



MIND AND LIFE XXX

# Perception, Concepts, and Self

Contemporary Scientific and Buddhist Perspectives

DECEMBER 14-17, 2015 • SERA MONASTERY • BYLAKUPPE, KARNATAKA, INDIA



CO-ORGANIZED BY  
THE MIND & LIFE INSTITUTE  
AND THE DALAI LAMA TRUST, INDIA





# THE MIND AND LIFE DIALOGUES



**Since 1987 the Mind & Life Institute** has organized regular dialogues between His Holiness the Dalai Lama and leading scientists and philosophers. The purpose of these meetings has been to creatively but critically investigate themes of mutual interest concerning the nature of reality, consciousness, the implications of recent developments in neuroscience, as well as to tackle the ethical issues raised by powerful technical innovations made possible by scientific discoveries. In these dialogues, two great investigative traditions—modern science and Buddhist philosophy—come together at the private residence of His Holiness in Dharamsala, India. Leading scientists inquire together with His Holiness and a select group of monastic scholars in the expectation that such cross-cultural dialogue can lead to mutual enrichment and even to new insights and lines of research. Indeed, several significant research initiatives have originated from these dialogues, including the study of contemplative attention and open awareness, compassion and altruism, neuroplasticity and meditation, cultivating emotional balance, and even new research ideas in the experimental foundations of quantum physics. One can say that from these dialogues the new field of contemplative science was born.

In 2003, the Mind & Life Institute organized its first public conference with His Holiness the Dalai Lama, which took place at the Massachusetts Institute of Technology in Boston. The impact of that meeting, and subsequent large public meetings with His Holiness on the clinical and educational applications of mindfulness, has transformed the Mind & Life Institute's mission and scope of work. While continuing

our private dialogues, we simultaneously seek to play an increasingly public role in catalyzing contemplative research around the globe through our growing community of scientists, scholars, and contemplative practitioners, now over 25,000 in number. To this end, Mind and Life holds a Summer Research Institute every year for 150 young scientists and scholars and has made over 130 Varela research awards in support of research in the contemplative sciences. To date, these modest grants have resulted in over 175 scholarly and scientific papers and over \$55 million dollars in follow-on funding.

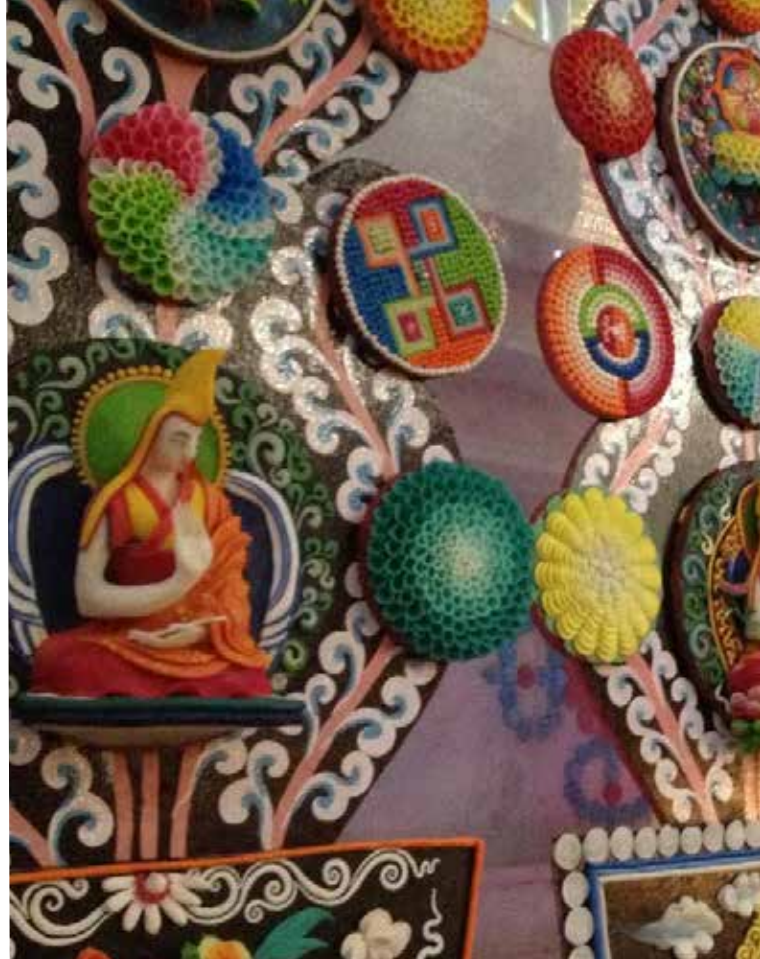
It is against this background that we hold the present meeting. For the second time, the Mind & Life Institute is bringing the dialogue experience to the larger Tibetan Buddhist monastic academic community (the first such meeting was held at Drepung Monastery in Mundgod, India in January 2013). Over the last several decades, largely through the work of Science Meets Dharma, Science for Monks, and the Emory-Tibet Science Initiative, science instruction has been delivered to a select group of monastic scholars. Recently, the decision was made to include science education in Geshe degree training at Tibetan monastic universities, and to facilitate all monastic students being introduced to modern science and the profound philosophical and ethical issues raised by science and technology. His Holiness the Dalai Lama has requested that this meeting take place at Sera Monastery, a major center of learning for the Tibetan monastic community, and one of the main sites where science is being integrated into the traditional curriculum.

**Left:** His Holiness greets Richard J. Davidson at Mind and Life XXVI: Mind, Brain, and Matter in 2013.

**Cover photo:** Monastic audience for ML XXVI at Drepung Monastery.

Photos courtesy of Ned Dunn.





## Perception, Concepts, and Self

**Western science has advanced our understanding** of many foundational issues in cognition, and has expanded psychological and philosophical explorations of the mind. Among the central topics addressed in this scientific endeavor are 1) perception, 2) concept acquisition, the nature of conceptual thought, and the role of language in cognition, and 3) the origins and content of our sense of self. These topics, so central to contemporary cognitive science, have also been an important focus of classical Indian and Tibetan thought, especially in the Buddhist Abhidharma accounts of mind and in the epistemological tradition of Dignāga (fifth century) and Dharmakīrti (seventh century). This confluence of interests opens the possibility that these traditions can learn from and enrich one another.

This conference will bring together some of the world's foremost scientists and philosophers with His Holiness and other senior Tibetan scholars for a rich dialogue,

with thousands of monks and nuns from numerous Tibetan monastic centers of learning in attendance. The dialogue will focus on the topics of perception, concepts, and self from the perspectives of these two traditions. The scientific presentations will address topics in perceptual neuroscience, the psychology of language and thought, and development of the concept of self in early infancy. Philosophical presentations will discuss accounts of perception and its role in knowledge, the nature of conceptual thought and the role of concepts in our experience, and the varying conceptions of self as well as debates concerning the reality of the self. In addition, we will consider possibilities for self-transcendent states such as altruism and compassion.

We hope that these conversations will advance both the project of scientific education in the monastic universities as well as the developing dialogue between the Tibetan and Western academic communities.



**Left:** Tibetan prayer flags in Dharamsala, India. Photo courtesy of Dave Womack.  
**Right:** Butter sculptures in the main prayer hall at Drepung Monastery. Photo courtesy of Wendy Hasenkamp.

### Daily Schedule

Each day of the meeting will be divided into several parts. The mornings and early afternoons will feature presentations and dialogue between His Holiness and scientists about the themes of this meeting—perception, concepts, and self. Later in the afternoon, we will hold a question and answer session and general discussion between the monastic audience and the presenters. Evenings will be reserved for special presentations and hands-on scientific demonstrations.

We are excited to host this landmark event and are conscious of its significance. It is our highest wish that the discussions and insights that emerge will be of benefit for our world and all beings.

