



## European Dana Alliance Plays Major Role at FENS 2012



Neuroethics Seminar, participants from left: Helen Mayberg, John Rothwell, Damiaan Denys, Carlos Belmonte, Roger Barker.



Max Cowan Lecturer: Peter Seeburg.

EDAB has supported and played a very active role in the Federation of European Neuroscience Societies (FENS) since it was founded in 1998 in Berlin. At the FENS meeting in Barcelona on July 14-18, EDAB was again a major participant, presenting two symposia, a special BAW meeting, an EDAB reception and Executive Committee meeting and sponsoring the press office.

In recognition of his early involvement and support for the field of neuroethics, EDAB renamed its seminar The William Safire Seminar on Neuroethics. Jointly presented by EDAB and the International Neuroethics Society, the topic in Barcelona was *Invading the Brain: What Are the Ethical Issues on Invasive Treatments for Brain Disorders?* Panellists included: Dr Helen S. Mayberg, Emory University; Professor John Rothwell, University College London; Dr Damiaan Denys, University of Amsterdam; Dr Roger Barker, University of Cambridge; and EDAB executive committee member **Carlos Belmonte** (moderator).

*Denys, a psychiatrist, spoke of "a huge gap between assessing efficacy as a doctor and what the patient feels."*

The speakers, experts in the fields of deep brain stimulation, cell transplantation and gene therapy, discussed not only the potential for these techniques in treating debilitating brain diseases but also the ethical issues that can arise from their use.

Denys, a psychiatrist, spoke of "a huge gap between assessing efficacy as a doctor and what the patient feels." He gave an example of an artist in his 60s who, having been depressed for over 25 years, responded very well to deep brain stimulation but became more impulsive as a result. Eventually, his family asked the surgical team to lower the implant voltage "to make him a little more depressed again."

The Max Cowan lecture was given by Professor Peter H. Seeburg, director

of the Max-Planck Institute for Medical Research, on *Behavioural Correlates of Hippocampal and Hypothalamic Functions Studied in Rodents* and was introduced by EDAB Vice Chairman **Pierre Magistretti**.

The lecture was established in 2004 in memory of Max Cowan, one of the founders and vice-chairman of the Dana Alliance who played an important role in the formation of EDAB. The lecture recognizes the contribution of a prominent neuroscientist whose work resonates with some aspect of Cowan's interest in molecular neuroscience and who shares his and EDAB's commitment to the public understanding of neuroscience.

**Geoff Raisman** gave the first lecture in 2004, followed by David Amaral in 2006, James Fawcett in 2008, and **Colin Blakemore** in 2010.

European BrainTeam members and Brain Awareness Week partners came together at the Network of European Neuroscience Schools (NENS) event

Continues on page 2...

## THINKING ALOUD

A letter from  
Pierre Magistretti



Dear EDAB members,

Though the New Year will be firmly established by the time you read this, may I take the opportunity to wish each one of you joy, health and good progress throughout 2013.

Following in the footsteps of the successful initiative taken by the Society for Neuroscience and by FENS for Europe, a Global Advocacy Initiative has been established by IBRO, FENS and the Society for Neuroscience; the Japanese Society for Neuroscience and the International Society for Neurochemistry have recently joined as well. The aim of the Global Advocacy Initiative is to inform and educate the general public, the media and opinion formers about recent developments in brain research. Dana will also participate in the grant making process, subject to certain conditions. National neuroscience societies may apply for a limited number of grants, €5,000 per project, to enable members to do advocacy work within their own countries. The forms and modalities of advocacy will be determined by the nature of the local issues and culture. Details can be found on the FENS website: <http://www.fens.org/fens-sfn-AdvocacyGrants/>.

And so to Brain Awareness Week (BAW) 2013...the means by which we nowadays communicate our research seems to become more sophisticated and original by the day. Your ideas for spreading the word during BAW 2013 will be warmly welcomed by us. We strongly encourage you to register at <http://www.dana.org/brainweek/Register.aspx> if you have not already done so.

Looking forward to hearing from you all very soon.

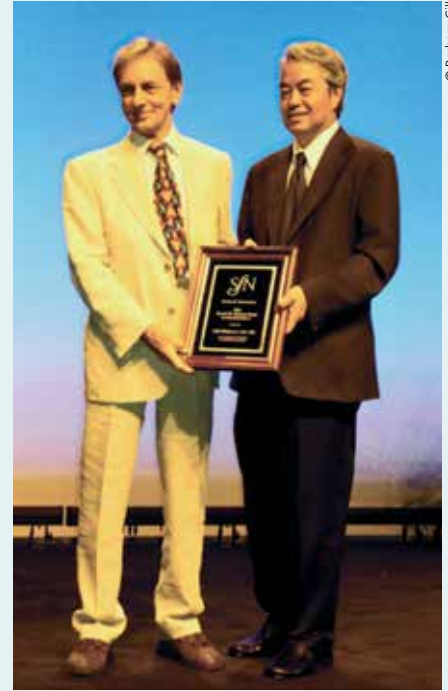
With best wishes.

Pierre Magistretti

## NEWS IN BRIEF

### Ralph Gerard Prize 2012

The 2012 Ralph W. Gerard Prize in Neuroscience, the highest recognition conferred by the Society for Neuroscience, was awarded to Colin Blakemore for his significant contribution to the field. His impressive career has provided fundamental insights into the neural mechanisms underlying visual perception development. His efforts to elucidate key molecular and cellular mechanisms underlying developmental plasticity of the visual cortex have been particularly helpful in improving knowledge about amblyopia. He continues to explore the molecular mechanisms that contribute to plasticity.



Colin Blakemore receives the award from Moses V. Chao, SfN President.

© Barbara Gill

...continued from page 1

at FENS 2012 to discuss their recent outreach activities and future plans. NENS was founded in 2003 and represents more than 150 graduate schools and programmes across 30 European countries that offer degrees in neuroscience. NENS is a formal structure within FENS, and members are primarily post docs and young researchers—an excellent audience for the BAW and BrainTeam programmes.

