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International Conference on Deep Brain Stimulation

– 25 years –



May 30th - May 31st, 2013
Hyatt Regency
Düsseldorf | Germany

Chairmen:

Alfons Schnitzler, MD | Jan Vesper, MD

Conference Secretary:

Martin Südmeyer, MD | Lars Wojtecki, MD

University Hospital Düsseldorf
Moorenstraße 5 | D-40225 Düsseldorf | Germany

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Editors

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State May 2013

Greetings by Dirk Elbers

Dear Ladies and Gentlemen,

welcome to the „International Conference on Deep Brain Stimulation - 25 years“ at the Hyatt Regency Hotel, Düsseldorf.

Düsseldorf enjoys an excellent reputation, both nationally and internationally, as a venue for medical symposia. Every year, the world's biggest medical fair Medica and the Rehacare prove their status as leading gatherings of the industry. In the fair and conference city of Düsseldorf, visitors enjoy the major advantages of a „10-minute city“ in which the airport, conference venues and city centre have optimal transport links. Visitors attending the „International Conference on Deep Brain Stimulation“ will also be impressed by this.



This conference hotel in Düsseldorf's modern „Medienhafen“ (media harbour) offers guests modern comforts and a good starting point from which to discover the city. After exchanging knowledge of innovations and developments in the field of neurology and neurosurgery, you will have the opportunity to spend a while enjoying the unique flair of this area on the Rhine. The Medienhafen and the nearby „Altstadt“ (The Old Town) also offer an inviting and varied range of cuisine.

I also very much recommend a visit to one of our museums. For example, the „Stadtmuseum“ (Museum of the city of Düsseldorf) is currently providing interesting insights into Düsseldorf's history in an exhibition marking the 725th anniversary of the city.

I invite you to also get to know these attractive sides of Düsseldorf. Above all, however, I wish you a successful conference and enriching new knowledge for your everyday work in hospitals and practices.

Yours sincerely

A handwritten signature in blue ink that reads "Dirk Elbers". The signature is fluid and cursive, with the first name "Dirk" being more prominent than the last name "Elbers".

Dirk Elbers

Lord Mayor of the State Capital Düsseldorf



**725 JAHRE
DÜSSELDORF**
1288-2013

Welcome address

Dear colleagues and friends

It is our great pleasure to invite you to the International Conference on **Deep Brain Stimulation – 25 years** in Düsseldorf, Germany from 30-31 May, 2013.

In the past 25 years the development of deep brain stimulation has revolutionized the treatment of Parkinson's disease and other movement disorders. Although the mechanisms of DBS are still not fully understood the remarkable therapeutic efficacy of DBS in Parkinson's disease and tremor has prompted clinical and basic research to scrutinize further applications in neurological and psychiatric disorders. At the same time DBS has tremendously fostered research in basal ganglia physiology and pathophysiology.

This conference will provide a state-of-the-art coverage of DBS ranging from animal models and basic mechanisms, human electrophysiology and imaging, established and emerging clinical applications in movement disorders, epilepsy, pain and neuropsychiatric diseases, to ethical aspects and future directions. The different topics will be dealt with in plenary lectures by internationally renowned experts and by short oral communications as well as poster presentations. In addition, company visions of DBS will be the focus of dedicated satellite symposia. The associated exhibition offers you the chance to get up-to-date information on technical and pharmaceutical developments.

We hope you find this conference both interesting and stimulating and enjoy meeting up with old friends and making new contacts.

Düsseldorf is the bustling Rhine metropolis and capital of the federal state of North-Rhine Westphalia. Arts, history, fashion, business and Rhenish lifestyle – Düsseldorf has a lot to offer to its visitors. Enjoy your stay in this vibrant city.

We are very pleased to welcome you in Düsseldorf and look forward to sharing and discussing with you interesting scientific results and new ideas.

With best wishes



A handwritten signature in blue ink that reads "A. Schnitzler".

Alfons Schnitzler, MD

A handwritten signature in blue ink that reads "Jan Vesper".

