

XXIST CONGRESS OF THE EUROPEAN SOCIETY FOR STEREOTACTIC AND FUNCTIONAL NEUROSURGERY

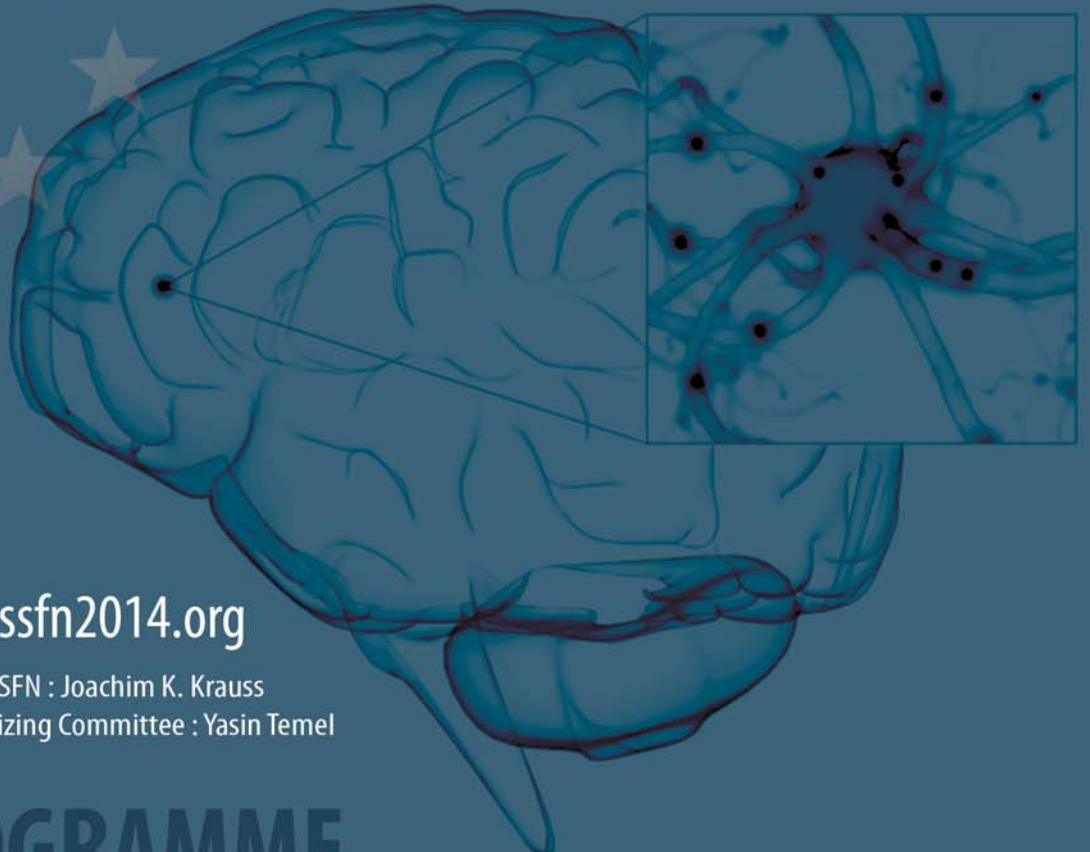
"Implementing research in clinical applications"



17 > 20 SEPTEMBER 2014

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MECC MAASTRICHT THE NETHERLANDS



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President ESSFN : Joachim K. Krauss

Chair, Organizing Committee : Yasin Temel

FINAL PROGRAMME

XXIST CONGRESS OF THE EUROPEAN SOCIETY FOR STEREOTACTIC AND FUNCTIONAL NEUROSURGERY

“Implementing research in clinical applications”

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CHAIRMAN OF THE ORGANIZING COMMITTEE

Dear colleagues and friends,

With great pleasure, I welcome you to the XXI Congress of the European Society of Stereotactic and Functional Neurosurgery. We have put together a scientifically appealing programme to create an active platform to exchange and discuss the latest research results and concepts in the field of Stereotactic and Functional Neurosurgery.

Important characteristic of the XXI Congress is the translational nature of the scientific programme. Invited clinician- and basic-scientists will give authoritative lectures, combined by selected speakers of excellent abstracts. The progress in our field is reflected by the high number and the outstanding quality of the submitted abstracts.

Another characteristic of this meeting is the location. Maastricht is one of the oldest cities in the Netherlands with well-preserved cultural heritage, and Maastricht University, being the most international University of the Netherlands, has a tradition in Clinical and Experimental Functional and Stereotactic Neurosurgery.

I am convinced that this meeting will highlight essential details of our past, provide us the current opinions, and perhaps more importantly, illustrate the next advances in our field.

On behalf of the organizing committee,

Yasin Temel

PROGRAMME

XXIST CONGRESS OF THE EUROPEAN SOCIETY FOR
STEREOTACTIC AND FUNCTIONAL NEUROSURGERY **17 > 20 SEPTEMBER 2014**
MECC MAASTRICHT THE NETHERLANDS

WEDNESDAY 17

- 09.00 – 12.00 ESSFN Officers Meeting *Brussels room*
- 10.00 – 18.00 Registration
- 12.00 – 18.30 *Exhibition*
- 13.00 – 15.30 PRE-CONGRESS SYMPOSIUM 1 *Auditorium 2*
See page 30 for the details of the programme.
- 15.30 – 16.00 *Coffee break and visit of exhibition*
- 16.00 – 18.30 PRE-CONGRESS SYMPOSIUM 2 *Auditorium 2*
See page 30 for the details of the programme.
- 20.00 *ESSFN Welcome Reception Old City Hall*
Opening by Professor Luc Soete, Rector Magnificus of Maastricht University

THURSDAY 18

07.00 Meeting of the WSSFN Committee for Psychiatric disorders *Brussels room*

07.00 – 18.30 *Exhibition*

08.30 – 10.15 **PLENARY SESSION 1 OPENING CEREMONY AND SPECIAL LECTURES** *Auditorium 2*

Chairs: J. Krauss, Y. Temel

> Opening address. *Joachim Krauss, Hannover*

> Welcome address. *Yasin Temel, Maastricht*

Special lectures

> With or without a knife. *Andries Bosch, Amsterdam*

> From Ramon Y Cajal to functional anatomy. *Harry Steinbusch, Maastricht*

> Advances in deep brain stimulation. *Andres Lozano, Toronto*

> Obituary: Jean Siegfried. *Serge Blond, Bjorn Meyerson and Yves Lazorthes*

10.15 – 10.45 *Coffee break and visit of posters & exhibition*

10.45 – 12.30 **PLENARY SESSION 2 PHILOSOPHY AND SCIENCE** *Auditorium 2*

Chairs: A. Bosch, Y. Lazorthes

> Great Expectations. Neuroscience and the ethics of promising. *Tsjalling Swierstra, Maastricht*

> Progress in neurotransplantation. *Tom Foltynie, London*

> Mechanisms of DBS in depression. *Clement Hamani, Toronto*

> DBS of the STN: a matter of silencing or desynchronizing? *Abdelhamid Benazzouz, Bordeaux*

12.30 – 14.00 ESSFN Executive Committee Meeting *Rome room*

12.30 – 14.00 *Lunch*

14.00 – 15.00 **PLENARY SESSION 3 SCIENCE** *Auditorium 2*

Chairs: A. Benazzouz, H. Bergman

> The contribution of animal models in the field of DBS. *Kerstin Schwabe, Hannover*

> Cellular mechanisms of DBS. *Nick Spitzer, San Diego*

> Computer-based modeling of DBS. *Ciska Heida, Enschede*

15.00 – 16.30 **PARALLEL SESSION 1 MOVEMENT DISORDERS** *Auditorium 2*

Chairs: F. Alesch, J. Guridi

Oral presentations

#11 A prospective pilot trial for Pallidal Deep Brain Stimulation in Huntington's Disease.

Jan Vesper, Alfons Schnitzler, Lars Wojtecki (Düsseldorf, Germany)

#18 Microelectrode recording in subthalamic nucleus deep brain stimulation : advantage or loss of time? *Ersay Kocabicak, Dursun*

Aygun, Kemal Paksoy, Musa Onar, Hatice Guz, Omer Boke, Murat Kurt, Murat Terzi, Onur Alptekin, Onur Yildiz, Yasin Temel (Turkey / Netherlands)

#36 STN-DBS for Parkinson's disease: correlation between the active contact electrode and oscillatory activity.

Jorge Guridi, David Garcia-Garcia, Manuel Alegre, Maria Cruz Rodriguez-Oroz, Jose A. Obeso (Pamplona, Spain)

- #37 Resting state cortical oscillations of Parkinson's disease patients without and with subthalamic deep brain stimulation, a MEG study. *Cao Chunyan, Jang Tianxiao, Li Dianyou, Zhan Shikun, Firat Ince Nuri, Sun Bomin (China/USA)*
- #53 Deep Brain Stimulation of the internal globus pallidus in severe Tourette Syndrome. *Anouk Smeets, Annelien Duits, Albert Leentjens, Mayke Oosterloo, Veerle Visser-Vandewalle, Birgit Plantinga, Yasin Temel, Linda Ackermans (Germany / Netherlands)*
- #76 Saccade-related modulation of beta oscillation in the human internal globus pallidus. *Akihiro Yugeta, Robert Chen, William D. Hutchison (Japan / Canada)*

Flash Oral presentations

- #13 Suboptimal benefits of subthalamic stimulation in elderly Parkinson's disease patients. *Shang-Ming Chiou (Taichung, Taiwan)*
- #19 Deep brain stimulation in complex tremor. *Ersay Kocabicak, Dursun Aygun, Murat Terzi, Musa Onar, Hatice Guz, Omer Boke, Yasin Temel (Turkey / Netherlands)*
- #40 Can the substantia nigra pars reticulata be stimulated by the electrode in subthalamic nucleus stimulation? *Takashi Kawasaki, Yuiko Kimura, Masahiro Shin, Makoto Taniguchi, Fusako Yokochi, Ryoichi Okiyama, Yshitomo Umitsu, Hironobu Tokuno, Seki Erika, Nobutaka Arai (Tokyo, Japan)*
- #42 Decline in verbal fluency after subthalamic nucleus deep brain stimulation in Parkinson's disease : a lesional effect of the electrode trajectory? *Stéphane Derrey, Floriane Travers, Romain Lefaucheur, Vianney Gilard, David Maltete (Rouen, France)*
- #47 The in vivo application accuracy of the neuromate® robot during frame based stereotactic implantations of electrodes for DBS. *Daniel Von Langsdorff, Marco Sgambati, Philippe Paquis, Denys Fontaine (Nice, France)*
- #48 The effect of dopaminergic therapy on intraoperative microelectrode recordings for subthalamic deep brain stimulation under GA: can we operate on patients in the 'ON' state? *M. J Asha, H. Krovvidi, J. Kausar, C. Shirley, H. Pall, R.D Mitchell (Birmingham, United Kingdom)*

15.00 – 16.30 PARALLEL SESSION 2 RADIOSURGERY *Brussels room*

Chairs: K. van Overbeeke, J. Regis

Oral presentations

- #26 Radiosurgery for large arteriovenous malformations. *Roman Liscak, Tomas Chytka, Dusan Urgosik, Gabriela Simonova, Josef Vymazal (Prague, Czech Republic)*
- #44 Long term visual outcome after radiosurgery in 97 patients affected by anterior skull base benign meningiomas. *Marcello Marchetti, Stefania Bianchi, Valentina Pinzi, Ida Milanese, Luisa Fumagalli, Achille Bergantin, Angelo Franzini, Francesco Di Meco, Laura Fariselli (Milano, Italy)*
- #120 X-knife stereotactic radiosurgery for cerebral AVM: a single centre experience in Hong Kong. *Benedict Beng Teck Taw, Ho Fun Victor Lee, Kwan Ngai Hung (Hong Kong SAR China)*
- #147 Gammaknife radiosurgery in pituitary adenomas: A 10-year single centre study of 150 cases. *Anne Balossier, Gustavo Touzet, Nicolas Reyns, Thierry Sarrazin, Christine Cortet-Rudelli, Serge Blond (Caen - Lille, France)*
- #162 Is there a role for gammaknife stereotactic radiosurgery in Grade 4 acoustic schwannoma? Highlight from a case series of 86 patients. *Michel Lefranc, Romain Carron, Pierre Yves Borius, Xavier Murraciale, Jean Marc Thomassin, Pierre Hugues Roche, Jean Regis (Amiens - Marseille, France)*
- #201 LINAC radiosurgery for vestibular schwannomas: fusion optimization with FIESTA MRI and high definition CT improves hearing preservation rate. *Ouzi Nissim, Roberto Spiegelmann, Leor Zach, Yaakov Lawrence, Raphael Pfeffer (Ramat Gan - Tel Aviv, Israel)*
- #221 Stereotactic radiosurgery for brain AVMS: outcome analysis. *Antonio Gonçalves Ferreira, Ana Raquel Escolástico, Herculano Carvalho, Rosário Vicente (Lisbia, Portugal)*
- #235 Dedicated linear accelerator radiosurgery for trigeminal neuralgia : a single-center experience in 238 patients with an anterior target. *Bertrand Debono, Igor Latorzeff, Yves Lazorthes, Jean-Albert Lotterrie, Pierre-Yves Borius, Pierre Duthil, Isabelle Berry, Jean-Christophe Sol, Jean Sabatier (Toulouse, France)*

Flash Oral presentations

- #218 How spatially accurate is a mono-isocentric shot with Leksell Gamma Knife at the end of the procedure ? Results of a series of 85 patients in "Real-Life" Conditions. *Romain Carron, Michel Lefranc, Antoine Dorenlot, Denis Porcheron, Pierre-Yves Borius, Jean Régis (Marseille, France)*

15.00 – 16.30 **PARALLEL SESSION 3 BRAIN MACHINE INTERFACE AND IMAGING** *Paris room*

Chairs: J. Bloch, L. Ackermans

Oral presentations

- #35 A wireless cortical prosthesis for epilepsy and BCI. *Pantaleo Romanelli, napoléon torres martinez, Alim Louis Benabid (Italy / France)*
- #82 Reliable control of a brain-machine interface using epidural electrocorticography. *Jocelyne Bloch, Ricardo Chavarriaga, Aleksander Sobolewski, robert leeb, Etienne Pralong, José del R. Millán (Lausanne, Switzerland)*
- #83 Neuronal expression of c-Fos after epicortical and intracortical electric stimulation of the primary visual cortex. *Belal Neyazi, Makoto Nakamura (Hannover, Germany)*
- #255 Reconstruction of Upper Limb Movement from Electrocorticographic Signals to Control Functional Electrical Stimulation for Hand Function Restoration. *Omid Talakoub, Cesar Marquez-Chin, Wong Willy, Jessie Navarro, Clement Hamani, Erich Fonoff, Milos R Popovic (Canada/ Brazil)*
- #87 In vivo ultra-high field tractography and subdivision of the human subthalamic nucleus to improve deep brain stimulation. *Birgit Plantinga, Alard Roebroek, Dimo Ivanov, Kâmil Uludağ, Mark Kuijf, Bart ter Haar Romeny, Yasin Temel (Maastricht - Eindhoven, Netherlands)*
- #163 Effect of direct visualization of GPi using MDEFT MR sequence on targeting and location of the active electrode. *Andreas Nowacki, Michael Fiechter, Jens Fichtner, Markus Oertel, Ines Debove, Lenard Lachenmayer, Michael Schüpbach, Roland Wiest, Claudio Pollo (Bern, Switzerland)*

Flash Oral presentations

- #51 Trigeminal nerve asymmetry in classic trigeminal neuralgia: evaluation by magnetic resonance imaging. *Dusan Urgosik, Aaron Rulseh, Jiri Keller, Vojtech Svehlik, Daniel Horinek, Roman Liscak (Prague - Brno - Usti nad Labem, CzechRepublic)*
- #172 What You See is What You Get: Lead Location Within Deep Brain Structures is Accurately Depicted by Stereotactic MRI. *Jonathan Hyam, Harith Akram, Marwan Hariz, Ludvic Zrinzo (London, Unitedkingdom)*
- #188 Targeting of the ventro-intermediate nucleus for Gamma Knife surgery purposes using high-field 7 Tesla MRI: a pilot in vivo study on healthy young subjects. *Constantin Tuleasca, Elena Najdenovska, José Rebelo Ferreira Marques, Francois Vingerhoets, Jean-Philippe Thiran, Meritxell Bach Cuadra, Marc and Levivier (Lausanne, Switzerland)*
- #267 Can we rely on susceptibility weighted imaging (SWI) for identification of the STN in DBS surgery? *M. Bot, MD, L. Bour, PhD, R.M.A. de Bie, MD PhD, P. R Schuurma, MD PhD, P. van den Munckhof, MD PhD (Amsterdam, NL)*