*“By establishing new connections, and strengthening existing ones, the network should serve as a testing ground for ideas and help bring neuroscience to mainstream attention”*

There were lively talks by: Martina Michalikova (Germany), who won the EDAB film contest; Casto Rivadulla Fernandez (Spain); **Elzbieta Pyza** (Poland); Crawford Winlove (UK); **Spiros Efthymiopoulos** (Greece); and **Pierre Magistretti**. Poster presentations were given by: **Ferhan Esen** (Turkey); Margret Franke (Germany); Nadia Japaridze (Georgia); Isabelle Lebrun (France); Martina Starc (Slovenia); Sandra Vieira and Joanna Rocha (Portugal); and Yves Tillet (France).

One of the exciting ideas to emerge from the event, developed by Winlove, is to launch a social media network to help neuroscientists plan innovative outreach activities and share research with a wider audience. “By establishing new connections, and strengthening existing ones, the network should serve as a testing ground for ideas and help bring neuroscience to mainstream attention,” Winlove said. To do this, Neuroconnexions will employ a variety of media forms and appear across all major social media platforms—search for “Neuroconnexions” on Facebook to find out more and get involved.

With funding from Dana, Elaine Snell, on behalf of EDAB, organized and managed the FENS press centre. Abstracts were selected for publicity, 11 press releases were written and distributed and press conferences in Barcelona were arranged on topics ranging from “Optogenetics: Controlling the Brain with Light” to “New Brain Connections Explain Teenage Turmoil.” A press contact from each national neuroscience society liaised with their national media to promote the neuroscience from their respective countries and translate and circulate the meeting’s press releases.

# MAZAHIR T. HASAN

Mazahir T. Hasan is a Group Leader at the NeuroCure Cluster of Excellence, Charité-Universitätsmedizin, Berlin. He is also the Founder of The Science Bridge initiative.



## **Please tell us about your research into information encoding in neuronal circuits and memory functions.**

The human brain has roughly 100 billion neurons and these neurons encode all our experiences. In my mind, a single neuron is like a single key on a piano board. The modern standard piano has 88 keys but there are only 12 notes, which repeat themselves over and over again in a pattern. I think that the brain, regardless of its complexity, might share with the piano similar features. In the brain, multiple neurons work together to compose complex symphonies, which in turn create our experiences, our feelings, our memories and our personality.

My research interest is to understand “where” and “how” sensory signals are encoded in neuronal circuits and modified by experience, and “where” and “how” associative memory circuits are organized in the brain. To tackle these questions, we are developing powerful genetic approaches to: (1) identify neurons which are activated by sensory signals, such as touch or smell; (2) permanently tag “experience-activated neurons” for activity manipulation; and (3) map with spatial high-resolution the connectivity between experience-activated neurons and also input/output neurons. Thus, the major goal of my research work is to reveal a “minimal” memory circuit.

Neurons communicate with one another by an electrical signal called an action potential, the information currency of the brain. An action potential activates calcium entry into neurons. Development of fluorescent calcium indicator proteins, or FCIPs, has revolutionized cell biology in general and system neuroscience in particular. To visualize action potentials from a large number of neurons in living mice, we smuggled FCIPs into neurons using genetic techniques; in collaboration with a few international labs, we showed that natural sensation, such as different types of smell, could be detected in the brain in the form of unique activity patterns. Importantly, we demonstrated that FCIPs are able to detect single action potentials from a large number of neurons. Finally, we also succeeded in recording neuronal activity during behavior in freely moving mice. In a recently published study, we imaged the activity of the same neurons from the same mice and showed that sensory experience reorganizes cortical activity dynamics. Since reciprocal interactions between inhibitory and excitatory neurons in thalamocortical and corticocortical pathways are responsible for various aspects

of sensory perception, our next goal with FCIPs is to investigate what specific role inhibition plays in controlling the functional boundaries within a single sensory modality and between different sensory modalities.

We have developed powerful and versatile genetic tools with recombinant adeno-associated viruses equipped with chemically-controlled genetic switches for inducible gene expression in the mammalian brain. These

*“In the future, we also plan to investigate memory-related disease mechanisms with a goal to design novel therapeutic strategies to prevent or treat them.”*

tools can precisely target any brain region, cell type, and mammalian species. Now, for example, we can inducibly delete “at will” any gene-of-interest in any brain regions and any cell type of choice. We can reversibly silence synaptic transmission between communicating brain regions and cell types. Most remarkably, we can permanently tag experience-activated neurons for activity manipulation by optogenetics and connectivity mapping by serial two-photon and electron microscopy. With these tools at our disposal, we aim to investigate “where” and “how” memory is formed and stored in the brain, and “how” it is retrieved and lost. In one recently completed project, we have investigated whether memory is stored in the intrinsic organization of synaptic contacts and/or in their re-distribution originated by the learning process. In another project, we deleted the NMDA receptor 1 gene (*Grin1*) selectively in the motor cortex, and discovered that NMDA receptor function is essential for LTP and learning-dependent synaptic plasticity in behaving mice.

In the future, we also plan to investigate memory-related disease mechanisms with a goal to design novel therapeutic strategies to prevent or treat them.

## **As the founder of The Science Bridge initiative, please tell us more about it.**

The Science Bridge (TSB) is a non-profit, peace-building humanitarian initiative with a unique approach of engaging scientists from different cultures and nations to collaborate on specific scientific research themes. Science, by its very nature, roots in curiosity and open-mindedness. Scientific research has the best chance of opening doors of communication and cultivating trusting

relationships between people of different cultures and nations. With this reasoning in mind, we launched this new initiative.

Our primary scientific goal is to advance the understanding of the brain. The brain gives us our individual identities and governs all our actions. The brain makes us “who we are” and tell us “who and what is important to us.” Neuroscience research, by the very nature of what it investigates, will give us a deep appreciation of others and ourselves. Ultimately, we hope to develop treatments for neurological diseases, including Alzheimer’s, Parkinson’s and Huntington’s diseases.