Jan Vesper, MD

Scientific programme

Thursday May 30th, 2013

10:00 a.m. - 10:05 a.m. **Welcome**

Alfons Schnitzler, Düsseldorf (D)
Jan Vesper, Düsseldorf (D)

10:05 a.m. - 10:15 a.m. **Opening**

Hans Michael Piper, President of the Heinrich-Heine-University, Düsseldorf (D)
Joachim Windolf, Dean of the Medical Faculty, Heinrich-Heine-University, Düsseldorf (D)

10:15 a.m. - 11:00 a.m. **Key note lecture**

Chair: Alfons Schnitzler, Düsseldorf (D)
Jan Vesper, Düsseldorf (D)

Pathophysiology of basal ganglia disorders

Mark Hallett, Bethesda (USA)

11:00 a.m. - 12:30 a.m. **Basic mechanisms and animal models of DBS**

Chair: Joseph Huston, Düsseldorf (D)
Alfons Schnitzler, Düsseldorf (D)

11:00 a.m. **The role of the basal ganglia model to establish a closed loop system**

Hagai Bergman, Jerusalem (IS)

11:30 a.m. **Animal models of DBS**

Clement Hamani, Toronto (CAN)

12:00 a.m. **Optogenetics to deconstruct DBS networks**

Jaimie Henderson, Stanford (USA)

12:30 a.m. - 01:30 p.m. **Break / visitation of the exhibition**

01:30 p.m. - 02:30 p.m. **Satellite symposium**

Company visions for DBS – Medtronic GmbH

Welcome & Introduction

Ali Sarem-Aslani, Meerbusch (D)

Optivise – Individualized patient programming toolkit

Gabi Molnar, Minneapolis (USA)

MRI-Safety for DBS systems – State of the Art

Heather Orser, Minneapolis (USA)

Scientific programme

Thursday May 30th, 2013

02:30 p.m. - 04:00 p.m. **Short presentations I**

*Chair: Rüdiger Hilker-Roggendorf, Frankfurt (D)
Lars Wojtecki, Düsseldorf (D)*

02:30 p.m. **Gamma and theta oscillations in movement disorders**
Andrea Kühn, Berlin (D)

02:40 p.m. **Substantia nigra DBS for freezing of gait**
Rejko Krüger, Tübingen (D)

02:50 p.m. **Abstract Presentations**
*Selected abstracts for oral presentation
s. pages 13 and 15*

04:00 p.m. - 04:30 p.m. **Break / visitation of the exhibition**

04:30 p.m. - 05:30 p.m. **Satellite symposium**

Company visions for DBS – St. Jude Medical

Past, present and future from a technology perspective

Daniel Powell, Plano (USA)

Partnering to expand clinical evidence and indications

Kevin Wilson, Plano (USA)

05:30 p.m. - 07:00 p.m. **Human electrophysiology and imaging**

*Chair: Andrea Kühn, Berlin (D)
Alfons Schnitzler, Düsseldorf (D)*

05:30 p.m. **Beta oscillations in PD – causal or correlational?**
Peter Brown, Oxford (UK)

06:00 p.m. **Neuroimaging findings in patients with DBS**
Rüdiger Hilker-Roggendorf, Frankfurt (D)

06:30 p.m. **Tractography-activation models for DBS**
Cameron McIntyre, Cleveland (USA)

07:00 p.m. **Target definition by Diffusion Tensor Imaging**
Volker Coenen, Freiburg (D)

07:15 p.m. **Get-together**

Scientific programme

Friday May 31st, 2013

09:00 a.m. - 11:00 a.m. **Movement disorders and OCD**

Chair: Günther Deuschl, Kiel (D)

Jürgen Voges, Magdeburg (D)

09:00 a.m. **Neuromodulation in PD with early motor fluctuations**

Günther Deuschl, Kiel (D)

09:30 a.m. **The pedunculo-pontine nucleus as a target for DBS**

Elena Moro, Grenoble (F)

10:00 a.m. **Efficacy of DBS in different types of dystonia**

Jens Volkmann, Würzburg (D)

10:30 a.m. **STN stimulation: impact on decision making and compulsion**

Luc Mallet, Paris (F)

11:00 a.m. - 11:30 a.m. **Coffee break / visitation of the exhibition**

11:30 a.m. - 01:00 p.m. **Neuropsychiatric disorders**

Chair: Jens Volkmann, Würzburg (D)

Jürgen Voges, Magdeburg (D)

11:30 a.m. **Tourette syndrome: clinical results of different targets**

Veerle Visser-Vandevalle, Cologne (D)