## Presenters

**HIS HOLINESS THE DALAI LAMA**

**LERA BORODITSKY**  
University of California–San Diego

**RICHARD J. DAVIDSON**  
University of Wisconsin–Madison

**JOHN DUNNE**  
University of Wisconsin–Madison

**JAY GARFIELD**  
Smith College; Yale-NUS College

**ROSHI JOAN HALIFAX**  
Upaya Zen Center

**WENDY HASENKAMP**  
Mind & Life Institute

**THUPTEN JINPA**  
McGill University; Institute of Tibetan Classics

**BRYCE JOHNSON**  
Science for Monks; Exploratorium

**CATHERINE KERR**  
Brown University

**TENZIN LHADRON**  
Jamyang Choling Nunnery

**GESHE LHAKDOR**  
Library of Tibetan Works and Archives

**THABKHE LODROE**  
Sera Monastery

**GESHE DADUL NAMGYAL**  
Emory University

**GESHE LOBSANG TENZIN NEGI**  
Emory University; Drepung Loseling Monastery, Inc.

**WERNER NATER**  
Science Meets Dharma

**VASUDEVI REDDY**  
University of Portsmouth

**MATTHIEU RICARD**  
Shechen Monastery

**YANGSI RINPOCHE**  
Maitripa College

**PAWAN SINHA**  
Massachusetts Institute of Technology

**PROFESSOR GESHE YESHE THABKHE**  
Central University of Tibetan Studies

**KHENPO SONAM TSEWANG**  
Ngagyur Nyingma Institute

**DAVID VAGO**  
Brigham and Women's Hospital; Harvard University

**CHRISTY WILSON-MENDENHALL**  
Northeastern University

**CAROL WORTHMAN**  
Emory University



# PROGRAM SCHEDULE

## DAY ONE

MONDAY, DECEMBER 14

9:00-11:30 **Perception, Concepts and the Self: Perspectives from Western Science and Philosophy**

HIS HOLINESS THE DALAI LAMA, RICHARD J. DAVIDSON & JAY GARFIELD\*

Moderated by: Roshi Joan Halifax

We will introduce the central themes of this meeting, discussing from scientific and philosophical perspectives the key questions in the study of perception, concepts and the self that will be considered this week. We will discuss the constructive nature of cognition, the possibility and possible nature of preconceptual cognition, and distinctions among different concepts of the self as articulated both in the Western philosophical and scientific and Buddhist traditions, as well as the origins of these concepts in our biology. We will discuss the possibility of neural and cognitive plasticity in each of these domains and, where there is evidence, the impact of different forms of contemplative training on these processes will be reviewed. We will attend to the variety of methodologies for studying these phenomena, the potential for collaboration between the Tibetan and Western traditions, and the implications of these questions for ethical development and for education in secular ethics.

**Does our Perception Mirror Reality? Theories of Perception in Buddhist Epistemology**

THUPTEN JINPA

Moderated by: Roshi Joan Halifax

Systematic theory of perception first emerged in Buddhist thought in the writings of Dignāga (circa fifth century). He defined perception—arising from the convergence of *object*, *sense faculty*, and *awareness*—in terms of absence of conceptuality, the latter involving “associating names and kinds to the object.” Dharmakīrti (seventh century) developed this view further and defined perception as “cognition free of conceptuality and undistorted.” For both these thinkers, *perception* relates to unique particulars that constitute the real world while *conceptual cognition* relates to general characteristics that are constructs of our own thought. Subsequent developments, especially by Dharmottara (eighth century), ushered in a more “active” view where perception acquires a more “ascertaining” character and is seen as intimately connected to the arising of correct perceptual judgment and action-readiness.

These Buddhist epistemologists view perception as apprehending its object by assuming an “aspect” or phenomenal form imprinted upon the cognition through the contact of the object with the sense faculty. Although veridical sensory experience, especially visual awareness, is taken to be paradigmatic, perception is not confined to the sensory modalities alone. It includes mental perception as well.

This presentation will situate Buddhist epistemology in its historical context, and focus on two points: 1) how perception is defined, and 2) how the insistence on perception being free of conceptuality raises important tensions within Buddhist epistemology, especially for the key question of how our perception and thought interact in creating an integrated cognitive experience of the world.

\*All dialogues with His Holiness the Dalai Lama will be interpreted by Thupten Jinpa.



11:30-13:00 **Lunch**

13:00-15:00 **Project Prakash: Merging Science and Service**

PAWAN SINHA - PRESENTATION AND DIALOGUE WITH HIS HOLINESS THE DALAI LAMA  
Moderated by: Richard J. Davidson

All scientists harbor the hope of merging their personal desire to be good Samaritans with their professional desire to be good researchers. This aspiration to braid science and service can only come to fruition if we actively identify opportunities that mesh the two—the kind of science that necessitates service. This presentation will describe Project Prakash as a prototype of what such initiatives might look like. The genesis of this project lies in the confluence of a crucial humanitarian mission and a fundamental scientific quest.

India is home to the world's largest population of blind children. The visual handicap, coupled with extreme poverty greatly compromises the children's quality of life and even basic survival. The humanitarian mission of Project Prakash is to bring light into the lives of curably blind children by providing them sight-restoring surgeries. Embedded in this mission is an unprecedented opportunity to study deep scientific questions: How does the brain learn to extract meaning from sensory chaos? Is the visual world we perceive a construction arrived at through a process of learning, or is our ability to interpret the visual environment immediate and innate? Can the brain learn to see even late in life? By following the development of visual skills in these unique children who are just setting out on the enterprise of learning how to see, we have gained insights into these and other fundamental questions regarding visual perception. Through a combination of behavioral and brain-imaging studies, Project Prakash has revealed remarkable neural malleability even late in life and significant improvements in the children's ability to recognize objects, and use vision to gain independence.

15:00-15:30 **Tea Break**

15:30-16:30 **Q&A with Monastics**

#### **EVENING SESSION**

19:00-20:00 **Investigating the Brain and Mind**

WENDY HASENKAMP

Over the last century, our understanding of the brain has increased dramatically. To help ground some of the information that will be discussed over the week, this presentation will provide a basic introduction to the discipline of neuroscience. Topics will include history, goals, and methods of the field, as well as anatomy and function of the brain and neurons. We will also examine the extraordinary complexity of the brain, and broadly address scientific views of the mind.





**DAY TWO****TUESDAY, DECEMBER 15****9:00-11:30 Examining the Perception of Body Sensations: Correlating Aspects of Perceptual Processes with Mind, Self, and Basic Physiology**

CATHERINE KERR – PRESENTATION AND DIALOGUE WITH HIS HOLINESS THE DALAI LAMA

Moderated by: Jay Garfield

Recent scientific findings suggest that perception of body sensations, such as a lump in the throat or a twinge in the hand, takes place precisely at the interface between mind and body. In this presentation, I will discuss work by our lab and others that shows how focused mental attention rapidly shapes perception of body sensations by influencing neurons in the basic somatosensory processing network in the brain. In parallel with this basic science, our work also suggests mindfulness practice enhances the mind's ability to control the "volume" of these simple body-related neuronal signals. In addition, I will describe a higher-order body perception network in the brain that integrates touch, joint and muscle sensations and visual images of the body, to produce a 3-dimensional ego-centric map of the body in space. To examine this 3-D body map, scientists have created illusions that probe body perception mechanisms. The rubber hand illusion, in which participants are tricked into "disowning" their real hand and adopting the rubber hand as if it were their own, is especially relevant for illustrating the perception of complex body sensations. Recent studies of the rubber hand illusion suggest that perception of complex, 3-dimensional multisensory body feelings occurs explicitly at the mind-body interface, as this perception is correlated with both self-processing and with basic physiological mechanisms such as temperature regulation. Finally, I will conclude by asking whether the neuroscience of body perception networks can provide a tractable basis for investigating the effects of contemplative practices (including Tibetan, Chinese and Zen practices) that focus on changing the 3-dimensional experience of the body in space through attention to posture and to internal spatial "channels" of sensation and "energy."

TUESDAY, DECEMBER 15

**Four Aspects of Concept Formation in the Buddhist Epistemological Tradition**

JOHN DUNNE - PRESENTATION AND DIALOGUE WITH HIS HOLINESS THE DALAI LAMA

Moderated by: Jay Garfield

Drawing primarily on Sanskrit sources, this presentation focuses on concept formation as articulated in the Buddhist epistemological tradition following Dharmakīrti (seventh century). According to realist accounts, concepts correspond to real, extra-mental universals that allegedly constitute real categories or classes in the world. In contrast, Dharmakīrtian theorists hold that all classes and categories are merely constructed through a process of concept formation. One feature of the Dharmakīrtian approach is that concepts generally depend upon sensory experience. Hence, concepts are formed through (and intertwined with) sensory modalities in a manner similar to contemporary grounded cognition theory. A second feature is that, since members of a class do not actually share any universal features, the formation of that class proceeds by excluding non-members while ignoring variability across class members. These twin actions of excluding and ignoring occur within a goal-oriented framework structured by approach and avoidance. Thus, another key issue is the way that concepts relate to goal-oriented behavior. Third, concepts involve the primitive features of language, even though they themselves are not necessarily linguistic. The Dharmakīrtian approach thus suggests that the three aspects of concept formation noted above may be foundational to language itself. Finally, concepts stand in a web of inferential relations, such that every concept implies others and is implied by others. These relations are often erroneous, in that they do not track actual features of the world. A key issue here is the problem of correcting beliefs that are based on false inferential relations, and the central role that philosophy and meditation practice plays therein.

