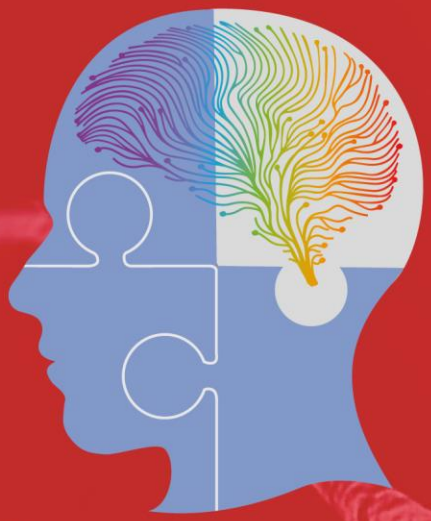
L'HOMME CÉRÉBRAL

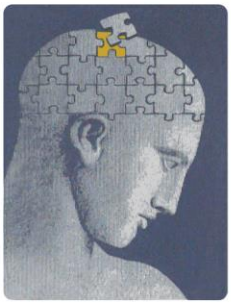
You said... Memories?



Monaco

March 13th 2021

100% VIRTUAL CONFERENCE



Organized by

FESN FONDATION POUR L'ETUDE DU SYSTEME NERVEUX CENTRAL ET PERIPHERIQUE

In partnership with

ASSOCIATION FRANÇAISE des sclérosés en plaques afsep

AFISM

Association monégasque de médecine anti-âge

IGAM Institut de Gérontologie des Alpes Maritimes

ASSOCIATION MONÉGASQUE POUR LA RECHERCHE SUR LA MALADIE D'ALZHEIMER AMPA

CSM CENTRE SCIENTIFIQUE DE MONACO

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Introduction

You said... Memories?

Memory is an essential process for survival. To use a formulation a bit provocative, memory allows anticipating the future! Indeed, our brain evaluates the situations in which individuals found themselves in and, on a memory reminder base, elaborates different solutions for decision-making. Memory also plays a part in our emotions and social relations genesis. The study of memory is at the centre of neurosciences actual researches. Those researches are exploring different aspects of memory, molecular and cellular mechanism down to the psychological and social aspects. What is emerging from all these studies is that different forms of memories are existing, who are manifesting themselves in all our active life aspects and unfortunately, their deficit are in first plan in pathologic conditions, like Alzheimer's disease and other neuropsychiatric diseases.

The Fondation pour l'Étude du Système Nerveux central et périphérique (FESN), with the support of Magnoglia, has the pleasure and privilege to introduce to the audience an exceptional set of great medical brain specialists who will present their work on the nervous system function and diseases. They will also discuss with the audience in a debate led by Ms. Cattan, Head of the Health Section of Nice Matin and Var Matin. The Monegasque public will thus have the possibility to ask questions to the members of the FESN's Scientific Council, as well as to the international experts of the different angles of memory field.

The Conference, 100% virtual, is accessible to the public for free and will be broadcasted live on the Conference website . Doctors and health workers are also welcome. The conference will be held in French and English with simultaneous translation into both languages.

Prof. Pierre Magistretti

Why Monaco?

The Principality of Monaco owns a health hub that is envied by many, thanks to the quality of its teams and the level of its equipment in several specialties.

Among the various establishments of the Principality, the RAINIER III Clinical Gerontology Centre treats all seniors needs, notably brain diseases that so often concern the most fragile patients. The Principality also possess a Research Centre focused, among other subjects, on the field of biology and biomedical medicine with a particular focus on patients affected by neurodegenerative diseases, notably through the work of several associations located on its territory.

Monaco also has a significant international vocation in the area of health that drives it to establish research and care collaborations with French and foreign establishments but also to welcome any project or idea from anywhere in the world enthusiastically.

Thanks to the reputation of its health hub, its international relationships and the attractivity of the Principality, Monaco is a preferred location for the organisation of international conferences and conventions in the medical field.