Our secondary goal is to promote understanding between the Middle-Eastern and Western worlds, whose relationship is currently at a crossroads; tensions are running high between them. Through scientific collaboration and a focus on what we all have in common, namely a desire for knowledge, progress and eradication of disease, we believe TSB initiative can make a positive contribution not only to science, but also to human relations.

For The Science Bridge initiative to be successful, it is especially important that we make every effort to cultivate a science culture in the Middle-East and other Muslim populated nations. Our idea is to build two closely linked research institutes, one located in a Western country and another one in a Middle-Eastern country. Through scientific collaboration, we will also take a positive step towards peace between the West and the Middle-East in particular and between the Western and the Muslim populated countries in general by demonstrating that the two can work together for the benefit of humanity.

*“Our idea is to build two closely linked research institutes, one located in a Western country and another one in a Middle-Eastern country.”*

We are extremely grateful to scientists from around the world who have endorsed TSB initiative, including Nobel Laureates and other top scientists. Now, we have reached a stage where we are requesting the support of private and governmental sectors and visionary philanthropists to build the “Twin Institutes” between collaborating nations. The “Twin Institutes” of TSB intends to partner with renowned universities, research institutes and international scientific organizations to uphold the highest standards of scientific research and practice. The “Twin Institutes” will represent a unique symbol of “science in diplomacy,” working diligently to pursue challenging scientific projects for the well-being of humanity for the present and a better future to come.

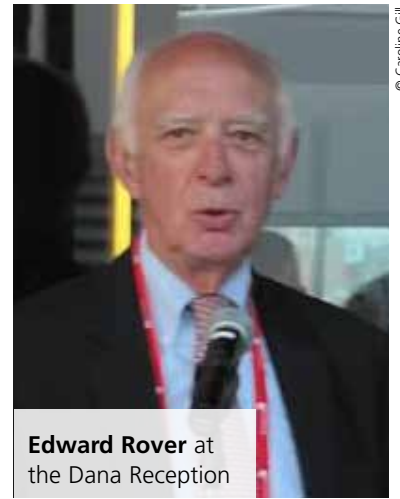
For more information on ‘The Science Bridge’ initiative, please visit our website:

[www.thesciencebridge.org](http://www.thesciencebridge.org)

# The Dana Reception at FENS 2012

In the evening of the first day of the FENS Forum, the Dana Reception was held on the rooftop terrace of Museu d'Historica de Catalunya, overlooking the Mediterranean in Barcelona. During the evening, in his speech to EDAB members and their guests, Chairman Edward Rover re-affirmed Dana's continued participation and commitment to European neuroscience.

To view more images of this event and the SfN 2012 Dana Reception in New Orleans, visit [danaalliance.shutterfly.com](http://danaalliance.shutterfly.com) (password: dabi)



**Edward Rover** at the Dana Reception

© Caroline Gill



**Richard Morris, Erwin Neher and Carlos Belmonte**

© Caroline Gill



**Colin Blakemore** and Hillie Mahoney, Chairman of the Harvard Mahoney Neuroscience Institute, Boston, USA.

© Caroline Gill



**Antonis Stamatakis, Irini Skaliora and Irina Bystron**

© Caroline Gill



**Dominique Poulain and Josef Syka**

© Caroline Gill



**Malgosia Kossut, Sigi Huck and Albert Aguayo**



At dinner, in foreground: Hillie Mahoney, **Pierre Magistretti** and **Spyros Efthymiopoulos**.

## The Dana Reception at FENS 2012



**Oleg** and Oksana **Kristal** with Marty Saggese, Executive Director, SfN.

© Caroline Gill



Elaine Snell and **Eva Sykova**

© Caroline Gill



**Mara Dierssen**, LOC Chairman FENS, Peter Stern, Senior Editor, *Science Magazine* and **Barbara Gill**

© Caroline Gill

## MEMBER NEWS



**Pavle Andjus** (Serbia) in September facilitated a project to popularize science by coaching Serbian Neuroscience Society students, who, with the aid of grants, were able to travel throughout Serbia, from October to December. They visited primary and high schools, cultural centres and centres for professional development of educators to demonstrate *The Brain and Learning* with interactive exhibitions and educational materials. They also organised a festival, *Days of the Brain—Brain at Your Palm*, with interactive games, lectures, videos and memory tests, attended by 1,564 visitors.



**Carlos Avendaño** (Spain) in June was interviewed for an article by SINC (Servicio de Información y Noticias Científicas) on artificial intelligence titled "Replicate a Replicant," on the 30th anniversary of the movie *Blade Runner*. In November he gave a public lecture, "Primary Sensory Neurons: An Open Population," at the Royal National Academy of Medicine, part of closing the "Year of Neuroscience in Spain".



**Colin Blakemore** (UK) gave the following public lectures: the Lord Brain Memorial Lecture "Why Was Bigger Better?" in June; "Looking at the Brain" in November at the opening of the University of Durham Neuroimaging Centre; Chancellor's Lecture "The Human Brain: Is It Up to the Job?" in November at the University of Hertfordshire; and Chandaria Lectures "Neurons of Knowledge" at the Institute of Philosophy, University of London, during December.

His opinions published by *The Times* included: "We mustn't let GM vandals get away with it" in May; "Even if you Back the Right to Die, Dr Jekyll should not play Mr Hyde" in August; "Rule 1: Stop Politicians Spouting about Drugs" in October; "If Scientists are Silent, Loony Ideas will Win" in November; and in December, "In Science, We Must Speculate to Accumulate." *The Daily Telegraph* published his comment: "Is the Afterlife Full of Fluffy Clouds and Angels?"

Throughout the year he was interviewed on topical scientific issues by BBC Radio 4 Today programme. In September, on BBC Radio 4 Head to Head programme, he discussed the

philosophy of science with Anthony O'Hear, Professor of Philosophy at the University of Buckingham. During 2012 he was awarded an honorary fellowship of the Royal Society of Medicine; the Lord Brain Memorial Medal; Peoples Republic of China Friendship Award (China's highest honour for foreigners); Ralph Gerard Prize; Chandaria Laureate, School of Advanced Study, University of London.



