's family is also affected with anxiety, worry, loss and the burden of taking on a caregiver role. Within the context of this disease, the use of mindfulness-based treatment modalities offers a unique means of addressing these symptoms experienced by the patient and his or her family.

Since 1996, the Division of Psychosocial Oncology at the Tom Baker Cancer Centre in Calgary, Alberta, Canada has been offering Mindfulness-Based Stress Reduction (MBSR) programs to cancer patients and their families. Close to 1500 patients and family members have participated, and numerous studies evaluating the efficacy of these programs have been conducted. One study demonstrated large improvements in symptoms of stress and mood disturbance such as anger, anxiety, depression, muscle tension, irritability, sleep disturbance, symptoms of physical arousal and fatigue among program participants compared to waitlist controls. These benefits were maintained through a 6-month follow-up assessment. Another study documented that patients who had elevated cortisol levels prior to program participation showed decreases afterwards; and that the secretion of cytokines by cells of the immune system shifted from a pro-inflammatory to anti-inflammatory environment. These effects persisted up to one year later. Recently, investigations of the salubrious effects of MBSR on positive psychological growth among cancer patients have been initiated.

Compassionate and Mindful End-of-Life Care: A Relational - Contemplative Approach for Clinicians

Roshi Joan Halifax, Ph.D.

Being with those who are dying is an integral part of clinical practice, yet many clinicians feel unprepared to support dying people and their caregivers as they encounter mortality and the final phase of human development. Similar to other aspects of medicine, however, the development of the necessary mental qualities and practical skills that allow clinicians to effectively accompany patients and their families through the experience of a catastrophic illness and/or the dying process requires specialized training. Such training

PRESENTATION ABSTRACTS

Presentation Abstracts, Cont'd

involves the cultivation of a steady, compassionate, and present-centered awareness that positions clinicians as strong but quiet advocates for patients who are suffering and dying. Ideally, such training also affords clinicians a means to be enriched, and not depleted by, their care of others, especially those who are at the end of their lives.

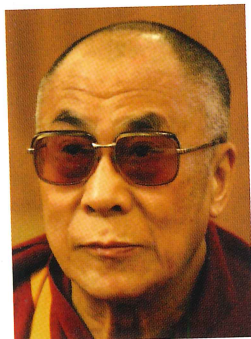
Since 1994, the Professional Training Program in Compassionate End-of-Life Care (CEOLC) has been pursuing these aims. Grounded in a relational and contemplative perspective, the CEOLC program trains health care professionals in the psycho-social, spiritual and ethical aspects of care of the dying. A main focus of the program is the cultivation of mindful awareness, emotional balance, equanimity and compassion around issues of death and dying. These mental qualities and the practices that develop them assist clinicians in learning how to not only provide more mindful and compassionate end-of-life care, but also effective self-care that reduces secondary trauma and compassion-fatigue. This presentation describes the CEOLC program, its key concepts, and the contemplative practices that make the program a unique form of clinical training that is worthy of further scientific investigation and practical dissemination.



Attendees participate in a poster session (above) and in a question and answer session (below) at the annual Mind and Life Summer Research Institute



SPEAKER and PANELIST BIOGRAPHIES



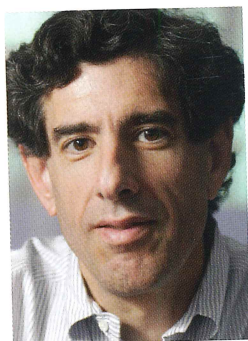
Tenzin Gyatso, the XIVth Dalai Lama, is the leader of Tibetan Buddhism, the head of the Tibetan government-in-exile, and a spiritual leader revered worldwide. He was born on July 6, 1935 in a small village called Taktser in northeastern Tibet. Born to a peasant family, he was recognized at the age of two, in accordance with Tibetan tradition, as the reincarnation of his predecessor, the XIIIth 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 universally 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.



Brent A. Bauer, M.D., is the Director of the Complementary and Integrative Medicine Program at Mayo Clinic. He is board-certified in Internal Medicine, an Associate Professor of Medicine and has been on staff at Mayo Clinic for 16 years. His main research interest has been the scientific evaluation of Complementary and Alternative Medicine (CAM) therapies that patients and consumers are using with increasing frequency. He has presented over 300 lectures internationally on the subject and serves on the editorial boards of numerous publications, including the *American Journal of Chinese Medicine*, and *Explore: The Journal of Science and Healing*. He has authored several book chapters and papers on this topic, and is the Medical Editor of the *Mayo Clinic Book of Alternative Medicine*.