**11:30-13:00 Lunch****13:00-15:00 Language and Mind: How the Languages We Speak Shape the Ways We Think**

LERA BORODITSKY - PRESENTATION AND DIALOGUE WITH HIS HOLINESS THE DALAI LAMA

Moderated by: Carol Worthman

Humans communicate with one another using 7,000 or so different languages, and each language differs from the next in innumerable ways. Do people who speak different languages think differently? Do languages merely express thoughts, or do they secretly shape the very thoughts we wish to express? Are some thoughts unthinkable without language? The question of whether the languages we speak shape the ways we think has been at the center of controversy for centuries, and with good reason. At stake are basic questions all of us have about ourselves, human nature, and reality. Why do we think the way we do? Why does the world appear to us the way it does? Are we able to directly perceive reality? I will discuss research conducted around the world and focus on how language shapes the way we think about color, space, time, causality, and agency. Language is a uniquely human gift. The study of language provides a peek at the very nature of human nature. As we understand how languages and their speakers differ from one another, we discover how we ourselves think, why we think that way, and why the world appears to us the way it does. Coming to understand linguistic and cognitive diversity reveals to us the ingenuity of the human mind, invites us to consider the perspectives of others and dares us to imagine how we ourselves could think differently.

**15:00-15:30 Tea Break****15:30-16:30 Q&A with Monastics**



**EVENING SESSION****19:00-20:30 Monastic Science Education Programs**

WERNER NATER, BRYCE JOHNSON &amp; CAROL WORTHMAN WITH GESHE LHAKDOR

One of the goals of this meeting is to extend the dialogue between Buddhism and science into the larger monastic community. This builds on more than a decade of impressive work from three groups—Science Meets Dharma, Science for Monks, and the Emory-Tibet Science Initiative—to deliver basic science education to Tibetan monastics. All three organizations have been developed in close collaboration with the Library of Tibetan Works and Archives, directed by Geshe Lhakdor. In this session, representatives of these programs will share an overview of the history and ongoing efforts of each group. Werner Nater will present the work of Science Meets Dharma, Bryce Johnson will discuss Science for Monks, and Carol Worthman will describe the Emory-Tibet Science Initiative. The panelists will then explore the collective insights from, and larger impact of, these exciting programs, and think together about future directions for science education.



**Left:** Michel Bitbol presents at ML XXVI. Photo courtesy of Ned Dunn.



**Right:** A nun watches monastic debates on science topics during ETSI. Photo courtesy of Wendy Hasenkamp.









The monastic audience with the presenters at ML XXVI at Drepung Monastery. Photo courtesy of Betsy Hershey.



## DAY THREE

## WEDNESDAY, DECEMBER 16

9:00-11:30 **The Self: What Isn't It?**

JAY GARFIELD - PRESENTATION AND DIALOGUE WITH HIS HOLINESS THE DALAI LAMA  
Moderated by: John Dunne

In this presentation, I will describe the range of positions in Western and in Buddhist philosophy regarding the self and the person, what motivates each, and what problems each view confronts. We will look briefly at the substantialist views of self against which most Buddhist and contemporary Western views are developed. We will distinguish questions about synchronic and diachronic unity and identity, and distinguish between a conventional person and an intrinsically real self. We will consider reductionist, supervenience, bundle and sequential models of selfhood before turning to narrative and socially constructive models of the self and no-self in both traditions. We will conclude with some observations about the ethical implications of self-grasping and of selflessness.

**The Self in a Buddhist Perspective**

PROFESSOR GESHE YESHE THABKHE  
Moderated by: John Dunne

In order to understand Buddhist accounts of the person, one must first identify the object of negation—the thing whose existence is to be refuted. That is the *atman*, or the unchanging, partless core self that is distinct from mind and body, and is what is reborn. At the time of the Buddha, the orthodox position in India was that every person has such an *atman*. The Buddhist doctrine of no-self—*anātman*—rejects that view. The Buddha argued that nothing is permanent or has an essence, and that persons, like everything else, are impermanent, constantly changing, partite, and exist only in dependence on causes and conditions, their parts and on mental imputation. This rejects the orthodox self, but does not reject the conventional, ordinary empirical existence of persons as dependently originated phenomena. Different Buddhist tenet systems have different ways of identifying the person. The Vaibhasika assert that the mind and body are the self. The Yogācāra assert instead that the person is the fundamental mind. Mādhyamikas argue that everything is impermanent, dependent, ultimately empty of true existence and only conventionally real. Prasāngika Mādhyamikas say that while the body and mind are not the self, they are the basis for the designation, “self.” The conventional self on this view is imputed on this basis. The self on this view is an impermanent phenomenon but is neither material form nor consciousness.

11:30-13:00 **Lunch**



- 13:00-15:00** **The Self in Engagement: Perspectives from Developmental Psychology**  
 VASUDEVI REDDY - PRESENTATION AND DIALOGUE WITH HIS HOLINESS THE DALAI LAMA  
 Moderated by: John Dunne

In trying to understand the nature of self, there is often a focus on language and concepts as mediators of human experience. However, there is human experience long before language and concepts are possible. And our attempts to understand the self, what it is, when it emerges, and in fact how and *why* it is, need to begin from there. In this session, I would like to focus on the early months of human infancy, as the phenomena evident in these months contain crucial answers to questions about the origins of self. Even before birth, infants learn to adapt and 'be like' the auditory world they experience and show evidence of increasingly complex emotional expressions. The boundaries of the self are fluid, but with an affective core. At birth, infants are quite able to discriminate self from non-self, distinguishing their own from others' touch, and interested in connections between what they feel and what they see. The self develops relationally, in engagement with the world; a process which needs the infant to be open, the world to recognize this, and the infant to recognize this recognition. From very early in life, infants show openness to things and to people, recognition of aspects of other minds (especially when other minds address the infant directly), and can develop along different paths depending on their experience. The fundamental playfulness of infant selves is a product of their openness and can lead to entirely new paths for those who join their play.

- 15:00-15:30** **Tea Break**  
**15:30-16:30** **Q&A with Monastics**

#### **EVENING SESSION**

- 19:00-21:00** **A Dialogue on Self and Self-Concepts**  
 TENZIN LHADRON, THABKHE LODROE, KHENPO SONAM TSEWANG, DAVID VAGO &  
 CHRISTY WILSON-MENDENHALL

As the dialogue between Buddhism and science continues, the conversation must be extended to the next generation of both monastics and scientists. This session offers an opportunity for emerging scholars in both communities to share their perspectives on topics relevant to this conference: self and self-concepts.

**DAY FOUR**

**THURSDAY, DECEMBER 17**

**9:00-11:30 Self & Ethics: The Science of Altruism**

MATTHIEU RICARD - PRESENTATION AND DIALOGUE WITH HIS HOLINESS THE DALAI LAMA\*  
 Moderated by: Roshi Joan Halifax

As we consider the views of both Buddhist philosophy and Western science on the nature of the self, what are the implications about our interactions with others, and our behavior in the world? What can we make of the idea that the self is constructed, and that all phenomena, including “selves,” are interdependent and mutually co-arising? In this presentation, I will discuss how the way we conceive of the self has deep repercussions on our relation to ourselves, to others, and to the world. I will also distinguish the notions of altruism, empathy, and compassion, and present a way to enact both individual change and societal change by adopting a more compassionate, selfless attitude. Specifically, I will explore the concept of altruism and attempt to show that it is a natural predisposition among human beings. Although some philosophers and psychologists have believed that we are irredeemably selfish, there are no scientific studies supporting such theory; indeed, a significant number of people do behave altruistically. I will also argue that altruism seems to be the only concept allowing us to reconcile the needs pertaining to the short term of the economy, the midterm of the quality of life, and the long term of the environment. Applications will be considered, including enhanced cooperative learning in schools and stronger cooperation within corporations, as well as the notion of sustainable harmony, which aims at reducing inequalities and preserving our environment and the other 8.7 million species who are our co-citizens on this planet.

