

## Participants' Curricula and Abstracts (not complete, status October 28, 2011)

### Participants with no CV/abstract up to now:

**Geshe Nyima Tashi (Gelug), Khangser Rinpoche, Mr.Karma (LTWA), Sonam Choephel (Drepung), Dhondup Gyaltzen (Bon), Lobsang Gonpo (Gomang), Tenzin Choedon (TSS), Tenzin Nyibum, Jamyang Gonpo (Sakya),**

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### Short CV of Alexis Dworsky:

#### Short curriculum of Alexis Dworsky:

After studying fine arts I have written my doctoral thesis; it was tutored by Bazon Brock (aesthetics) and Ludwig Trepl (ecology). Topic was the cultural history of the dinosaur. Therefore I have examined how scientific facts are socially constructed, how society affects science and vice versa—how our image of the world is created.

#### Abstract:

I am going to document the meeting in India. My presentation might be separated into two parts.

In the first part I would like to show how the way of seeing facts has changed all the time. I am going to illustrate this with my personal topic of research, the image of the dinosaur. Based on this I might be able to show that science and spirituality are not the only ways to search for the truth and that objectivity also has a historical component.

In the second part I would like to talk about our meeting. I am going to show how my own view about scientists and Buddhist monks has changed within these ten days.

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### Short CV of Armin Duff:

During my studies in Physics at the Swiss Federal Institute of Technology (ETH) in Zürich I was first acquainted to the field of computational neuroscience. In my PhD I investigated how intelligent systems extract and learn the rules and regularities of the world in order to act autonomously. In particular I developed a self-contained autonomous model for sensory motor learning and planning. Currently I'm a post-doctoral researcher at the SPECS laboratory at the Pompeu Fabra University in Barcelona. My research is focused on evidence based, neuro-scientific grounded rehabilitation for stroke. Based on our knowledge of the brain dynamics underlying action execution and perception we developed and tested a virtual reality based rehabilitation system called Rehabilitation Gaming System ([rgs-project.eu](http://rgs-project.eu)).

#### Abstract:

**The role of mathematization in science:** Mathematics lies at the very essence of science. From a strict point of view one can claim that science only regards phenomena that are measurable, regular, and can be described in a formal (mathematical) way. In a first part I will explore the origins of mathematics and its application to science. In particular I would like to emphasize the properties of natural phenomena that render the mathematization of natural phenomena possible. In a second part I will address the limits of the mathematical method to describe the dynamics and functions of the brain such as perception, decision-making and consciousness.

**About a simple device for imaging brain activity:** An essential step towards understanding nature is observation. Recent developments in neuro-technology allow us to gather more and more precise data on

brain dynamics. For the seminar I will bring along a device called EPO that allows measuring the electric signals produced by the brain. During the week you can try it out yourself and participate in a simple neuro-feedback experiment.

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## **Titles and Abstracts of the three lectures given by Richard R. Ernst at the SmD Dialogue 2011 at DLIHE**

### **1. Wednesday, November 9, 2011, 08:45-10:15**

#### **Western and Buddhist Concepts of Physics and Metaphysics.**

##### **A Personal View of an Inept and Biased Western Scientist.**

The mathematical foundations of Western Physics are contrasted with the spiritual concepts of Buddhism. While the former lead to the possibility of accurate predictions and analysis of scientific experiments and to a quantitative understanding of nature, the latter concentrate on grasping the “essence” of nature without any quantitative outcome but with providing a qualitative sense of comprehension in philosophical terms. Western physics and science are excellent foundations for technology and for solving the material problems of our world. Buddhist natural philosophy, on the other hand, is of little use for addressing questions of technology and technological science as it abstains from all quantitative aspects such that computations are impossible and quantitative optimization and comparisons are out of question. It is characteristic that Buddhist ‘science’ concentrates on the mind and on mental processes. In other words, Buddhist ‘science’ addresses questions that are today very difficult or even impossible to answer by Western science. In this way, Buddhist ‘science’ avoids conflicts with Western science. Western science claims to comprehend and to be able to quantitatively formulate the basic laws of nature in the form of mathematical concepts. But very often, the resulting equations are too complicated to be solved with mathematical accuracy. Western science starts invariably by doing experiments and confronting experimental results with theoretical concepts, either to verify or to reject them. In Buddhist ‘science’, hardly ever physical experiments are being done, and one relies entirely on one’s own mind and on spiritual experiences for explaining the ‘inner world’, hoping for some congruence of inner and outer worlds. In this sense one may claim complementarity of the two approaches.