16.30 – 17.00 **Coffee break and visit of posters & exhibition**17.00 – 18.30 **PARALLEL SESSION 4 EXPERIMENTAL** *Auditorium 2*

Chairs: K. Lehtimäki, A. Savas

Oral presentations

- #199 Delta oscillations in the bed nucleus of the stria terminalis correlate with compulsion in a rat model of obsessive-compulsive disorder. *Hemmings Wu, Tim Tambuyzer, Ioana Nica, Kris van Kuyck, Jean-Marie Aerts, Sabine Van Huffel, Bart Nuttin (Leuven, Belgium)*
- #54 Long-term Functional Recovery of Rodent Hemiparkinsonism by Carbon Nanotube-mediated siRNA 'Genetic Lesioning' of the Subthalamic Nucleus. *Katie Bates, Marwan Hariz, Kostas Kostarelou (London- Manchester, UnitedKingdom)*

- #67 Kilohertz Frequency and Conventional Spinal Cord Stimulation in Rat Models of Different Pain Conditions. *Björn Meyerson, Antti Pertovaara, Zhiyang Song, Hanna Viisanen, Bengt Linderöth (Sweden / Finland)*
- #123 Deep brain stimulation of the centromedian-parafascicular complex prevents apomorphine-, and attenuates dizocilpine-induced deficient sensorimotor gating in rats. *Nadine Polascheck, Thomas Elle, Joachim K. Krauss, Kerstin Schwabe (Hannover, Germany)*
- #124 High frequency stimulation of the Subthalamic Nucleus improves graft survival and behavioural outcome in a rat model of Parkinson's disease. *Luciano L Furlanetti, Joacir G Cordeiro, Karina K Cordeiro, Joanna AS Garcia, Christian Winkler, Guilherme Lepski, Volker A Coenen, Guido Nikkhah, Máté D Döbrössy (Brazil / Germany)*
- #125 Continuous and chronic bilateral deep brain stimulation of the medial forebrain bundle in rats. *Luciano L Furlanetti, Máté D Döbrössy, Inigo Aguirre, Volker A Coenen (Freiburg, Germany)*

Flash Oral presentations

- #20 Deep brain stimulation of the rat subthalamic nucleus induced inhibition of median raphe serotonergic and dopaminergic neurotransmission. *Ersay Kocabicak, Ali Jahanshahi, Lisa Schönfeld, Sarah-Anna Heschem, Yasin Temel, Sonny K.H Tan (Turkey / Belgium / Netherlands / Germany)*
- #130 Ventral tegmental area lesion-induced ultrasonic vocalization phenotype reversed by high-frequency stimulation of the medial forebrain bundle in rodents: indication of non-dopaminergic mechanisms. *Luciano L Furlanetti, Timo S Spehl, Lars Frings, Friederike Braun, Marisa Ferch, Philipp T Meyer, Máté D Döbrössy, Volker A Coenen (Freiburg, Germany)*
- #131 Electrophysiological correlates of auditory change detection: A simultaneous depth and scalp EEG study. *Anne-Kathrin Beck, Götz Lütjens, Hans Heissler, Kerstin Schwabe, Reinhard Dengler, Joachim Kurt Krauss, Pascale Sandmann (Hannover, Germany)*
- #164 Subthalamic nucleus high frequency stimulation reduces – almost immediately – primary sensorimotor and prefrontal dorsolateral cortical activity whatever the patient is at rest or performing a motor task: a fNIRS study. *Michel Lefranc, Mahdi Mahmoudzadeh, Melissa Tir, Pierre Krystkowiak Fabrice Wallois (Amiens, France)*
- #193 Lesions of cholinergic neurons in the anterior or posterior pedunculopontine nucleus in rats: effect on motor behaviour and neuronal network activity in the basal ganglia motor loop. *Xingxing Jin, Kerstin Schwabe, Joachim K Krauss, Mesbah Alam (Hannover, Germany)*
- #233 In vitro electro taxis: low current densities attract neural precursor cells. *Lisa-Maria Schönfeld, Evi Lemmens, Ali Jahanshahi, Yasin Temel, Sven Hendrix (Belgium/ Netherlands)*

17.00 – 18.30

PARALLEL SESSION 5 EPILEPSY *Brussels room*

Chairs: P. Sokal, I. Valalik

Oral presentations

- #46 Deep brain stimulation of the centromedian thalamic nucleus: a single blind trial. *Cristina Torres, Jesus Pastor, Marta Navas, Eduardo García-Navarrete Paloma Pulido, Lorena Vega-Zelaya, Oscar Garnés-Camarena, Rafael Sola (Madrid, Spain)*
- #57 Defining anterior nucleus of thalamus (ANT) as a surgical target in epilepsy: delineation using 3T MRI and intraoperative microrecording. *Timo Möttönen, Jani Katisko, Joonas Haapasalo, Timo Tähtinen, Tommi Kiekara, Veikko Kähärä, Jukka Peltola, Juha Öhman, Kai Lehtimäki (Oulu - Tampere, Finland)*
- #108 Amygdalo-hippocampotomy: long-term (5 years) epilepsy outcome. *Antonio Gonçalves-Ferreira, Alexandre Rainha-Campos, Manuel Herculano Carvalho, Carlos Morgado, Carla Bentes, Rita Peralta, Jose Pimentel (Lisbon, Portugal)*
- #133 Temporal resection is an effective treatment in patients with MRI negative intractable epilepsy. *JB. Cheserem, I. Ughratdar, Irfan Malik, Antonio Valentin, Robert Elwes, Nandini Mullatti, Gonzalo Alarcon, Richard Selway (London, United Kingdom)*
- #165 Prospective evaluation of Gamma Knife Surgery in Hypothalamic Hamartomas : about a series of 57 patients
Jean Regis, Medhi Lagmari, Géraldine Daquin, Nathalie Villeneuve, Fabrice Bartolomei, Patrick Chauvel (Marseille, France)

- #166 Gamma knife radiosurgical treatment of paracentral epilepsy. *Jean Regis, Aileen McGonigal, Fabrice Bartolomei (Marseille, France)*
- #170 Application of stereotactic 3D photographic texture-encoded surface contour imaging in epilepsy surgery. *David Roberts, Xiaoyao Fan, Songbai Ji, Alex Hartov, Keith Paulsen (Lebanon, United States)*

Flash Oral presentations

- #12 Improved localization of implanted subdural electrode contacts on MRI using an elastic image fusion algorithm in invasive EEG recording. *Lennart Stieglitz, Christian Ayer, Markus Oertel, Roland Wiest, Claudio Pollo (Zurich - Bern, Switzerland)*
- #14 Deep Brain Stimulation of the nucleus accumbens – 1st experience in pharmacoresistant focal epilepsies. *Friedhelm Schmitt, Alexander Kowski, Lars Buentjen, Patricia Panther, Julia Matzen, Wenjie Li, Hans-Jochen Heinze, Tino Zaehle, Martin Holtkamp, Frank Oltmanns, Juergen Voges (Magdeburg - Berlin, Germany)*
- #15 Radiofrequency lesioning for focal epilepsies – a rational approach. *Friedhelm Schmitt, Lars Buentjen, Johannes Klein, Joerg Wellmer, Christian Bien, Friedrich Woermann, Tilman Polster, Heinz Pannek, Reinhard Schulz, Hans-Jochen Heinze, Klaus Kopitzki, Juergen Voges (Magdeburg - Dresden - Bochum - Bielefeld, Germany)*
- #155 Anterior nucleus of the thalamus (ANT) stimulation in epilepsy: stereotactic targeting and localization of effective contacts. *Johannes A Koeppen, Berthold Voges, Patrick M. House, Fahimeh Nahravani, Torge Huckhagel, Andreas K Engel, Manfred Westphal, Stefan RG Stodieck, Christiane Kuhlmann, Alessandro Gulberti, Christian KE Moll, Wolfgang Hamel (Hamburg - Meerbusch, Germany)*

FRIDAY 19

07.30 – 08.30 Breakfast seminar “MOVEMENT DISORDERS SURGERY” *Paris room*

Chairs: R. Schuurman, A. Lozano

> Solve the case. *Rick Schuurman, Amsterdam - Andres Lozano, Toronto*

Breakfast seminar “NEUROMODULATION BY RADIOSURGERY: BACK TO THE FUTURE” *Brussels room*

Chair: J. Regis, B. Nuttin

> Radiosurgery for Trigeminal Neuralgia. *Constantin Tuleasca, Lausanne*

> Radiosurgery for Psychiatric disorders. *Roberto Martinez, Madrid*

> Radiosurgery for Epilepsy. *Jean Regis, Marseille*

08.30 – 18.30 *Exhibition*

08.30 – 10.00

PLENARY SESSION 4 SURGERY AND SCIENCE *Auditorium 2*

Chairs: Y. Temel, C. Hamani

> **Optogenetics** - Stimulating the brain by light. *Jaimie Henderson, Stanford*

> **Ablative Surgery** - Ablative Surgery in movement disorders, the pendulum of history. *Jean Regis, Marseille*

> **Motion and Emotion** - New insights in the Basal ganglia. *Hagai Bergman, Jerusalem*

> **Gait** - Freezing of gait: a mysterious motor phenomenon. *Bas Bloem, Nijmegen*

10.00 – 10.30 *Coffee break and visit of posters & exhibition*

10.30 – 11.30

PLENARY SESSION 5 SURGERY *Auditorium 2*

Chairs: J. Regis, B. Nuttin

> Current opinion in DREZotomies and Rhizotomies for Spasticity. *George Georgoulis, Lyon*

> Radiosurgery for metastases: is there a number limit? *Patrick Hanssens, Tilburg*

> Occipital nerve stimulation in headache syndromes. *Onno Teernstra, Maastricht*

11.30 – 12.30

PARALLEL SESSION 6 SPASTICITY *Auditorium 2*

Chairs: S. Blond, O. Teernstra

Oral presentations

#122 Tibial neurotomy for lower limb spasticity in cerebral palsy. *Nobuhiko Takeda, Takaomi Taira (Tokyo, Japan)*

#153 Efficacy, safety and complication profile of the Prometra programmable pump in providing intrathecal baclofen therapy for intractable spasticity. *Aristotelis V. Kalyvas, Marios Themistocleous, Nikolaos Boutos, Konstantinos Themistoklis, Stefanos Korfiatis, Damianos E. Sakas (Athens, Greece)*

#154 Infectious complications and treatment options in intrathecal baclofen delivery systems. *Konstantinos Themistoklis, Nikolaos Boutos, Marios Themistocleous, Aristotelis V. Kalyvas, Damianos E. Sakas (Athens, Greece)*

#70 Behavioral and EEG responses to deep cerebellar stereotactic stimulation. *Miroslav Galanda, Peter Jombik, Tomas Galanda, Jana Mistinova, Peter Bob (Slovakia / Czech Republic)*

#109 Stereotactic planning software for human neurotransplantation: suitability in 22 surgical cases of Huntington's disease. *William Omar Contreras Lopez, Guido Nikkhah, Elisabeth Schultke, Luciano Furlanetti (Brazil / Germany)*

11.30 – 12.30 **PARALLEL SESSION 7 MOVEMENT DISORDERS** *Brussels Room*

Chairs: L. Ackermans, V. Shabalov

Oral presentations

- #271 Subthalamic spectral densities in Parkinson's disease and the effect of steering deep brain stimulation. *LJ Bour, PhD, MAJ Lourens, PhD, R Verhagen, MSc, RMA de Bie, MD, PhD, P. van den Munckhof, MD, PhD, MF Contarino, MD, PhD, PR Schuurman, MD, PhD (Amsterdam - The Hague, The Netherlands)*
- #102 Assessment of neural activation using directional deep brain stimulation leads. *Christopher Butson, Lalit Venkatesan (Salt Lake City - Plano, TX, United States)*
- #272 Deep brain stimulation: life-long treatment, life-long complications. *O. van der Veer, MD, L. Bour, PhD, R.M.A. de Bie, MD PhD, P.R. Schuurman, MD PhD P. van den Munckhof, MD PhD (Amsterdam, NL)*

Flash Oral presentations

- #213 Altered taste during thalamic DBS stimulation can be normalized with interleaved stimulation. *Anna-Lena Törnqvist Jensen, Natalie Montevert, Hjalmar Bjartmarz (Lund, Sweden)*
- #268 Should lead Penetration of the Caudate Nucleus be avoided in DBS surgery for Parkinson's Disease? *M. Bot, MD, R.M.A. de Bie, MD PhD, P. van den Munckhof, MD PhD, P.R. Schuurman, MD PhD (Amsterdam, The Netherlands)*
- #27 The impact of deep brain stimulation on tinnitus: a multicenter questionnaire study. *Jasper V Smit, Marcus LF Janssen, Malou Engelhard, Rob MA De Bie, Arne Mosch, Fiorella Contarino, Robert J Stokroos, Yasin Temel (Maastricht - Amsterdam - The Hague, Netherlands)*
- #28 Infections associated with deep brain stimulators: Characteristics and Outcome. *David Bervini, Stefano Giulieri, Trampuz Andrej, Claudio Pollo, Marc Levivier, Jocelyne Bloch (Germany / Switzerland)*
- #89 Taste disturbances in thalamic deep brain stimulation - analysis of a common therapeutic dilemma. *Bastian Sajonz, Burkhard Mädler, Stephan Herberhold, Sebastian Paus, Niels Allert, Volker Arnd Coenen (Freibur - Bonn, Germany)*
- #143 Bacterial biofilm formation on neurostimulation systems. *Bujung Hong, Andreas Winkel, Mahmoud Abdallat, Assel Saryyeva, Götz Lütjens, Meike Stiesch, Joachim K Krauss (Hannover, Germany)*
- #196 Infected implantable devices. Treatment without removal. *Marios Themistocleous, Christos Anagnostopoulos, Aristotelis Kalyvas, Konstantinos Themistoklis, Stefanos Korfiatis, Damianos Sakas (Athens, Greece)*

11.30 – 12.30 **PARALLEL SESSION 8 ONCOLOGY/EPILEPSY** *Paris room*

Chairs: J. Ciurea, O. Schijns

Oral presentations

- #72 Artificial Induction Of Cortical Plasticity By High Frequency Cortical Stimulation Permits To Increase Resection Of Brain Tumors Located In Eloquent Areas. *Juan A. Barcia, Paola Rivera, Osman Salazar, Sandra Sanchez-Casarrubios, Marcos Ríos-Lago, Mercedes González-Hidalgo, Miguel Yus, Juan Alvarez-Linera, Josue Avecillas Chasin (Madrid, Spain)*
- #279 ZEB1 mediates hypoxia driven- glioma invasion and is associated to neural stem cell. *UD Kahlert, FA Siebzehnruhl, EE Bar, CG Eberhart and J Maciaczyk (USA/Germany)*
- #219 Accuracy of electromagnetic frameless stereotactic brain biopsy. *Alessandro Dario, Jacopo Poli, Angelo Rusconi, Lidia Bifone (Varese, Italy)*

Flash Oral presentations

- #203 Seizure and neuropsychological outcome after stereotactic amygdalohippocampectomy for mesial temporal lobe epilepsy. *Roman Liscak, Zdenek Vojtech, Hana Malikova, Lenka Kramaska, Tomas Prochazka (Prague, Czech Republic)*

- #220 Changes in intracerebral EEG connectivity during VNS. *Romain Carron, Francesca Bonini, Jean Régis, Fabrice Wendling, Fabrice Bartolomei (Rennes - Marseille, France)*
- #246 DBS of ANT for Epilepsy – Long Term Follow-up. *Alexandre Rainha Campos, Inês Cordeiro, Carla Bentes, Ana Rita Peralta, José Pimentel, António Gonçalves-Ferreira (Lisbon, Portugal)*

12.30 – 14.00 **Lunch SYMPOSIUM** *Brussels Room*
See page 30 for the details of the programme.