\*This talk will be followed by commentary from the perspective of contemplative science, from Richard J. Davidson.





11:30-13:00 **Lunch**

13:00-14:30 **The Exchange of Ideas Between Buddhism and Western Culture: Challenges and Opportunities**

GESHE LHAKDOR, GESHE LOBSANG TENZIN NEGI, GESHE DADUL NAMGYAL & YANGSI RINPOCHE

Moderated by: Carol Worthman

As Buddhist ideas and contemplative practices are increasingly applied and integrated into contemporary Western societies, the views and methods of Western science are likewise beginning to enter the Buddhist world. As part of his active collaboration between modern scientists and Buddhist contemplatives, His Holiness the Dalai Lama has initiated a process for the integration of modern science education into the Tibetan monastic curriculum. With the support of the Library of Tibetan Works and Archives (LTWA), this process began in the late 1990s via science workshops sponsored by Science for Monks and basic courses offered by Science Meets Dharma. In 2006, His Holiness invited Emory University to collaborate with the LTWA to develop and implement a sustainable science curriculum for monastics, which is now being implemented at nine major Tibetan monasteries. In 2013, the Gelukpa leadership adopted a historic resolution to include science education as part of the core Gelukpa monastic curriculum, the first major change to this system in 600 years. In this session, we will hear perspectives from both sides of this cultural exchange. Geshe Lhakdor, Geshe Lobsang, and Geshe Dadul will discuss efforts to incorporate science into the monastic education system in a sustainable way, sharing successes, challenges, and future plans. Their presentations will be followed by Yangsi Rinpoche, who will offer reflections on sharing Buddhist ideas in Western culture. Drawing from his experience as the president of Maitripa Buddhist College in Portland, Oregon, his presentation will focus on the challenges and opportunities of teaching Buddhist theory and practices (mindfulness and compassion) in a Western academic setting.

14:30-15:30 **Closing Dialogue: Integration and Future Directions**

ALL PRESENTERS WITH HIS HOLINESS THE DALAI LAMA

Moderated by: Roshi Joan Halifax and Richard J. Davidson

In this final session, we will seek to integrate the material that has been presented across the week, examining the implications for both scientific theory and investigation, as well as for Buddhist epistemology and philosophy. For example, do modern scientific findings about cognitive processes, such as perception and concept formation, agree with Buddhist views, and if not, what can we make of these differences? Can Buddhist views of self (and no-self) be investigated scientifically, and what can psychological and neuroscientific studies tell us about the nature of the self? Furthermore, how can we apply what we know from both Buddhism and science to our work in domains such as education, policy, and health care to create a better world? Finally, we will highlight areas for future investigation and dialogue and consider research implications in relevant fields.

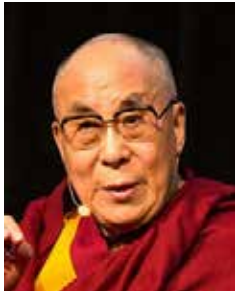


Monastic audience at ML XXVI.  
Photo courtesy of Ned Dunn.



## PRESENTERS

**Tenzin Gyatso, the 14th Dalai Lama**, is the spiritual leader of the Tibetan people and one of the most revered and enduring leaders on the



global stage. Born on July 6, 1935, in a small village called Taktser in north-eastern Tibet, the Dalai Lama was recognized at the age of two, in accordance with Tibetan tradition, as the reincarnation of his predecessor, the

13th Dalai Lama. He received his formal education in Buddhist thought and the great Buddhist classics and received the Geshe Lharam degree, equivalent to a doctorate in divinity, following the conclusion of his final debate examinations at the great Prayer Festival in Lhasa in 1959. Winner of numerous international awards, including the Nobel Prize for Peace in 1989 and the US Congressional Gold Medal in 2007, His Holiness is universally respected for his steadfast promotion of understanding and tolerance across boundaries and a more compassionate and peaceful resolution of human conflict. He has traveled extensively, speaking on subjects including global peace, environment, universal responsibility, justice, equality, and compassion. 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 Potala 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. He has also played a critical leadership role in the formal incorporation of scientific education in the Tibetan monastic curriculum. His Holiness is a co-founder and the honorary Chairman of the Mind & Life Institute, and has been central to the development of this organization for over 25 years.

**Lera Boroditsky**, PhD, is an Associate Professor of Cognitive Science at the University of Cali-



fornia–San Diego and Editor in Chief of *Frontiers in Cultural Psychology*. She previously served on the faculty at MIT and at Stanford. Her research investigates the relationships between mind, world, and language. She

has been named one of 25 Visionaries changing the world by the *Utne Reader*, and is also a Searle Scholar, a McDonnell scholar, recipient of an NSF Career award, and an APA Distinguished Scientist lecturer.

**Richard J. Davidson**, PhD, is the founder of the Center for Investigating Healthy Minds at the Waisman Center ([www.investigatinghealthyminds.org](http://www.investigatinghealthyminds.org)) and the



director of the Waisman Laboratory for Brain Imaging and Behavior ([brainimaging.waisman.wisc.edu](http://brainimaging.waisman.wisc.edu)), both at the University of Wisconsin–Madison. He was educated at

New York University and Harvard University, where he received his BA and PhD, 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–Madison. 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*. He is the author (with Sharon Begley) of *The Emotional Life of Your Brain* published by Penguin in 2012. Professor Davidson has published more than 340 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 and election to the American Academy of Arts and Sciences. He has served on the board for the Mind & Life Institute since 1992. In 2006, he was named one of the 100 most influential people in the world by Time Magazine and that same year he received the first Mani Bhaumik Award from UCLA for advances in the understanding of the brain and the conscious mind in healing. In 2011 he received the Paul D. MacLean Award for Outstanding Neuroscience Research in Psychosomatic Medicine. He serves on the Scientific Advisory Board at the Max Planck Institute for Human Cognitive and Brain Sciences in Leipzig, as Chair of the Psychology section of the American Association for the Advancement of Science and is a member of the World Economic Forum's Global Agenda Council on Mental Health.

**John Dunne**, PhD, holds the Distinguished Chair in Contemplative Humanities at the Center for Investigating Healthy Minds (CIHM) at the University of Wisconsin-Madison, with a joint appointment in the newly formed Department



of Asian Languages and Cultures. His work focuses on Buddhist philosophy and contemplative practice, especially in dialogue with cognitive science. His publications include a monograph on Dharmakirti, and scientific

studies of Buddhist contemplative practice with colleagues from various institutions, including the CIHM. His most recent work focuses on the nature of mindfulness in both theoretical and practical contexts. He was educated at the United States Air Force Academy, Amherst College, and Harvard University, where he received his PhD from the Committee on the Study of Religion in 1999. Before his current appointment, he was tenured in the Department of Religion at Emory University, where he was co-founder of the Emory Collaborative for Contemplative Studies. He previously taught at the University of Wisconsin-Madison (1999-2005) and in earlier

years, conducted research at the University of Lausanne (Switzerland) and the Central University for Higher Tibetan Studies (Sarnath, India).

**Jay Garfield**, PhD, is Kwan Im Thong Hood Cho Temple Professor of Humanities and Head of Studies in Philosophy at Yale-NUS College, Professor of Philosophy at the National University of Singapore, Doris Silbert Professor in the Humanities and Professor of Philosophy at Smith College, Visiting Professor of Philosophy at Yale University, Professor of Philosophy at the University of Melbourne and Adjunct



Professor of Philosophy at the Central University of Tibetan Studies. He studies the philosophy of mind and foundations of cognitive science, Buddhist philosophy, 19th and 20th Century Indian philosophy, hermeneutics, ethics, logic and developmental psycholinguistics. He is author or editor of over 20 books and over 100 scholarly articles. Jay's most recent books are *Moonpaths: Ethics and Emptiness* (with the Cowherds); *The Moon Points Back: Buddhism, Logic and Analytic Philosophy* (with the Koji Tanaka, Graham Priest and Yasuo Deguchi); *Madhyamaka and Yogācāra: Allies or Rivals* (with Jan Westerhoff); and *Engaging Buddhism: Why it Matters to Philosophy*.

