

# Università di Pisa & Istituto Lama Tzong Khapa present:



**The Embodied Mind**  
Cognitive Science and Human

**Quantum Consciousness?**

**Summer School**  
**Consciousness and Cognition**  
**Pisa 27/08 – 04/09 2022**

**di** DIPARTIMENTO DI INGEGNERIA DELL'INFORMAZIONE  
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**FOM Academy**

**Unione Buddhista Italiana**

## Summary

The enigma of Consciousness is perhaps the most fascinating mystery in the Universe. In the absence of definitive and widely shared answers, the study of consciousness and of the process through which we have cognition of Reality, must be fronted with a multidisciplinary approach that includes not only neurosciences, but also biology, artificial intelligence, philosophy of science and epistemology, as well as Quantum Physics and Contemplative Practices. While the first constitute the most advanced approach to the study of the physical world, which also extends to phenomena that take place at the nanoscopic level in biological tissues, the latter allows to explore in a profound and accurate way aspects of the problem that are not accessible with objective methods and that concern the first-person experience. For these reasons, the School will be organized in order to explore the enigma of Consciousness not only from a third person (objective) point of view, but also from that of personal experience, with the participation of teachers who are experts in all these disciplines.

The School will take place in a residential form, thanks to a Convention between the University of Pisa and the Lama Tzong Khapa Institute, 35 Km from Pisa, renowned for the excellent quality of its study programs of Buddhist philosophy and psychology. A specific space will be reserved for the experiential aspect in order to integrate the lessons with familiarization sessions with contemplative practices (Yoga and Meditation). The sessions will be conducted by highly qualified teachers with specific experience and will also be usable by the students who will attend the school online. The 2022 edition of the Summer School Consciousness and Cognition is organized with the patronage of the Italian Buddhist Union.

For details about accommodation, tuition fee, see the Summer School web page:

<https://wwwnew2.unipi.it/index.php/engineering/item/16642-consciousness-cognition>.

**The program will be activated both on campus and online.**

## Aim

- (Philosophy): acquire a sensitiveness for the existence of a dimension of consciousness that overcomes the distinction between subject and object and understand its role in the current quest to explain consciousness, through a progression into insights drawn from Western philosophical approaches (especially phenomenology) and Eastern traditions and practices;
- (Quantum Mechanics) understand the basic principles of quantum mechanics to comprehend the subtler issues connected with the interpretation of the theory and their possible relevance for a discussion of consciousness, of the mind-body problem and of the nature of reality itself;
- (Artificial Intelligence): learn the basic concepts and models of nature-inspired computational techniques, and to know how to apply them to a wide range of application areas. Students will be exposed to the advantages and challenges of using computationally intelligent systems with human-like capabilities in terms of reasoning, learning and adaptation;
- (Biosemiotics): learn the basic of Biosemiotics and become acquainted with the semiotic nature of sign relationships both in biological and human-made systems, understand how cells act as semiotic units capable of interpreting their own environment through signs exchange, and eventually comprehend how sign perception and epigenetic regulation are causally linked through differential gene expression;
- (Contemplative Practices): comprehend the vision of Eastern tradition (Induism and Buddhism) concerning Consciousness and its different levels and manifestations; learn the foundations, the characteristics and the aspects of the different types of meditation;
- (Neurosciences and not Ordinary state of Consciousness): after a description of the neural networks, acting in the brain, and a survey on the main investigation techniques of the brain activity (Electroencephalography, FMRI), understand how self induced not ordinary states of consciousness by natural drugs, hypnosis, dream, deep meditation, affect this activity;
- (Practice) become familiar with the experiential aspects of contemplative practices, through Meditation and Yoga sessions led by highly qualified teachers. The sessions shall be accessed by students also online.