12.30 – 14.00 WSSFN Board meeting *Rome room*

14.00 – 15.00

PLENARY SESSION 6 SURGERY FOR MOVEMENT DISORDERS: AN UPDATE *Auditorium 2*

Chairs: J. Krauss, P. Krack

- > Parkinson's disease. *Paul Krack, Grenoble*
- > Dystonia. *Joachim Krauss, Hannover*
- > Tourette's syndrome. *Veerle Visser-Vandewalle, Cologne*

15.00 – 16.30

PARALLEL SESSION 9 MOVEMENT DISORDERS *Auditorium 2*

Chairs: I. Panourias, G. Beute

Oral presentations

- #94 Cerebellar peduncle stimulation reduces symptoms of dystonia in patients with cerebral palsy treated due to spasticity. *Pawel Sokal, Marek Harat, Marcin Rudas, Łukasz Szyłberg, Marcin Rusinek (Bydgoszcz, Poland)*
- #106 Study of subthalamic motor cortical connectivity in parkinson's disease as predictive factor for deep brain stimulation. *Rebeca Conde, Antonio Gutierrez, Irene Martinez, Ignacio Rubio, Vicente Belloch, Carlos Botella (Valencia, Spain)*
- #157 Technical considerations and outcome of DBS for dystonia in very young children. *Ismail Ughratdar, Eunice Chan, Daniel Lumsden, Margaret Kaminska, Jean-Pierre Lin, Keyoumars Ashkan, Richard Selway (London, United Kingdom)*
- #176 Fiber tractography-guided stereotactic thalamic surgery for intractable tremor. *Susumu Sasada (Okayama, Japan)*
- #182 A functional assessment of essential tremor treated with bilateral or unilateral surgery. *Robert Dallapiazza, Diane Huss, Binit Shah, Madaline Harrison, W. Jeff Elias (Charlottesville, United States)*
- #184 NSTAPS trial: 3-year follow-up interim analysis Netherlands Subthalamic And Pallidal Stimulation trial in Parkinson's disease. *Vincent Odekerken, P. Rick Schuurman, Rob de Bie (Amsterdam, Netherlands)*

Flash Oral presentations

- #50 Bilateral ablative surgery for Parkinson's disease. *Kostiantyn Kostyuk, Vitaliy Tsybaliuk, Yurii Medvedev, Andriy Popov, Maksim Shevelov, Valeriy Cheburakhin, Sergei Dichko (Kyiv, Ukraine)*
- #71 A susceptibility-weighted MRI-based analysis of the subthalamic nucleus footprint in patients with Parkinson's disease and non-Parkinson's disease controls and electrophysiological validation of the morphology. *James McEvoy, Ismail Ughratdar, Stefan Schwarz, Dorothee Auer, Surajit Basu (Nottingham, United Kingdom)*
- #75 A prospective, randomized assessment of GPi and/or Voa-Vop DBS in a case of stroke induced hemidystonia. *Philipp J Slotty, Walleed Dabbas, Christopher R Honey (Vancouver, BC, Canada)*
- #77 Predictive factors of cognitive outcome in PD patients treated with Stn-DBS and medical therapy. *Clarissa Cavandoli, Andrea Trezza, Alberto Bona, Manuela Pilleri, Angelo Antonini, Erik Sganzerla, Andrea Landi (Monza - Venezia, Italy)*

- #81 Deep brain stimulation of STN for advanced Parkinson disease with octopolar leads: Programming electrical parameters guided for a neuroanatomical-3D-image software. *Muñoz Jorge, Gabriel Salazar, Cladellas Josep Maria, Tardaguila Manel (Barcelona, Spain)*
- #95 Pallidal and nucleus accumbens stimulation in Tourette Syndrome: a four cases series report. *Pawel Sokal, Marek Harat, Marcin Rudas, Marcin Rusinek (Bydgoszcz, Poland)*

15.00 – 16.30 **PARALLEL SESSION 10 PAIN** *Brussels room*

Chairs: A. Franzini, B. Meyerson

Oral presentations

- #31 Impact of deep brain stimulation on visceral pain in a model of rat. *Pierre Hannequin, Mathieu Meleine, Pierre Dechelotte, Guillaume Gourcerol, Stéphane Derrey (Rouen, France)*
- #58 Possible reason for the loss of effectivity of motor cortex stimulation for treatment of neuropathic pain syndromes. *Wilhelm Eisner, Thomas Fiegele, Florian Sohm (Innsbruck, Austria)*
- #64 A tractography analysis of a new target of Deep Brain Stimulation for pain: the Anterior Cingulate Cortex. *Sandra Boccard-Binet, Saad Jbabdi, Tim Van Hartevelt, Morten Kringelbach, Henrique Fernandes, James FitzGerald, Erlick Pereira, Liz Moir, Alex Green, Tipu Aziz (Oxford, UnitedKingdom)*
- #149 Deep Brain Stimulation for Refractory Chronic Cluster Headache. *Harith Akram, Sarah Miller, Susie Lagrata, Jonathan Hyam, Marwan Hariz, Manjit Matharu, Ludvic Zrinzo (London, UnitedKingdom)*
- #179 Construction and refinement of a collagenase induced haemorrhagic stroke model. *Philippe De Vloot, Kris van Kuyck, Johannes van Loon, Bart Nuttin (Leuven, Belgium)*
- #253 Topography of pain and somatic sensations in the insula: a study of responses to direct electrical stimulation on children population. *Vincent d'Hardemare, Sarah Ferrand-Sorbet, Georg Dorfmueller, Delphine Taussig, Jean-Baptiste thiebaut (Paris, France)*
- #254 Electromagnetic navigation system in the percutaneous cannulation of the foramen ovale. Technical note. *Vincent d'Hardemare, Jean Bruxelles, Anne Margot-Duclos, Maximilien Bachelart, Jean-Baptiste thiebaut (Paris, France)*

Flash Oral presentations

- #41 Relation of effective stimulation settings and motor threshold in motor cortex stimulation. *Philipp J Slotty, Walleed Dabbas, Christopher R Honey (Vancouver, BC, Canada)*
- #138 Sacral nerve root stimulation (SNRS) for the chronic pelvic pain. *Emil Isagulyan, Vladimir Shabalov (Moscow, Russia)*
- #139 Central cortex stimulation (CCS) in the complex treatment of severe pain. *Vladimir Shabalov, Emil Isagulyan, Ekaterina Salova, Alexei Tomskiy (Moscow, Russia)*
- #167 Drug-enhanced spinal cord stimulation in neuropathic pain: long term follow up of a translational based pilot study. *Gastón Schechtmann, Jaleh Winter, Göran Lind (Stockholm, Sweden)*

15.00 – 16.30 **PARALLEL SESSION 11 EXPERIMENTAL** *Paris room*

Chairs: R. Liscak, A. Jahanshahi

Oral presentations

- #128 High-frequency stimulation of the Medial Forebrain Bundle reverses depressive-like behavior in a combined rodent model of depression and Parkinson's disease. *Luciano L Furlanetti, Inigo Aguirre, Volker A Coenen, Máté D Döbrössy (Freiburg, Germany)*

- #129 Long-term characterization of the Flinders Sensitive Line rodent model of depression: Behavioral and PET evidence of a dysfunctional hippocampal system. *Stephanie Thiele, Timo S Spehl, Lars Frings, Friederike Braun, Marisa Ferch, Philipp T Meyer, Luciano L Furlanetti, Volker A Coenen, Máté D Döbrössy (Freiburg, Germany)*
- #159 Conceptualization and validation of an open source closed-loop deep brain stimulation system in rats. *Hemmings Wu, Hartwin Ghekiere, Dorien Beeckmans, Tim Tambuyzer, Kris van Kuyck, Jean-Marie Aerts, Bart Nuttin (Leuven, Belgium)*
- #178 Efficacy of rostral and caudal PPN stimulation in an experimental rat model for Parkinson's disease based on the functional STN-PPN connectivity. *Marcus Janssen, Filipa Campos, Joao Casaca-Carreira, Ali Jahanshahi, Sarah Heschem, Graca Baltazar, Nuno Sousa, Yasin Temel (Portugal / Netherlands)*
- #192 Striatal and entopeduncular nucleus single neuronal discharges and oscillatory activity in the 6-OHDA rat model of Parkinson's disease with levodopa-induced dyskinesia. *Xingxing Jin, Kerstin Schwabe, Joachim K Krauss, Mesbah Alam (Hannover, Germany)*
- #276 The hyperdirect pathway in the basal ganglia is the location of 5-HT_{2C} and D₂ receptors interaction and controls the emergence of purposeless oral movements. *Mélanie Lagière, Marion Bosc, Philippe De Deurwaerdère (Bordeaux, France)*
- #30 Deep Brain Stimulation of the anterior thalamic nucleus increases neurotrophin expression and neurogenesis in the rat dentate gyrus. *Tharakeswari Selvakumar, Travis Tierney (Boston, United States)*

Flash Oral presentations

- #168 Endothelial barrier dysfunction in temporal lobe epilepsy: preliminary results. *Roel Haeren, Govert Hoogland, Olaf Schijns, Jim Dings, Kim Rijkers, Jo de Mey, Koo van Overbeeke, Paul Schiffers (Maastricht, The Netherlands)*
- #169 Vessel wall permeability in temporal lobe epilepsy. *Roel Haeren, Denise Habets, Amanda van Vliet, Paul Schiffers, Olaf Schijns, Jim Dings, Jo de Mey, Marc van Zandvoort, Koo van Overbeeke, Hans Vink, Kim Rijkers (Maastricht, Netherlands)*
- #280 Deep brain stimulation to restore memory loss? *Sarah Heschem, Ali Jahanshahi, Leewei Lim, Harry Steinbusch, Arjan Blokjan, Yasin Temel (Maastricht, the Netherlands)*
- #195 Deep brain stimulation by 5-track microelectrode recordings causes no detectable by s-100b brain injury. *Marios Themistocleous, Christos Anagnostopoulos, Damianos Sakas (Athens, Greece)*
- #202 Nucleus accumbens deep brain stimulation as treatment option for binge eating disorder? *R Lok, M Verhagen, L Staal, J Van Dijk, A van Beek, Y Temel, A Jahanshahi, M Staal, G van Dijk (Maastricht, Netherlands)*

16.30 – 17.00 *Coffee break and visit of posters & exhibition*

17.00 – 18.30 ESSFN General Assembly *Auditorium 2*

20.00 *The ESSFN society's dinner Neercanne Castle*

SATURDAY 20**07.30 – 08.30** Breakfast seminar “EPILEPSY SURGERY” *Paris room*Chairs : *D. van Roost, O. Schijns*

- > Resections for epilepsy in at around the central region. *Hans Clussman, Aachen*
- > Advances in non-resective epilepsysurgery. *Dirk van Roost, Gent*
- > SEEG : the quest for the epileptogenic focus and/or network. *Olaf Schijns, Maastricht*

Breakfast seminar “PAIN SURGERY” *Brussels room*Chairs : *D. Sakas, T. Aziz*

- > A new, proposed classification of the causes of trigeminal neuralgia as a basis for the planning and application of surgical treatment. *Damianos Sakas, Athens*
- > DBS in Chronic Pain *Tipu Aziz, Oxford*
- > Neuromodulation in Cluster Headache *Angelo Franzini, Milano*

08.30 – 13.00 *Exhibition***08.30 – 09.15****PLENARY SESSION 7 SURGERY FOR PSYCHIATRIC DISORDERS: AN UPDATE** *Auditorium 2*Chairs: *A. Goncalves-Ferreira, V. Visser-Vandewalle*

- > Electrical stimulation of the BNST in OCD. *Bart Nuttin, Leuven*
- > Electrical stimulation of the Nucleus Accumbens in OCD. *Rick Schuurman, Amsterdam*

09.15 – 10.45**PARALLEL SESSION 12 ESSFN-ISIN JOINT SESSION** *Auditorium 2*Chairs: *D. Sakas, J. Arle*

- > How computational modeling of the neurophysiology can help in the design and intra-operative placement of neuromodulation devices. *Jeff Arle, Boston*
- > Intraoperative Monitoring in cortical stimulation for central pain. *Damianos Sakas, Athens*
- > MER in the ANT for DBS in epilepsy. *Yasin Temel, Maastricht*
- > Complication avoidance using IONM during functional procedures. *Jay Shils, New York*

09.15 – 10.45**PARALLEL SESSION 13 PSYCHIATRIC DISORDERS** *Brussels room*Chairs: *R. Schuurman, V. Coenen***Oral presentations**

- #90** Deep Brain Stimulation for Treatment Resistant Major Depression - Targeting the Dysfunctional Human Reward System. *Volker Coenen (Freiburg, Germany)*
- #136** Anterior Cingulotomy for Refractory Major Depression: case series outcomes and predicting response. *Serenella Tolomeo, David Christmas, Muftah S. Eljamel, J. Douglas Steele, Keith Matthews (Dundee, United Kingdom)*
- #175** Delineation of the nucleus accumbens: targeting for deep brain stimulation. *Laura Cif, Jocelyne Bloch, Etienne Pralong, Bogdan Draganski (Lausanne, Switzerland)*
- #273** Deep brain stimulation in nucleus accumbens / ventral anterior limb of the internal capsule is effective in decreasing depressive symptoms. *I.O. Bergfeld, M.H. Mantione, P. van den Munckhof, P.R. Schuurman, D. Denys (Amsterdam, The Netherlands)*

- #274 DTI/Tractography of the Human Nucleus Accumbens – implications for psychosurgery. *Neto L, Sousa J, Reimão S, Campos J, Nunes R, Gonçalves-Ferreira A (Lisbon, Portugal)*

Flash Oral presentations

- #43 Long term results of posteromedial hypothalamic deep brain stimulation for patients with resistant erethism. *Cristina Torres, Rafael Sola, Jesus Pastor, Elena Ezquiaga, Eduardo García-Camba (Madrid, Spain)*
- #73 Is the proper DBS target for OCD patient-specific? Multimodal fMRI-DWI to predict success of striatal DBS in obsessive compulsive disorder. *Juan A. Barcia, Jose Angel Pineda-Pardo, Josue AVECILLAS-Chasin, Rocio Arza, Bryan Strange (Madrid, Spain)*
- #114 Long-term results of posteromedial hypothalamic deep brain stimulation in resistant epilepsy associated to aggressive behavior. *Juan Carlos Benedetti Isaac, Martin Torres-Zambrano, William Omar Contreras Lopez, Randy Guerra-Olivares, Esther Perea-Castro, Gabriel Alcalá, Thomas Reithmeier, Luciano Furlanetti (Brazil / Colombia / Germany)*
- #134 A model for modernity? Interpreting outcome data for the stereotactic subcaudate tractotomy (SST). *Christine Matthews, Keith Matthews (Dundee, United Kingdom)*
- #171 GK radiosurgery in intractable psychiatric disorders. *Jung Kyo Lee, Seung Yoon Kim, Tae Kyung Lee, Eun Ki Chung (Seoul, South Korea)*
- #180 Rechargeable neurostimulators in deep brain stimulation for obsessive-compulsive disorder: experience in a series of 10 patients. *Philippe De Vloo, Simon Raymaekers, John Das, Loes Gabriëls, Bart Nuttin (Leuven, Belgium)*
- #194 Event-related potentials in the bed nucleus of the stria terminalis/ internal capsule in response to neutral and aversive stimuli in OCD. *Mesbah Alam, Lotta Winter, Kerstin Schwabe, Hans H. Heissler, Lütjens Goetz, Kai Kahl, Joachim K Krauss (Hannover, Germany)*

09.15 – 10.45 PARALLEL SESSION 14 MOVEMENT DISORDERS *Paris room*

Chairs: R. Mahesparan, M. Galanda

Oral presentations

- #197 Successful pallidotomy using remote microelectrode mapping. *Jason Moyer, He Huang, Fred Haer, Andrei Barborica, Erwin Montgomery, Leland Albright (Romania / United States)*
- #200 Deep brain stimulation and its effect on the cost of Parkinson's medications. *David Rowell, Hong Son Nghiem, Terry Coyne, Luke Connelly (Brisbane, Australia)*
- #227 Directional Deep Brain Stimulation improves the therapeutic window: an Intraoperative Double-Blind Pilot Study. *Claudio Pollo, Alain Kaelin-Lang, Markus Oertel, Lennart Stieglitz, Michael Schüpbach (Lugano - Zürich - Bern, Switzerland)*
- #237 DBS in STN and Vim for tremor. Are we stimulating a unique structure? *Michael Fiechter, Andreas Nowacki, Michael Schüpbach, Ines Debove, Lennart Lachenmayer, Roland Wiest, Markus Oertel, Claudio Pollo (Bern, Switzerland)*
- #241 Probabilistic tractography-based connectivity of the active contact region after Vim-DBS for Essential tremor. *Péter Szloboda, István Valálik (Budapest, Hungary)*
- #256 Spinal cord stimulation improves gait performance in advanced parkinson disease in chronic stn-dbs patients: pilot study. *Erich Talamoni Fonoff, Carolina Oliveira Souza, Carolina Pinto Souza-Pinto, Maria Gabriela Santos-Ghilardi, Rubens Gisbert Cury, William Omar Contreras-Lopez, Egberto Reis Barbosa, Manoel Jacobsen Teixeira (São Paulo, Brazil)*