All these medical conventions have a special place there, whether they are organised at the initiative of doctors practicing in Monaco or if the Principality is selected by the persons in charge of a national, European, or even global convention, which is very often the case.

Members of the Scientific Committee

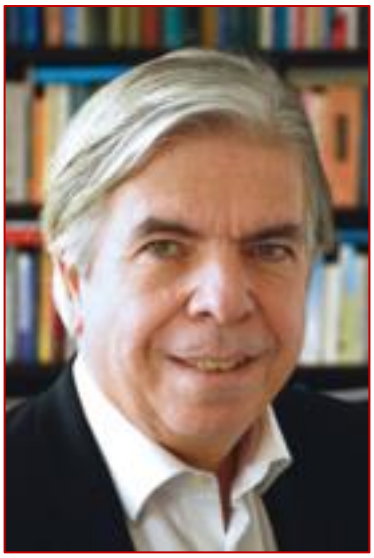
Pierre Magistretti

Pierre Magistretti, doctor and neurobiologist is currently Dean of the Biology and Environmental Science Department at the *King Abdullah University of Science and Technology* in Saudi Arabia. He is also Professor Emeritus at the University of Lausanne and at the Swiss Federal Institute of Technology Lausanne, where he ran the Brain Mind Institute from 2005 to 2012. From 2004 to 2013, he was the Founding Director of the Center Neuroscience Psychiatriques of the University of Lausanne and of the Lausanne University Hospital (CHUV).

His work has contributed to the discovery of fundamental cellular and molecular cells of the brain energy metabolism, notably the basis of the pairing between neuronal activity and energy consumption by the brain and certain mechanisms of neuronal plasticity and neuroprotection.

He is the author of more than 250 articles and three books, two of which are co-edited with François Ansermet on neuronal plasticity and the neurobiological bases of unconsciousness, "A chacun son cerveau" and "Les énigmes du plaisir", and one with Yves Agid regarding glial cells "L'homme glial", all published by Odile Jacob.

Pierre Magistretti has received the Camillo Golgi medal, the Goethe Award of the Canadian Psychological Association, the Theodore-Ott Prize of the Swiss Academy of Medical Science and the IPSEN Foundation Prize. In 2007 – 2008, he held the International Chair at the Collège de France. He is an elected member of the Academia Europæa (Physiology and Medicine), as well as an *ad personam* member of the Swiss Academy of Medical Sciences. He has been the Chairman of the International Brain Research Organisation (IBRO) since 2014.



Bruno Dubois

Bruno Dubois is a Professor of Neurology at Sorbonne University in Paris.

He is the Head of the of Cognitive and Behavioural Diseases Department at the *Salpêtrière Hospital*, Research Unit Director at the Brain & Spine Institute (ICM). He coordinates several centres of national references on rare diseases (the centre for "Rare and Early Dementias" and "young people with Alzheimer's disease") and the Paris Centre of Excellence for Neurodegenerative Diseases (CoEN).

He has published on the topic of animal and human brain neurochemistry, neuropharmacology, neuropsychology, and biomarkers of patients with cognitive disorders and dementia.

He led the International Working Group (IWG) that spearheaded a new conception and definition of Alzheimer's disease.

He is a member of the Academy of Medicine and Knight of the Legion of Honour.

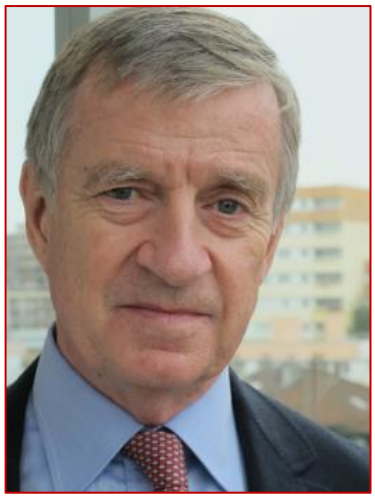
Richard Frackowiak

Neurologist and former Dean and Director of the Queen Square Institute of Neurology in London, specialist in brain imagery and Alzheimer's disease. Co-director of the Human Brain Project.