12:00 a.m. **DBS for major depression – efficacy data and outlook**

Thomas Schläpfer, Bonn (D)

12:30 a.m. **Addiction: Ncl. accumbens stimulation**

Thomas Münte, Lübeck (D)

01:00 p.m. - 02:00 p.m. **Lunch break / visitation of the exhibition**

Scientific programme

Friday May 31st, 2013

02:00 p.m. - 03:30 p.m. **Dementia / epilepsy / pain**

*Chair: Volker Coenen, Freiburg (D)
Jan Vesper, Düsseldorf (D)*

02:00 p.m. **Is dementia a suitable indication for DBS?**

Yasin Temel, Maastricht (NL)

02:30 p.m. **Modulating seizure control networks by DBS**

Jan Vesper, Düsseldorf (D)

03:00 p.m. **DBS for neuropathic pain**

Tipu Aziz, Oxford (UK)

03:30 p.m. - 04:00 p.m. **Coffee break / visitation of the exhibition**

04:00 p.m. - 05:30 p.m. **Short presentations II**

*Chair: Yasin Temel, Maastricht (NL)
Martin Südmeyer, Düsseldorf (D)*

04:00 p.m. **Animal models for DBS in schizophrenia**

Christine Winter, Dresden (D)

04:10 p.m. **DBS in rare and symptomatic dystonia**

Lars Timmermann, Cologne (D)

04:20 p.m. **Basal ganglia oscillations in gait freezing**

Kai Bötzel, Munich (D)

04:30 p.m. **Abstract Presentations**

*Selected abstracts for oral presentation
s. pages 15 and 17*

05:30 p.m. - 06:00 p.m. **Break**

06:00 p.m. - 07:30 p.m. **History / visions / ethics**

*Chair: Hans-Joachim Freund, Düsseldorf (D)
Volker Sturm, Köln (D)*

06:00 p.m. **Controversies in functional neurosurgery**

Michael Schulder, Manhasset, (USA)

06:30 p.m. **History and future indications of DBS**

Jürgen Voges, Magdeburg (D)

07:00 p.m. **Neuroethical considerations in DBS**

Christiane Woopen, Cologne (D)

07:30 p.m. **Abstract awards and „Auf Wiedersehen“**

Abstracts: Oral presentations

Short presentations I Thursday, May 30th, 2013 02:50 p.m. - 04:00 p.m.

- OP1 Tissue properties differentiate between motor and limbic subthalamic nucleus**
02:50 p.m. *Ettore Accolla, Berlin (D) | Juergen Dukart, Lausanne (CH) | Gunther Helms, Göttingen (D) | Nicholas Weiskopf, London (GB) | Ferath Kherif, Lausanne (CH) | John-Dylan Haynes, Berlin (D) | Andrea Kühn, Berlin (D) | Bogdan Draganski, Lausanne (CH)*
- OP2 Non-invasive, intraoperative demonstration of cerebral cortex synchronization by subthalamic deep brain stimulation**
02:57 p.m. *Harrison Walker, Birmingham, AL (USA) | Christopher Gonzalez, Birmingham, AL (USA) | He Huang, Birmingham, AL (USA) | Barton Guthrie, Birmingham, AL (USA)*
- OP3 Influence of deep brain stimulation (DBS) on different speech parameters in Parkinson's disease: a perceptual and acoustic analysis**
03:04 p.m. *Sabine Skodda, Bochum (D) | Wenke Grönheit, Bochum (D) | Uwe Schlegel, Bochum (D) | Martin Südmeyer, Düsseldorf (D) | Alfons Schnitzler, Düsseldorf (D) | Lars Woitecki, Düsseldorf (D)*
- OP4 Subthalamic Coordinated Reset stimulation has sustained effects on motor symptoms in MPTP treated non-human primates**
03:11 p.m. *Peter Tass, Juelich (D) | Li Qin, Beijing (CN) | Erwan Bezard, Bordeaux (F) | Thomas Boraud, Bordeaux (F) | Christian Hauptmann, Juelich (D) | Wassilios Meissner, Bordeaux (F)*
- OP5 In vitro testing of a closed loop adaptive DBS prototype device: the SURF system.**
03:18 p.m. *Mattia Arlotti, Milan (IT) | Lorenzo Rossi, Milan (IT) | Manuela Rosa, Milan (IT) | Sara Marceglia, Milan (IT) | Alberto Priori, Milan (IT)*
- OP6 Characterization of Nigro-Putaminial Connectivity Employing Probabilistic Tractography in 60 healthy subjects**
03:25 p.m. *Andreas Hintzen, Cologne (D) | Esther Annegret, Cologne (D) | Lars Timmermann, Cologne (D) | Marc Tittgemeyer, Cologne (D)*
- OP7 Connectivity patterns of pallidal DBS (Deep Brain Stimulation) electrodes in focal dystonia**
03:32 p.m. *Verena Rozanski, Munich (D) | Christian Vollmar, Munich (D) | Kai Bötzel, Munich (D) | Joao Paulo Cunha, Porto (PT)*
- OP8 Electrophysiological properties of the centro-median nucleus in anesthetized humans**
03:39 p.m. *Jesús Pastor, Madrid (ES) | Lorena Vega, Madrid (ES) | Oscar Garnés, Madrid (ES) | Angela de Abreu, Madrid (ES) | Cristina Torres, Madrid (ES) | Marta Navas, Madrid (ES) | Rafael G. Sola, Madrid (ES)*