Professor of Philosophy at the Central University of Tibetan Studies. He studies the philosophy of mind and foundations of cognitive science, Buddhist philosophy, 19th and 20th Century Indian philosophy, hermeneutics, ethics, logic and developmental psycholinguistics. He is author or editor of over 20 books and over 100 scholarly articles. Jay's most recent books are *Moonpaths: Ethics and Emptiness* (with the Cowherds); *The Moon Points Back: Buddhism, Logic and Analytic Philosophy* (with the Koji Tanaka, Graham Priest and Yasuo Deguchi); *Madhyamaka and Yogācāra: Allies or Rivals* (with Jan Westerhoff); and *Engaging Buddhism: Why it Matters to Philosophy*.



**Roshi Joan Halifax**, PhD, 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 PhD in medical anthropology in 1973 while teaching at the University of Miami Medical School. She received a National

Science Foundation Fellowship in visual anthropology, was an honorary research fellow in medical ethnobotany at Harvard University, and was 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 healthcare professionals and family caregivers about the psychosocial, 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, which has developed programs on meditation for prisoners. She studied with Zen teacher Seung Sahn, 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 four 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*; and *Being with Dying: Compassionate End-of-Life Care (Professional Training Guide)*. She is a Lindisfarne fellow and co-director of the Lindisfarne Association, and a Mind & Life Institute board member.

**Wendy Hasenkamp**, PhD, currently serves as Senior Scientific Officer at the Mind & Life



Institute. Wendy holds a PhD in Neuroscience from Emory University, where her graduate and early postdoctoral training centered around understanding the pathology of schizophrenia, utilizing techniques ranging from

single-cell gene expression to psychophysiology, and from cognitive testing to neuroimaging. More recently, growing out of her personal interest in contemplative practice, she used brain imaging to investigate the neural correlates of dynamic cognitive states that occur during shamatha-style meditation. In her time at Emory, Wendy was central in the development of the Emory Collaborative for Contemplative Studies, organizing an interdisciplinary seminar focused on exploring the application of contemplative practices in our modern society. She also has been involved in developing neuroscience curriculum and teaching Tibetan monastics in India through the Emory-Tibet Science Initiative since 2009; she has taught summer sessions in Dharamsala for two years and is co-author and editor of several neuroscience textbooks developed through this program. She is also the editor of the forthcoming book on the 2013 Mind and Life dialogue with His Holiness the Dalai Lama at Drepung Monastery in Mundgod, India.

**Thupten Jinpa**, PhD, was trained as a monk at the Shartse College of Ganden Monastic University in south India, where he received the Geshe



Lharam degree. Jinpa also holds BA honors in philosophy and a PhD in religious studies, both from Cambridge University. He taught at Ganden monastery and worked also as a research fellow in Eastern religions at

Girton College, Cambridge University. Jinpa has been the principal English translator to His Holiness the Dalai Lama since 1985 and has translated and edited numerous books by the Dalai Lama, including the New York Times Bestsellers *Ethics for the New Millennium* and *The Art of Happiness*, as well as *Beyond Religion: Ethics for a Whole World*. His own publications include, in addition to numerous works in Tibetan, translations of major Tibetan works featured in The Library of Tibetan Classics series as well as *Essential Mind Training*, *Self, Reality and Reason in Tibetan Philosophy*, and *Grains of Gold: Tales of a Tibetan Cosmopolitan* (co-edited with Donald S. Lopez Jr.) His latest book, released in May 2015, is *A Fearless Heart: How the Courage to be Compassionate Can Transform Our Lives*. He is the main author of CCT (Compassion Cultivation Training), an eight-week formal program developed at the Center for Compassion and Altruism Research and Education (CCARE), Stanford University. Jinpa is an adjunct professor at the Faculty of Religious Studies at McGill University, Montreal, the founder and president of the Institute of Tibetan Classics, Montreal and the general series editor of its The Library of Tibetan Classics series. He has been a core member of the Mind & Life Institute from its inception, and since January 2012, the Chairman of its board. Jinpa lives in Montreal and is married with two daughters.

**Bryce Johnson**, PhD, is a scientist-teacher with a love of inquiry and hands-on learning. His



research background is in environmental science with an emphasis on the connection between humans and their impacts on the environment. He holds a BS and an MS in Mechanical Engineering from the University of California–Santa Barbara, and a PhD in Environmental Engineering from the University of California–Berkeley. From 1999-2001, Bryce lived

in Dharamsala, India, working at the Library of Tibetan Works and Archives to launch the Science for Monks program. He has over 15 years of experience directing and implementing programming that has grown to include teacher trainings, institutes, exhibitions, and conferences for Tibetan monastics that are now emerging as leaders of science education within the community. Bryce is also a staff scientist at the Exploratorium where he works with teachers, artists, and exhibit developers to create professional development workshops for middle- and high-school teachers, as well as exhibits at the Exploratorium and public spaces beyond.

**Catherine Kerr**, PhD, is Director of the VITALITY PROJECT situated in the embodied neuroscience lab at Brown University. She also directs the trans-



lational neuroscience initiative in Brown's Contemplative Studies Initiative. Her research investigates the effects of embodied contemplative practice on brain networks, with a specific focus on mindfulness, qigong and Tai Chi.

For the VITALITY PROJECT, she is investigating novel neuro-immune hypotheses related to embodiment, assessing the effects of qigong on fatigue and the experience of energy. The larger goal of the VITALITY PROJECT is to discover neural mechanisms underlying the experience of "energy" and "qi."

**Tenzin Lhadron** was born and grew up in Ladakh in northern India. After hearing His Holiness give teachings and encourage the people of her town



to study Buddhism, she was fortunate to be able to travel with a senior nun to Dharamsala, and join the Jamyang Choling nunnery. From 1989-2007, she studied Tibetan Language, English and Bud-





**Top:** Monastics engage with presenters during Q&A at ML XXVI.

**Left:** His Holiness welcomes Rajesh Kasturirangan at ML XXVI.

**Right:** Sona Dimidjian presents at ML XXVI.

Photos courtesy of Ned Dunn.

dhist philosophy at Jamyang Choling, practicing monastic debate and completing five major Buddhist philosophical texts. While studying, Lhadron also held administrative positions for Jamyang Choling Institute, including Secretary/Assistant Director, disciplinarian, chatting master and store keeper. She has been engaging with Western science for many years, attending the Emory-Tibet Science Initiative from 2009-2013, and participating in two Monastic Graduate courses from Science for Monks. She has also participated in conferences and study tours in over five countries. Lhadron has completed the first three years of the Geshe examination, and plans to complete Geshe degree by the summer of 2016.

**Geshe Lhakdor** was born in Western Tibet and left Tibet in 1962 following the communist Chinese invasion of Tibet in 1959. He studied



Buddhist Philosophy for 13 years in the Institute of Buddhist Dialectics in Dharamsala and received his Master of Prajnaparamita and Madhyamika. From 1986 to 1989 he served as translator and research assistant in Tibet

House, the Cultural Centre of His Holiness the Dalai Lama, in New Delhi. From 1989-2005, for 16 years, he worked in the Office of His Holiness the Dalai Lama as Religious Assistant and Translator and has accompanied His Holiness the Dalai Lama to many countries. He received his MA in English from Punjab University, Chandigarh and MPhil from the University of Delhi and his Geshe from Drepung Loseling Monastic University in South India. Since 2005 he has served as the Director of the Library of Tibetan Works and Archives in Dharamsala. He travels extensively sharing his insights on Buddhism, Tibetan Culture. He has translated a number of books by His Holiness including the *Stages of Meditation and Joy of Living and Dying in Peace*. Since 2005 he has also overseen the monastic science initiative, which has become a very successful programme.

**Thabkhe Lodroe** is a Buddhist monastic with training in both science and Buddhist philosophy.



Born in central Tibet, he came to India in 1997 by walking through the Himalayas to receive an audience with His Holiness the Dalai Lama, and to further his studies of Buddhist philosophy. He began studying science

under the Science Meets Dharma and Science for Monks programs in 2003. In 2009, he received the Tenzin Gyatso Scholarship through the Emory-Tibet Science Initiative to join the first cohort of monks to study science in the US, spending three years at Emory University in Atlanta. After this period of study, Thabkhe returned to India to begin the Geluk monastic examinations. He is currently preparing to finish the last year of these exams, and he also now teaches science to other monastics at the Sera Jey Science Centre at Sera Monastery.