Richard Frackowiak is a Professor ad hominem and former Head of the of Clinical Neuroscience Department at the University of Lausanne (UNIL) and at the University Hospital of Lausanne (CHUV). He also holds a Chair as Professor at the Federal Polytechnic School of Lausanne (EPFL). He is one of the promoters of the European project "Human Brain Project". A pioneer in human brain imagery, his scientific contribution is often mentioned and rewarded with international prizes.

Founding Professor of the Clinical Neuroscience Department at the University of Lausanne and the Cognitive Nuerology Department at the University College London (UCL), where he is an honorary Professor. He has run the UCL Queen Square Institute of Neurology and was vice-rector of this University. He has also run the Cognitive Studies Department (DEC) at the *École Normale Supérieure* (Ulm) in Paris.

He is a member of the Academies of Medicine of the United Kingdom, France, Belgium and of the United States, a member of the Academia Europæa and foreign associate of the Polish Academy of Sciences. He was chairman of the British Association of Neuroscience and of the European Brain and Behaviour Society. Former scientific advisor to the managing director of the French National Institute of Health and Medical Research (INSERM) and has presided the commission of University Hospitals Institutes (IHU). He is a member of the Commission for Excellence Initiatives (IDEX) of the Investments' Program and of various other international evaluation commissions.



Yves Agid

Neurologist at the *Institut du Cerveau et de la Moëlle* in Paris, specialist in Parkinson's disease, member of the Académie des sciences, Yves Agid is professor emeritus of Neurology and Cellular Biology at Pierre et Marie Curie University and Practitioner Hospital. Physician and scientist, this specialist in the study of neurodegenerative diseases (Parkinson's, Alzheimer's, etc.) has studied their causes, mechanisms, and clinical consequences in order to propose new therapies.

In 1993, he became the Director of the Neurology Department of the *Pitié-Salpêtrière* Hospital until 2007 and, at the same time pursued a career as a researcher at the *Institut National de la Santé et de la Recherche Médicale* (Inserm) from 1985 to 2000.

In 2008, he was elected member of the Academy of Sciences in the Human Biology and Medical Sciences section and was named *Chevalier de la Légion d'honneur* the same year. Since 2009 he has been a member of the National Consultative Ethics Committee.

He was also director of *the Institut fédératif de recherche* (IFR) for neurosciences from 1997 to 2005 of the Neurology Institute from 2000 to 2002, coordinator of the Clinical Investigation Center since 1996, but also a founding member and scientific director of the *Institut du cerveau et de la moelle épinière* (ICM).

Grégoire Courtine

From Swiss Federal Institute of Technology Lausanne, specialist in the study and approaches of the repair of spinal cord injuries

Grégoire Courtine was originally trained in Mathematics and Physics but received his PhD degree in Experimental Medicine from the University of Pavia, Italy, and the INSERM Plasticity and Motricity, in France, in 2003.

From 2004-2007, he held a Post-doctoral Fellow position at the Brain Research Institute, University of California at Los Angeles (UCLA) under the supervision of Dr. Reggie Edgerton and was a research associate for the Christopher and Dana Reeve Foundation (CDRF).

In 2008, he became Assistant Professor at the faculty of Medicine of the University of Zurich where he established his own research laboratory.

In 2012, he was nominated Associate Professor at the Swiss Federal Institute of Technology Lausanne (EPFL) where he directs the International Paraplegic Foundation (IRP) chair in spinal cord repair at the Centre for Neuroprosthetics and the Brain Mind Institute.

He published several articles proposing radically new approaches for restoring function after spinal cord injury, which were discussed in national and international press extensively. Recently, he managed to use his results on paraplegic patients.

In 2013, he launched the start-up GTXmedical, whose goal is to turn these results into a treatment for paraplegia.