### **2. Late afternoon of Wednesday, November 9 or Thursday, November 10 for the general public (Students and Professors of DLIHE)**

#### **My Personal Pathway into Science and Beyond.**

##### **Ups and Downs in the Life of a Western Scientist.**

This lecture provides a vivid narration of my own pathway from the beginning as a somewhat retarded child to a Nobel laureate. I learned from the start that the major obstacles in life are not presented by human “adversaries” but by personal limitations of myself. In trying to overcome these personal barriers, one can mobilize forces that may lead to surprising achievements. I had the great

luck to be able to contribute to the advancement of Magnetic Resonance Imaging, a marvelous tool for measuring mental activity. I was interested from the beginning in divergent fields of science and of the arts. Besides chemistry, I developed a strong interest for music, providing me with experiences of my inner self, discovering a realm that contrasted to my chemical experiences. Later, I met Buddhist art that became a highly important source of inspiration for me. Fortunately, I also found bridges between science and Tibetan art in the form of a physico-chemical analysis of pigments in Nepalese, Tibetan, and Mongolian scroll paintings (thangkas), using Raman spectroscopy. In this way, the circle of experiences is closing again, bringing together Western technology and Buddhist spirituality.

**3.** Thursday, November 10, 08:45 – 10:15

### **The circumstances of Conceiving the Idea of NMR Fourier Zeugmatography, 1974**

A case study of conceiving a novel idea in the sciences is presented: NMR Zeugmatography. During an inspiring lecture by Paul Lauterbur, at a conference in the US, a highly promising idea came to my prepared mind. A few days later, I was writing down the novel idea that led then to a patent application, to lectures, and to publications. It also helped for gaining a Nobel prize, although it was not cited directly in that context. The method that was later called “Fourier Magnetic Resonance Imaging (Fourier MRI)” became highly important for further developments in MRI. Today it is used inherently in virtually all MRI methods. Two essential factors leading to this invention were (i) an “inspiring lecture”, i.e. an outside “kick” starting a mental process in my brain and (ii) a “prepared mind” as I was working at that time on related experiments of “two-dimensional NMR”. The coincidence of the two factors led to the possibility of a relevant invention. In the lecture, I will explain the method in detail. I “sold” the patent for 200 US\$ to the company Varian Associates in Palo Alto, California, for which I was consulting. Varian gained probably several 100 million Dollars from this patent. But I remained as “poor” as I was before. But the experience of having made a relevant contribution to mankind outweighs all missed financial remunerations.

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#### **Short CV of Lene Handberg:**

Studied Psychology in Copenhagen University, and with Lharampa Geshe Tarab Tulku XI for 25 years, 15 of which as Rinpoche’s assistant. Tarab Rinpoche developed the modern version of advanced Buddhist teachings Unity in Duality / *Tendrel*, extracting universalities beyond culture and faith. When Tarab Tulku in 2004 went, he handed Lene the responsibility for UD teachings. Educational director of Tarab Institute International, with UD Trainings at Institutes in Germany, France, Holland, Slovakia and India (Tarab Ling, a UD Study and Research Institute being build, Dehradun) disseminating UD and with contemporary science investigating its application.

**Abstract:****“Buddhist view of Interrelation between Body – Mind and Reality / Phenomena”.**

My point of departure will be UD / Tendrel, as formulated by Lharampa Geshe Tarab Rinpoche, in terms of pointing out the interesting knowledge in Buddhist Inner Science of the interrelated nature of subject (awareness/mind) – object (reality perceived), body – mind as well as energy (potential field) – matter, including elaboration on essential epistemological questions. The presentation of these aspects of inner science will be done with relation to contemporary science.

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**Short CV of Ruedi Högger**

Born in 1940, I studied History and – much later – analytical psychology. A large part of my career was in international development cooperation. I was Vice Director of the Swiss Government’s International Cooperation Agency from 1981-88. Currently, I am the chairman of the Tibet- Institute Rikon.

All through the years, I have been engaged in research on the psychic background of development planning and projects. He have taught and written comprehensively on Buddhist and Hindu Art and myths as well as Indian daily life rituals from the perspective of Analytical Psychology.