## Courses and lectures

<b>Title</b>	<b>(hours)</b>	<b>Teacher</b>
Introduction	(1)	Bruno Neri
Consciousness in Western and Eastern Traditions		
Phenomenology and Yoga	(8)	Giulia Moiraghi
Consciousness in Psychoanalysis	(2)	Riccardo Zerbetto
Consciousness and emptiness	(2)	Sonam Wangchuck
Quantum Mechanics and Consciousness	(5)	Shantena Augusto Sabadini
Biosemitotics	(5)	Franco Giorgi
Artificial Intelligence	(6)	Mario Cimino
Measurement Techniques	(2)	Nicola Vanello
Brain Networks and States of Consciousness	(5)	A. Gemignani, A. Piarulli
Ordinary and not Ordinary states of Consciousness.		
Resting state and brain connectivity	(2)	Gabriele Penazzi
Meditation	(6)	G.Piana, A. Zaccaro, B. Neri
Hypnosis	(2)	Enrico Facco
Sciamanic Trance	(2)	Tania Re

## Experiential Activities (optional)

- **Developing the Skills of Attention: Focus, Mindful Awareness, Consciousness:**

An experiential exploration in 2 sessions of the various components of attention, their importance to human flourishing, a bit about the science of attention, and how these skills can be developed through the practice of meditation. Exercises in pairs will be provided so as not to stay seated all the time.

(5) Connie Miller

- **Consciousness and Reality:**

meetings with students will be aimed at bringing the topics explained in the morning session to an experiential level. The following abilities will be developed: distinguishing between conventional reality and ultimate reality, identifying in oneself minds that perceive reality in an incorrect manner, generating minds that lead to a correct understanding of the mode of existence of phenomena. There will be walking meditation sessions and informal Q&A sessions.

(5) Sonam Wangchuk

- **The *Embodiment* in Yoga. A Phenomenological-Informed *Hatha-Yoga* and Meditation Practice:**

After having set the theoretical framework of what a phenomenological approach to reality amounts to, students are given the chance to embody through yoga this particular stance and experience first-hand how the yogic practice can become a favorable access-door to a usually overlooked and unconsidered dimension of consciousness, a dimension not taken into account within the Western ongoing debate on mind.

(5) Giulia Moiraghi

# Agenda

Friday 26<sup>th</sup>, August

Ore 21: Welcome at ILTK

Saturday 27<sup>th</sup>, August

9.30 – 10.30 Opening Session

B.Neri

10.30-12.30 Phenomenology and Yoga

G.Moiraghi

14.00-16.00 Consciousness in Psychoanalysis

R.Zerbetto

16.00- 18.00 Consciousness and Quantum Physics

Shantena A.Sabbadini

19.00-20.00

Presentation Experiential activities (Optional)

Sunday 28<sup>th</sup>, August

8.30-11.30

Shantena A. Sabbadini

11.30 – 13.30 Conscious states: hypnosis

E. Facco

16.30-19.00 Experiential activities (Optional):

Developing the Skills of Attention: Focus, Mindful Awareness,  
Consciousness

Connie Miller

Monday 29<sup>th</sup>, August

8.30-10.30 Meditation in Buddhism

G. Piana

10.30-12.30 Consciousness and emptiness in the Prasangika perspective

S. Wangchuk

14.00-16.00 Phenomenology and Yoga

G.Moiraghi

16.30-19.00 Experiential activities (Optional)

Consciousness and Reality

Sonam Wangchuk

Tuesday 30<sup>th</sup>, August

8.30-10.30	Biosemiotics	F.Giorgi
10.30-12.30	Phenomenology and Yoga	G.Moiraghi
14.00-16.00	Investigation techniques and signal elaboration	N.Vanello

16.30-19.00	Experiential activities (Optional): Developing the Skills of Attention: Focus, Mindful Awareness, Consciousness	Connie Miller
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Wednesday 31<sup>st</sup>, August

8.30-11.30	Biosemiotics	F.Giorgi
11.30-13.30	Phenomenology and Yoga	G.Moiraghi

16.30-19.00	Experiential activities (Optional): <i>The Embodiment in Yoga. A Phenomenological-Informed Hatha-Yoga and Meditation Practice</i> ) Giulia Moiraghi	
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Thursday 1<sup>st</sup>, September

8.30-10.30	States of Consciousness: Meditation	A.Zaccaro
10.30-12.30	AI	M.Cimino
14.00-16.00	AI	M.Cimino

16.30-19.00	Experiential activities (Optional) Consciousness and Reality	Sonam Wangchuk
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Friday 2<sup>nd</sup>, September

8.30-10.30	AI	M.Cimino
10.30-12.30	Consciousness states: sciamanic trance	T.Re
14.00-16.00	Resting state and brain connectivity	G.Penazzi

16.30-19.00	Experiential activities (Optional):	
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The *Embodiment* in Yoga. A Phenomenological-Informed  
*Hatha-Yoga* and Meditation Practice ) Giulia Moiraghi