Abstracts: Oral presentations

OP9 Thalamic phase synchronization shapes perception - evidence from human intracranial EEG

03:46 p.m. Tobias Staudigl, Konstanz (D) | Simon Hanslmayr, Konstanz (D) | Jürgen Voges, Magdeburg (D) | Hermann Hinrichs, Magdeburg (D) | Friedhelm C. Schmitt, Magdeburg (D) | Hans-Jochen Heinze, Magdeburg (D) | Alan Richardson-Klavehn, Magdeburg (D) | Tino Zaehle, Magdeburg (D)

OP10 Human Emotion and Affect Related Circuitry - Future DBS Targets for Non-Motor Disease Treatment

03:53 p.m. Zang-Hee Cho, Incheon (KR) | Je-Geun Chi, Seoul (KR) | Young-Bo Kim, Incheon (KR) | Sang-Han Choi, Incheon (KR) | Chan-Woong Park, Seoul (KR) | Se-Hong Oh, Incheon (KR) | Sung-Hyun Park, Incheon (KR) | Meng-Law, Los Angeles, CAL (USA)

Short presentations II Friday, May 31st, 2013 04:30 p.m. - 05:30 p.m.

OP11 Coherence within the tremor network increases in parkinsonian rest tremor

04:30 p.m. Jan Hirschmann, Düsseldorf (D) | Christian J. Hartmann, Düsseldorf (D) | Markus Butz, London (UK) | Nienke Hoogenboom, Düsseldorf (D) | Tolga E. Özkurt, Ankara (TR) | Saskia Elben, Düsseldorf (D) | Jan Vesper, Düsseldorf (D) | Lars Wojtecki, Düsseldorf (D) | Alfons Schnitzler, Düsseldorf (D)

OP12 Subthalamic nucleus stimulation induces cortical plasticity and facilitates corticospinal synchrony

04:37 p.m. Daniel Weiss, Tübingen (D) | Rosa Klotz, Tübingen (D) | Rathinaswamy Govindan, Washington D.C. (USA) | Friedemann Bunjes, Tübingen (D) | Alireza Gharabaghi, Tübingen (D) | Rejko Krüger, Tübingen (D)

OP13 Relation of lead location to neuropsychological outcomes of subthalamic neurostimulation in Parkinson's disease: results from a randomized trial

04:44 p.m. Karsten Witt, Kiel (D) | Oliver Granert, Kiel (D) | Christine Daniels, Kiel (D) | Jens Volkmann, Würzburg (D) | Daniela Falk, Kiel (D) | Thilo van Eimeren, Kiel (D) | Günther Deuschl, Kiel (D)

OP14 A prospective pilot trial for Pallidal Deep Brain Stimulation (DBS) in Huntington's Disease (HD) - 12 month follow-up of chorea, dystonia, hypokinesia, cognition, mood and quality of life

04:51 p.m. Lars Wojtecki, Düsseldorf (D) | Stefan Jun Groiss, Düsseldorf (D) | Saskia Elben, Düsseldorf (D) | Stefano Ferrea, Düsseldorf (D) | Jan Vesper, Düsseldorf (D) | Alfons Schnitzler, Düsseldorf (D)