He is a member of the NIH-NCCAM special emphasis review panel and is currently collaborating on over 20 studies being conducted at Mayo Clinic evaluating CAM therapies ranging from acupuncture to valerian. Most recently, Dr. Bauer spearheaded a collaboration between Mayo Clinic and Gaia in the creation of a series of 10 DVDs (Mayo Clinic Wellness Solutions). These DVDs address common health problems (e.g. diabetes, obesity, high blood pressure) with integrative medicine approaches that empower patients to take charge of their health.



Richard J. Davidson, Ph.D., 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, including *Visions of Compassion: Western Scientists and Tibetan Buddhists Examine Human Nature* and *The Handbook of Affective Science*. Professor Davidson has also written more than 250 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. He was named one of the 100 most influential people in the world by *Time Magazine* in May, 2006 and in November, 2006 he received the first Mani Bhaumik Award from UCLA for advances in the understanding of the brain and the conscious mind in healing. 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. Websites: <http://psychz.psych.wisc.edu>; (W.M. Keck Laboratory): <http://tezpur.keck.waisman.wisc.edu>

SPEAKER and PANELIST BIOGRAPHIES



Linda E. Carlson, Ph.D., R. Psych., is a Clinical Psychologist and Associate Professor in Psychosocial Oncology in the Department of Oncology, Faculty of Medicine at the University of Calgary, and the holder of the Enbridge Endowed Research Chair in Psychosocial Oncology. She also holds an Adjunct Associate Professor appointment in the Department of Psychology. Dr. Carlson trained as a Clinical Health Psychologist at McGill University in Montreal, researching the area of psychoneuroendocrinology. She then worked as a post-doctoral fellow at the Tom Baker Cancer Centre in Calgary, sponsored by a Terry Fox Postdoctoral Research Fellowship from the National Cancer Institute of Canada/Canadian Cancer Society, before being appointed Assistant Professor. She received a Canadian Institutes of Health Research New Investigator

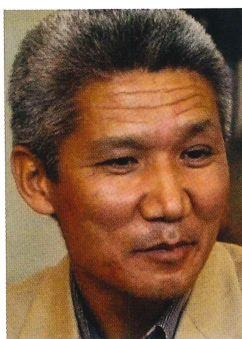
award from 2002-2007, before being appointed the Endowed Chairholder.

Dr. Carlson's current research interests are focused in the areas of computerized distress screening, psychoneuroimmunology, integrative oncology and complementary and alternative medicine, providing and evaluating interventions for cancer patients such as mindfulness-based stress reduction (MBSR), yoga, Reiki, acupuncture, exercise, and smoking cessation. She has published over 80 book chapters and research papers in peer-reviewed journals, holds several millions of dollars in grant funding and regularly presents her work at international conferences.



R. Adam Engle, J.D., M.B.A., is the Chairman, CEO and co-founder of the Mind and Life Institute. He 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 Institute in 1987 with Francisco Varela and the Dalai Lama. 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 a member of the World Business Academy. He received his A.B. in Economics from the University of Colorado; his J.D. degree from the Harvard Law School; and his M.B.A. from the Stanford Graduate School of Business.

He was a founding member of the Social Venture Network, and a member of the World Business Academy. He received his A.B. in Economics from the University of Colorado; his J.D. degree from the Harvard Law School; and his M.B.A. from the Stanford Graduate School of Business.



Geshe Thupten Jinpa, Ph.D., was educated at the Shartse College of Ganden Monastic University, South India, where he received the Geshe Lharam degree. In addition, Jinpa holds a B.A. Honors in philosophy and a Ph.D. in religious studies, both from Cambridge University. He taught for five years at Ganden monastery and worked as a research fellow in Eastern religions at Girton College, Cambridge University.

Jinpa has been a principal English translator to H.H. the Dalai Lama for over two decades and has translated and edited numerous books by the Dalai Lama including *Ethics for the New Millennium*, *Transforming the Mind*, *The World of Tibetan Buddhism* and *The Universe in a Single Atom: Convergence of Science and Spirituality*. His own publications include works

in both Tibetan and English, the most recent books being *Self, Reality and Reason in Tibetan Philosophy*, *Mind Training: The Great Collection*, and *The Book of Kadam: The Core Texts*, the two latter works being part of the Library of Tibetan Classics series.