**Maja Bresjanac** (Slovenia) in October gave a public lecture, "From Animal Magnetism to Neurobiology: How Placebo Affects the Brain, Modulates Physiologic Processes and Impacts Health," at the SiNAPSA Neuroscience Semi



**Alexis Brice** (France) in May was awarded the Roger De Spoelberch Prize for his research on neurodegenerative diseases.



**Carmen Cavada** (Spain) in May gave a public lecture, "The Brain Degenerates. Can We Avoid It?" in Ibercaja, Zaragoza (video: <http://www.ibercaja.es>).

[youtube.com/watch?v=qG\\_bv-pZhXc](http://youtube.com/watch?v=qG_bv-pZhXc)). In October she gave a public lecture, "The Neural Circuits of Consciousness," at a Universidad de Navarra conference (video: <http://www.youtube.com/watch?v=wRSYulaXB1o>). In November she gave a lecture at the 2012 Science Week public workshop, "How do We Neuroscientists Work?" at the Universidad Autónoma de Madrid Medical School. She also gave a public lecture, "Cerebral Mechanisms of Conscious Activity," in Madrid in November. In May, *Diario de Aragón* published an interview, "We Have Invested Little in Research on Alzheimer's Disease," and "How do we decide?" was published by ABC newspaper, followed by "Doing research is a very clever way of investing money and resources," which appeared on the ABC blog *Brain Thins*. In October, *Diario de Navarra* published her comment, "A Professor declares that the crisis is slowing down research on the brain." In November her comments "A Century with the Brain" and "When the brain fails" were published in *Vogue* and *Diario de Navarra*, respectively. In December her online article, "Teaching Neuroscience to Laypersons," was published by the Ministry of Education, Culture and Sports of Spain.



**Marina Chernysheva** (Russia) wrote an article, "Time and Brain," published in August in *St-Petersburg Morning*.



**Christina Dalla** (Greece) in October was the Commentator for "Your Brain has a Gender?"—Professor Melissa Hines' public lecture at the Gulbenkian Health Forum 2012 in Lisbon. Two of her articles were published in *Vita*: in July "Sun: Friend or Enemy?" and in December "Medicines and Food." She wrote a chapter on depression in *Serotonin: Biosynthesis, Regulation and Health Implications* published by Nova Publishers. Her name appears on the 2012 Hellenic's Ministry of Education internet site for excellence: <http://excellence.minedu.gov.gr/listing/133-depression>.



**José M. Delgado-García** (Spain) gave plenary lectures: "Learning as a Functional State of the Brain" at the FENS meeting in July and "Learning as a Functional State: Studies in Wild Type and Transgenic Mice" at the first FALAN (Federation of Latin America Neuroscience Societies) Meeting, in Cancun, México, in November. He gave several media interviews about the mind and brain immediately after the FENS meeting.



**Ferhan Esen** (Turkey) in May was promoted to full professorship at the Department of Biophysics, Faculty of Medicine at Eski ehir Osmangazi University. She is a regular contributor to Brain Awareness Week Facebook Turkey <http://www.facebook.com/BeyinFarkindaligiHaftasi>



**Tiago Fleming** (Portugal) in August gave an interview on TV Brazil about ageing and neurodegeneration, part of a meeting on human ageing at the University of Passo Fundo, Brazil: <http://www.upf.br/site/inc/noticias/mostraNoticia.php?codNoticia=18091>



**Richard Frackowiak** (Switzerland) was elected chair of the Medical Sciences Committee of Science Europe, a new European scientist-centred lobby group in Brussels funded by 50 European national grant and research organisations: <http://www.scienceeurope.org/index.php?page=chairs-of-thescientific-committees>



**Tamás F. Freund** (Hungary) in May gave a lecture, "Endocannabinoid Signaling in the Brain," to the Danish Neuroscience Society and again at FENS in Barcelona. Variations on this lecture were given in Hungary in July, September and November. His lecture, "Cannabinoid Functions in the Cerebral Cortex," was given at Cambridge and Oxford Universities in May and at Université de la Méditerranée, Marseille, in June.

In October he gave a talk, "Operational Principles of Inhibitory Circuits in the Cerebral Cortex," at the ECPN 25th Congress, in Austria. He also gave the opening speech at the European Student Researchers' Conference, Debrecen, Hungary. His lecture, "Selfishness and Solitude: Dead End Roads of Societal Development—Analogies from the World of Biological Evolution," was given in Hungary on a number of occasions: at Dunakeszi Youth Camp in July, Conference of Catholic seminar Directors in August, Inauguration lecture of a Protestant Church in Dudar in September, Szentesi Keresztény Pedagógus Társaság, Szentes and the Sára Salkaház Church Lecture Series in October.

He delivered the public lecture, "Heritage of János Szentágothai for Today's Neuroscience," at the Memorial Symposium, in Budapest. He was interviewed several times by the media about Szentágothai's Centenary: <http://rsbm.royalsocietypublishing.org/content/early/2012/12/14/rsbm.2012.0038.full.pdf+html?sid=4f32885d-09b3-41db-ae79-1132f501bf80>



**Jean-Antoine Girault** (France) in November gave a public lecture, "Que sait-on du rôle du Cerveau dans les Addictions?" in Paris, organized by FRC (Fédération pour la recherche sur le cerveau) and Reunica.



**Albert Gjedde** (Denmark) in 2012 was awarded the Danish Research Communication Prize by the Ministry of Higher Education. In December his op-ed column, "Novel Challenges of Neuroscience," was published in *Politiken*. He is regularly cited in Danish radio, television, and

daily newspapers, such as "How Denmark's Radio Butchers Computer Gaming through Scandalous Journalism" in *Politiken* in January, "More People Get Brain Damaged Due to Drug Addiction" in *Daily Information* in April, "Warning: 18 year old Brains are not Ready for a Driver's License" in *Berlingske Times'* press bureau in March and "Memory: CTRL + ALT + DELETE" in *Berlingske Times* in April. He currently lectures to the public on "Brain and Consciousness" at the People's University branches in Copenhagen, Aarhus, and Odense. He is Vice President of the Danish Brain Forum, a member of the Grethe Lundbeck European Brain Prize Outreach Committee, and serves on the Research & Technology Committee of the Social Democratic Caucus in the Danish Parliament.