Abstracts: Oral presentations

OP15 Memory modulation by weak synchronous deep brain stimulation: A pilot study

04:58 p.m. *Nikolai Axmacher, Bonn (D) | Bernhard Staresina, Cambridge (UK) | Anne Do Lam, Bonn (D) | Guido Widman, Bonn (D) | Christoph Helmstaedter, Bonn (D) | Christian E. Elger, Bonn (D) | Juergen Fell, Bonn (D)*

OP16 Phase-Amplitude Cross-Frequency Coupling in the Human Nucleus Accumbens Tracks Action Monitoring during Cognitive Control

05:05 p.m. *Stefan Dürschmid, Magdeburg (D) | Tino Zaehle, Magdeburg (D) | Klaus Kopitzki, Magdeburg (D) | Jürgen Voges, Magdeburg (D) | Friedhelm Schmitt, Magdeburg (D) | Hans-Jochen Heinze, Magdeburg (D) | Robert T. Knight, Berkeley, CAL (USA) | Hermann Hinrichs, Magdeburg (D)*

OP17 Boosting memory via deep brain stimulation of nucleus accumbens in patients with obsessive-compulsive disorder

05:12 p.m. *Bryan Strange, Madrid (ES) | Paola Rivera Rivera, Madrid (ES) | Javier Gonzalez Rosa, Madrid (ES) | Blanca Reneses Prieto, Madrid (ES) | JJ Lopez Ibor, Madrid (ES) | Juan Barcia, Madrid (ES)*

OP18 Nucleus accumbens high frequency stimulation induces gaba release in freely moving rats

05:19 p.m. *Ramya Varatharajan, Luebeck (D) | Kevin Joseph, Luebeck (D) | Anja Richter, Luebeck (D) | U.G. Hofmann, Freiburg (D) | Volker Tronnier, Luebeck (D) | Andreas Moser, Luebeck (D)*

OP19 The practice of Deep Brain Stimulation - An international survey on clinical and ethical issues

05:25 p.m. *Markus Christen, Zurich (CH) | Christian Ineichen, Zurich (CH) | Merlin Bittlinger, Berlin (D) | Hans-Werner Bothe, Münster (D) | Sabine Müller, Berlin (D)*

Poster Awards

Decisions on poster awards will be made on site.

Awards will be announced in the final session of the conference, Friday, May 31st, 2013 – 07:30 p.m.

The awardee's attendance is required.

Donated by AG THS



Abstracts

Electrophysiology and imaging

P1 (OP1) Tissue properties differentiate between motor and limbic subthalamic nucleus

Ettore Accolla, Berlin (D) | Juergen Dukart, Lausanne (CH) | Gunther Helms, Göttingen (D) | Nicholas Weiskopf, London (GB) | Ferath Kherif, Lausanne (CH) | John-Dylan Haynes, Berlin (D) | Andrea Kühn, Berlin (D) | Bogdan Draganski, Lausanne (CH)

P2 Immunocytochemical characterization of the subthalamic nucleus in humans

Anneke Alkemade, Amsterdam (NL) | Rawien Balesar, Amsterdam (NL) | Birte U Forstmann, Amsterdam (NL)

P3 Protocol for the microelectrode recording of neuronal activity in head-restrained, alert animals

Daniela Andres, Zurich (CH) | Daniel Cerquetti, Buenos Aires (AR) | Marcelo Merello, Buenos Aires (AR) | Ruedi Stoop, Zurich (CH)

P4 (OP5) In vitro testing of a closed loop adaptive DBS prototype device: the SURF system.

Mattia Arlotti, Milan (IT) | Lorenzo Rossi, Milan (IT) | Manuela Rosa, Milan (IT) | Sara Marceglia, Milan (IT) | Alberto Priori, Milan (IT)

P5 Thalamic gamma oscillations correlate with reaction time in a Go/noGo task in patients with essential tremor

Christof Brücke, Berlin (D) | Antje Bock, Berlin (D) | Julius Huebl, Berlin (D) | Joachim K. Krauss, Hannover (D) | Thomas Schönecker, Berlin (D) | Gerd-Helge Schneider, Berlin (D) | Peter Brown, Oxford (UK) | Andrea A. Kühn, Berlin (D)

P6 (OP10) Human Emotion and Affect Related Circuitry - Future DBS Targets for Non-Motor Disease Treatment