Saturday 3<sup>rd</sup>, September

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|-------------|---|-------------|
| 08.30-10.30 | Brain Networks and States of Consciousness      | A.Piarulli  |
| 10.30-13.30 | Neurophenomenology of NOSC                      | A.Gemignani |
| 15.00-17-00 | Report from a Tibetan Monastery and Conclusions | B.Neri      |

Sunday 4<sup>th</sup>, September

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| 8.30-10.30 |  | Final Test |
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## Teachers

**Bruno Neri** (Director) received his "Laurea" degree "cum laude" from the University of Pisa in 1980, in 1983 he joined the "Dipartimento di Ingegneria dell'Informazione" of the same University, since 2000 he is Full Professor of Electronics. Prof. Neri has taught and teaches several courses in the fields of Instrumentation and Measurements, Electronics for Telecommunications, Wireless electronic systems, Design of microwave integrated circuit, moreover currently he holds a short course entitled "Science and contemplative practices" at the Master of the University of Pisa entitled "Neurosciences, Mindfulness and Contemplative Practices". His current research interest is in the field of Mind Sciences regarding the effect of meditation on brain activity: in this framework he spend several weeks each year inside Tibetan Monasteries in India to carry out his research. In September 2017 he was co-chair of the Symposium "The Mindscience of Reality" in which His Holiness the Dalai Lama participated as a guest of honor. Since 2020 he has been Director of the first edition of the Summer School "Consciousness and Cognition" result of a collaboration between Università di Pisa e Istituto Lama Tzong Khapa.

**Mario G.C.A. Cimino**, PhD in Information Engineering, is professor of Information Systems and Artificial Intelligence at the University of Pisa. He is co-founder of the "Machine Learning and Process Intelligence" Initiative at the Department of Information Engineering. He is an Associate Editor of the Journal of Granular Computing (Springer) and the Journal of Ambient Intelligence and Humanized Computing (Springer). His research lies in the areas of swarm intelligence, machine learning, process mining and intelligence. He is member of the CINI National Lab in Artificial Intelligence and Intelligent Systems, and vice-chair of the IEEE CIS Task Force "Intelligent Agents". He is member of the steering committee of the Artificial Intelligence and Cybersecurity working group, a part of the Italian Association for Artificial Intelligence.

**Enrico Facco** is professor of Anesthesiology and Intensive Care, specialist in Neurology, Studium Patavinum - Dept. of Neuroscience, University of Padua. Deputy Director of the Master in Sedation and Emergency in Dentistry at the University of Padua. Teacher of the Franco Granone Institute - Italian Center for Clinical Experimental Hypnosis (CIICS), Turin. Chair of General Anesthesia and Special Odontostomatology at the University of Padua from 2009 to 2014. Past president of the European Federation for the Advancement of Anesthesia in Dentistry and reviewer for several international journals. He has published over 300 articles (on anesthesia, headaches, acute and chronic pain, acupuncture, consciousness, hypnosis, meditation and other non-ordinary expressions of the mind, coma, vegetative state, brain death, intensive care) and the following books: Facco, E. Near death experiences (Altravista, Lugavilla, 2010). Facco, E. Meditation and hypnosis between neuroscience, philosophy and prejudice (Altravista, Lungavilla, 2014). Facco, E., Fracas, F. The enigma of conscience (Mondadori University, Milan, 2018). Facco, E., Tagliagambe, S. (2020). Return to Ippocrate (Mondadori Università, Milan, 2018).

**Angelo Gemignani** is a medical doctor, psychiatrist and doctor in psychology, full professor of neuroscience at University of Pisa, Director of the Department of Surgical, Medical and Molecular Pathology & Critical Care Medicine; Director of the Master in Neuroscience, Mindfulness and Contemplative Practices; Director of Clinical Psychology branch of the Pisa University Hospital. His didactic activity includes many different topics, i.e. the psychobiological bases of human behavior, the neural correlates of mental disorders, integrative cerebral functions and clinical psychology. His research activity is mainly devoted to the study of psychobiological mechanisms of a) sleep functions, b) consciousness and its related non-ordinary states (i.e. induced by meditation), c) distress and



negative emotions. (i.e. sleep and consciousness changes in healthy volunteers simulating the human flight to Mars).