Jinpa is an adjunct professor at the Faculty of Religious Studies at McGill University, Montreal and a visiting scholar at the Stanford Neuroscience Institute, Stanford University. He is currently the president of the Institute of Tibetan Classics and heads its project of critical editing, translation and publication of key classical Tibetan texts.

SPEAKER and PANELIST BIOGRAPHIES



Glenn S. Forbes, M.D., is chief executive officer of Mayo Clinic Rochester. He serves as chair of Mayo Clinic Executive Board and is a member of Mayo Clinic Board of Trustees. Dr. Forbes received the B. S. degree from the University of Notre Dame and the M.D. degree from Yale University School of Medicine. He completed fellowships at Notre Dame and Yale, in addition to an internship and fellowships in diagnostic radiology and neuroradiology at Mayo Clinic.

Throughout his training and career, Dr. Forbes has received numerous honors and awards and has held professional memberships for the American Board of Radiology, American College of Radiology, American Medical Association and the American Society of Neuroradiology, among other organizations. He is past president and CEO of Franciscan Skemp Healthcare, Mayo Health System, and past chair of Mayo Clinic Rochester Department of Radiology. Dr. Forbes holds the academic rank of professor of radiology, and he has been a staff consultant in Diagnostic Radiology since 1977. Dr. Forbes has served in editorial and reviewer positions for various medical journals, such as the *American Journal of Neuroradiology*, *Journal of Computed Tomography*, *Journal of Neurology* and *Mayo Clinic Proceedings*. He has given national and international presentations and has authored or co-authored numerous articles, book chapters, editorials, electronic media, abstracts and letters. At Mayo Clinic, he actively participates in educational activities and is a recipient of the Teacher of the Year Award.

Dr. Forbes is widely recognized for his clinical and research contributions in radiology and for his leadership at Mayo Clinic.



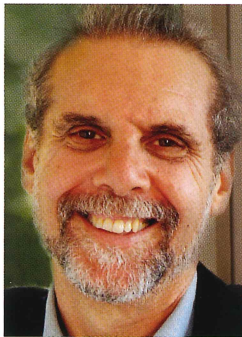
Roshi Joan Halifax, Ph.D., is a Buddhist teacher, Zen priest, anthropologist, and pioneer in the field of end-of-life care. She is Founder, Abbot, and Head Teacher of Upaya Institute and Zen Center in Santa Fe, New Mexico. She received her Ph.D. in medical anthropology in 1973 while teaching at the University of Miami Medical School. She has lectured on the subject of death and dying at many academic institutions, including Harvard Divinity School, Harvard Medical School, Georgetown Medical School, University of Virginia Medical School, Duke University Medical School, University of Connecticut Medical School, among many others. She received a National Science Foundation Fellowship in Visual Anthropology, was an Honorary Research Fellow in Medical Ethnobotany at Harvard University, and is a Distinguished

Visiting Scholar at the Library of Congress.

From 1972-1975, she worked with psychiatrist Stanislav Grof at the Maryland Psychiatric Research Center with dying cancer patients. She has continued to work with dying people and their families, and to teach health care professionals and family caregivers the psycho-social, ethical and spiritual aspects of 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 focused on applied Buddhism. Her books include: *The Human Encounter with Death* (with Stanislav Grof); *The Fruitful Darkness*; *Simplicity in the Complex: A Buddhist Life in America*; *Being with Dying: Cultivating Compassion and Wisdom in the Presence of Death*; *Being with Dying: Compassionate End-of-Life Care Professional Training Guide*, and *Wisdom Beyond Wisdom* (with Kazuaki Tanashashi). She is a Lindisfarne Fellow and Co-director of the Fellowship and a Mind and Life board member.