Flash Oral presentations

- #103** Frameless system (nexframe) in deep brain stimulation. study of accuracy comparing neurophysiological and electrode coordinates. *Massimo Mondani (Udine, Italy)*
- #112** Deep brain stimulation of the Globus Pallidus internus for Holmes tremor. *Rachel Martinez, William Omar Contreras Lopez, Marcus Pinsker, Thomas Reithmeier, Erich Talamoni Fonoff, Luciano Furlanetti, Oscar Escobar, Gabriel J Arango (Brazil / Germany / Colombia)*
- #115** Neurosurgical treatment in dystonia: A proposed algorithm and its outcome in a case series of 80 patients. *Jairo Alberto Martinez Espinosa, William Omar Contreras Lopez, Marcus Pinsker, Gabriel J Arango, Xiomara Garcia, Luciano Furlanetti, Inigo Aguirre, Jorge Humberto Marin, Oscar Escobar (Brazil / Germany / France / Colombia)*
- #186** Directional steering: clinical observations from an intraoperative study with a 32-contact lead. *Maria Fiorella Contarino, Lo Bour, Rens Verhagen, Marce Lourens, Rob de Bie, Pepijn van den Munckhof, Rick Schuurman (Amsterdam, Netherlands)*
- #189** Dynamic change of synchronized temporal patterns of somatosensory evoked potentials within thalamus following median nerve stimulation in Parkinson's disease and essential tremor patients. *Katsushige Watanabe, Sumito Sato, Futaba Maki, Yasushi Okamura, Makoto Taniguchi, Fusako Yokochi Kanagawa - Tokyo, Japan)*
- #204** Chronic spinal cord stimulation in medically intractable orthostatic tremor: longterm follow-up. *Tamara Sauer, Christian Blahak, Goetz Luetjens, Assel Saryyeva, Hansjoerg Baezner, Hans-Holger Capelle, Michael Hennerici, Joachim K. Krauss (Mannheim - Stuttgart - Hannover, Germany)*

10.45 – 11.15 **Coffee break and visit of posters & exhibition**

11.15 – 12.00 **CLOSING LECTURES - PLENARY SESSION 8 Auditorium 2**

Chairs: J. Krauss, T. Aziz

> History of electrical stimulation of the nervous system. *Damianos Sakas, Athens*

> DBS for psychiatric illness: chronic stimulation or chronic investigation? *Marwan Hariz, London*

12.00 - 13.00 **ESSFN RESEARCH GRANT 2012 REPORT Auditorium 2**

Neurostimulation to promote neurobiological recovery in Stroke. *Yasin Temel, Maastricht*

ESSFN RESEARCH GRANT AND AWARDS 2014

CLOSING CEREMONY *Joachim Krauss and Damianos Sakas.*

POSTER PRESENTATIONS

MOVEMENT DISORDERS

- #9** Long-Term Outcomes of Bilateral Pallidal Stimulation for Primary Generalized Dystonia. *Michał Sobstyl, Mirosław Ząbek, Karol Budohoski, Tomasz Kmieć, Zbigniew Mossakowski (Warsaw, Poland) Krzysztof Szczatuba (Kielce, Poland)*
- #23** Children's pallidal deep brain stimulation with torsion dystonia: case report. *Tatiana Tubaeva, Albert Sufanov, Vladimir Shabalov, Artur Biktimirov, Alexander Orlov, Sergey Churkin, Evgeniy Matveev (Tyumen, Russia)*
- #24** Combination of stereotactic radiofrequency lesion and neuromodulation techniques in treatment of Parkinson's disease. *Evstafiy Melidi, Oxana Gavronina (Novosibirsk, Russia)*
- #25** Deep brain stimulation for Parkinson disease in Kazakstan. *Serik Akshulakov, Chingiz Shashkin, Yerbol Makhambetov, Azat Shpekov (Astana, Kazakhstan)*
- #29** A new neurosurgical analysis system by image processing to determine the accuracy of frameless DBS in parkinson's disease. The nexframe-stealthstation[®] experience. *Pedro Roldan, Antonio Salvador, Jose Dura, Gabriel Calatayud, Jose Gonzalez-Darder, Jose Lainez (Valencia, Spain)*
- #33** Lead location for subthalamic nucleus deep brain stimulation using a 3D visualization tool. *Ignacio Regidor, Lidia Cabañes, Marta del Alamo, Luis Ley (Madrid, Spain), Francisco Estella (Granada, Spain)*
- #38** Intraoperative CT scan utility in evaluation of DBS lead implantation. *Domenico Servello, Claudia Menghetti, Edwin Zekaj, Giovannie Broggi, Mauro Porta (Milan, Italy)*
- #49** Deep brain stimulation in movement disorder. Experience in three years using 3 mm length active tip lead and high frequency constant current stimulation. *Muñoz Jorge, Alvarez Ramiro, Blanco Alberto, Cladellas Josep Maria, Tardaguila Manel, Rimbau Jordi (Barcelona, Spain)*
- #56** DTI-tractography for stereotactic planning of deep brain stimulation for tremor. *Donatus Cyron, Uwe Spetzger, Fabian Meisel (Karlsruhe, Germany), Fernando Garcia, Jesse Ross-Jones (Mannheim, Germany), Vitor Vieira (Heidelberg, Germany)*
- #63** Technical reasons for differences in intraoperative findings in semi - macrostimulation and postoperative neurological state in respect to dysarthria or other side effects? *Wilhelm Eisner, Florian Sohm, Thomas Fiegele (Innsbruck, Austria)*
- #65** A Possible Pathogenic Mechanism of Hemifacial Spasm: Hemodynamic Effects caused by Venous Sinus. *Moonyoung Chung, Ryoong Huh (Incheon, South Korea), Inbo Han, Sang-Sup Chung (Seongnam, South Korea)*
- #66** Case report: A patient with fixed dystonia successfully treated by pallidal deep brain stimulation. *Fusako Yokochi, Makoto Taniguchi, Ryouichi Okiyama, Takashi Kawasaki, Kouichi Hamada (Tokyo, Japan)*
- #69** Cerebrospinal fluid content of neurostimulator pocket – complication of deep brain stimulation in movement disorders – a case report. *Dusan Urgosik, Robert Jech, Stefan Raev, Petr Dusek, Daniela Stastna, Filip Ruzicka, Roman Liscak, Evzen Ruzicka (Prague, Czech Republic)*
- #80** Holmes tremor in a patient with progressive multifocal leukoencephalopathy. *Vimal Raj Nitish Gunness, Georges Doods, Bernd Wauschkuhn, Frank Hertel, Nico Diederich (Luxembourg) Wolfgang Feiden (Trier, Germany)*
- #91** A method for electric field simulations and acceleration measurements for intraoperative test stimulation. *Simone Hemm-Ode, Daniela Pison, Ashesh Shah, Erik Schkommodau (Northwestern Switzerland), Fabiola Alonso, Karin Wårdell (Linköping, Sweden), Jérôme Coste, Jean-Jacques Lemaire (Clermont-Ferrand, France)*
- #92** Intraoperative tissue resistance measurement using DBS electrode for movement disorders. *Etienne Pralong, Laura Cif, Xavier Vasques, Marc Levivier, Jocelyne Bloch (Lausanne, Switzerland)*
- #96** Peri-electrode oedema after DBS implantation: case report. *Alberto Bona, Andrea Trezza, Clarissa Cavandoli, Erik Sganzerla, Andrea Landi (Monza, Italy), Manuela Pilleri, Angelo Antonini (Venezia, Italy)*

- #98** Comparison between constant voltage and constant current stimulation in dbs for Parkinson's disease and Primary generalized dystonia. *Clarissa Cavandoli, Alberto Bona, Andrea Trezza, Andrea Landi, Erik Sganzerla (Monza, Italy) Manuela Pilleri, Angelo Antonini (Venezia, Italy), Maria Chiara Sensi, F Preda, Michele L Cavallo (Ferrara, Italy)*
- #99** Chronic intraventricular baclofen infusion in patients with secondary dystonia. *Andrey Dekopov, Aleksey Tomsky, Vladimir Shabalov (Moscow, Russia)*
- #104** Simultaneous bilateral MER-guided Stereotactic implantation of DBS electrodes. *Erich Talamoni Fonoff, William Omar Contreras Lopez, Rachel Martinez, Jairo Angelos, Jessie Navarro, Angelo Azevedo, Manoel Jacobsen Teixeira (Sao Paulo, Brazil)*
- #107** Deep brain stimulation for essential tremor in the elderly – a single center analysis. *Johann Klein (Dresden, Germany), Andreas Kupsch, Imke Galazky, Lars Büntjen, Hans-Jochen Heinze, Jürgen Voges (Magdeburg, Germany)*
- #117** Downward displacement of a deep brain stimulation electrode ten years following implantation. *Domenico Iacopino, Rosario Maugeri, Antonella Giugno (Palermo, Italy), Cole Giller (Augusta, United States)*
- #118** Relief of occipital neuralgia due to parkinsonian cervical dystonia by C2 rhizotomy and C1-2 fusion. *Ethan Taub, Peter Fuhr, Margareth Amort, Gregory F. Jost (Basel, Switzerland)*
- #119** GPi-DBS in dystonic patients using frameless versus frame-based. stereotaxy: a single centre experience. *S. D'Auria, M. Mondani, Christian Lettieri, S. Rinaldo, G. Devigili, M. Skrap, R. Eleopra (Udine, Italy)*
- #132** A case series of dopamine agonist withdrawal syndrome following deep brain stimulation for Parkinson's disease. *Lucy Partington, Monty A Silverdale, Gemma Mercer, Julian Evans, Christopher Kobylecki (Salford, U.K)*
- #140** Advanced age and neuropsychological deficits do not predict difficulty using a rechargeable Deep Brain Stimulation system in a typical cohort of implanted Parkinson's Disease patients. *Stephen Carcieri, Lilly Chen (CA, United States), Lars Timmermann, Michael Barbe, Mohammed Maarouf (Cologne, Germany), Thomas Bruecke (Vienna, Austria), Fernando Seijo, Esther Suarez San Martin (Oviedo, Spain), Steven Gill, Alan Whone (Bristol, United Kingdom), Domenico Servello, Mauro Porta (Milan, Italy), Claire Haegelen, Verin Marc (Rennes, France)*
- #145** Correlation analysis between quantitatively analyzed stimulation effects and anatomical position during deep brain stimulation surgery. *Ashesh Shah, Erik Schkommodau, Simone Hemm-Ode (Switzerland, Basel), Jerome Coste, Jean-Jacques Lemaire (Clermont-Ferrand, France)*
- #146** Surgical Experience with Miniature Rapid-Prototype Stereotactic Frames for Deep Brain Stimulation. *James McInerney, Namath Hussain, David Carr, Oliver Mrowczynski (Hershey, United States)*
- #150** Aim for the suprasternal notch: Technical note to avoid bowstringing after deep brain stimulation. *Harith Akram, Jonathan Hyam, Patricia Limousin, Marwan Hariz, Ludvic Zrinzo (London, United Kingdom)*
- #156** Reuse of internal pulse generator in infected cases after deep brain stimulation surgery. *Selcuk Gocmen (Denizli, Turkey)*
- #161** Twiddler's syndrome in a patient with dystonic tremor treated with DBS. *Patric Blomstedt, Jennifer Samuelsson (Umeå, Sweden)*
- #181** Initial experiences with intraoperative computed tomography (O-arm) in deep brain stimulation surgery. *Eduarne Ruiz de Gopegui, Gaizka Bilbao, Imanol Lambarri, Elena Lezcano, Juan Carlos Gomez, Beatriz Tijero, Olivia Rodriguez, Rafael Villoria, Ibai Diez, Iñigo Pomposo (Barakaldo, Spain)*
- #183** Early outcomes after frameless DBS placement in the intraoperative MRI suite. *Darlene A Lobel, Danilo Silva (Cleveland, United States), Andrei Barborica (Bucharest, Romania)*
- #198** Combined pallidal and thalamic stimulation for multifocal primary dystonia with prominent writers' cramp. *Joachim Krauss, Christoph Schrader, Götz Lütjens, Mahmoud Abdallat, Andreas Wloch (Hannover, Germany)*
- #205** Cessation of deep brain stimulation for secondary parkinsonism may result in a neuroleptic-like malignant syndrome. *Tamara Sauer, Mark Wolf, Michael Hennerici, Christian Blahak (Mannheim, Germany), Goetz Luetjens, Hans-Holger Capelle, Joachim K. Krauss (Hannover, Germany), Hansjoerg Baezner (Stuttgart, Germany)*
- #206** Comparative study of emotional prosody following subthalamic nucleus Deep Brain Stimulation (DBS) for Parkinson's Disease. *Dimitra Kastamoniti, Miltiadis Georgiopoulos, George Sakellaropoulos, Constantine Constantoyannis (Patras, Greece)*

- #208** Deep brain stimulation for dystonia in patients with previous thalamotomy/subthalamotomy or pallidotomy and peripheral denervation. *Goetz Luetjens, Hans-Holger Capelle, Christoph Schrader, Joachim K. Krauss (Hannover, Germany)*
- #210** Quality of Life in Advanced Parkinson's Disease after Bilateral Subthalamic Stimulation: 2 Years Follow-up Study. *Michał Sobstyl, Mirosław Ząbek, Wojciech Górecki, Zbigniew Mossakowski (Warsaw, Poland)*
- #212** Staged bilateral thalamotomy for musician's dystonia. *Takaomi Taira, Shiro Horisawa (Tokyo, Japan)*
- #214** Fingertapping 5 year postoperatively is performed in similar speed with DBS on without antiparkinsonian medication as before surgery in the L-dopa challenge test. *Natalie Montevert, Ursula Albert, Hjalmar Bjartmarz, Anna-Lena Törnqvist Jensen (Lund, Sweden)*
- #215** Paroxysmal cough attacks with syncope induced by thalamic DBS for essential tremor. *Bernhard Décard, Ethan Taub, Peter Fuhr (Basel, Switzerland)*
- #222** Advantage of axillary skin incision for implantation of deep brain stimulator. *Takeshi Nakajima, Takehiko Konno, Rie Nagayama, Yoshihito Ando, Hidenori Yokota, Keiji Oguro, Kenichi Fujimoto, Eiju Watanabe (Tochigi, Japan)*
- #225** Deep Brain Stimulation Programming Experiences for Non-Motor Complications in Parkinson's Disease. *Peter Poortvliet, Karen O'Maley, Terry Coyne, Peter Silburn, (Brisbane, Australia)*
- #226** Effect of intraoperative narrowing of the third ventricle on the electrode implantation site in DBS surgery. *Jens Fichtner, Markus Oertel, Andreas Nowacki, Michael Fiechter, Ines Debove, Lenard Lachenmayer, Michael Schüpbach, Claudio Pollo (Bern, Switzerland)*
- #228** Magnetic resonance safety in two DBS patients with Vercise©System, our experience report. *Pedro De La Rosa Jiménez, Beatriz Cuartero Pérez, Ossama Morsi, Miguel Ángel Pérez-Espejo Martínez, Juan Francisco Martínez-Lage Sanchez (Murcia, Spain)*
- #229** Use of Microrecording and Multiple Trajectories in Deep Brain Stimulation (DBS) of the Nucleus Subthalamicus. *Daniela Falk, Jose W.L. Reis, Steffen Paschen, Nils Warneke, H.Maximilian Mehdorn (Kiel, Germany)*
- #230** Effectiveness of zona incerta deep brain stimulation in tremors refractory to thalamic stimulation. *Witold Libionka, Wojciech Kloc (Gdansk, Poland)*
- #231** Acute transient severe dyskinesia following subthalamic nucleus stimulation. *Mehmet Tonge, Nesrin Helvacı Yilmaz, Fatihhan Bolukbasi, İlhan Elmaci (Istanbul, Turkey), Yasin Temel (Maastricht, Netherlands)*
- #232** The effect of deep brain stimulation on cognitive performance in patients with Parkinson's disease. *István Valálik, Gyula Demeter, Ferenc Kemény, Ágnes Lukács, Mihály Racsmány (Budapest, Hungary)*
- #234** Deep brain stimulation for pediatric dystonia secondary to cerebral palsy. *Mehmet Tonge, Nesrin Helvacı Yilmaz, Guzide Turanlı, Ramazan Sari, İlhan Elmaci (Istanbul, Turkey), Yasin Temel (Maastricht, Netherlands)*
- #240** First Experience of Bilateral Pallidotomy for the Treatment Chorea-Dystonia Patient to Improve Quality of Life in Indonesia. *Tommy A. Nazwar, Achmad Fahmi, Agus Turchan (Surabaya, Indonesia)*
- #243** Exploring the meaning of the Subthalamic Nucleus's neural signal in Parkinson. *Bergman Hagai (Jerusalem, Israel), Fried Itzhak, Gurevich Tania, Giladi Nir, Endelman Fani, Manor Yael, Cohen Jacob, Balash Jacob, Zurbal Mika (Tel Aviv, Israel).*
- #247** Detachment of the distal contact during removal of the DBS electrode. *István Valálik, Péter Szloboda (Budapest, Hungary)*
- #250** Multi-channel microelectrode recordings are safe and predictors of clinical outcome in Parkinson's disease treated with deep brain stimulation. *Erik Johnsen, Bo Bergholdt, Niels Sunde, Karen Østergaard (Aarhus, Denmark)*
- #257** Deep brain Stimulation for Tardive Dystonia in Hong Kong. *Danny TM Chan, Cannon XL Zhu, Claire KY Lau, Vincent CT Mok, Jonas HM Yeug, Wai S Poon (Hong Kong, China)*
- #263** Subthalamic deep brain stimulation in Parkinson's disease: the role of intraoperative microelectrode recording in short-term follow-up. *Tomskiy Alexey, Gamaleyeva Anna, Dekopov Andrey, Bondarenko Anna, Bril Ekaterina, Salova Ekaterina, Gubareva Nataliya, Fedorova Nataliya, Buklina Svetlana, Shabalov Vladimir (Moscow, Russia)*