**Franco Giorgi** graduated in Biological Sciences at the University of Pisa in 1969. He then obtained a PhD in Epigenetics at the University of Edinburgh (Scotland) in 1975. From 1980 to 1990 he has worked as Associate Professor of Developmental Biology in the Faculty of Science, University of Pisa (Italy). On 1990, he became Full Professor of Biology at the Faculty of Medicine, University of Pisa. Over the years, Franco Giorgi has studied several morphological and functional features of the ovarian and embryonic development with particular reference to the processes of receptor mediated endocytosis and post-endocytic ligand modification. He has also worked on several research projects dealing with wound healing, collagen degradation and TSH receptors. After retirement he has become an active member of the International Society of Biosemiotic Studies.

**Connie Miller** is a Buddhist nun since 1978, she is president of the Ethical, Emotional and Social Education Association. She teaches Meditation, Secular Ethics and Contemplative Pedagogy; creates and conducts innovative courses and curricula pertaining to these topics, targeting them to both general audiences and specific populations such as teachers and educators. She's a resident teacher at the Lama Tzong Khapa Institute in Italy, where she designs, develops and teaches new courses and works to make Tibetan and Western pedagogical approaches more harmonious in Buddhist education in the West.

**Giulia Moiraghi** is a post-doctoral researcher in Philosophy and has been a dedicated Yoga practitioner for about 20 years.

Author of several essays and of the book, *Cura e Ardore. Il rigore e la passione della pratica yoga* (*Corriere della Sera* RCS, 2017, 2021), she is a member of the National Association of Yoga Teachers and teaches yoga and meditation since 2013. **Phenomenological yoga** (Fenomeno Yoga) is a method developed in order to create a bridge of communication between Eastern contemplative practices and Western phenomenological research.

She teaches in the master program in "Neuroscience, mindfulness and contemplative practices", in the Summer-School "Consciousness and Cognition" of the University of Pisa and in the one in "Meditation in Medicine" of the University of Padova and the University of Strasbourg

**Gabriele Penazzi** is a Phd student at the Department of Psychology and Cognitive Science of the University of Trento. His current research topic is focused on the study on neurophysiological and phenomenological effects of non-ordinary states of consciousness induced by breathing techniques, meditation and hypnosis.

**Gabriele Piana** was a college philosophy professor before taking the position of Moral Philosophy researcher at the Faculty of Education, University of Palermo. He was member of the editorial board of international journals of philosophical studies, such as 'Aut Aut' and 'Millepiani', with a keen interest in the contemporary French thought. Between 2008 and 2013 he completed a Masters Program in Buddhist philosophy, and had undergone a very beneficial three-year monastic training. He now continues his path as a lay practitioner, teaching and writing about Buddhist theory and meditation, and participating in the interreligious dialogue events. He is also collaborating with the University of Pisa and the University of Udine in the framework of their neuroscience and meditation master programs. In 2020 Gabriele Piana conducted an uninterrupted one-year solitary retreat.

**Andrea Piarulli**, Master's Degree in Electronic Engineering and PhD in Innovative Technologies "Methods for the EEG Analysis in Different States of Consciousness". His research interests are mainly focused on the investigation of consciousness, and its various facets. His line of research includes the exploration of non-ordinary states of consciousness (such as those induced by meditative

practices), the characterization of hallucinatory states, be they drug-induced or linked to pathological conditions, as well as the investigation of Disorders of Consciousness and non-REM sleep, mainly using EEG techniques, behavioural assessment as well as psychometric tests administration. Dr. Piarulli is a senior research scientist and EEG specialist at Heneisis s.r.l. (Parma and Pisa), the biomedical branch of Camlin Group, Northern Ireland, UK. He is also adjunct professor of Psychophysiology of Mental Activities within the degree course of 'Science and Techniques of Clinical and Health Psychology' at the University of Pisa, Italy and post-doc researcher at Coma Science Group, Giga Consciousness, University of Liège

**Tania Re** is RE graduated in Clinical and Community Psychology, specialized in Gestalt Therapy at the CSTG in Milan and as a complementary therapist in Switzerland, deepening the study and practice of bio-natural disciplines. She was a student of Prof. Benson of the "Mind-Body Institute" in Boston where she learned the mind-body techniques, hypnosis and visualization techniques for the accompaniment of people with chronic and oncological diseases. Over the years she has specialized in Health Anthropology and Ethnomedicine. She is a founding member of the Unesco Chair "Health, Anthropology, Biosphere and care systems" at the University of Genoa and currently collaborates with the Tuscany Regional Center for Phytotherapy (CERFIT) and with the Gestalt Therapy Study Center (CSTG) of Milan. He teaches Ethnomedicine and Medical Anthropology at University Courses and Masters in health and works in Italy and Switzerland. His field research is carried out in indigenous communities in South America by studying traditional medicines, plants and healing rituals.