SPEAKER and PANELIST BIOGRAPHIES

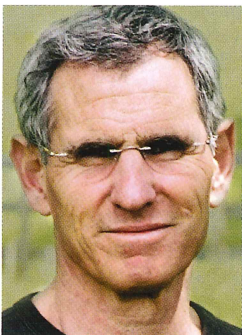


Daniel Goleman, Ph.D., is an internationally known psychologist and lecturer. He received his bachelors degree magna cum laude from Amherst College, where he was an Independent Scholar, and his Ph.D. in psychology from Harvard University. Working as a science journalist, Goleman reported on the brain and behavioral sciences for *The New York Times* for many years. His 1995 book, *Emotional Intelligence* (Bantam Books) was on *The New York Times* bestseller list for a year-and-a-half; with more than 5,000,000 copies in print worldwide in 30 languages, and has been a best seller in many countries. Other books he has written include *Social Intelligence: The New Science of Human Relationships*, *Working With Emotional Intelligence* (Bantam), *Primal Leadership – Learning to Lead with Emotional Intelligence* (co-

authored with Richard Boyatzis and Annie McKee) and *Destructive Emotions*.

Goleman was a co-founder of the Collaborative for Academic, Social and Emotional Learning at the Yale University Child Studies Center (now at the University of Illinois at Chicago), with a mission to help schools introduce emotional literacy courses. He is co-chairman of The Consortium for Research on Emotional Intelligence in Organizations, based in the Graduate School of Applied and Professional Psychology at Rutgers University, which recommends best practices for developing emotional intelligence abilities, and promotes rigorous research on the contribution of emotional intelligence to workplace effectiveness. He is a member of the board of directors of the Mind and Life Institute.

Goleman has received many awards for his writing, including a Career Achievement award for journalism from the American Psychological Association. In recognition of his efforts to communicate the behavioral sciences to the public, he was elected a Fellow of the American Association for the Advancement of Science.



Jon Kabat-Zinn, Ph.D., 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, where mindfulness-based stress reduction (MBSR) originated. He received his Ph.D. in molecular biology from MIT in 1971 in the laboratory of Nobel Laureate, Salvador Luria.

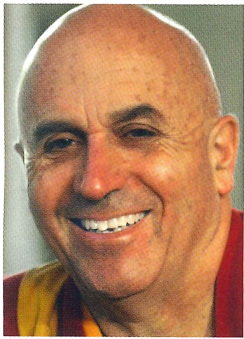
His research since 1979 has focused on mind/body interactions for healing and on the clinical applications and cost-effectiveness of mindfulness meditation training for people with chronic pain and stress-related disorders, including a work-site study of the effects of MBSR on the brain and how it processes emotions, particularly under stress, and on the immune system (in collaboration with Dr. Richard Davidson). He has trained groups from a wide variety of professions in mindfulness.

Dr. Kabat-Zinn is a founding fellow of the Fetzer Institute, and a fellow of the Society of Behavioral Medicine. He received the Art, Science, and Soul of Healing Award from the Institute for Health and Healing, California Pacific Medical Center in San Francisco (1998), the 2nd Annual Trailblazer Award for "pioneering work in the field of integrative medicine" from the Scripps Center for Integrative Medicine in La Jolla, California (2001), the Distinguished Friend Award from the Association for Behavioral and Cognitive Therapies (2005), and an Inaugural Pioneer in Integrative Medicine Award from the Bravewell Philanthropic Collaborative for Integrative Medicine (2007).

Dr. Kabat-Zinn is the founding convener of the Consortium of Academic Health Centers for Integrative Medicine, and a member of the Board of the Mind and Life Institute. He was co-program chair of the 2005 Mind and Life Dialogue: The Clinical Applications of Meditation, held in Washington DC.

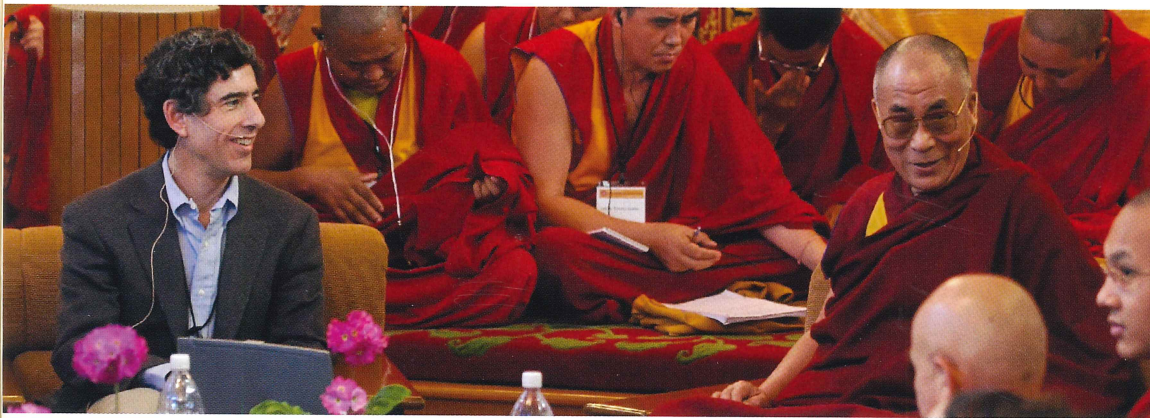
He is the author and co-author of many books about mindful living, including *Wherever You Go, There You Are: Mindfulness Meditation in Everyday Life*, *Coming to Our Senses: Healing Ourselves and the World Through Mindfulness*, and most recently, *Arriving At Your Own Door: 108 Lessons in Mindfulness*, and with Williams, Teasdale, and Segal, *The Mindful Way Through Depression: Freeing Yourself from Chronic Unhappiness*.