The International Experts

Emrah Düzel, German Center for Neurodegenerative Diseases (DZNE), Magderburg, Germany

Emrah Düzel has been trained as a neurologist in Germany (in Bonn and Magdeburg) and have a long-standing interest in the functional anatomy of human episodic memory networks, neuromodulator circuits, their alterations in aging and early stages of neurodegeneration and their scope for plasticity. For this purpose, his research group uses and advances multimodal imaging techniques including fMRI, EEG / MEG and PET.

He is particularly interested in how the degeneration of dopaminergic and noradrenergic neurotransmitter systems contribute to cognitive dysfunction in old age by impacting on motivation, decision making, memory consolidation and plasticity. He approaches this problem from the vantage point of how declarative memory processes, motivation and decision-making interact.

Francis Eustache, Unité Inserm-EPHE-Université de Caen-Normandie U1077

Francis Eustache is a French researcher in the areas of neuropsychology and brain imaging, specializing in the study of memory and its disorders. He is the author or co-author of more than 300 articles in fields such as cognitive psychology, brain imaging, cognitive neuropsychology, clinical neuropsychology, and numerous works intended for the general public. He was one of the first researchers in France to use brain neuroimaging in the study of human memory.

His work in neuropsychology and brain imaging has enabled a better understanding of human memory and its disorders, in various pathologies such as Alzheimer's disease, frontotemporal dementias and amnesic syndromes. He co-directs, with historian Denis Peschanski, the transdisciplinary and longitudinal research program entitled *13-Novembre*, which focuses on the construction of individual and collective memories after the attacks perpetrated in Paris and its suburbs in November 2015. His work, broadcasted internationally, contributes to the modelling of human memory.

Johannes Gräff, Brain Mind Institute, EPFL

Johannes Gräff was born and raised in the German-speaking part of Switzerland, in St. Gallen. After high school, he moved across the language boarder to the French-speaking University of Lausanne, where he completed his undergraduate studies. During those, he spent a year at the University of British Columbia (UBC), in Vancouver, Canada, where he started to become interested in neuroscience and psychology. His M.Sc. thesis, conducted with Professor Laurent Keller in 2005, focused on the genetic causes of aging in ants. Intrigued by how genes can influence behavior – and vice versa – he started a Ph.D. thesis in the lab of Isabelle Mansuy at the Swiss Federal Institute of Technology in Zürich (ETHZ) to specialize in the neuroepigenetic mechanisms that regulate learning and memory.

He obtained his Ph.D. in 2009 and stayed there for a short while as a postdoctoral fellow. In 2009, he moved to the Massachusetts Institute of Technology in Cambridge, MA, USA to start his postdoctoral work under the supervision of Li-Huei Tsai. During this time, he had the ability to show for the first time that the epigenetic machinery is causally involved in cognitive decline associated with neurodegeneration, as well as with updating long-term traumatic memories in a mouse model of post-traumatic stress disorder.

Since 2013, Johannes Gräff is a tenure-track assistant professor at the Brain Mind Institute of the School of Life Sciences, and the Nestle Chair for Neurosciences at the Swiss Federal Institute of Technology in Lausanne (EPFL). He is also a founding member of the FENS-Kavli Network of Excellence, a MQ fellow, a NARSAD Independent Investigator and holds an ERC StG.

Emiliano Macaluso, University Claude Bernard, Lyon, France

Emiliano Macaluso is professor of neuroimaging at the Biology Dept. of University Claude Bernard Lyon 1, and carries out his research at the ImpAct team of the Lyon Neuroscience Research Center (Lyon, FR). He was awarded his PhD at University College London (UK) in 2000. After working as a post-doc at the Institute of Cognitive Neuroscience (London, UK), in 2004 he moved to the *Fondazione Santa Lucia*, where he set up the Neuroimaging Laboratory (Rome, IT) which he has directed from 2006 to 2016.