**Geshe Dadul Namgyal** began his Buddhist studies in 1977 at the Institute of Buddhist Dialectics, Dharamsala, and completed the prestigious Geshe Lharampa Degree in 1992 at



Drepung Loseling Monastic University in south India. He also holds a Master's degree in English Literature from Panjab University, Chandigarh, India. Geshe Dadul served as Principal of Drepung Loseling School for five

years before joining Central University of Tibetan Studies (CUTS), Sarnath, India, as Lecturer in the Department of Indian Buddhism for seven years. In June 2007, he began serving as one of His Holiness the Dalai Lama's English language interpreters/translators for religious topics. In this capacity, he traveled extensively with His Holiness' entourage for two and a half years, both within India and abroad. Since 2010, Geshe



Dadul has served as Senior Resident Teacher at Drepung Loseling Monastery Inc., Atlanta. At the same time, he began his current position with the Emory-Tibet Partnership where he is engaged in preparing a curriculum in modern science to be formally used in Tibetan monasteries and nunneries. Geshe Dadul also advises the Emory-Tibet Partnership staff on Tibetan cultural issues, and assists with other translation and interpretation needs. A published author and translator, Geshe Dadul's credits include a Tibetan translation of His Holiness the Dalai Lama's *Power of Compassion*, and a language manual, *Learn English through Tibetan*, in addition to a critical edition of Tsongkhapa's *Speech of Gold*, among others publications. His translation into Tibetan of Jay Garfield's *Western Idealism and Its Critics* was published by CUTS under the title *nub phyogs pa'i sems gtso'i grub mtha' dang der rgol ba rnam ky'i lugs*, and was formally released in December, 2010.

**Werner Nater**, PhD, studied physics at the Swiss Federal Institute of Technology and received his doctorate for his work in atmospheric physics.



He also holds a Master's Degree in Development and Cooperation. In addition, he is a dance and movement therapist and in this capacity has worked in Swiss psychiatric clinics. For some years

Werner held a physics professor post at Zurich University of Applied Sciences. Later, after completing a Master's degree in Development and Cooperation, he managed a research project in forest ecology, and a foreign aid project in Nepal. Returning to Switzerland he took up his previous work in forest ecology and worked on air pollution. Dr. Nater taught physics at a number of colleges, also working on school and curriculum development. More recently, he has played a central role in building the Science Meets Dharma programme, a project initiated by the Dalai Lama to teach

science to nuns and monks in Buddhist monasteries in India. At present, he continues to teach in, and is Project Manager of, this venture based in Bylakuppe and Mundgod in Karnataka, India.

**Geshe Lobsang Tenzin Negi**, PhD, is a Professor of Practice in Emory University's Department of Religion and the founder and spiritual director of



Drepung Loseling Monastery, Inc., in Atlanta, GA. He is also the co-founder and director of the Emory-Tibet Partnership, a unique multi-dimensional initiative founded at Emory University in 1998. Dedicated to bringing

together the best of the Western and Tibetan Buddhist intellectual traditions for their mutual enrichment and for the discovery of new knowledge, the Emory-Tibet Partnership seeks to make a lasting contribution to human flourishing through the education of both heart and mind. As director, Dr. Negi oversees the Emory-Tibet Science Initiative (ETSI), an educational program created at the invitation of His Holiness the Dalai Lama to design and implement a comprehensive modern science curriculum specifically for Tibetan monastics. Additionally, Dr. Negi developed Cognitively-Based Compassion Training (CBCT), a compassion meditation program based on Tibetan contemplative methods and taught as both a research protocol and to the public for personal enrichment. CBCT is a systematic method for gradually training the mind until compassion becomes a spontaneous response, and is currently utilized in a wide variety of research studies, including an NIH-funded study examining the efficacy of compassion meditation on the experience of depression. Extension programs are currently being developed in partnership with other institutions in the US, Brazil and Spain. Dr. Negi was born in Kinnaur, a remote Himalayan region adjoining Tibet. A former monk, he began his monastic training at The Institute of Buddhist Dialectics in Dharamasala,



India and continued his education at Drepung Loseling Monastery in south India, where in 1994 he received his Geshe Lharampa degree—the highest academic degree granted in the Tibetan Buddhist tradition. Dr. Negi completed his PhD at Emory University in 1999; his interdisciplinary dissertation centered on traditional Buddhist and contemporary Western approaches to emotions and their impact on wellness. His current research focuses on the complementarity of modern science and contemplative practice.

**Vasudevi Reddy**, PhD, is a Professor of Developmental and Cultural Psychology at the University



of Portsmouth, UK. She completed her studies in Hyderabad, India and in Edinburgh, Scotland. She has been interested for nearly three decades in the origins and development of social cognition, mainly in young infants.

She has focused particularly on the everyday phenomena of infancy that are familiar to parents and caregivers but not often investigated in science—such as teasing, clowning, showing off, and feeling shy. She is the Director of the Centre for Situated Action and Communication at Portsmouth, which explores the impact of context and situation on different kinds of psychological phenomena. Her interest in engagement as the route to understanding has led her to questions about the nature and influence of cultural engagement on social understanding, and to arguments about the dialogical and cultural nature of self and development. She is the author of *How Infants Know Minds*, published by Harvard University Press with Japanese, Italian, Korean and Greek translations.



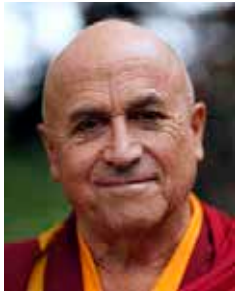
**Top:** Tania Singer presents at ML XXVI.

**Bottom:** Geshe Ngawang Samten presents at ML XXVI.

Photos courtesy of Ned Dunn.



**Matthieu Ricard**, PhD, is a Buddhist monk who has lived in the Himalayan region for the last forty years. Born in France in 1946, as the son



of philosopher Jean-François Revel and artist Yahne Le Toumelin. He earned a PhD in cellular genetics at the Pasteur Institute under Nobel Laureate Francois Jacob. He traveled to the Himalayas in 1967 and has

studied with some of the greatest masters of Tibetan Buddhism. He is the author of *The Monk and the Philosopher*, a dialogue with his father, Jean-François Revel; *The Quantum and the Lotus*, a dialogue with the astrophysicist Trinh Xuan Thuan; *Happiness: A Guide to Developing Life's Most Important Skill*; *Why Meditate?*; and *Altruism: The Power of Compassion to Change Yourself and the World*. As a photographer, he has also published several photos books, including *Motionless Journey: From a Hermitage in the Himalayas* ([www.matthieuricard.org](http://www.matthieuricard.org)). He is an active participant in scientific research on the effects of meditation on the brain, working in conjunction with the Mind & Life Institute, and has been the French interpreter for the Dalai Lama since 1989. He lives at Shechen Monastery in Nepal ([www.shechen.org](http://www.shechen.org)) and donates all proceeds from his books and much of his time to 140 humanitarian projects in Nepal, India and Tibet ([www.karuna-shechen.org](http://www.karuna-shechen.org)), and to the preservation of the Tibetan cultural heritage.

**Yangsi Rinpoche** was recognized at the age of six as the reincarnation of Geshe Ngawang



Gendun, one of the great scholars from Sera Jey Monastery. Rinpoche earned the title of Geshe Lharampa, the highest degree in the Tibetan Buddhist tradition and the equivalent of a PhD in Western education, at

Sera Jey Monastery. He is the author of *Practicing the Path*, a commentary on the Lam Rim Chenmo. Yangsi Rinpoche is the founder and current President of Maitripa College, one of the first Buddhist Colleges in the Northwest, located in Portland, Oregon and the spiritual director of several Tibetan Buddhist centers in the United States. He travels widely teaching at various centers around the world.