**Shantena Augusto Sabbadini** is a physicist, philosopher and a scholar of Chinese classics. As a physicist he worked at the University of Milan on the foundations of quantum physics and at the University of California on the first identification of a black hole. In the 1990's he was scientific consultant for the Eranos Foundation, an East-West research institute founded in 1933 under the supervision of C.G. Jung. In that context he produced innovative translations of the I Ching and of the Taoist classics. He directs the Pari Center for New Learning, an international institute located in the small medieval village of Pari, Tuscany. His latest books are *Pilgrimages to Emptiness* (Pari Publishing, 2017), *Buchi neri* (Lindau, Turin, 2018) and *Vacuum: The Ultimate Ground of Being*, with Maurizio Consoli (World Scientific, Singapore, expected to come out in 2020).

**Nicola Vanello**, PhD in Automatics, Robotics and Bioengineering, is Professor at the University of Pisa. His research activity is related to models and methods for biomedical signal and image processing. In particular, his skills concern the study of cerebral functions in complex cognitive tasks, and the development of exploratory and confirmatory models for data analysis, using electroencephalography and magnetic resonance imaging (MRI). His research interests include the analysis of speech signal with a special focus in the estimation of subjects' mood and emotional state. He is author of several papers, contributions to international conferences and chapters in international books.

**Sonam Wangchuk** is 45 years old. He arrived in India in 1993 and studied Buddhism at Sera Je (Tehor Khamtsen) Monastery. Geshe Gedun Cheophel and Geshe Lobsang Delek are his teachers. In 2010 he completed his studies of the five main texts of the Geluk tradition and devoted himself to madhiyamika studies in the sakyapa, nyimapa, kagyupa, jonangpa and Bon traditions. After these studies, he devoted himself to writing the book *Madiyamika Meditation and Description of Science*, which was printed twice in India and three times in Tibet.

In 2013, the Department of Tibetan Religion in Exile asks him to write a book on Buddhism for beginners of the new Tibetan generation and at the same time Tibetan Sarnath University to give lectures to students. He finished writing the book in 2015, which was printed by the Tibetan

government. After presenting the book to His Holiness Dalai Lama, he follows up on his suggestion to write another book based on Lama Tsokhapa's Guhysamaja Tantra. He completes the new book in 2021, which is successfully printed in India and Tibet. The main programs he currently devotes himself to are mainly aimed at introducing Buddhism to new Tibetan generations.

**Andrea Zaccaro PhD**, psychologist, is currently a research fellow in psychobiology at the University of Pisa, Italy. His research is based on the investigation of the neurophysiological bases of altered states of consciousness induced by contemplative practices such as meditation and respiratory techniques (i.e. pranayama), mainly focusing on their effects at the phenomenological, cognitive, neurophysiological, and cardio-respiratory level”

**Riccardo Zerbetto**, trainer and supervisors in gestalt therapy accredited by the Federazione Italiana delle Scuole e Istituti di Gestalt-FIAP, Founder and Director of the Centro Studi di Terapia della Gestalt accredited by the Ministry of Education and Research for delivering training in Gestalt Therapy in Milan and Siena. Child and adult psychiatrist, Consultant of the Ministry of Health for psychiatry and drug abuse field (1980), past contract professors in Psychopathology at the School in Psychiatry of the University of Siena, past president of the Associazione Italiana di Psicologia Umanistica e Transpersonale (1995), of the European Association for Psychotherapy-EAP (1996-7), of the Federazione Italiana delle Scuole e Istituti di Gestalt-FIAP (1995-6) and co-founder and honorary member of the Federazione Italiana delle Associazioni di Psicoterapia-FIAP, Co-founder and honor. president of Alea- Association for the study of gambling and Scientific, Director of Orthos, for the Studi and treatment of Behavioural addiction, Editor of the scientific journal Monographies in Gestalt.