#264 Subthalamic deep brain stimulation in a patient with unusual presentation of Parkinson's disease. *Tomskiy Alexey, Gamaleyeva Anna, Bondarenko Anna, Shabalov Vladimir (Moscow, Russia)*

#265 Extended Programming with VERCISE Neurostimulator in the VANTAGE Multi-Site Clinical Trial. *Lars Timmermann, Mohammad Maarouf (Köln, Germany), François Alesch (Vienna, Italy), Thomas Brücke (Vienna, Austria), Esther Suarez San Martin, Fernando Seijo (Asturias, Spain), Mauro Porta, Domenico Servello (Milano, Italy), Alan Whone, Steven Gill, Marc Verin (Frenchay Hospital), Claire Haegelen (Rennes, France), G. Karl Steinke, Stephen Carcieri, Lilly Chen (Boston, USA)*

#266 Deep Brain Stimulation at short pulse width results in superior therapeutic windows for treatment of Parkinson's Disease: a randomized, controlled, double-blind neurostimulation trial (CUSTOM-DBS). *Jens Volkmann, Frank Steigerwald, Martin Reich, Anna-Dalal Sawalhe (Würzburg, Germany), Lars Timmermann, Michael Barbe (Köln, Germany), Andrea A. Kühn, Julius Hübl (Berlin, Germany), Alfons Schnitzler, Stefan Jun Groiss (Düsseldorf, Germany), Alexia Moldovan, Karl Steinke, Sherry Lin, Ljubomir Manola, Stephen Carcieri (Valencia, CA)*

#277 VANTAGE trial: Twelve month (12 mo.) follow up of a prospective, multi-center trial evaluating Deep Brain Stimulation with a new multiple source, constant-current rechargeable system (Vercise™) in Parkinson's disease. *Lars Timmermann, Michael T. Barbe (Cologne, Germany), Roshini Jain, Lilly Chen (Valencia, CA), Thomas Brücke, François Alesch (Vienna, Austria), Fernando Seijo, Esther Suarez San Martin (Oviedo, Spain), Claire Haegelen, Marc Verin (Rennes, France), Mohammed Maarouf, Steve Gill, Alan Whone (Bristol, UK) Mauro Porta, Domenico Servello (Milan, Italy)*

PSYCHIATRIC DISORDERS

#39 DBS in Major Depressive Disorder. *Domenico Servello, Edvin Zekaj, Claudia Menghetti, Giovanni Broggi, Mauro Porta (Mila, Italy)*

#113 Deep Brain Stimulation for the treatment of Refractory Cocaine Dependence: Case report with 2 years follow-up. *Antonio Gonçalves-Ferreira, Alexandre Rainha-Campos, Frederico Simões Couto, Lia Lucas Neto, Diogo Gonçalves Ferreira, Joana Teixeira, Lucilia Salgado, Martin Lauterbach, Maria Ceu Rueff (Lisbon, Portugal), Helena Raposo, Rui Sequeira (Barreiro, Portugal)*

#135 Vagus Nerve Stimulation (VNS) for the treatment of mood disorders. Revisiting the past? *Christine Matthews, Serenella Tolomeo, Keith Matthews (Dundee, United Kingdom)*

#137 Anterior Cingulotomy for Major Depression does not impair Stroop task performance but Depression Severity Does. *Serenella Tolomeo, Christine Matthews, David Christmas, J. Douglas Steele, Keith Matthews (Dundee, United Kingdom), Ines Jentzsch (St Andrews, United Kingdom)*

#151 Deep brain stimulation in pathological aggression – a case report. *Marek Harat, Marcin Rudaś, Paweł Sokal, Piotr Zieliński (Bydgoszcz, Poland)*

#191 Deep brain stimulation in kleefstra syndrome. *David Segar, Yosef Chodakiewitz, Radmehr Torabi, G. Rees Cosgrove (Providence, United States)*

#209 DBS of the nucleus basalis of Meynert in Alzheimer's disease: results of a pilot study and its implications for the start of a larger randomized controlled trial. *Pablo Andrade, Doris Lenartz, Rowshanak Hashemiyoan, Jens Kuhn, Veerle Visser-Vandewalle (Cologne, Germany)*

#223 Deep brain stimulation for depression: scientific and ethical issues. *Philip Mosley, Rodney Marsh (Brisbane, Australia)*

#242 Deep brain stimulation in five patients with obsessive compulsive disorder. *István Valálik, András Harsányi, Katalin Csigó, Attila Németh (Budapest, Hungary)*

#248 DBS in severe addiction: first experiences with stimulating the nucleus accumbens and review of the literature. *Jens Kuhn, Doris Lenartz, Rowshanak Hashemiyoan, Veerle Visser-Vandewalle (Cologne, Germany)*

EPILEPSY

#85 Efficacy of Vagus Nerve Stimulation (VNS) for treatment of refractive epilepsy in the pediatric population: our institutional series. *Claudio Ruggiero, Sibilla Salvia, Giuseppe Mlrone, Pietro Spennato, Giuliana Di Martino, Salvatore Buono, Giuseppe Cinalli (Naples, Italy)*

#97 Vagal Nerve Stimulation in metabolic encephalopathies: report of two cases. *Andrea Trezza, Daniele Gironi, Leonardo Fiori, Carlo Giussani, Clarissa Cavandoli, Andrea Landi, Erik Sganzerla (Monza, Italy)*

#116 Diagnosis and surgical outcome of frontal lobe epilepsy: a case series report. *Xianlun Zhu, Danny Chan, Eva Fung, Howan Leung, Wai Poon, Hoitung Wong (Hong Kong, China)*

#244 Studies around the seizure related injuries in young patients and in young athletes. Appropriate management in young individuals with epilepsy, with headache and epileptic neurologic signs. *Nikolaos Syrmos, Andreas.Diamantopoulos, Christos. Bechlivanides, Georgios.Ampatzidis (Macedonia Greece)*

#158 Epilepsia Partialis Continua responsive to subdural cortical stimulation. *Ismail Ughratdar, Antonio Valentin, Jebet Cheserem, Robert Elwes, Franz Brunnhuber, Nandini Mullati, Gonzalo Alarcon, Richard Selway (London, United Kingdom), Robert Morris (Cambridge, United Kingdom)*

#224 Immediate postimplantation effect of baseline stimulation parameters of vagus nerve stimulation in patients with refractory epilepsy. *Maria Tormasiova, Aurelia Kollova, Ladislav Bratsky (Kosice, Slovakia)*

PAIN

#45 Diffusion tensor magnetic resonance imaging (DTI) tractography guided deep brain stimulation in neuropathic pain. *Volker Arnd Coenen, Kristin Kieselbach, Irina Mader, Hans-Joerg Mast, Peter Reinacher (Freiburg, Germany)*

#68 Spinal cord stimulation with surgical leads in local anesthesia and sedation. *Roberto Donati (Bergamo, Italy)*

#174 VPM-DBS 10 years after VPM thalamotomy to treat a recurrent facial pain. *Yves Yamgoue, Etienne Pralong, Marc Levivier, Jecelyne Bloch (Lausanne, Switzerland)*

#207 Hypothalamic deep brain stimulation in the treatment of chronic refractory cluster headache: An extended long-term follow-up. *Goetz Luetjens, Assel Saryyeva, Hans-Holger Capelle, Christoph Schrader, Joachim K. Krauss (Hannover, Germany)*

#216 The clinical efficiency of spinal cord stimulation for refractory angina pectoris. *Vladimir Murtazin, Andrey Ashurkov, Vladimir Shabalov, Abdyrakhman Du shobaev, Alexey Krivoschapkin (Novosibirsk, Russia)*

#217 The clinical efficiency of spinal cord stimulation for peripheral vascular disease. *Vladimir Shabalov, Vladimir Murtazin, Andrey Ashurkov, Abdyrakhman Duishobaev, Alexey Krivoschapkin (Novosibirsk, Russia)*

#236 Radiofrequency at Foramen Ovale approach for Trigeminal Neuralgia. How selective can it be? *Jean Ciurea (Bucuresti, Romania)*

#251 Intrathecal Baclofen effect on central or peripheric neuropathic pain: a retrospective, multicenter, single-blind study on 23 patients. *Vincent d'Hardemare, Jean Bruxelles, Anne Margot-Duclos, Maximilien Bachelart, Jean-Baptiste Thiebaut (Paris, France)*

#252 Dorsal Root Entry Zone lesioning for pain after a lombo-sacral plexus avulsion: a study in a 9-patients consecutive series. *Vincent d'Hardemare, Anne Margot-Duclos, Jean Bruxelles, Maximilien Bachelart, Jean-Baptiste Thiebaut (Paris, France)*

SPASTICITY

#21 Optimization of the Treatment of Spasticity in Patients after severe Spine Trauma. *Artur Biktimirov, Albert Sufianov, Vladimir Shabalov, Alexander Orlov, Tatiana Tubaeva, Sergey Churkin, Evgeniy Matveev (Tyumen, Russia)*

#142 Neurostimulation for myelopathy. Fecal incontinence treatment using spinal cord stimulation. *Oleg Kamadey, Gennadiy Alekseev, Irina Poverennova, Evgeniy Krivoschekov (Samara, Russia)*

#144 Indication to implant intrathecal Baclofen (ITB) pump in walking patients : Experience on external continuous test. *Alessandro Dario, Francesca Tonini, Michele Bertoni, Daniela Biacchi (Varese, Italy)*

NEUROIMAGING

- #17** Volumetric analysis of the subthalamic and red nuclei based on magnetic resonance imaging in patients with Parkinson's disease. *İlkay Camlıdag, Ersoy Kocabicak, Bunyamin Sahin, Lutfi Incesu, Dursun Aygun, Onur Yildiz (Samsun, Turkey), Ali Jahanshahi, Yasin Temel (Maastricht, Netherlands)*
- #34** Anatomy of Subthalamic Nucleus with Correlation of Deep Brain Stimulation. *Baran Yilmaz, Akin Akakin (Istanbul, Turkey)*
- #55** Thalamic deep brain stimulation for complex tremor in multiple sclerosis: a case report and analysis of side effects related to fiber tracts. *Höllig Anke, Sonny Tan, Björn Falkenburger (Aachen, Germany), Yasin Temel (Maastricht, Netherlands)*
- #59** Identification of blood vessels with micro duplex ultrasound in Stereotactic Functional Neurosurgery. *Wilhelm Eisner (Innsbruck, Austria), Samuel Basler (Zürich, Switzerland)*
- #60** Intraoperative imaging: stereotactic orthogonal x ray radiography versus intraoperative computed tomography – MRI issues? *Wilhelm Eisner, Florian Sohm (Innsbruck, Austria)*
- #74** Localization of Deep Brain Stimulation Targets by Deterministic Tractography Using an Available Navigation System. *Juan A. Barcia, Josue Avecillas-Chasin, Fernando Alonso-Frech, Olga Parras (Madrid, Spain)*
- #79** Identification of the anatomic networks of Wakefulness & Awareness for the treatment of patients with disorders of Consciousness. *Stefanos Korfiatis, Marios Themistocleous, Efthymios Angelakis, George Stranjalis, Damianos Sakas (Athens, Greece)*
- #88** Ultra-high resolution ex vivo connectivity and parcellation of the human subthalamic nucleus. *Birgit Plantinga, Alard Roebroek, Matteo Bastiani, Valentin Kemper, Mark Kuijff, Kâmil Uludağ, Yasin Temel (Maastricht, Netherlands), Bart ter Haar Romeny (Eindhoven, Netherlands)*
- #105** 3-D Position of STN in T2 weighted MR images compared to Stereotactic Atlases for functional neurosurgery planning. *Erich Talamoni Fonoff, William Omar Contreras Lopez, Paul Rodrigo Reis, Eduardo Alho, Jairo Angelos, Jessie Navarro, Manoel Jacobsen Teixeira (Sao Paulo, Brazil)*
- #148** Is there still a need for Gadolinium in stereotactic DBS planning procedures ? – The value of susceptibility weighted MRI. *Frank Hertel, Andreas Husch, Florian Bernard, Georges Dooms (Luxembourg), Peter Gemmar (Trier, Germany)*
- #185** MRI methods to localise the ventral intermediate nucleus of the thalamus: structural imaging and connectivity data. *Adrian Zammit, Harith Akram, Mark White, Enrico De Vita, Ludvic Zrinzo (London, United Kingdom)*
- #190** Evaluating the extent of CT to MRI fusion error in deep brain stimulation patients. *David Kis, Laszlo Entz, Laszlo Halasz, Adrienn Mate, Peter Klivenyi, Pal Barzo, Lorand Eross (Szeged, Hungary)*
- #249** Simultaneously stereotactic fibrinolytic evacuation of deep seated intraserebral and intraventricular hemorrhages. *Selhan Karadereler, Burcu Goker, Ozlem Tuncer, Ebru Altindag (Istanbul, Turkey)*
- #275** Neuroanatomical alterations in transgenic rat model of Huntington's disease; detectable by conventional histology but not with ultra high-field MRI. *Ali Jahanshahi, Joao Casaca-Carreira, Rinske Vlaming, Birgit Plantinga, Sarah Heschem, Yasin Temel (Maastricht, the Netherlands)*

NEUROMONITORING

- #93** Awake neurological monitoring with supraselective propofol injection during embolization of AVM in eloquent area. *Hendrik Franssen, David Colle, Bonny Noens, Erik Robert, Giovanni Alessi, Henry Colle (Ghent, Belgium)*
- #160** Subcortical stimulation guided stereotactic biopsy for tumors in the posterior insular area. *David Colle, Giovanni Alessi, Henry Colle, Bob D'Haen, Bonny Noens, Chris van der Linden, Erik Robert (Gent, Belgium)*

NEURO-ONCOLOGY

- #61** Is it possible to remove subcortically located space occupying lesion in the sensory motor strip with motor function improvement? *Wilhelm Eisner, Florian Sohm, Miriam Mulino, Thomas Fiegele (Innsbruck, Austria)*

- #78** Post operative T2 hyperintensity in peri resection margin following total macroscopic resection of Low Grade Gliomatous tumours are not a reliable marker residual disease or long term adverse outcome. *Huai Hao Khor, Surajit Basu (Nottingham, United Kingdom)*
- #100** Comparison of efficacy, safety and advantages between frameless nonfiducial and standard frame-based brain biopsy. *Miltiadis Georgiopoulos, Sotirios Raftopoulos, Aikaterini Apostolopoulou, Constantine Constantoyannis (Patras, Greece)*
- #111** Interstitial brachytherapy with iodine-125 seeds for low grade brain stem gliomas in adults: diagnostic and therapeutic intervention in a one-step procedure. *William Omar Contreras Lopez (Sao Paulo, Brazil), Michael Trippel, Soroush Doostkam, Thomas Reithmeier (Freiburg, Germany)*
- #121** Is there still a place for stereotactic brachytherapy for brain tumors in modern neuro-oncology? *Ruge Maximilian (Köln, Germany)*
- #245** Technique and planning software for stereotactic brainstem and basal ganglia biopsies. *István Valálik, Ferenc Pongracz, András Csókay (Budapest, Hungary)*

NEUROTRANSPLANTATION

- #110** Clinical neurotransplantation protocol for Huntington's and Parkinson's disease. *William Omar Contreras Lopez (Sao Paulo, Brazil), Guido Nikkhah (Erlangen, Germany), Ulf Kahlert, Sven Moellers, Mate Dobrossy (Freiburg, Germany), Jaroslaw Maciaczyk (Dusseldorf, Germany)*

RADIOSURGERY

- #62** Intra-european neurosurgical communication and treatment of rare indications – an option for small countries? *Wilhelm Eisner, Lukas Koller, Florian Sohm (Innsbruck, Austria), Mohamad Maarouf, Maximilian Ruge, Volker Sturm (Cologne, Germany)*
- #187** Combined approach for the management of large vestibular schwannomas: planned subtotal resection followed by Gamma Knife surgery in a series of 20 consecutive cases. *Roy Thomas Daniel, Constantin Tuleasca, Mercy George, Louis Sciappacasse, Michele Zeverino, Raphael Maire, Marc Levivier (Lausanne, Switzerland)*