**Agnes Gruart** (Spain) in May gave a lecture, "The Cortical Basis of Associative Learning," at the Friederich Miescher Institute for Biomedical Research in Basle. Her article, "The Pill to Erase Traumatic Memories is Still Far Away," was published in *Mente Y Cerebro* 2012 and in November she was interviewed about this article on Spanish National Radio's *It's Never too Late* programme.



**Eckhart Gundelfinger** (Germany) during 2012 devoted much time to educate and inform parliamentarians. In June he gave a lecture, "20 Years of Neuroscience," to members of his local Parliament Saxony-Anhalt (Landtag), which attracted extensive media coverage, and in November "Brain Investment—Investments into Education from the Perspectives of Brain Research" to members of the German Bundestag in Berlin.



**Riitta Hari** (Finland) in September was elected an Honorary Member of the Finnish Society of Clinical Neurophysiology and gave a lecture, "When MEG (magnetoencephalography) was young, and so was I".



**Norbert Herschkowitz** (Switzerland) gave the following public lectures: "The Challenge of Midlife" in Stuttgart in September and in Willisau in November; "Life-long Brain Plasticity" in October to the Bobath Society in Bern; "Brain Development and Cerebral Palsy" at TMS Münchenstein in November; and "Is Life-long Learning Possible?" in November to Rotary Bern-Muri. His article, "The Brain: How We Make Decisions," was published in *Hirnliga Magazin* in August.



**Peter Holzer** (Austria) in response to the topic of the potential impact of gut microbiotas on mental health had the following articles published: in June, "Hotel Man: Useful and Harmful Residents," by *Salzburger Nachrichten*; and in September, "Anxiety, Depression and Stress: how gut microbiota modify our behaviour,"

"The Secret Power of Gut Microbiota: how a Healthy Diet Empowers our Psyche" and "Gut type I is a particular risk: how gut bacteria makes you fat" by Focus ONLINE. As Head of Initiative on Brain Research in Styria, he has overseen the relaunch of this local website: <http://www.gehirnforschung.at/inge-st/>. At present it is only in German.



**Markku Kaste** (Finland) gave a public lecture, "Help, I am having a stroke!" in March for the Helsinki Heart Association in March and in October for the Helsinki University Alumna Association for Professors' Spouses. In November he participated in a round table discussion, "Prevention of Stroke in Patients with Atrial Fibrillation with new Anticoagulants," published in *Medical News (Mediutiset)*. In December, his article, "Highlights of the Karolinska Stroke Update meeting: the prevention, treatment and rehabilitation of stroke," was published in the Finnish laypersons' journal *Stroke Survivors and their Families*. In November his script for a Stroke Awareness Campaign, FAST, was broadcast on ten occasions on Finnish national TV. Recently he was awarded honorary memberships by the Korean Stroke Society, the Finnish Neurological Association and the Indian Stroke Association.



**Ann Kato** (Switzerland) in October gave a public lecture "How to keep your Brain Young and Healthy with Food and Exercise" at Fondation de Genève. In May her article, "The Myth of Anti-Depressants," was published in the chronicle section of *Le Temps*.



**Malgosia Kossut** (Poland) was interviewed on Public Radio 1 about stroke in December and about brain gender issues in September. She also gave a public lecture, "Physiology of Memory," as her contribution to The Polish Fund for Talented Children.



**Oleg Krishtal** (Ukraine) gave two public lectures: "Why do we experience pain?" in Kiev in March and "The Problem of Consciousness" at the Academy of Sciences General Meeting in May. He took part in a public round table discussion, "Science and Modernisation," at the National Academy of Agriculture in May. He was interviewed on ecology and neuroscience on the Health TV channel in March and was profiled in a First National TV interview in May. In January he appeared on the TV talk show "Born to Think: Neuroscience and Consciousness." The Weekly Mirror interviewed him in May for an article, "Science Turnkey," and *Moskovskii Komsomoletz* interviewed him for an article, "Face to Face with Molecules," published in January.



**May-Britt and Edvard Moser** (Norway) in September May-Britt gave a public lecture, "A Taste

of Memory," at the Kavli Prize week of the Norwegian Academy of Science and Letters in Oslo. In November Edvard and May-Britt gave a lecture, "What Can Education Policy Learn from Neuroscience?" for the Ministry of Education and Research. In December they were guests on the Norwegian Broadcasting radio programme *Good afternoon Trondheim* discussing the brain, memory and stress. In December the University of North Carolina jointly awarded them the 13th Perl-UNC Neuroscience prize for "the discovery of key principles governing the internal representation of space and episodic memory."



**Irena Nalepa** (Poland) in October wrote a commentary for the Polish Press Association's Science and Health online service about the 2012 Nobel Prize in Chemistry, awarded to Robert J. Lefkowitz and Brian K. Kobilka for their Studies of *G-Protein-Coupled Receptors*. This research is of great importance for the pharmacotherapy of psychiatric disorders and other diseases.



**Alexandr D. Nozdrachev** (Russia) in September was awarded the Russian Academy of Sciences Prize for popularisation of science. His book, *Pavlov's Encyclopedia*, was published in St. Petersburg in July.



**Dimitri K. Obukhov** (Russia) in November gave a public lecture for children, "Evolution of the Nervous System in Vertebrates," at St. Petersburg Ecological/Biological Centre. He also gave two public lectures for schoolteachers: "The Regeneration of Neurons and Functions of Radial Glia" and "Stem Cells in CNS."



**Maria Panayotacopoulou** (Greece) organised a symposium, "Neurobiology and Child Psychiatry," for professionals and the public involved in the treatment of neurodevelopmental disorders, which informed them about new "tools" available for the study of the pathogenesis of behavioural deficits in children. She is also studying the effects of stress on the Greek population, due to the economic crisis.