Zang-Hee Cho, Incheon (KR) | Je-Geun Chi, Seoul (KR) | Young-Bo Kim, Incheon (KR) | Sang-Han Choi, Incheon (KR) | Chan-Woong Park, Seoul (KR) | Se-Hong Oh, Incheon (KR) | Sung-Hyun Park, Incheon (KR) | Meng-Law, Los Angeles, CAL (USA)

P7 Targeting the Cerebellothalamic Tract for in the Subthalamic Space with Fibre Tracking - a new Concept for DBS in Tremor

Donatus Cyron, Karlsruhe (D) | Andrej von Schilling, Karlsruhe (D) | Fabian Meisel, Karlsruhe (D)

P8 Targeting dysfunctions of pathophysiologically relevant neural circuits by means of animal model-based fMRI paradigms

Oliver Gruber, Goettingen (D)

- P9 Optimization of visualization and analysis for tractography activation models of deep brain stimulation**
Christian J. Hartmann, Cleveland, OH (USA) | Ashutosh Chaturvedi, Cleveland, OH (USA) | J. Luis Lujan, Cleveland, OH (USA) | Cameron C. McIntyre, Cleveland, OH (USA)
- P10 (OP6) Characterization of Nigro-Putaminal Connectivity Employing Probabilistic Tractography in 60 healthy subjects**
Andreas Hintzen, Cologne (D) | Esther Annegret, Cologne (D) | Lars Timmermann, Cologne (D) | Marc Tittgemeyer, Cologne (D)
- P11 Functional and effective connectivity in the subthalamic nucleus of patients with Parkinson's Disease**
Friederike Hohlefeld, Berlin (D) | Christine Huchzermeyer, Berlin (D) | Julius Huebl, Berlin (D) | Gerd-Helge Schneider, Berlin (D) | Guido Nolte, Berlin (D) | Christof Brücke, Berlin (D) | Thomas Schönecker, Berlin (D) | Andrea A. Kühn, Berlin (D) | Gabriel Curio, Berlin (D) | Vadim V. Nikulin, Berlin (D)
- P12 Effect transformation of the micro electrode recording (MER) data to fast fourier transform (FFT) for the main target nucleus determination for STN-DBS**
Hulagu Kaptan, Konya (TR) | Hulagu Kaptan, Konya (TR) | Murat Ayaz, Konya (TR) | Hakan Ekmekci, Konya (TR) | Gokhan Akdemir, Konya (TR)
- P13 Quantifying the effect of medial prefrontal cortical deep brain stimulation on glucose metabolism in the rat brain using microPET**
Joke Parthoens, Antwerp (B) | Viki Engelen, Antwerp (B) | Tine Wyckhuys, Antwerp (B) | Sigrid Stroobants, Antwerp (B) | Steven Staelens, Antwerp (B)
- P14 Ultra-high field imaging of the pallido-subthalamic network**
Birgit Plantinga, Eindhoven (NL) | Kamil Uludag, Maastricht (NL) | Andreas Herrler, Maastricht (NL) | Alard Roebroek, Maastricht (NL) | Bart ter Haar, Eindhoven (NL) | Yasin Temel, Maastricht (NL)
- P15 In vitro electrotaxis: Effects of varying current densities on neural stem cell motility**
Lisa Schönfeld, Maastricht (NL) | Ali Jahanshahi, Maastricht (NL) | Evi Lemmens, Hasselt (B) | Sven Hendrix, Hasselt (B) | Yasin Temel, Maastricht (NL)
- P16 Changes in subthalamic nucleus local field potentials during subliminal priming in Parkinson's disease**
Martin Sonveaux, Liège (B) | Quentin Noirhomme, Liège (B) | Julie Dethier, Liège (B) | Bruno Kaschten, Liège (B) | Rodolphe Sepulchre, Liège (B) | Gaëtan Garraux, Liège (B)

Abstracts

P17 (OP9) Thalamic phase synchronization shapes perception - evidence from human intracranial EEG

Tobias Staudigl, Konstanz (D) | Simon Hanslmayr, Konstanz (D) | Jürgen Voges, Magdeburg (D) | Hermann Hinrichs, Magdeburg (D) | Friedhelm C. Schmitt, Magdeburg (D) | Hans-Jochen Heinze, Magdeburg (D) | Alan Richardson-Klavehn, Magdeburg (D) | Tino Zaehle, Magdeburg (D)

P18 Is intraoperative macrostimulation in subthalamic lead placement dispensible? A retrospective analysis of 92 DBS lead placements in 46 patients.