EXPERIMENTAL STUDIES

- #22** The change of extracellular contents of striatal glutamate and GABA after high frequency stimulation of the subthalamic nucleus in 6-h droxydopamine lesioned hemiparkinsonian rat. *Chul Bum Cho (Suwon, South Korea)*
- #101** Where, what & how? Adaptation of cortico-subcortical stimulation-testing tasks to cortical parcellation. *Henry Colle, David Colle, Bonny Noens, Giovanni Alessi, Bob D'Haen, Erik Robert (Ghent, Belgium)*
- #126** Electrical stimulation of the medial forebrain bundle in pre-clinical studies of psychiatric disorders: a Review. *Máté D Döbrössy, Luciano L Furlanetti, Volker A Coenen (Freiburg, Germany)*
- #127** High-frequency stimulation of the Medial Forebrain Bundle in rodents: Gender as a predictive factor influencing outcome. *Inigo Aguirre, Luciano L Furlanetti, Máté D Döbrössy, Volker A Coenen (Freiburg, Germany)*
- #177** Simulated activation distances in a study of three different DBS-lead designs. *Fabiola Alonso, Malcolm Latorre, Karin Wårdell (Linköping, Sweden)*
- #211** The stereotaxic neurophysiology of the midbrain periaqueductal gray in the rat in vivo: An effective site for deep brain stimulation and autonomic control. *Hari Subramanian, Terry Coyne, Peter Silburn (Herston, Australia)*
- #269** The role of 5-HT in depression in Parkinson's disease patients after deep brain stimulation of the subthalamic nucleus: evidence in subdural CSF? *M. Melse, S.K.H. Tan, A.F.G. Leentjens, Y. Temel (Maastricht, The Netherlands)*
- #270** Deep brain stimulation influences the mesolimbic dopamine pathway. *M. Melse, A. Jahanshahi, S.K.H. Tan, A.F.G. Leentjens, Y. Temel (Maastricht, The Netherlands)*

INVITED SPEAKERS

> AJEFF ARLE, BOSTON (USA)



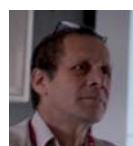
Dr. Arle is the Associate Chief of Neurosurgery at the Beth Israel Deaconess Medical Center in Boston and an Associate Professor of Surgery at Harvard Medical School. His clinical interests include neuromodulation, epilepsy, pain, and neuroprosthetics. He also cares for patients with complex spine disorders, brain tumors, neurovascular disease, and traumatic injuries. A clinical innovator, Dr. Arle has achieved many firsts on the regional, national, and international stage. He was the first in New England to perform deep brain stimulation (DBS) surgery for patients with Parkinson's disease and dystonia, the first in the U.S. to use motor cortex stimulation for the treatment of Parkinson's disease, and the first in the world to use intradiscal stimulation for individuals suffering from back pain. Along with Jay Shils, PhD, he holds a patent for a device and technique to treat spinal cord injury. His research interests include the use of computational modeling and analysis of neural circuitry and function — specifically with regard to the effects of electrical stimulation on the nervous system — and developing novel implantable devices for interfacing with the nervous system. He has authored nearly 60 publications and is frequently invited to lecture nationally and internationally. Dr. Arle also co-edited Essential Neuromodulation (Elsevier- Academic Press) with Dr. Shils, one of the first textbooks in the field of neuromodulation, and has served as Associate Editor of Neurosurgery since 2010 as well as a frequent reviewer for Neuromodulation. Outside of medicine, he is married with three wonderful children and occasionally engages in high altitude mountaineering, having climbed 4 of the 7 summits and recently completed a trek to Mt. Everest basecamp and to the top of a small mountain (18,500') nearby.

> ABDELHAMID BENAZZOUZ, BORDEAUX (FRANCE)



Abdelhamid Benazzouz is a Neurophysiologist Researcher employed by the Inserm Institute working in Bordeaux University. After completing a Master degree in Morocco, he went to Bordeaux to prepare his PhD diploma in the field of Neuroscience and Pharmacology that he obtained in 1993. During his PhD, he was the first to develop high frequency stimulation (HFS) of the subthalamic nucleus (STN) as a therapeutic approach of Parkinson's disease. After the demonstration in the non-human primate model of the disease that HFS of the STN improved all the cardinal motor symptoms, he joined as a Research Fellow the Inserm unit of Professor Alim-Louis Benabid in Grenoble to participate in transferring this approach to patients. In parallel with his hospital activity as a Neurophysiologist performing the electrophysiological mapping during surgery, he was the head of a research group in the Inserm unit investigating the functional mechanisms of this approach in animal models. In 1998 he was appointed to Inserm position as a permanent position researcher. In 2001, he came back to Bordeaux as a PI in the CNRS unit of Professor Bernard Bioulac. In 2005 he was promoted to Research Director position. Since 2011, he is the leader of the Team « Monoamines, Deep Brain Stimulation & Parkinson's disease » in the Institute of Neurodegenerative diseases in Bordeaux University in which he is investigating the respective role of monoamines in the development of motor and non-motor symptoms. He has published more than 100 papers in peer-reviewed journals. Abdelhamid Benazzouz obtained the National Academy of Medicine award in 2003 and the Academy of Science award in 2007.

> HAGAI BERGMAN, JERUSALEM (ISRAEL)



Age 62 (born in 1952 in Tel-Aviv), married to Dr. Revital Attia who practices internal medicine and geriatrics in the Jerusalem public healthcare system. Father of Lottem, Marva, Re'em and Tzufit (aged 29 to 22) and grandfather of Carmel. I earned my MD and DSc (=PhD) from the Technion, Haifa, Israel in 1984 and then have done two post-doctorate fellowships in the Hebrew University Jerusalem and at the Johns Hopkins Medical School, Baltimore, USA – with Moshe Abeles and Mahlon DeLong.

In 1990, I started my own research group in the Department of Physiology (Neurobiology) of the Hebrew University – Hadassah Medical School. I was appointed the Simone and Bernard Guttman Chair in Brain Research in 2003 and became a full professor at the Hebrew University in 2004.

I was one of the founding members of the Hebrew University's Interdisciplinary Center

for Computational Neuroscience (ICNC) as well as the Edmond and Lily Safra Center for Brain Research (ELSC) and remain active in both centers.

I am an active member of the Hadassah hospital deep brain stimulation (DBS) group since 2003 and performed the electrophysiological mapping in ~400 procedures.

> BASBLOEM, NIJMEGEN (NETHERLANDS)



Professor Bas Bloem is a consultant neurologist at the Department of Neurology, Radboud University Nijmegen Medical Centre, the Netherlands. He received his M.D. degree (with honours) at Leiden University Medical Centre in 1993. In 1994, he obtained his PhD degree in Leiden, based on a thesis entitled "Postural reflexes in Parkinson's disease". He was trained as a neurologist between 1994 and 2000, also at Leiden University Medical Centre. He received additional training as a movement disorders specialist during fellowships at 'The Parkinson's Institute', Sunnysvale, California (with Dr. J.W. Langston), and at the Institute of Neurology, Queen Square, London (with Prof. N.P. Quinn and Prof. J.C. Rothwell). In 2002, he founded and became Medical Director of the Parkinson Centre Nijmegen (ParC), which was recognised from 2005 onwards as centre of excellence for Parkinson's disease. Together with Dr. Marten Munneke, he also developed ParkinsonNet, an innovative healthcare concept that now consists of 64 professional networks for Parkinson patients covering all of the Netherlands (www.parkinsonnet.nl). Because of the evidence-based quality improvement and significant cost reduction, ParkinsonNet has received multiple awards, including the prize 'Best Pearl for Healthcare Innovation' in 2011. In September 2008, he was appointed as Professor of Neurology, with movement disorders as special area of interest. He is currently Past-President of the International Society for Gait and Postural Research, and is on the editorial board for several national and international journals. He is currently also member of the International Executive Committee of the Movement Disorder Society. In 2009, he joined the board of ZonMw (The Netherlands Organisation for Health Research and Development). In 2011, he was elected as the National Healthcare Hero by the Dutch Ministry of Health. In 2012, he was elected Citizen of the Year for the city of Nijmegen. He has two main research interests: cerebral compensatory mechanisms, especially in the field of gait & balance; and healthcare innovation, aiming to develop and scientifically evaluate patient-centred collaborative care. Prof. Bloem has published over 450 publications, including more than 360 peer-reviewed international papers.

> STEPHAN CHABARDES, GRENOBLE (FRANCE)



Dr Stéphan Chabardès received his MD degree at the university of Montpellier, France and his neurosurgical training from Pr Benabid at the university of Grenoble, France. He is professor of neurosurgery and the head of the functional neurosurgery unit, at the Grenoble University Hospital, since 2007. Dr Chabardès is the co-director of the primate platform at Grenoble Institute of Neurosciences and has a laboratory activity dedicated to pre clinical research in the field of DBS and microrecording. His team mapped out basal ganglia during seizure in monkey epilepsy model, and brainstem during bipedal walking in sub human primate. His main clinical interests are robotic and functional neurosurgery including DBS and microelectrode recordings in PD and OCD. Dr Chabardès received also microsurgical training and is responsible for the epilepsy surgery program. Dr Chabardès is officer of the French neurosurgery society in charge of the research chapter.

> HANS CLUSMANS, AACHEN (GERMANY)



MEDICAL EDUCATION

1986 – 1993: University at Cologne, Germany

1991: Educational program University of California at Los Angeles (USA)

THESIS AND SCIENTIFIC AWARDS

1996: Characterization of extracellular potentials in the area dentata of rat hippocampal slices after kindling and after lesion of the entorhinal cortex in vivo (Prof. Dr. U. Heinemann, Cologne)

1998: "Hans Imhoff-award", University at Cologne

2001: Scientific award of the German Neurosurgical Society (DGNC)

TRAINING AND MEDICAL CAREER

1994: Internship, Institute of Neurophysiology, University at Cologne

1994 – 2001: Neurosurgical resident, University Bonn (Prof. Dr. J. Schramm)
 2001: Board-exam in Neurosurgery
 2004: Habilitation (2nd thesis) "Differentiated limited resections for the surgical treatment of temporal lobe epilepsy – prognostic factors, chances, and surgical risks"
 2004: Appointment as Associate Professor (Privatdozent)
 2007: Board-exam in Intensive-Care-Medicine
 2007: Senior consultant neurosurgeon (Leitender Oberarzt), special responsibility for epilepsy surgery organization and data base, Epilepsy surgery programme Bonn University (Prof. Dr. C.E. Elger and Prof. Dr. J. Schramm)
 2009: Vice-chairman, Department of Neurosurgery, Bonn University
 2010: Calls by Justus-Liebig-University Gießen and RWTH Aachen University, Germany
 Since May 2010: Professor of Neurosurgery and Chairman, Department of Neurosurgery, University Hospital RWTH Aachen, Germany

> TOM FOLTNYIE, LONDON (UK)



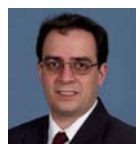
Dr Tom Foltynie is Senior Lecturer and Honorary Consultant Neurologist at the Sobell Department of Motor Neuroscience at the UCL Institute of Neurology and National Hospital for Neurology and Neurosurgery, Queen Square, London. He completed Neurology training in Cambridge where he undertook his PhD in the Epidemiology & genetics of Parkinson's disease. He is responsible for Movement disorder patients, particularly PD patients undergoing advanced treatments such as DBS, Apomorphine and Duodopa. He is chief investigator for a trial of Exenatide- a potential neurorestorative treatment for PD, as well as the lead clinician at UCL for a multi-centre trial of fetal dopaminergic cell transplantation for PD, and a proposed trial of Deep Brain stimulation as a treatment for the cognitive problems associated with advanced PD. Dr Foltynie is also leading a trial of Deep Brain Stimulation for the treatment of patients with severe Tourette syndrome. Aside from trial involvement, PD patients with and without DBS are being recruited to research looking at the influence of genetics on PD risk and clinical progression, and the use of functional imaging to explore the mechanism of action of DBS surgery.

> ANGELO FRANZINI, MILAN (ITALY)



Dr. Angelo Franzini was born in Milan , Italy in 1951. Low-tenent in the Italian Airforce after the graduation in medicine in 1976. He was graduated in Neurosurgery in 1980 at the University of Milan. Dr. Franzini pioneered Computer-Assisted Stereotactic Neurosurgery and techniques for stereotactic biopsy of brain tumors and functional neurosurgery. Dr. Franzini is internationally known not only as a brain surgeon but is also considered an expert in the field of peripheral nerve surgery and Deep Brain Stimulation (DBS) . He introduced the original surgical technique for the minimally invasive release of carpal tunnel syndrome . In the last ten years Dr.Franzini introduced the technique of hypothalamic stimulation for the treatment of refractory cluster headache and for the treatment of intractable impulsive and aggressive behaviour. He also introduced the first surgical treatment for the so called "Thalamic hand syndrome" and fixed dystonia. Now he works in Milan as chairman of the third Neurosurgical Division of the National Neurological Institute and he is involved in many research programs dealing with movement disorders, behaviour disorders, brain tumors, spine surgery and chronic pain.

> HAMANI CLEMENT, TORONTO (CANADA)



Dr. Hamani did his medical training and earned his Ph.D. in Experimental Neurology and Neurophysiology at the Federal University of São Paulo, Brazil. He completed his Neurosurgical Residency at the University of São Paulo, followed by a fellowship in Functional Neurosurgery at the Toronto Western Hospital. Dr. Hamani is currently an Associate Professor of Neurosurgery at the University of Toronto. His main research interests are in the field of the neurosurgical treatment of movement disorders, epilepsy, pain and psychiatric disorders.

> GEORGE GEORGOULIS , LYON (FRANCE)



Dr George Georgoulis is Fellow Neurosurgeon at the "Hôpital Neurologique - P. Wertheimer" - Lyon University. Graduate of Medical School of University of Athens. Neurosurgical Residency: Agia Sofia Children's Hospital of Athens (Greece), General Hospital of Piraeus (Greece) and Hôpital Neurologique "P. Wertheimer" (France). Co-author with Professor Marc Sindou and Professor Patrick Mertens in the book: "Neurosurgery for Spasticity - a Practical Guide for Treating Children and Adults". Field of interest: Ablative Neurosurgery for Spasticity.

> PATRICK HANSENS, TILBURG (NETHERLANDS)



He is a radiation oncologist. Since 2002, he is working at the Gamma Knife Center Tilburg in close collaboration with neurosurgeons and neuroradiologists of the St. Elisabeth Hospital in Tilburg where the Gamma Knife is installed. We perform 600-650 treatments a year, almost half of them for Brain Metastases. The other most common indications are Trigeminal Neuralgia, meningiomas, vestibular schwannomas, AVM's and pituitary adenomas. His interest is in Gamma Knife radiosurgery in general with focus on Brain Metastases.

> MARWAN HARIZ, LONDON (UK)



Marwan I. Hariz received the Baccalauréat in Beirut, Lebanon at the Lycée Franco-Libanais, then studied medicine in Reims, France and in Umeå, Sweden. He trained in Neurosurgery in Umeå, with Lauri Laitinen as main mentor. He received a PhD in 1990 in stereotactic neurosurgery.

In 2002, he was recruited as professor to the United Kingdom's first Chair of Functional Neurosurgery at the National Hospital for Neurology and Neurosurgery, and Institute of Neurology, Queen Square, London, where he contributed to establish a multidisciplinary clinical and academic Unit of Functional Neurosurgery, and introduced the concept of MRI-guided and MRI-verified functional stereotactic neurosurgery, without the use of micro-electrode recording. His main interests are in surgery for movement disorders and psychiatric illness, in the history of this field, and in critical appraisal of published literature in these areas. He has published over 200 scientific papers and book chapters.