**Grega Repovs** (Slovenia) in June gave two interviews: the investigative journal *Mladina* focused on gender differences and cognitive rehabilitation; the journal *Viva* focused on brain and behaviour, personality relationships, gender differences, emotional processing in the brain, ageing and dementia. In both interviews he stressed the significant impact of brain disease on quality of life and cost to society. His December presentation of "Functional Connectivity of the Amygdala in Early-Childhood-Onset Depression" at the Slovenian Academy of Arts and Sciences won him recognition in the field of psychology as author of the most visible publication of a Slovene scientist.



**Steven Rose** (UK) in October gave the John Hamilton Lifelong Learning public lecture in Liverpool. In November his book, *Genes Cells and Brains: the Promethean Promises of the New Biology*, co-written by his wife, Hilary, was published by Verso. In December he received the BNA 2012 award for Outstanding Contributions to Neuroscience. In March he reviewed the Wellcome Brain Exhibition for the BBC radio 3 programme *Nightwaves*.

He is a member of: the Nuffield Council on Bioethics working party on Novel Neurotechnologies (NNT), the Advisory group for Y-touring play *Broken Bridges* and *Stunted Trees* about NNTs for school students, and the Arts and Humanities Research Council (AHRC) Workshop on teaching neuroethics to neuroscientists. Playwright Caryl Churchill used an extract from his book, *The Making of Memory*, for her play *Love and Information*, which ran at London's Royal Court theatre in September and October.



**Osvaldas Ruksenas** (Lithuania) gave a public lecture, "Current Problems in Neurobiology," at a centre for teaching business leaders in June, and during Spaceship Earth Science Festival in September. He gave a lecture, "Current Concepts in Neurobiology," at the 5th NanoSchool in November. His video report, "More Grey Cells Don't Necessarily Mean More Intelligence," appeared in May on [www.delfi.lt](http://www.delfi.lt). In December he was recognised as Best Teacher of 2012, Faculty of Natural Sciences, Vilnius University, who gave The Best Lecture of 2012.



**Maria V. Sanchez-Vives** (Spain) in July gave a public lecture, "Using Virtual Reality to Understand Brain Function," part of a programme about neuroscience in the 21st century, at University Internacional Menendez Pelayo in Valencia. She also organised an international workshop, "How Mind Emerges from Mind," at Biocat in Barcelona in July.

Over the past year she has been running a very successful research project, "Learning Music as Brain Exercise," to study the cognitive impact of learning music and piano playing, on people over the age of 62 ([https://www.youtube.com/watch?v=1Bdg\\_AD\\_YSE](https://www.youtube.com/watch?v=1Bdg_AD_YSE)). She has also organised a series of talks given by scientists about lifestyle and the brain: <http://www.bdebate.org/en/interview-7>.

In May she was interviewed through a robot in the BBC news: <http://www.bbc.co.uk/news/world-europe-17905533>. The BBC cited this demonstration as one of the technical highlights of 2012 (see the first clip: <http://www.bbc.co.uk/news/technology-20712096>). TV3 screened a documentary Project BEAMING about this technology in January. She was editor-in-chief of the December issue of *Frontiers in Systems Neuroscience*. She has also contributed a chapter, "Spontaneous Rhythmic Activity in

the In Vitro Cerebral Cortex," to *Isolated Brain Circuits*, published in 2012 by Springer Humana, New York.



**Menahem Segal** (Israel) in June organised a public symposium, "Scientific Research—Bridge to the Future," to honour the 90th birthday of Sir David Samuel, Emeritus Professor at the Weizmann Institute. Speakers included Professors H. Harari, Ada Yonath, Yadin Dudai and Yuval Tamir.



**Wolf Singer** (Germany) gave the following public lectures: "Perception, an Active Attention Dependant Process," on attention across the

disciplines, at a Mainz University Symposium in July; in November, "CIN Dialogue on Religious Experience in Interdisciplinary Perspectives" at Tübingen University, "Complexity, Modularity and Synchronisation in the Brain" at the Catholic Academy of Bavaria in Munich, "Intuition and Complexity, a Difficult Relationship: The Brain as an Example," to Friends of the Hertie Foundation in Frankfurt, and "The Concept of Wellbeing as Opposed to Economic Growth and Health" to the Frankfurt Society for Commerce, Industry and Science; in December, "The Question of Free Will Seen from a Neurobiological Perspective" at the Prof. Schöne-Seifert Symposium, Münster University, "Who Rules in Our Brain?" at Nixdorf Museum Forum, Paderborn, in cooperation with Max Planck Science Tunnel, and "On the Neurobiological Grounds of our Mind" at the VHS Evening School of the City of Frankfurt: Psychoanalytical Friday Circle. Interviews and articles include "How the brain is recognising itself," published by *GEO kompakt* in May; "A portrait of Wolf Singer: What are these cerebral gymnastics about?," in *FAZ Frankfurter Allgemeine Zeitung* in September; "What economists can learn from neuroscientists," in *The House of Finance, Newsletter 4th Quarter 2012*; and "An orchestra with no conductor" in *Die Welt kompakt* in December.

In June, he took part in a Hessian Broadcasting, hr2 Doppelkopf interview (<http://www.hr-online.de/website/radio/hr2/index.jsp?rubrik=22564>) and in July appeared on a Rhine Main TV programme, "The Correctness of Public Knowledge," discussing Three Intelligent Minds. *The Educator* published his article, "Conflicts

between self-experience and neurobiological description from a third person perspective," in the June/July issue. His article, "Neuronal and conscious processes—an ambiguous relationship," was included in the Proceedings of the XXII German Congress for Philosophy, Munich, September 2011, and the German Annals of Philosophy No. 4, published by *Felix Meiner*.



**David Smith** (UK) in October gave a Nansen Neuroscience public lecture, "Slowing Progression in Alzheimer's Disease by Lowering Homocysteine—Evidence from Neuroimaging," on Nansen's birthday, at the Academy of Sciences, Oslo.