Kajetan von Eckardstein, Göttingen (D) | Friederike Sixel-Döring, Göttingen (D) | Claudia Trenkwalder, Göttingen (D) | Veit Rohde, Göttingen (D)

P19 (OP2) Non-invasive, intraoperative demonstration of cerebral cortex synchronization by subthalamic deep brain stimulation

Harrison Walker, Birmingham, AL (USA) | Christopher Gonzalez, Birmingham, AL (USA) | He Huang, Birmingham, AL (USA) | Barton Guthrie, Birmingham, AL (USA)

P20 The role of theta oscillations in vestibular spatial working memory

Yizhou Wan, London (UK) | Nada Yousif, London (UK) | Barry Seemungal, London (UK)

Parkinson's disease

P21 Cortico-muscular coherence of DBS treated Parkinsonian patients

Katja Airaksinen, Helsinki (FI) | Katja Airaksinen, Helsinki (FI) | Jyrki Mäkelä, Helsinki (FI) | Jussi Nurminen, Helsinki (FI) | Jarkko Luoma, Helsinki (FI) | Samu Taulu, Helsinki (FI) | Antti Ahonen, Helsinki (FI) | Eero Pekkonen, Helsinki (FI)

P22 MR-Guided High Intensity Focused Ultrasound for the treatment of tremor-dominant Parkinson's disease - first experience

Ronald Bauer, St. Gallen (CH) | Beat Werner, Zurich (CH) | Stefan Hägele-Link, St. Gallen (CH) | Georg Kägi, St. Gallen (CH) | Stephan Nitschke, St. Gallen (CH) | Florian Brugger, St. Gallen (CH) | Moritz von Specht, St. Gallen (CH) | Ernst Martin-Fiori, Zurich (CH)

P23 Subthalamic nucleus stimulation and compulsive use of dopaminergic medication in Parkinson's disease

Alexandre Eusebio, Marseille (F) | Tatiana Witjas, Marseille (F) | Julien Cohen, Marseille (F) | Frédérique Fluchère, Marseille (F) | Elisabeth Jouve, Marseille (F) | Jean Régis, Marseille (F) | Jean-Philippe Azulay, Marseille (F)

- P24 The effect of subthalamic nucleus inhibition in the survival of dopaminergic grafts in a rat model of Parkinson's disease**
Luciano Furlanetti, Freiburg (D) | Karina Cordeiro, Freiburg (D) | Joacir Cordeiro, Freiburg (D) | Joanna Garcia, Freiburg (D) | Christian Winkler, Freiburg (D) | Máté Döbrösy, Freiburg (D) | Guido Nikkhah, Freiburg (D)
- P25 Age modulates the decline of verbal fluency after deep brain stimulation (DBS) in patients with Parkinson's disease (PD)**
Ute Gschwandtner, Basel (CH) | Nina Benz, Basel (CH) | Ronan Zimmermann, Basel (CH) | Florian Hatz, Basel (CH) | Michael Ehrensperger, Basel (CH) | Ethan Taub, Basel (CH) | Christian Schindler, Basel (CH) | Peter Fuhr, Basel (CH)
- P26 Therapeutic communication instead of anesthetics for awake craniotomy**
Ernil Hansen, Regensburg (D) | Nina Zech, Regensburg (D) | Milena Seemann, Regensburg (D) | Anette Janzen, Regensburg (D) | Eva Rothenfusser-Korber, Regensburg (D) | Max Lange, Regensburg (D)
- P27 (OP11) Coherence within the tremor network increases in parkinsonian rest tremor**
Jan Hirschmann, Düsseldorf (D) | Christian J. Hartmann, Düsseldorf (D) | Markus Butz, London (UK) | Nienke Hoogenboom, Düsseldorf (D) | Tolga E. Özkurt, Ankara (TR) | Saskia Elben, Düsseldorf (D) | Jan Vesper, Düsseldorf (D) | Lars Wojtecki, Düsseldorf (D) | Alfons Schnitzler, Düsseldorf (D)
- P28 Anticipatory grip force adaptation is related to oscillatory local field potentials in the subthalamic nucleus of Parkinson's patients**
Lukas Imbach, Zurich (CH) | Christian Baumann, Zurich (CH) | Heide Baumann-Vogel, Zurich (CH) | Joachim Hermsdörfer, Munich (D) | Oguzkan Sürürcü, Zurich (CH) | Johannes Sarnthein, Zurich (CH)
- P29 A Web-Based Interactive Platform for the Assessment of DBS Treatment in Parkinson's Disease: The Italian Multicentric Study.**
Emma Scelzo, Milan (IT) | Manuela Rosa, Milan (IT) | Ettore Beghi, Milan (IT) | Lorenzo Rossi, Milan (IT) | Elena Rossi, Milan (IT) | Sara Marceglia, Milan (IT) | Angelo Antonini, Venice (IT) | Claudio Pacchetti, Pavia (IT) | Luigi Romito, Milan (IT) | Filippo Tamma, Acquaviva delle Fonti (IT) | Leonardo Lopiano, Turin (IT) | Nicola Modugno, Pozzilli (IT) | Alberto Priori, Milan (IT)
- P30 Evaluation of Mini Mental State Examination After DBS Surgery: Case Report**
Hulagu Kaptan, Konya (TR) | Hulagu Kaptan, Konya (TR) | Hakan Ekmecki, Konya (TR)