> CISKA HEIDA, ENSCHEDE (THE NETHERLANDS)



Dr.ir. Ciska T. Heida is assistant professor in the Biomedical Signals & Systems group at the Faculty of Electrical Engineering, Mathematics & Computer Science and the MIRA Institute (Institute for Biomedical Technology and Technical Medicine) of the University of Twente, the Netherlands. She received the MSc. and PhD. degrees in Electrical Engineering in 1997 and 2002, respectively, both at the Biomedical Signals & Systems group of the University of Twente. Her primary research interests focus on improving our understanding and optimizing the application of neurostimulation and neuromodulation methods in movement disorders such as Parkinson's disease and essential tremor. She combines computational modeling and experimental research to gain insight into the mechanisms underlying deep brain stimulation (DBS) therapy and to simulate and test new therapeutic strategies

> JAIMIE HENDERSON, STANFORD (USA)



Jaimie Henderson, M.D. is director of the Stanford program in Stereotactic and Functional Neurosurgery. Following his residency and fellowship training, he developed the movement disorders surgery program at St. Louis University, where he remained on staff for 7 years. He then moved to the Cleveland Clinic Foundation in 2001, joining their world-class functional neurosurgery program which at the time was the busiest in the US. He has directed the Stereotactic and Functional Neurosurgery program at Stanford since 2004. During his residency in the early 1990's, Dr. Henderson was intimately involved with the development of the new field of image-guided surgery. This innovative technology has revolutionized the practice of neurosurgery, allowing for safer and more effective operations with reduced operating time. Dr. Henderson remains one of the world's foremost experts on the application of image-guided surgical techniques to functional neurosurgical procedures such as the placement of deep brain stimulators for movement disorders, epilepsy, pain, and psychiatric diseases.

Dr. Henderson's research encompasses several areas of stereotactic and functional neurosurgery. He collaborates closely with Krishna Shenoy, Ph.D., (Departments of Neuroscience and Electrical Engineering) on the development of neural prosthetic systems and understanding of the cortical control of movement. His work with Karl Deisseroth, M.D., Ph.D. (Departments of Psychiatry and Bioengineering) explores the combination of gene therapy and light to understand the circuitry of Parkinson's disease and to develop innovative new therapies for brain and spinal cord disorders. His groundbreaking work on frameless functional neurosurgery was featured on the cover of the Journal of Neurosurgery, and has become the standard technique of many neurosurgeons throughout the world. As Past President of the North American Neuromodulation Society, Dr. Henderson was closely involved in policy efforts at state and national levels to ensure access to neuro-modulation technologies for patients with severe chronic disease.

> ALI JAHANSHAHIANVAR, MAASTRICHT (NETHERLANDS)



Ali Jahanshahi was born in September 1978 in Iran. In 2007, he received his master degree in medical physiology at Tarbiat Modares University, Tehran, Iran. In December 2008, he was awarded with Marie Curie fellowship to carry out his PhD research at Maastricht University. Since February 2012, he continued his career as a postdoctoral fellow at the department of Neuroscience.

> PAUL KRACK, GRENOBLE (FRANCE)



Paul Krack is Professor of Neurology and Head of the Movement Disorder Unit at the Department of Psychiatry and Neurology, University Hospital Grenoble, France. He is a member of the team "Brain function and neuromodulation" at the Grenoble Institute of Neuroscience - Inserm U836. His main field of expertise is deep brain stimulation of Parkinson's disease and other movement disorders. He has published >150 peer reviewed papers. His H-Index is 51 and he is listed among the top 50 most cited Parkinson's disease researchers. Topics of interest are cognitive and behavioural aspects of PD; DBS in neurologic and psychiatric disorders; basal ganglia involvement in the physiology of human behaviour.

> JOACHIM KRAUSS, HANNOVER(GERMANY)



Joachim K. Krauss is Professor of Neurosurgery at Medical School Hannover in Hannover, Germany, where he also serves as Director and Chairman of the Department of Neurosurgery since 2005. He received his MD degree at the Medical Faculty of the University of Freiburg, Germany, for his experimental work in neuropharmacology of the basal ganglia. He first trained in Neurology and Neuropsychology, and then joined Professor Mundinger to learn Stereotactic and Functional Neurosurgery. He continued his neurosurgical training with Professor Seeger in Freiburg, Germany, to learn general neurosurgery and microsurgery. He became board certified for both neurosurgery and neurology. After he obtained the degree Privatdozent for his work on normal pressure hydrocephalus, he moved to Houston, Texas, to train and collaborate with Drs Grossman and Jankovic. He went back to Europe to establish functional neurosurgery in Berne, Switzerland, in 1997, and in Mannheim, Germany, in 1999. He became Associate Professor at the University of Heidelberg, Germany in 2001, and he served as Adjunct Associate Professor at Baylor College of Medicine Houston, Texas, until 2004.

He has published more than 350 scientific manuscripts and book chapters, and he has edited four books in the field of functional neurosurgery. He received several awards including the Oppenheim prize for his work in dystonia. He introduced pallidal deep brain stimulation for cervical dystonia in 1997, and spinal cord stimulation for orthostatic tremor in 2002. He also pioneered deep brain stimulation for various other forms of dystonia. He has an active laboratory dedicated to the study of animal models of movement disorders and behaviour.

Dr. Krauss is President of the European Society for Stereotactic and Functional Neurosurgery since 2010. He is an active member of several international societies, committees and advisory boards. Among others he is head of the Commission for Technical Standards of the German Society of Neurosurgery. One of his missions is to bridge the gap between Neurosurgery and Neurology why he is also active in the Movement Disorders Society where he served as Chair of the Task Force Neurosurgery and as Co-Chair of the Task Force Deep Brain Stimulation for Dystonia, and where he continues his activities as Co-Chair of the Working Group on PPN DBS, as member of the Task Force on Dystonia, and as delegate of the Education Committee to the American Academy of Neurology on the Core Program for DBS. He is President of the World Society for Stereotactic and Functional Neurosurgery since 2013. His current research interests include experimental and clinical studies on the treatment of movement disorders, with a special focus on dystonia, but also psychiatric disorders and other applications of deep brain stimulation. He is also active in the fields of neurooncology, hydrocephalus research, and neuronavigation. In the past few years he put a particular focus on education and training. He is regularly organizing national and international meetings focussed on functional neurosurgery and movement disorders.

> ANDRES LOZANO, TORONTO (CANADA)



RR Tasker Professor and Chairman of Neurosurgery University of Toronto and the Toronto Western Hospital Andres Lozano is University Professor and Chairman of Neurosurgery at the University of Toronto and holds both the RR Tasker Chair in Functional Neurosurgery and a Tier 1 Canada Research Chair in Neuroscience.

He is best known for his work in Deep Brain Stimulation (DBS). His team has mapped out cortical and subcortical structures in the human brain and have advanced or pioneered applications of DBS for various disorders including Parkinson's disease, depression, dystonia, anorexia, Huntington's and Alzheimer's disease. Dr. Lozano has over 450 publications, serves on the board of several international organizations and is a founding member of the scientific advisory board of the Michael J Fox Foundation. He has received a number of awards including the Margolese National Brain Award, Olivecrona medal and the Pioneer in Medicine award, has been elected a Fellow of the Royal Society of Canada and the Canadian Academy of Health Sciences and has received the Order of Spain.

> BART NUTTIN, LEUVEN (BELGIUM)



Bart Nuttin, born August 9, 1959, is married to Claire Borghgraef and has 4 children, Laura, Bram, Matthias and Dries. He is chief of clinic at the University Hospitals Leuven and is specialized in functional and stereotactic neurosurgery. He is Coordinator of Research of the Group of Biomedical Sciences, KU Leuven. He is professor and teaches courses in neuroscience in the faculties of Medicine and FaBeR. He heads the lab of Experimental Functional Neurosurgery, located within the Research Group of Neurosurgery and Neuroanatomy. His main research is on electrical brain stimulation for psychiatric disorders and of lesion cavity wall. He is and has been leading a series of master degree theses and PhD theses. He was coordinator of the Erasmus Mundus project EMMAPA. He was Ombudsman for PhD students in the Group of Biomedical Sciences KU Leuven. He is or has been treasurer of the ESSFN, chairman of the Committee of Neurosurgery for Psychiatric Disorders of the World Society for Stereotactic and Functional Neurosurgery (WSSFN), president of the Belgian Society for Stereotactic and Functional Neurosurgery, president of the Benelux Neuromodulation Society and member of the Council of the "Europäische Akademie zur Erforschung von Folgen wissenschaftlich-technischer Entwicklungen Bad Neuenahr-Ahrweiler GmbH". He holds a chair 'Stereotactic Neurosurgery for Psychiatric Disorders', supported by Medtronic Inc. He has / had several research contracts with Medtronic, 3WIN, the European Commission, the Research Council of the University, the Flemish Government (SBO) and the "Fonds voor Wetenschappelijk Onderzoek Vlaanderen (FWO)".

> JEAN REGIS, MARSEILLE (FRANCE)



Jean Regis, MD, is Professor of Neurosurgery at the Aix Marseille University (Marseille, France), and Neurosurgeon at the Timone University Hospital where he currently serves as Head the Stereotactic, Functional Neurosurgery and Radiosurgery Department. His basic research activity (INSERM UMR 1106) is focused on radiosurgery of epilepsy in experimental models and cerebral cortex gyration modeling. His clinical research activity is dedicated to advance imaging applied to surgery of the cortex and the functional applications of radiosurgery and specially its application to Epilepsy. Prof Regis co-authored >360 peer-reviewed articles referenced in PUBMED.

He is the Vice President of the European Society for Stereotactic and Functional Neurosurgery (ESSFN), the past president of the International Stereotactic Radiosurgery Society (ISRS) and the President of the European Gamma Knife Radiosurgery Society (EGKS). He is member of the Board of directors of the World Society for Stereotactic and Functional Neurosurgery (WSSFN). He is reviewer for the several main international journals.

> DAMIANOS SAKAS, ATHENS (GREECE)



Dr. Damianos E. Sakas was born in Greece and he is a graduate of the University of Athens (1978), where he also completed his Doctoral Thesis (1988). He received his training in the Department of Neurology and Neurosurgery, University of Athens (1982-86). He has worked in the Massachusetts General Hospital, Harvard Medical School, Boston, USA (1986-89), the Institute of Neurological Sciences, University of Glasgow, Glasgow, Scotland (1990-91) and the National Centre for Neurosurgery, Dublin, R. Ireland (1991-93). He was appointed as Consultant Neurosurgeon and Honorary Senior Clinical Lecturer in the Midland Centre for Neurology and Neurosurgery, University of Birmingham, and the University Hospital Coventry and Warwickshire, University of Warwick, England (1993-99). He is a member of various professional societies and has held senior positions as President, Hellenic Neurosurgical Society, Chairman, Neuromodulation Committee, World Federation of Neurosurgical Societies (WFNS), Member of the EANS Education and Training Committee and Member of the Executive Committee, Second Secretary and Secretary (ESSFN). His special interests include Epilepsy and Movement Disorders Surgery, Neurotrauma, Vascular and Skull Base Surgery. Damianos E. Sakas has edited two books: Operative Neuromodulation. Functional Neuroprosthetic Surgery and

Operative Neuromodulation. Neural Networks Surgery both published by Springer-Verlag, Wien (2007), and the book *Introduction in Neurosurgery* (in Greek, 2003). He has worked as Associate Editor or Member of the Editorial or Advisory Board in the *Yearbook of Neurology and Neurosurgery*, *Yearbook of Medicine*, *Neurosurgical Review*, and *Neuromodulation*. He has published more than 150 peer-reviewed articles and chapters in books and his work has been cited more than 1500 times in the international scientific literature. In 2000, Dr Damianos E. Sakas was elected as Professor of Neurosurgery and appointed as Chairman of the Department of Neurosurgery, University of Athens, Evangelismos General Hospital, Athens, Greece. Since 2010, he has been elected as a Member of the World Academy of Neurological Surgeons.

> OLAF SCHIJNS, MAASTRICHT (THE NETHERLANDS)



Neurosurgeon

1990-1997: Study Medicine, University Leiden, The Netherlands

1994-1995/1998: Doctoral Thesis, Epilepsysurgery, Department of Neurosurgery, University Hospital Bonn, Germany

1997: Clinical Clerkship, Department of Neurosurgery, Mayo Clinic,

Rochester, USA

1999-2005: Residency in Neurosurgery, Maastricht University Medical Center, The Netherlands

2006-2007: Fellowship in Epilepsysurgery, Department of Neurosurgery, University Hospital Bonn, Germany

2007: Staff member / Consultant, Department of Neurosurgery, Maastricht University Medical Center, The Netherlands

Areas of special interest:

1. Epilepsysurgery / Intraoperative Mapping Techniques

2. Oncological Neurosurgery / Intraoperative Mapping Techniques

3. Spine surgery

> RICK SCHUURMAN, AMSTERDAM (NETHERLANDS)



Dr P.R. Schuurman is heading the department of functional neurosurgery in the Academic Medical Center Amsterdam, the Netherlands.

His research focuses on the development and application of deep brain stimulation (DBS), in collaboration with the departments of neurology, neurophysiology and psychiatry. His team has worked on various clinical trials studying the effects of DBS in different areas of the brain in patients with Parkinson's disease, dystonia, tremor, obsessive compulsive disorder and depression.

Current research projects involve both clinical and technical aspects of the application of DBS: further improvement of surgical technique, with emphasis on the potential scientific benefit of micro-electrode recordings and local field potential measurements during surgery, assessing the long-term effects of DBS in movement disorders, defining new indications of the application of DBS, taking into account emerging pathophysiological knowledge, clinical, ethical and economical aspects of the treatment, developing new advanced methods for applying DBS by designing new equipment and stimulation paradigms, in collaboration with medical industry, application of deep brain stimulation in psychiatric disorders, in particular obsessive compulsive disorder and major mood disorder, application of DBS in epilepsy.

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> KERSTIN SCHWABE, HANNOVER (GERMANY)



Kerstin Schwabe is Professor for Experimental Neurosurgery at the Department of Neurosurgery, Medical School Hannover, Germany. In 1997 she obtained her State Examination in Veterinary Medicine at the School of Veterinary Medicine, Hannover. In 2000 she obtained her PhD at the Department of Pharmacology for her studies on the spreading of epileptic seizure activity in the electrical kindling model of temporal lobe epilepsy by local manipulation and anatomical characterization of the neuronal circuitry involved. Later, during her postdoctoral studies (2001 – 2006) at the Department of Neuropharmacology, University of Bremen, she developed and characterized animal models for neuropsychiatric disorders with behavioural, pharmacological and neuroanatomical methods. During that time she spent several months at the Carleton University of Canada to learn in vitro electrophysiological methods. Since 2006 she is the head of the Experimental Laboratory of the Department of Neurosurgery, Director Prof. Joachim K. Krauss. Main focus of this group is to evaluate the basic mechanisms of DBS on subcortical neuronal network activity in rodent models for movement disorders and neuropsychiatric disorders with a combination of behavioral, electrophysiological and neuroanatomical methods. This translational approach provides additional insight to the pathophysiological mechanisms of patients operated for DBS in the Department.

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> JAY SHILS



Jay L. Shils, Ph.D., FASN, D.ABNM is currently the director of intraoperative neurophysiology in the Department of Neurosurgery at the Lahey Clinic in Burlington, MA and an Associate Professor in the department of neurosurgery at the Tufts University School of Medicine.

He received his Bachelor of Science degree in electrical engineering

from Syracuse University, and both his masters and PhD in Bio-Engineering at The University of Pennsylvania. He began his work in the field of intraoperative neurophysiology in 1994 specializing in single unit recordings during surgery for movement disorders in the department of Neurology at the University Of Pennsylvania School of medicine. Since that time he has built programs at two other institutions including the one at the Lahey clinic. Dr. Shils' research interests include investigating methods for improving real-time intraoperative neurophysiologic techniques as well as theoretical research into neuro-

modulation mechanisms of action. Dr. Shils has published over 30 peer reviewed papers and multiple chapters on intraoperative neurophysiologic surgical technique, post-operative management of movement disorders patients, and computational modeling as related to neuromodulation effects on various neural circuits. He also co-edited the book "Neurophysiology in Neurosurgery: A modern approach" with Dr. Vedran Deletis and "Essential Neuromodulation" with Dr. Jeffrey E. Arle. Prior to entering the field of neuro-

physiology Dr. Shils was an electrical engineer at the Electric Boat division of General Dynamics where he was involved in various modifications to existing systems and investigating new technology. Dr. Shils is the past President of the International Society for Intraoperative Monitoring and was the founding secretary of the society. He is a past board member of and present chairman for the American Society of Neurophysiologic Monitoring ethics committee and as well as a member of the technology committee. He is an associate editor for the Journal of Neurosurgery and Journal of Clinical Neurophysiology.

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> NICK SPITZER, SAN DIEGO (USA)



Nicholas C. Spitzer is Distinguished Professor and Vice Chair of Neurobiology and Director of the Kavli Institute for Brain and Mind at the UC San Diego. He received his B.A.

in biology from Harvard College in 1964, attended Harvard Medical School and received

his Ph.D in neurobiology in 1969 from Harvard University. After postdoctoral work at Harvard and University College London he joined the faculty at UC San Diego in 1972. He has been chair of the Biology Department, the Neurobiology Section and chair of the Academic Senate, and has served as a member of the NIH NINDS Council and as a Trustee of the Grass Foundation. He is editor-in-chief of BrainFacts.org, a fellow of the American Association for the Advancement of Science and member of the American Academy of Arts and Sciences and the National Academy of Sciences.