**Karen Steel** (UK) and **Christine Petit** (France) in May were awarded The Brain Prize by the Queen of Denmark, and each gave a lecture to an invited audience in Copenhagen.



**Petra Stoerig** (Germany) was elected to membership of Academia Europaea.



**Piergiorgio Strata** (Italy) gave public lectures: "Trials Dealing with False Memory," at the Association for Forensic and Criminologic Studies in Milan in May; "Emotion and Rationality in Bioethical Issues" at The City of Science, Naples in October.

He appeared on Italian National TV in a debate about using animals in research in July, and was interviewed about aspects of memory in October. He had several articles published: "The Brain-Mind Problem in the Bioethical Debate" in *ItalianiEuropei magazine* in April, "The inheritance by Alan Turing and the guilt of those who have persecuted him" in *La Stampa* in June and "Discussions on bioethical issues and on research organisation in Italy" in the August and November issues of *Il Maratoneta*. On the death of Rita Levi Montalcini, at the end of December, he gave several television interviews and wrote numerous tributes to her.



**Josef Syka** (Czech Republic) during 2012 was the leader of a task force which produced "Open Access in Biomedicine," a Science Policy Briefing, published by the European Medical Research Council. He also collaborated on producing the European Science Foundation publication, "The Human Brain—From Cells to Society" (both available at <http://www.esf.org/publications.html>).



**Eva Sykova** (Czech Republic) in September gave a lecture, "Tissue Engineering—Present and Future," at the Conference of Tissue Engineering in Brno. In November, during Science & Technology Week 2012, she gave a public lecture, "The Brain: Facts and Hope," at the Academy of Sciences in Prague. In May, she was interviewed on two occasions by *Tyden magazine*: about the function of the spinal cord and its recovery, using biomaterials and stem cells, and about stem cells being used to treat dogs with spinal cord pathology. In May, *Pravo Magazine* published an interview "Professor Eva Sykova knows How to Expand the Brain"; in June *LeasePlan Magazine* published "Stem Cell Research: Amazing Advances in Knowledge." In October, *Scientific American: Research for Health* published her summary of research in the field of regenerative medicine at the Institute of Experimental Medicine ASCR. In the summer issue of *Sanquis* she was interviewed about her team's latest research in the field of regenerative medicine. In December, she was interviewed on eský rozhlas Praha Radio about the future treatment of stroke using stem cells.



**Lord Walton** (UK) in June was elected President of the College of Occupational Therapists. In celebration of his 90th birthday, he was honoured by Newcastle University with a major seminar on basic and clinical neuroscience and a celebratory dinner. He was also given a dinner by all the past presidents of the Association of British Neurologists at the Garrick Club in London. He was recognised as Founder and Life President of the Muscular Dystrophy Campaign by Charity Times Awards.



**Semir Zeki** (UK) in October 2012 gave the Nansen Neuroscience public lecture "The Neurobiology of Beauty," on Nansen's birthday at the Academy of Sciences, Oslo.

## A Dana Alliance for the Brain Inc newsletter prepared by EDAB

Chairman: Edward Rover

Vice Chairmen:

Colin Blakemore PhD, ScD,  
FRS and Pierre J Magistretti  
MD, PhD

Contact: Sylvie Hammerson  
shammerson@edab.net  
+44 (0)20 7581-1087

European Dana Alliance  
for the Brain  
C/O Prof. Pierre Magistretti  
Brain Mind Institute – EPFL  
SV 2511 – Station 19  
CH – 1015 Lausanne -  
Switzerland

## Calendar

11 – 17 March 2013	Brain Awareness Week 2013
9 – 13 November 2013	Neuroscience 2013, Society for Neuroscience Congress, San Diego, California, USA
5 – 9 July 2014	9th FENS Forum of Neuroscience Milan, Italy



# Jan Bureš (1926-2012)



With great sadness we inform the international neuroscience community that on August 24,

2012, one of the most distinguished and renowned neuroscientists, Jan Bureš, left us forever at the age of 86 years.

The name of Jan Bureš is connected with important studies of the mechanisms underlying learning and memory. With his wife Olga, he established a school of neuroscience in Prague in the 1950s, which attracted the attention of many young, as well as more senior, neuroscientists. During the fifty year history of the Bureš laboratory, more than one hundred Ph.D. students, postdocs, and neuroscientists passed through, coming from 27 countries around the world. Most of their names can be recognized from among the authors of the hundreds of Bureš publications. These concerned the mechanisms of spreading depression, single unit as well as behavioral studies of learning and memory

function, and in later years, studies of the mechanisms underlying spatial memory. Jan always devoted a large part of his activity to the development of new electrophysiological and behavioral methods. Along with Olga and other colleagues, he published three noteworthy monographs—one, from his 1967 book focusing on electrophysiological methods in biological research, was translated into several foreign languages and used by neuroscientists worldwide.

Jan was one of the founders of the International Brain Research Organization and remained a strong supporter of the organization throughout his life. During the 6th IBRO World Congress of Neuroscience in Prague in 2003, he served as Honorary President of the Congress. Jan received many important awards and honours during his life, the most distinguished being his election in 1995 to the US National Academy of Sciences, the only Czech scientist so honoured.

With the passing of Jan Bureš, the Czech as well as the world neuroscience community has lost

a great personality, as well as a wonderful guide in the difficult task of understanding the complexity of brain function. His name will forever be included in the list of those who made major contributions to the discovery of the brain's secrets, particularly the mechanisms of learning and memory, and he will be greatly missed by his many friends and colleagues around the world.

On a personal note, we both started our scientific careers in Jan's laboratory. As young medical students, we performed our first behavioural studies using spreading depression to block memory formation. In addition, we were introduced to our first electrophysiological experiments, recording neuronal activity using glass microelectrodes in anesthetized rats, which at that time was pioneering work performed in Jan's laboratory. It was while working in his laboratory that we first met and later married. For both of us, Jan Bureš was not only a great teacher, but also a lifelong best friend.