SPEAKER and PANELIST BIOGRAPHIES

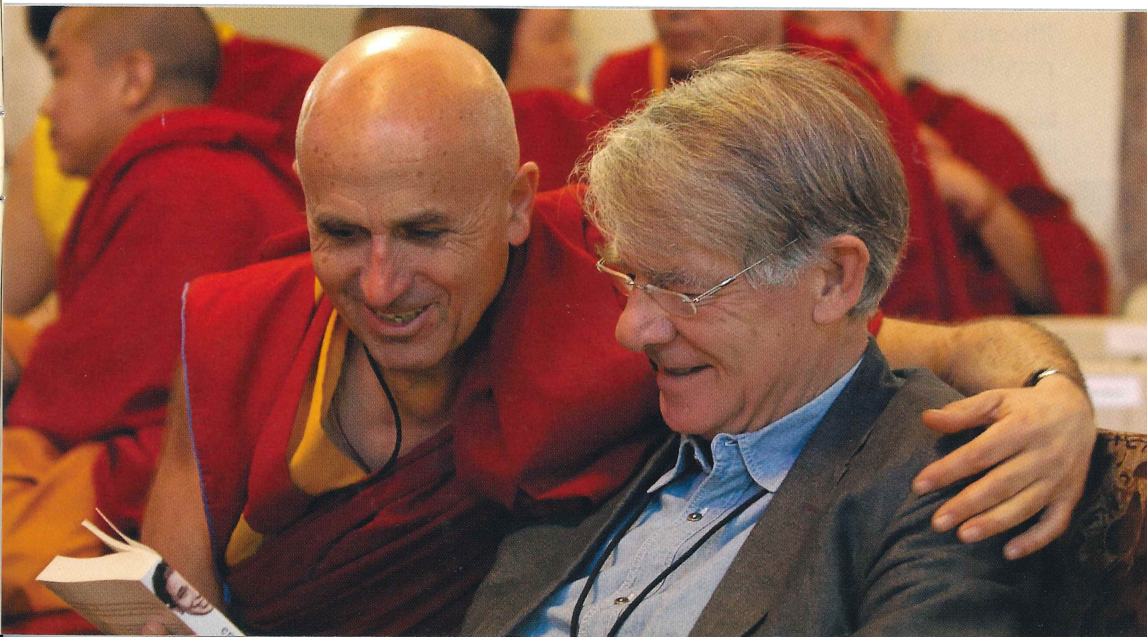


Matthieu Ricard, Ph.D., is a Buddhist monk at Shechen Monastery in Kathmandu and French interpreter since 1989 for His Holiness the Dalai Lama. Born in France in 1946, he received a Ph.D. in Cellular Genetics at the Institut Pasteur under Nobel Laureate Francois Jacob. As a hobby, he wrote *Animal Migrations* (Hill and Wang, 1969). He first traveled to the Himalayas in 1967 and has lived there since 1972, studying with Kangyur Rinpoche and Dilgo Khyentse Rinpoche, two 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), of *The Quantum and the Lotus* with the astrophysicist Trinh Xuan Thuan (Crown, New York), and of *Happiness, A Guide to Developing Life's Most Important Skill* (Little, Brown and Co, New York; Atlantic Press, London). He has translated several books from Tibetan into English and French, including *The Life of Shabkar* (Snow Lion). As a photographer, he has published several albums, including *The Spirit of Tibet* (Aperture, New York), *Buddhist Himalayas* (Abrams, New York), *Tibet, an Inner Journey* (Thames and Hudson, London & NY) and *Motionless Journey* (Thames & Hudson). He devotes all the proceeds from his books and much of his time to thirty humanitarian projects (clinics, schools, orphanages, elderly people's home, bridges, etc.) in Tibet, India, Nepal and Bhutan, and to the preservation of the Tibetan cultural heritage.