**Pawan Sinha**, PhD, is Professor of Computational and Visual Neuroscience in the Department of Brain and Cognitive Sciences at MIT. He received



his undergraduate degree in computer science from IIT, New Delhi, and his Master's and doctoral degrees from MIT. Using a combination of experimental and computational modeling techniques, research in Professor Sinha's laboratory focuses

on understanding how the human brain learns to recognize objects through visual experience and how objects are encoded in memory. His experimental work on these issues involves studying healthy individuals and also those with challenges such as autism or blindness. The goal is not only to derive clues regarding the nature and development of high-level visual skills, but also to create better therapeutic routines to help children overcome sensory or cognitive impairments. Professor Sinha is a recipient of the Pisart Vision Award from the Lighthouse Guild, the PECASE (US Government's highest award for young scientists), the Alfred P. Sloan Foundation Fellowship in Neuroscience, the Troland Award from the National Academies, the inaugural Asia GameChangers Award from AsiaSociety, the Oberdorfer Award from ARVO Foundation, and the Distinguished Alumnus Award from IIT Delhi. He has been named a Global Indus Technovator, and has also been inducted into the Guinness Book of World Records for creating the world's smallest reproduction of a printed book.



**"The central question,** central for the survival and well-being of our world, is how we can make the wonderful developments of science into something that offers altruistic and compassionate service for the needs of humanity and the other sentient beings with whom we share this earth."

–His Holiness the 14th Dalai Lama





**Professor Geshe Yeshe Thabke** was born in Lhokha, Central Tibet and became a monk of Drepung Loseling at the age of 13. He excelled in



his studies, and eventually received his Rabjamba Degree in 1958, and later was awarded Geshe Lharam, the highest academic degree offered in the Geluk School of Tibetan Buddhism at Drepung Monastic University. He served as

a lecturer at the School of Buddhist Philosophy, Leh, Ladakh and at Sanskrit University in Sarnath. He is currently a professor of Mool Shastra (Indian Tradition of Buddhist Philosophy) at the Central Institute of Higher Tibetan Studies, the only Tibetan university in India. Professor Thabke is regarded as one of the most eminent scholars of both the Madhyamaka tradition and the Indian Buddhist studies. His monumental works include translation of *The Essence of Good Explanation of Definitive & Interpretable Meanings* (Lek-Shey Nying-Po) by Tsong-Kha-Pa into Hindi, as well as *A Commentary on the Rice Seedlings* (Salistamba) Sutra by Kamalashila. He has also facilitated the completion of numerous research works including a complete translation of Lama Tsongkha-pa's Lam rim chen mo *Great Treatise on the Stages of the Path to Enlightenment*.

**Khenpo Sonam Tsewang** is a Khenpo (equivalent to Professor of Buddhism) at Ngagyur Nyingma Institute, the advanced center of Buddhist philosophical study and practice at Namdroling



Monastery, Bylakuppe. He completed his training in Buddhism at the Central Institute of Higher Tibetan Studies, Varanasi, and also at the Ngagyur Nyingma Institute, Namdroling. He has translated for His Holiness Penor Rinpoche and

Khenchen Pema Sherab Rinpoche on many occasions. He has published English translations of books such as *How to Follow a Spiritual Master*,

*The All Pervading Melodious Sound of Thunder: the Outer Liberation Story of Tertön Migyur Dorje* and *Drops of Nectar*. He was enthroned as a Khenpo at Namdroling Monastery in 2010 by His Holiness Karma Kuchen Rinpoche. Khenpo Sonam is presently overseeing the Buddhist textual research scholarship project at Ngagyur Nyingma Research Center and also the translation classes (Padma Mani Translation Committee) at Namdroling Monastery. He regularly teaches Buddhism at Thubten Lekshey Ling Tibetan Buddhist Center at Bangalore, and also visits Pune in Maharashtra and Calicut in Kerala to give teachings.

**David Vago**, PhD, is an Associate Psychologist in the Functional Neuroimaging Laboratory, Brigham and Women's Hospital, and instructor at Harvard Medical School. He has completed postdoctoral fellowships in neuroimaging, pain research, and the Stuart T. Hauser Research Training Program in Biological & Social Psychiatry. David has previously held the position of Senior Research Coordinator for



the Mind & Life Institute and is currently a Mind and Life Fellow. He received his BA in Brain & Cognitive Sciences in 1997 from the University of Rochester. In 2005, David received his PhD in Cognitive & Neural Sciences with a specialization in learning and memory from the University of Utah. David's research interests broadly focus on utilizing translational models to identify and characterize neurobiological substrates mediating psychopathology, to better predict outcomes and potential biologically-based diagnostic and therapeutic strategies for those suffering with mental illness. David has been specifically focusing on the study of mindfulness-based interventions in clinical settings, and the basic neurocognitive mechanisms by which mindfulness-based practices function. He has published numerous peer-reviewed articles and book chapters, spoken at international conferences, and his research has

been covered by mainstream news outlets such as the *Huffington Post*, *Boston Globe*, and *NPR*, among others.

**Christy Wilson-Mendenhall**, PhD, is currently a Research Scientist in the Interdisciplinary Affective Science Lab at Northeastern University and Massachusetts General Hospital. She received her PhD in Cognitive Psychology and Neuroscience from Emory University in 2010, where she



conducted research as a National Science Foundation Graduate Research Fellow. Christy's expertise bridges cognitive and affective science to understand the dynamic and varied emotional feelings that people experience

in day-to-day life. Her work has, in large part, examined the idea that human emotions referred to as "sadness," "fear," "happiness," and so on are complex and diverse mental states. Central to this approach is the idea that conceptual patterns developing in memory are fundamental in shaping emotional experiences. Thus, an individual's emotional experiences vary from situation to situation, can be dramatically changed with new learning, and contribute to a rich and unique mental life. The parallels between this integrative, interdisciplinary approach to studying emotion and contemplative philosophies recently inspired a new line of grant-funded research investigating proposed "destructive" and "virtuous" emotional experiences. Christy has also developed neuroscience courses and taught with the Emory-Tibet Science Initiative, a program that brings science education to the Tibetan monastic community in India. Her research and teaching promotes an interdisciplinary, basic science approach to investigating mental suffering, flourishing, and psychological growth.

**Carol Worthman**, PhD, holds the Samuel Candler Dobbs Chair in Anthropology, Emory University, and directs the Laboratory for Comparative Human Biology. She took her PhD in biological anthropology at Harvard University, having also studied endocrinology at UCSD and neuroscience at MIT under Jack



Geller and Richard Wurtman, respectively. Upon joining Emory, she established a pioneering laboratory advancing the use of biomarkers in population research. Professor Worthman takes a biocultural approach to comparative interdisciplinary research on human development and biocultural bases of differential mental and physical health. She has conducted cross-cultural biosocial research in 13 countries, as well as in rural, urban, and semi-urban areas of the United States, including 20 years' collaboration in the Great Smoky Mountains Study. Her current work includes a study of the impact of television on adolescent sleep patterns and functioning in the context of a controlled experiment with Vietnamese villages lacking both television and electricity. Since 2007, she also leads the neuroscience component of the Emory-Tibet Science Initiative, first developing and piloting a six-year curriculum of science education for monastics, and then implementing its ongoing roll-out in the Tibetan Buddhist monasteries of south India beginning in 2014.



## Science Meets Dharma

In 1998, His Holiness the Dalai Lama asked the Tibet Institute Rikon for help in implementing a new idea: to provide monks and nuns in Tibetan exile monasteries in India with access to scientific education. This led to the foundation of the Tibet Institute Rikon's project Science Meets Dharma. During the first project phase (2001-2011), we found that science classes were well accepted in eight monasteries in South India. During this time, science education became an integral part of multiple monastic reforms initiated by His Holiness the Dalai Lama. Beginning in 2012, this education program has been organized by the monasteries themselves, and Science Meets Dharma has continued to support the monasteries by coaching local teachers, creating new syllabi, and preparing teaching materials. In addition, the project has organized annual week-long trainings in the two large monastic centers of Bylakuppe and Mundgod. Starting in 2015, we will focus on giving Science Introduction Workshops in different monasteries across India and Nepal. The project is administered by a Swiss project manager, who is supported and advised by a well-known and very experienced Tibetan consultant.

## Science for Monks

Our mission is to nurture monastic leaders who are establishing the indigenous capacity of the Tibetan monastic community to engage science. Through institutes, workshops, exhibitions, conferences, research investigations, and mentorship visits, our programs bridge Eastern and Western knowledge, bringing science to monastics and Buddhist wisdom to the world of science and to a global audience. Monastic science centers are now becoming a cornerstone of learning and leadership for the exiled community, and Science for Monks provides grants to these centers to grow their work. Accessible to all monastics and others, the new centers are building their capacity to launch thoughtful activities that are dedicated to furthering learning, dialogue, and inquiry. For 15 years, and at the request of His Holiness the Dalai Lama, Science for Monks has worked to realize His Holiness's vision for monastic education to include science. Formed as a partnership with the Library of Tibetan Works and Archives and the Sager Family Foundation, Science for Monks focuses on developing science leadership in Tibetan monastic communities in India, Nepal, and Bhutan.