**Josef Syka and Eva Syková,**  
President of the Czech  
Neuroscience Society

# Rita Levi-Montalcini (1909-2012)



With the deepest regret, we inform members of EDAB that Rita Levi-Montalcini, Nobel Laureate, a giant pioneer in the discovery of the first growth factor (NGF) and a founder member of EDAB, died on December 30 at the age of 103.

Rita was born into a Jewish family in Turin. Her father was Adamo Levi, an electro-technical engineer and mathematician. Her mother was Adele Montalcini, a painter and sister of Anna and Gino, a renowned architect and sculptor of the 1930s. Rita had a twin sister, Paola, also a painter.

In 1930, against the wishes of her conservative Victorian father, she entered the Medical School of Turin and began her scientific studies at the Institute of Anatomy, headed by Giuseppe Levi. Like many other students, she was attracted more by Levi's personality than by the current research: investigation into the nervous system. Fellow students included Renato Dulbecco and Salvatore Luria, two future Nobel Laureates: a unique situation of three Nobelists coming from the same classroom.

Following Mussolini's 1938 Manifesto disallowing Jews from further

# MEMBER NEWS

education, Rita was barred from entering the University. Thus, she went to Brussels to continue her experiments, but returned home before the Nazi invasion of Belgium. She first set up a primitive lab at home, then later in a safe house in the countryside. Giuseppe Levi, also barred, joined Rita to work on how nerve fibres, growing out of an embryonic spinal cord, find their way to the budding limbs they will eventually innervate.

Rita was inspired by an article published in 1934 by Viktor Hamburger, an embryologist at Washington University in St Louis.<sup>1</sup> The article illustrated that the removal of a limb in a chick embryo resulted in cell death in the spinal ganglia. The atrophy was explained by the absence of an inductive factor, implying a contact with the tissue to be innervated. Rita was impressed by these results and decided to watch the growing fibre in the embryo, using the silver-staining method. The neurons proliferated, differentiated and started to grow towards their targets, but they died before reaching them. She concluded that the problem was not the lack of an inductive factor, but of a growth-promoting one that would normally be released by the budding limbs.<sup>2</sup>

In 1946 Hamburger invited Rita to spend a semester in St Louis to clarify the issue. The period was prolonged to almost 30 years, as the duo made extraordinary discoveries in rapid succession.

Hamburger's graduate students, Elmer Bueker, grafted a piece of sarcoma onto a chick embryo and found a massive growth of fibre onto the tumour, supporting the view of an inductive factor being responsible for the nerve growth. Rita repeated the experiments by grafting the tumour onto the external surface of the sac enveloping the embryo to avoid the contact. The strong nerve fibre sprouting, also coming from sympathetic neurons, supported her hypothesis that the

tumour was releasing a soluble factor carried by the blood to the embryo.<sup>3</sup>

To simplify matters, she went to Rio de Janeiro to perform experiments in a model of cell culture in the Institute of Biophysics, where Hertha Meyer, a colleague in Turin, was running a big tissue-culture facility. The mouse sarcoma was cultured close to isolated ganglia. The remarkable effect observed after 24 hours was the formation of "haloes of nerve fibres growing from the ganglia like suns."

When Rita returned to St Louis she found a new collaborator, Stanley Cohen, a biochemist recruited by Hamburger to identify the nature of the soluble factor, which proved to be a protein bound to nucleic acids, named nerve growth factor or NGF. The next step was to discover which of the two components was the active one. For their separation they used snake venom. But the same growth effects were observed when the venom alone was applied. Serendipitously, the experiments led to the conclusion that snake venom and extracts of mouse salivary glands were abundant sources of NGF.

In 1959 the dual team developed an antiserum to purify NGF which abolished the in vitro effects. Later, Rita showed that an antiserum to the NGF selectively destroys most of the sympathetic nerve cells in a variety of newborn mammals.<sup>4</sup>

The saga of these discoveries culminated with the identification of the structure of the protein in 1971 by Ralph Bradshaw and Ruth Hogue Angeletti.<sup>5</sup> Rita did not put her name to the paper, because this was a work that she could not perform personally.

From the early 1960s Rita established an intense contact with Italy, where she moved to create new laboratories in Rome, first at the Health Institute and later at National Research Council, having as main collaborators Pietro Calissano, Luigi Aloe, and Antonino

Cattaneo, thus extending the functional role of NGF in different systems and diseases.

From 2004 she spent her time in her newly founded European Brain Research Institute (EBRI), where a large number of young investigators represented her true family. But her later Italian life was rich in other diverse activities. Nominated a Senator for Life, she was always present to support the Prodi Government, during its critical period. She was also deeply committed to promoting women in science and supported a foundation giving young African women access to culture and promotion of science in their country. She was always at the forefront of battles on bioethics against religious dogmas.

In her book "Elogio dell'imperfezione," a kind of autobiography, Rita writes that she inherited her father's strong sense of confidence and tenacity in pursuing the route which she considered the right one, regardless of difficulties she encountered along the way. To be a successful scientist it is not necessary to have a high degree of intelligence, nor the capacity of a perfectionist, but rather total dedication, regardless of difficulties "in such a way we can face problems that others, more critical and cute, will not face."

**Piergiorgio Strata.** Turin, Italy,  
January 2013

## References:

- <sup>1</sup> Hamburger, V. J. *Exper. Zool.* 68, 449-494, 1934
- <sup>2</sup> Levi-Montalcini, R., Levi, G. *Arch. Biol. Liège* 54, 189-200, 1943
- <sup>3</sup> Levi-Montalcini, R. *Ann. N. Y. Acad. Sci.* 55, 330-343, 1952
- <sup>4</sup> Levi-Montalcini, R., Booker, B. *Proc. Natl. Acad. Sci. USA* 46, 384-391, 1960
- <sup>5</sup> Angeletti R. H, Bradshaw R. A. *Proc. Natl. Acad. Sci. U S A.* 68, 2417-2420, 1971