His main research interest concerns the neural basis of attention, multisensory integration, and space perception. Using non-invasive brain imaging techniques, he investigates the dynamic interactions that arise from the combination of top-down signals related to task and expectations, with bottom-up signals triggered by the onset of stimuli in the external world. Recently, his studies have focused on the interplay between attention and memory in complex, naturalistic environments. He is co-editor of Experimental Brain Research, and Associate Editor of Neuroscience Letters and of Frontiers in Integrative Neuroscience. He is a member of the European Brain and Behaviour Society (EBBS) executive committee.

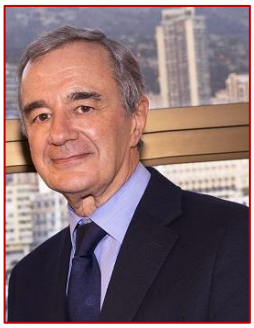
Eraldo Paulesu, University of Milano-Bicocca, Italy

Eraldo Paulesu is a neurologist, professor of cognitive neuroscience at the University of Milano-Bicocca.

In the early 90s, with Chris Frith and Richard Frackowiak, he pioneered the combination of behavioural techniques inspired by cognitive models and neurophysiological observations based on functional imaging techniques.

Among his main scientific achievements; the first definition of the functional anatomy of verbal working memory and its subcomponents; the identification of the vestibular cortical pathways and their role in the modulation of conscious perception in right brain damage patients; the identification of neural pathways of cardiac pain and the pathological lack of it; the identification of shared dysfunctional cognitive and anatomical patterns in dyslexia across cultures; the definition of neurophysiological correlates of motor awareness and its impairments in anosognosia for hemiplegia and the first identifications of mirror neuron activity in humans are standing out.

Eraldo Paulesu is also actively studying how aging affects awareness for memory skills with particular attention to autobiographic memory and personal semantics



Patrick Rampal, Centre Scientifique de Monaco

Professor of Gastroenterology.

Since 2008, he has been Chairman of the Board of Directors of the Centre Scientifique de Monaco, the scientific research agency in the Principality of Monaco. The Centre Scientifique de Monaco integrates, on the same site located on the port of Monaco, fundamental research activities grouped into three departments: a marine biology department, a polar biology department, and a medical biology department. The aim of this department is to ensure the link between fundamental medical research and clinical applications in major fields such as cancer, immunity, and certain genetic diseases.

Jordan Squair, Brain Mind Institute, EPFL

Jordan Squair received his PhD from the University of British Columbia in 2018.

His research is focused on understanding the cardiovascular consequences of spinal cord injury. Recently, his research group identified that individuals with spinal cord injury are 300-400% more likely to suffer from cardiovascular disease (i.e., stroke, myocardial infarction, cardiac disease) than the general population.

Thus, his work specifically focuses on developing novel strategies (i.e., neuromodulation) to restore and/or maintain control of crucial autonomic structures below the level of injury. Using these strategies, he aims to reduce blood pressure lability, restore cardiac function, and thereby reduce this population's dramatic cardiovascular disease risk burden.

The Moderator

Nancy Cattan

Science Journalist, Nice Matin.

Before obtaining her PhD in life sciences at the University of Nice Sophia-Antipolis, Nancy Cattan was initially a researcher at the A. Lacassagne Cancer Centre, at the Inserm U145 and at the University Nice Sophia-Antipolis, she then became a scientific journalist.

She thus started her career in journalism in 2002 as Editor-in-Chief of the Senior Magazine from 2003 to 2006.

Being a regular contributor to Nice Matin since 2003, she turned into Head of the Health Section of Nice Matin and Var Matin in 2013.