He has been chair of the Biology Department, the Neurobiology Section and chair of the Academic Senate, and has served as a member of the NIH NINDS Council and as a Trustee of the Grass Foundation. He is editor-in-chief of BrainFacts.org, a fellow of the American Association for the Advancement of Science and member of the American Academy of Arts and Sciences and the National Academy of Sciences.

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> HARRY STEINBUSCH, MAASTRICHT (NETHERLANDS)



Prof. Harry Steinbusch is appointed as Professor in Cellular Neuroscience, chairman of the Department of Neuroscience, director of the School for Mental Health and Neuroscience and in addition Director of the European Graduate School for Neuroscience at Maastricht University. Recently he is appointed as Fellow of the Indian Society for Neurosciences and as Adjunctive Professor at Chungnam National University in Korea. He is founding editor of the Journal of Chemical Neuroanatomy. His research is focussed on neurodevelopmental influences towards depression and neurodegenerative diseases studied in animal models. This implies combining a broad range of techniques, i.e. molecular neurobiology, quantitative neuromorphology, animal behavior and epigenetics. He has thus far guided 53 Ph.D. students. He has been involved as the director of the travel IBRO program. He has gathered a total of 367 papers. He was twice coordinator of a Marie Curie Early Stage Training site. His current Hirsch factor is 60

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> TSJALLING SWIERSTRA, MAASTRICHT (NETHERLANDS)



Prof. dr. Tsjalling Swierstra is head of the Philosophy Department at the University of Maastricht. He is member of the Dutch Health Council and of the Program Committee of the 'Responsible Innovation' program funded by the Dutch Research Council NWO. He has published widely on the ways in which ethical and political beliefs influence scientific and technological research, and – vice versa – how science and technology affect (moral) values, philosophies and political beliefs.

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> ONNO TEERNSTRA , MAASTRICHT (NETHERLANDS)



Born in September 1968, studied psychology (propaedeutical year) at Leiden University before serving in the Dutch army till 1990. After graduation in Medicine (bene meritum) at the Maastricht University in 1997 he started neurosurgical residencies in Rotterdam and later Maastricht while doing clinical research on cerebral hematomas which resulted in a PhD in 2002. Since finalizing his neurosurgical training in Maastricht and Tilburg in 2006 he is a staff neurosurgeon at the Maastricht University MC and teaching neurosurgeon since 2011. Special areas of interest concern spinal cord stimulation, intrathecal baclofen for spasticity, vascular neurosurgery and neurooncology.

> AZIZ TIPU, OXFORD (UNITED KINGDOM)



Tipu Aziz is the founder and head of Oxford functional neurosurgery (OFN). His primate work was central to confirming the subthalamic nucleus as a possible surgical target for deep brain stimulation in Parkinson's disease and more recently the pedunculo-pontine nucleus. OFN is currently one of the busiest centres for such surgery in the UK and academically very productive.

Research Interests are the role of the upper brain stem in the control of movement, the clinical neurophysiology of movement disorders and neuropathic pain and autonomic responses to deep brain stimulation, use of MR and MEG imaging in functional neurosurgery.

> KOO VAN OVERBEEKE, MAASTRICHT (THE NETHERLANDS)



J.J. van Overbeeke is professor of Neurosurgery and head of the Department of Neurosurgery and Functional Neurosurgery at the University of Maastricht (the Netherlands). He finished his training in neurosurgery in 1988 and continued his training with a vascular fellowship at the Henry Ford Hospital in Detroit (USA). He received a PhD in 1991 in vascular neurosurgery (the origin of the variations of the circle of Willis), and published articles about anatomy of the cavernous sinus and the arteries to the optic nerve. Apart from vascular neurosurgery his main interest became the skull base surgery. He was one of the founders of the Dutch skull base society. He holds several international invited professorships in skull base surgery. He has been a member of the Dutch Gamma Knife team from the start of the Gamma knife in the Netherlands in 2002 with focus on skull base tumors. Since his professorship in Maastricht in 2008 he is involved in daily activities of functional neurosurgery and the basic research of the department of Functional Neurosurgery and the molecular pathophysiology of chordomas.

> DIRK VANROOST, GENT (BELGIUM)



Dr. Dirk Van Roost graduated from Leuven University (Belgium) in 1977 and completed his neurosurgical residency programme at the universities of Leuven and Tübingen (Germany). Dr. Van Roost has been working from 1985 to 2003 at the neurosurgical department of Bonn University Hospital (Germany). In 2003 Dr. Van Roost was appointed professor and in 2008 head of the neurosurgical department at Ghent University Hospital (Belgium). His interests mainly focus on stereotactic and epilepsy surgery. He is past-president of the Belgian Society of Neurosurgery and of the Belgian Society of Stereotactic and Functional Neurosurgery. He is member of the Executive Committee of the ESSFN and of the Individual Membership Committee of the EANS.

> VEERLE VISSER VANDEWALLE , COLOGNE (GERMANY)



Veerle Visser-Vandewalle finished her neurosurgical training at the University hospital Ghent, Belgium, in 1996. The following years she gained further expertise in deep brain stimulation (DBS) and epilepsy surgery, a.o. at the Montreal Neurological Institute. In 1999 she was the first to treat a patient suffering from Tourette syndrome with DBS. In 1999 she was offered a position as member of staff at the University hospital Maastricht, The Netherlands, in order to set up a DBS and epilepsy surgery program. In August 2012 she became head of the department of stereotactic and functional neurosurgery at the University hospital Cologne, Germany.

GENERAL INFORMATION

Climate and clothing Maastricht boasts a moderate climate, and receives more sunshine than any other place in Holland. The hottest months are the summer period (June to August), although May and September have averages of about 25°C also. Maastricht weather is cool in winter (December to February), but can drop below 0°C at night.

Electricity Electricity used in Holland is 220 Volts; its frequency is 50 Hz and the plugs have two male contact points. Plan to bring a transformer for your electrical or electronic equipment using different voltage.

Currency EUR (€) is the official currency in Holland. Money can be changed at the main train stations, international airports, major banks, exchange bureau, most large hotels and the post office. All major credit cards are accepted in most hotels, restaurants and shops.

Restaurants The sheer number of high-quality restaurants reminds you that you are not far from Brussels and Paris.

UEMS ACCREDITATION

XXI Congress of the European Society of Stereotactic and Functional Neurosurgery

Venue: Maastricht, Netherlands (17.–20.09.2014)

Event code: 11239

was granted 15 European CME credits (ECMEC) by the European Accreditation Council for Continuing Medical Education (EACCME).

XXI Congress of the European Society of Stereotactic following CME activity for medical specialists. The EACCME is an institution of the European Union of Medical Specialists (UEMS), www.uems.net.

The 'XXI Congress of the European Society of Stereotactic and Functional Neurosurgery' is designated for a maximum of (or 'for up to') 15 hours of European external CME credits. Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity.

Through an agreement between the European Union of Medical Specialists and the American Medical Association, physicians may convert EACCME credits to an equivalent number of AMA PRA Category 1 Credits™. Information on the process to convert EACCME credit to AMA credit can be found at www.ama-assn.org/go/internationalcme.

Live educational activities, occurring outside of Canada, recognized by the UEMS-EACCME for ECMEC credits are deemed to be Accredited Group Learning Activities (Section 1) as defined by the Maintenance of Certification Program of The Royal College of Physicians and Surgeons of Canada.

THE VENUE

MECC Maastricht - Maastricht Exhibition and Conference Centre - Address: 6229 GV Maastricht - Limburg (NL), Netherlands - t: +31 (0)43 383 83 83 - f: +31 (0)43 383 83 00

ACCESS

By car Signing of MECC Maastricht is visible as soon as you reach the outer ring of Maastricht. Follow these signs until you reach the MECC car park. If you are travelling south on the A2/E25 motorway (from Amsterdam-Eindhoven), take exit 55 signed 'Randwyck-MECC'. If you are travelling north on the A2/E25 motorway (from Paris-Liège) take exit 56 signed for 'Gronsveld-MECC'.

By bus Maastricht's metropolitan bus company runs a regular service between the city centre, Maastricht Central Station and MECC Maastricht. There is a bus about every five minutes (bus stop "Forum").

By train Maastricht-Randwyck station is located 250 metres from MECC Maastricht and is part of the national and international railway network. There are frequent trains to Maastricht Central Station, which is also linked to the national and international railway network.

By plane Maastricht-Aachen Airport is located 10 kilometres from MECC Maastricht and only 15 minutes away by car, taxi or bus.

Visitors to MECC Maastricht business offices

MECC Maastricht's staff offices are located in Euro Centre (Duboisdomein 5a). You can reach the Euro Centre by following the signs to car park P4. The receptionist in the main lobby will help you further.

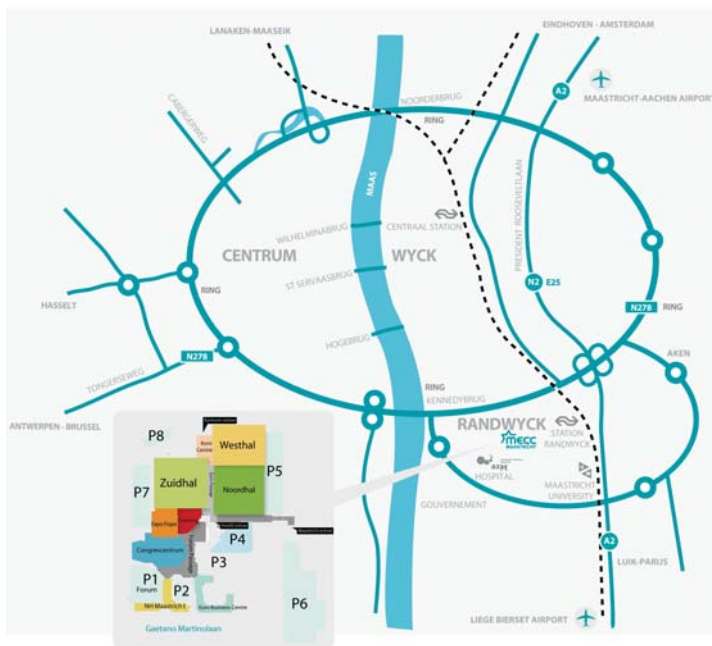
Useful links

- www.9292ov.nl

latest information on public transport in The Netherlands (bus, train, tram and metro)

- www.ns.nl/reisplanner

Journey planner from Nederlandse Spoorwegen (Dutch railways)



CONGRESS OFFICE

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27, rue du Four à Chaux - 13007 Marseille - France

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Sponsors & Exhibitors

Natalie RUXTON - natalie.ruxton@mcocongres.com

Registration & Accommodation

Mary ABBAS - mary.abbas@mcocongres.com

General information contact@essfn2014.org

SYMPOSIA & LUNCH SYMPOSIUM

WEDNESDAY 17

13.00 – 15.30

PRE-CONGRESS SYMPOSIUM **ST-JUDE** Auditorium 2
NEUROMODULATION MODALITIES IN THE TREATMENT OF PAIN – AN EXPERT PANEL
Chair: Prof. Y. Temel & Prof. T. Aziz (SCS/DRG counterpart)



- > Introduction by SJM – Company vision
- > Intracranial neuromodulation in treatment of pain
Motor Cortex Stimulation. *Prof. Nguyen (Nantes)*
Deep Brain Stimulation. *Prof. Aziz (Oxford)*
- > Extracranial neuromodulation in treatment of pain
Spinal Cord Stimulation and burst. *Dr. Van Paesschen*
Dorsal Root Ganglion. *Dr. Liem*
Occipital Nerve Stimulation. *Prof. Fontaine (Nice)*
- > General discussion (led by moderators)

16.00 – 18.30

PRE-CONGRESS SYMPOSIUM **MEDTRONIC** Auditorium 2
ADVANCING PATIENT CARE THROUGH PARTNERSHIP
Chair: Prof J. Krauss & Prof M. Hariz



- > Introduction
Partnership throughout entire DBS patient journey. *Medtronic speaker*
- > Advancing DBS Patient Care with imaged-based surgical approaches
Ultra-high field MR imaging: the next step in understanding brain structure and connectivity. *Prof Y. Temel*
Brain circuitry informed DBS - Does it make clinical outcome better? *Prof. Coenen*
Accuracy of intra-operative imaging for DBS. *Prof S. Chabardès*
Developments in MRI for post-operative imaging. *Dr Thornton*
- > Advancing DBS Patient Care through innovative patient management
Location of active contacts correlates with outcome in ANT DBS refractory epilepsy. *Dr K. Lehtimäki*
Developments in sensing and programming algorithm. *Prof. H. Bergman*
- > Conclusion. *Prof J. Krauss & Prof M. Hariz*

FRIDAY 19

12.30 – 14.00

Lunch SYMPOSIUM **BOSTON SCIENTIFIC** Brussels Room
Chair: Prof. Yasin Temel, Prof. Andres Lozano



- > Current steering to activate targeted neural pathways. *C. McIntyre, PhD*
- > VANTAGE DBS Trial Data - 1 year. *Prof. Dr. F. Alesch*
- > CUSTOM-DBS Phase I Trial Data. *Prof. Dr. A. Schnitzler*

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17 > 20 SEPTEMBER 2014
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EXHIBITION

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- 5 RENISHAW MAYFIELD
- 1 ST JUDE
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Welcome to the XXI ESSFN Congress

Please visit us at the the Medtronic Booth to experience

Surgical **Synergy**TM

A unique suite of products, services, and new technologies to complement your practice and advance DBS patient care from planning to programming

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VERCISE™
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The first and only DBS system with current steering* designed for precise neural targeting to customize therapy for your patients.

**25 Year
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*Multiple Independent Current Control: 16 independent current sources engineered for fine adjustment of stimulation position and shape.

1) Boston Scientific Physician Manual

The Vercise™ Deep Brain Stimulation (DBS) System is indicated for use in unilateral or bilateral stimulation of the subthalamic nucleus (STN) or internal globus pallidus (GPI) for treatment of levodopa-responsive Parkinson's disease which is not adequately controlled with medication and also for treatment of intractable primary and secondary dystonia, for persons 7 years of age and older.

Thalamic stimulation using the Boston Scientific Vercise™ DBS System is indicated for the suppression of tremor not adequately controlled by medications in patients diagnosed with Essential Tremor or Parkinson's disease.

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**With Elekta's neuroscience solutions,
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By integrating ideas from clinicians for over 40 years, Elekta sets the benchmark for accuracy with its portfolio of advanced neuroscience solutions for treating brain disorders. The result: intuitive solutions that ensure exceptional outcomes with minimal invasiveness and – above all – outstanding precision. It's easy to imagine why Elekta innovations are preferred by over 5,000 hospitals worldwide.

Welcome to the Elekta booth, #4 at ESSFN!



Brio™

Rechargeable DBS Implantable Pulse Generator



THE BEST IN CLASS* RECHARGEABLE DEEP BRAIN STIMULATOR NOW ALSO AVAILABLE FOR USE IN DYSTONIA.

*Fastest recharge times¹⁻³ and easier to charge compared to Medtronic's Activa RC⁴

The St. Jude Medical Deep Brain Stimulation system is indicated for unilateral or bilateral stimulation of the internal globus pallidus (GPi) or the subthalamic nucleus (STN) for the management of intractable, chronic dystonia, **including primary and secondary dystonia.**

Rechargeable Done Right: The Brio™ IPG's small size, increased longevity and fast, easy recharging offer more flexibility for DBS therapy for dystonia.

Movement Friendly Extensions: The eXtend™ DBS extension is specifically designed for long-term durability, and made for comfort for patients experiencing twisting and involuntary contractions in neck region.

Unique Lead Durability: St. Jude Medical DBS leads are designed and manufactured to help minimize the risk of breakage and electrical shorts along the entire lead over time.

Pocket Adapter: The IS-1 pocket adapter allows surgeons to switch over from Kinetra®/Solettra® to Brio™ or Libra™/LibraXP™.



1. St. Jude Medical data on file.

2. Medtronic System Eligibility Battery Longevity Reference Manual – M929534A021.

3. Boston Scientific Vercise Deep Brain Stimulation System Physician Manual – 9055944-003 Rev A.

4. Gillies M.J., Joint C., Forrow B., Fletcher C., Green A.L., Aziz T.Z. 2013. Rechargeable vs. Non-Rechargeable Internal Pulse Generators in the Management of Dystonia. *Neuromodulation* 2013; e-pub ahead of print. DOI: 10.1111/ner.12026

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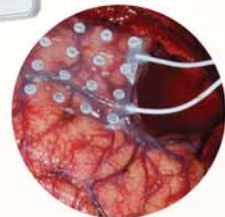
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