Richard Davidson, His Holiness the Dalai Lama and several Buddhist monks discuss "The Universe in a Single Atom" at Mind and Life XIV in Dharamsala, India in April, 2007
(above) while Matthieu Ricard of Shechen Monastery and Wolf Singer of the Max Planck Institute in Frankfurt, Germany (below) discuss a new book on emotions



THE MIND & LIFE INSTITUTE

A TWENTY-ONE YEAR HISTORY OF ACCOMPLISHMENT

Mind and Life Dialogues

The titles of these dialogues between the Dalai Lama and leading scientists show the range of topics that the Mind and Life Institute has explored. For more details on these conferences, please go to www.mindandlife.org.

- 2008: Investigating the Mind-Body Connection: The Science and Clinical Applications of Meditation, hosted by Mayo Clinic
- 2007: Mindfulness, Compassion and the Treatment of Depression, co-sponsored by Emory University
- 2007: The Universe in a Single Atom
- 2005: Investigating the Mind: The Science and Clinical Applications of Meditation, co-sponsored by Johns-Hopkins Medical University and Georgetown Medical Center
- 2004: Neuroplasticity: The Neuronal Substrates of Learning and Transformation
- 2003: Investigating the Mind: Exchanges between Buddhism and the Biobehavioral Science on How the Mind Works, co-sponsored by Massachusetts Institute of Technology
- 2002: The Nature of Matter, The Nature of Life
- 2001: Transformations of Mind, Brain and Emotion at the University of Wisconsin
- 2000: Destructive Emotions
- 1998: Epistemological Questions in Quantum Physics and Eastern Contemplative Sciences at Innsbruck University
- 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

Mind and Life Books and DVD Sets

The following books and DVD sets describe discussions between the Dalai Lama and Western scientists. Books in print can be obtained from major booksellers; DVD sets are available directly from the Mind and Life Institute. For more information about each title, please go to www.mindandlife.org.

- *The Science of a Compassionate Life*, DVD from the Dalai Lama's Denver Public Talk in 2006
- *The Science & Clinical Applications of Meditation*, DVD from Mind and Life XIII in 2005
- *Train your Mind; Change your Brain*, from Mind and Life XII in 2004
- *Investigating the Mind*, DVD from Mind and Life XI in 2003
- *The Dalai Lama at MIT*, from Mind and Life XI in 2003
- *What is Matter, What is 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
- *Visions of Compassion: Western Scientists and Tibetan Buddhists*, from Mind and Life V in 1995
- *Sleeping, Dreaming, and Dying: An Exploration of Consciousness with the Dalai Lama*, from Mind and Life IV in 1992
- *Healing Emotions: Conversations with the Dalai Lama on Mindfulness, Emotions, and Health*, from Mind and Life III in 1990
- *Consciousness at the Crossroads: Conversations with the Dalai Lama on Brain Science and Buddhism*, from Mind and Life II in 1989
- *Gentle Bridges: Conversations with the Dalai Lama on the Sciences of Mind*, from Mind and Life I in 1987

Mind and Life Research Initiatives

- **Mind and Life Summer Research Institute** — A week-long residential science retreat for 185 scientists, clinicians, contemplative scholar/practitioners and philosophers from around the world, working together to develop new fields of science and studies that examine the effects of contemplative practice and mental training on brain, behavior, philosophy, religious studies and the humanities. This is an annual program of the Mind and Life Institute and was begun in June, 2004, and has continued yearly since then.
- **Mind and Life Francisco J. Varela Research Grant Program** — providing small research grants to investigate hypotheses developed at the ML Summer Research Institute. 10 to 15 Varela Awards are given yearly.
- **Mind and Life Education Research Network** — exploring how to bring the benefits of mental training in clarity, calmness and kindness to children.
- **Mind and Life Neuroplasticity of Self Identification Research Studies** — exploring the neural systems that are responsible for the processing of self identification and the neuroplasticity of those neural systems.



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Phone: 720.891.4292

Email: Info@mindandlife.org Website: www.mindandlife.org