**Main publications:**

- Naga and Garuda: The Other Side of Development Cooperation, Sahayogi Press, Kathmandu 1993. The book analyses the problems of international development cooperation in terms of analytical psychology.
- In Search of Sustainable Livelihood Systems, co-edited with Ruedi Baumgartner, Sage publications, New Delhi, 2004
- Various articles in “Jungiana” as well as the Eranos Yearbook

**Abstract**

The starting point of my lecture is the statue of a transcendental Buddha sitting on the coils of a Naga and being protected by the Naga’s hood. My central question is: What is the psychological symbolism of the Naga in this context? In dialogue with Geshe Nyima Tashi, I then try to analyse and understand the Naga’s meaning in a stepwise procedure as usually applied in psychological analysis. The result – as I hope – will show the close relations between Buddhist Philosophy and Western Analytical Psychology.

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**Short CV of Carin Muhr:**

Along with my clinical specialization to a neurologist at Uppsala University Hospital, Sweden, I worked on my PhD mainly focusing on Neuroendocrinology and interaction between hormones and the brain. Since then I have been active with research on brain tumors, headache and stress, and teaching and clinical work at the University hospital. I also enjoy working with international research and pedagogical projects in India, Peru and the West Indies and have been responsible for student and faculty exchange. My interest has to an increasing degree become to understand the fascinating complex function of the brain and interrelated nature with the mind (whatever this might be) and the body and the studies of Unity in Duality Buddhist philosophy have increasingly opened my mind and challenged me to learn and to understand more.

**Abstract:**

Modern neuroscience has developed immensely within the latest decades and has through technological advancements been able to more and more in details study brain structure and function. However, the more complex the models develop the more there is a need for a holistic and "open minded" perspective to be able to reach further progress in the medical world to truly benefit humanity. I will discuss some of the recent findings in neuroscience which might play a role for how we can think about the brain and the mind like epigenetics, neuroplasticity, also in relation to mindfulness and discuss mental health. I am very much looking forward to have these ideas considered and discussed in relation to Buddhist science.

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**Short CV of Dana Rudinger**

Dana Rudinger studied physics and did her PhD in neuroscience. She teaches mathematics and physics and, recently, „Theory of Knowledge“ at secondary level and has been associated with SmD almost since its beginning. She also worked in Indonesia and Laos. She has been involved in activities concerning Tibet for many years.

**Abstract**

The presentation is based on an article by the physicist Vic Mansfield. Almost all laws of physics, especially collisions between particles, are symmetrical in time; nevertheless we experience a direction in time. In physics this asymmetry is described by the concept of entropy or „measure of lack of structure“, whereas in Buddhism, according to Mansfield, it may reflect impermanence.

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**Short CV of Sundar Sarukkai:**

Sundar Sarukkai's research interests include philosophy of science and social science, phenomenology and philosophy of language and art, drawing on both Indian and Western philosophical traditions. He is trained in physics and philosophy, and has a PhD from Purdue University, USA. Other than numerous papers, he is the author of the following books: *Translating the World: Science and Language*, *Philosophy of Symmetry*, and *Indian Philosophy and Philosophy of Science*. His forthcoming books include *What is Science?* and *The Cracked Mirror: An Indian Debate on Theory and Experience* (co-authored with Gopal Guru). He is an Editorial Board member of the Leonardo Book Series, an influential series published by MIT Press on science and art and Member of the Council of the Indian Council of Philosophical Research. Presently, he is the Director of the Manipal Centre for Philosophy & Humanities, Manipal University.

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**Short CV of Heiri Schenkel:**

After learning the profession of designer in the industry, I studied experimental physics at the University of Zurich. After some industrial research I definitely turned to education and taught physics, math and didactics in Africa, Nepal, the US and, mostly, in Switzerland. After retirement my intercultural interest lead my as teacher to Sera monastery in Bylakuppe and to my engagement with SmD. (60 words)

**Abstract:**

**Part 1:** My point of departure will, as usual, be optical interference at the double-slit, and its classical wave interpretation, using some demonstrations - as experimental physicists like to do. There will be the possibility to assemble a spectroscope, which can be used to observe the light of different light sources. Following this a brief look at the history of science shows how the concept of quantum developed.

**Part 2:** Here I'll explain the conceptual difficulties science encounters, when it has to explain how individual entities seen as waves or as particles can lead to interference and related phenomena. We'll see which interpretation seems to be accepted today and how the concept of entanglement has come in, which has led to an intense discussion about Buddhist concepts like interdependence and emptiness..

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