# Emory-Tibet Science Initiative

The Emory-Tibet Science Initiative began in 2006 when His Holiness the Dalai Lama invited Emory University to collaborate with the Library of Tibetan Works and Archives (LTWA) on a comprehensive and sustainable science curriculum specifically designed for Tibetan monastics. The ultimate goal of ETSI is to build a bridge between two complementary systems of knowledge by educating future scientific collaborators who can contribute to new discoveries in the science of mind and body. A pilot program (2008–2013) trained over ninety monks and nuns in biology, neuroscience, physics, and mathematics, during six-week summer intensives taught by Emory faculty in Dharamsala, India. Beginning in 2014, ETSI embarked on a six-year implementation phase at three monastic universities (Sera, Ganden, and Drepung). This program is comprised of summer intensives taught by faculty from Emory and other institutions, year-round study led by on-site instructors, translation and production of bilingual textbooks and instructional videos, and further curriculum refinement. Monks and nuns at other academic monastic institutions can also participate in the ETSI program through the pedagogical materials created, which are available for free. ETSI also promotes the creation of a new lexicon of scientific terms in Tibetan through the work of translators at both Emory and the LTWA, and facilitates the Tenzin Gyatso Science Scholars program, which brings monastics to Emory for two-year residencies in science education. Upon completion, the Tenzin Gyatso Science Scholars serve as indigenous monastic science teachers in India, ensuring the program's long-term sustainability.







# THE MIND & LIFE INSTITUTE

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**Left:** Monks explore the science of sound during a hands-on demonstration at ML XXVI. Photo courtesy of Ned Dunn.



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### The Mind & Life Institute



The Mind & Life Institute is a non-profit organization whose mission is to promote and support rigorous, multi-disciplinary scientific investigation of the mind that will result in the development of strategies to cultivate attention, emotional balance, kindness, compassion, confidence and happiness. Our mode of investigation is rooted in an integrated way of knowing that combines the first-person direct experience of contemplative practice with modern scientific third-person inquiry. Mind and Life’s approach to multi-disciplinary investigation includes research in biological, cognitive and social sciences, contemplative scholarship and practice, philosophy and humanities. We believe that only through this integrated investigation can we achieve an accurate understanding of how the mind works, the benefits of contemplative practice, and the best methods for achieving mental and emotional fitness. Through a more thorough understanding of the human mind and experience, we hope to relieve suffering and advance well-being.

### The Dalai Lama Trust, India



His Holiness the 14th Dalai Lama founded the Dalai Lama Trust in 2003. The Trust was established to support the advancement and welfare of the Tibetan people, the culture and heritage of the ancient civilization of Tibet, and the promotion of the deep-rooted values associated with its culture and people.

Among a number of charitable activities, the Dalai Lama Trust supports the preservation of Tibetan culture and the development of leadership and educational opportunities for young Tibetans. The Trust also seeks to support initiatives that encourage a sense of universal responsibility in the global community, and the advancement of dialogue between science and religion. The Trust regards the cultivation of ahimsa and nonviolence as a powerful means toward both individual growth and broader social change. The Trust also provides relief and assistance to underserved communities of all faiths and origins.

The Dalai Lama Trust is funded by charitable contributions made by the founder and by the public, and is a Public Charitable Trust registered under the provisions of the Indian Income Tax Act, 1961. A board of trustees, chaired by the founder, governs it.



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Library of Tibetan Works and Archives

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Office of His Holiness the Dalai Lama  
Sera Monastery (Sera Lachi)  
Yiga Choeling Guest House  
Jey Tsang Khangtsen

#### Library of Tibetan Works and Archives



The devastation wrought by the Communists Chinese takeover of Tibet in 1959 has rendered the existence of Tibetan culture in peril. Scores of learning centres, ancient manuscripts, artefacts and countless other aspects of Tibetan cultural heritage have either been plundered or destroyed under the garb of modernity. Realizing the impending threat and precariousness of the situation His Holiness the 14th Dalai Lama conceived of and founded

the Library of Tibetan Works & Archives (LTWA) to restore, protect, preserve and promote the culture.

The LTWA serves as a repository for Tibetan artifacts, statues, manuscripts, Thangkas (traditional scroll paintings), photographs and a variety of other resources attributing to Tibetan culture. It is not only a library, a museum and an archive but also an academic institute where cultural and educational courses are offered regularly and where seminars, conferences, workshops and lecture series are held, providing wider avenues of learning and sharing the knowledge that help promote an environment fostering research and an exchange of knowledge among scholars, researchers, students and interested general public.

### Sera Monastery

Sera Monastery is one of the “great three” (*densa sum*) Geluk university monasteries of Tibet, the other two being Ganden and Drepung. The name “Sera,” meaning “fence of wild roses,” derives from a unique feature of the landscape where so many wild roses were in bloom when the monastery was originally built, to the north of Tibet’s capital city of Lhasa. Sera Monastery was founded in 1419 by Jamchen Chöje Shakya Yeshé (1355-1435), a principal disciple of Jé Tsongkhapa, the founder of the Geluk School. In Tibet, Sera Monastery was composed of a complex of structures, including the Great Assembly Hall and three colleges: Sera Jey, Sera Mey, and Sera Ngakpa Dratsang. In 1959, before Communist China’s forcible occupation of Tibet, Sera Monastery was a home for over 5,000 monastic scholars and students.

Following His Holiness the Dalai Lama’s flight to India in 1959, many of the monks of Sera moved to India, eventually settling in Bylakuppe in Karnataka, India, as part of a Tibetan resettlement program. After initial tribulations, they established a parallel Sera Monastery with Sera Jey and Sera Mey colleges and a Great Assembly Hall, similar to the original monastery. Today, there are more than 3,000 monks living at Sera in India. Like its two counterparts, Drepung and Ganden, Sera Monastery specializes in the study of Buddhist philosophy and its great classics and is especially noted for its great debate tradition.





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- Mind and Life XIX Educating World Citizens for the 21st Century: Educators, Scientists, and Contemplatives Dialogue on Cultivating a Healthy Mind, Brain, and Heart, 2009
- Mind and Life XVIII Attention, Memory, and Mind, 2009
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- Mind and Life II Dialogues between Buddhism and the Neurosciences, 1989
- Mind and Life I Dialogues between Buddhism and the Cognitive Sciences, 1987







# Mind and Life XXX: Perception, Concepts, and Self

Monday, December 14—Thursday, December 17, 2015

	Day One	Day Two	Day Three	Day Four
	Monday, December 14	Tuesday, December 15	Wednesday, December 16	Thursday, December 17
Morning Session 9:00-11:30	Introduction and Perception	Perception and Concepts	Self in Buddhism	Self in the World
	His Holiness the Dalai Lama Richard J. Davidson Jay Garfield Thupten Jinpa	His Holiness the Dalai Lama Catherine Kerr John Dunne	His Holiness the Dalai Lama Professor Geshe Yeshe Thabkhe Jay Garfield	His Holiness the Dalai Lama Matthieu Ricard Richard J. Davidson
	Moderator: Roshi Joan Halifax	Moderator: Jay Garfield	Moderator: John Dunne	Moderator: Roshi Joan Halifax
11:30-13:00	<b>LUNCH</b>			
Afternoon Session 13:00-15:00	Perception	Concepts and Language	Development of the Self	Buddhism-Science Exchange
	His Holiness the Dalai Lama Pawan Sinha	His Holiness the Dalai Lama Lera Boroditsky	His Holiness the Dalai Lama Vasudevi Reddy	Geshe Lhakdor, Geshe Lobsang Geshe Dadul, Yangsi Rinpoche
	Moderator: Richard J. Davidson	Moderator: Carol Worthman	Moderator: John Dunne	Moderator: Carol Worthman
15:00-15:30	<b>TEA BREAK</b>			Closing Dialogue All presenters with His Holiness the Dalai Lama Moderators: Halifax and Davidson
15:30-16:30	Q&A With Monastics			

All dialogues with His Holiness the Dalai Lama will be interpreted by Thupten Jinpa.  
Please see the detailed program schedule for information on evening sessions.

**MIND & LIFE INSTITUTE**

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