Programme

Virtual edition, March 13th, 2021

13:30 – 14:00 Introduction

13:30 – 13:35 **Welcome**
Patrick Rampal (Monaco)

13:35 – 13:40 **Introduction**
Pierre Magistretti (Switzerland)

13:40 – 14:00 **Memory : a clinical perspective**
Bruno Dubois (France)

14:00 – 15:00 Round table: Memory's dimensions

14:00 – 14:10 **Episodic memory**
Francis Eustache (France)

14:10 – 14:20 **Personal memory and identity**
Eraldo Paulesu (Italy)

14:20 – 14:30 **Memories in the real world**
Emiliano Macaluso (France)

14:30 – 15:00 **Debate and questions of the public**
Moderation by Nancy Cattan (France)

15:00 – 16:10	*Round Table: Memory's mechanisms*

15:00 – 15:10 **Memory's Anatomy**
Emrah Düzel (Germany)

15:10 – 15:20 **Molecular Memory**
Johannes Gräff (Switzerland)

15:20 – 15:30 **Spinal Cell Memory**
Jordan Squair (Canada)

15:30 – 15:40 **Motor memory following neurotrauma**
Grégoire Courtine (Switzerland)

15:40 – 16:10 **Debate and questions of the public**
Moderation by Nancy Cattan (France)

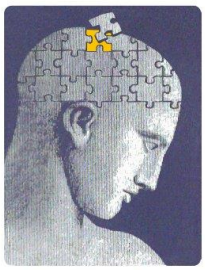
16:10 – 17:00	*Round Table: Researches on memories: Quo vadis?*

16:10 – 16:40 **Round Table**
FESN Scientific Committee:
Pierre Magistretti, Bruno Dubois, Richard Frackowiak, Yves Agid, Grégoire Courtine

16:40 – 16:50 **Debate and questions of the public**
Moderation by Nancy Cattan (France)

16:50 – 17:00 **Conclusion**
Pierre Magistretti (Switzerland)

The Organiser



FESN FONDATION POUR L'ETUDE DU SYSTEME NERVEUX CENTRAL ET PERIPHERIQUE

The *Fondation pour l'Étude du Système Nerveux central et périphérique* (FESN) was one of the first European foundations dedicated to the promotion of the study of the nervous system. Founded in 1983 upon the initiative of a group of prominent scientists, it has two main goals:

- Offering a high-level forum aiming to facilitate meetings between the various leaders of emerging fields of neurosciences.
- Promoting information on the progress of neurosciences to a non-specialist audience, interested in this field.

In this regard, the FESN has organised a dozen meetings on topics as varied as the development of the nervous system, the brain and biological rhythms, neurodegenerative diseases or even neuropharmacology. The conclusions of these works were discussed in the series of publications "Discussions in Neurosciences" intended for a non-specialist audience.

The scientific FESN council is the following:

Yves Agid, Neurologist for the « Institut du Cerveau et de la Moëlle » in Paris, specialist of Parkinson's disease

Bruno Dubois, Neurologist at Sorbonne Université, Head of Service at La Salpêtrière in Paris, specialist of Alzheimer's disease

Richard Frackowiak, Neurologist, and former Head of Service of « Queen Square » in London University, specialist of brain imaging and of Alzheimer's disease

Pierre Magistretti, Neurobiologist for the « Ecole Polytechnique Fédérale de Lausanne » and in KAUST University, specialist of energy metabolism and glial brain cells

Grégoire Courtine, from the « Ecole Polytechnique Fédérale de Lausanne », specialist of the spinal cord injuries studies and restorative approaches.

The Partner

MAGNOGLIA

Magnoglia is a Monegasque company of prospection and development of innovative pharmaceutical products.

Magnoglia is particularly active in the areas of ophthalmology, rheumatology and more specifically neurology.

On its last discipline of expertise, Magnoglia is specialised in a 360° approach in the field of neurons and astrocytes, the main cells of the central nervous system.

Magnoglia's goal is to highlight any product regarding neurodegenerative diseases as well as solutions for the improvement of brain faculties.

Notes

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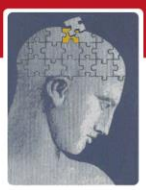

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