Abstracts

- P31 Motor and Cognitive Placebo-/Nocebo-Responses in Parkinson's Disease Patients with Deep Brain Stimulation**
Ariane Keitel, Düsseldorf (D) | Lars Wojtecki, Düsseldorf (D) | Jan Hirschmann, Düsseldorf (D) | Christian Hartmann, Düsseldorf (D) | Stefano Ferrea, Düsseldorf (D) | Martin Südmeyer, Düsseldorf (D) | Alfons Schnitzler, Düsseldorf (D)
- P32 Reward Processing under Deep Brain Stimulation of the Nucleus Subthalamicus in Patients with Parkinson's disease**
Lisa Klingelhöfer, Dresden (D) | Sylvia Rietzel, Dresden (D) | Ulrike Lueken, Dresden (D) | Yuliya Stankevich, Dresden (D) | Ricarda Evens, Dresden (D) | Martin Wolz, Meißen (D) | Thomas Goschke, Dresden (D) | Alexander Storch, Dresden (D)
- P33 Parkinsonian patients with subthalamic stimulation and carers judge quality of life differently**
Catharine Lewis, Cologne (D) | Franziska Maier, Cologne (D) | Carsten Eggers, Cologne (D) | Mohammad Maarouf, Cologne (D) | Elena Moro, Grenoble (CH) | Mateusz Zurowski, Toronto (CAN) | Jens Kuhn, Cologne (D) | Christiane Woopen, Cologne (D) | Lars Timmermann, Cologne (D)
- P34 Patients' expectations of deep brain stimulation, and subjective perceived outcome related to clinical measures in Parkinson's disease**
Franziska Maier, Cologne (D) | Catharine Lewis, Cologne (D) | Carsten Eggers, Cologne (D) | Mohammad Maarouf, Cologne (D) | Jens Kuhn, Cologne (D) | Mateusz Zurowski, Toronto (CAN) | Elena Moro, Grenoble (CH) (D) | Christiane Woopen, Cologne (D) | Lars Timmermann, Cologne (D)
- P35 Deep Brain Stimulation Programming in Parkinson's Disease Using Functional Motor Symptom Response Tuning Maps**
Thomas Mera, Cleveland, OH (USA) | Jerrold Vitek, Minneapolis, MN (USA) | Joseph Giuffrida, Cleveland, OH (USA)
- P36 β -band peak localizes the optimal Deep Brain Stimulation contact in Parkinson's disease patients**
Konstantinos Michmizos, Cambridge, MA (USA) | Polytimi Frangou, Athens (GR) | Pantelis Stathis, Athens (GR) | Damianos Sakkas, Athens (GR) | Konstantina Nikita, Athens (GR)
- P37 Differentiating unipolar and bipolar STN-DBS on Parkinsonian patients using source and directionality analysis**
Muthuraman Muthuraman, Kiel (D) | Helge Hellriegel, Kiel (D) | Stephan Paschen, Kiel (D) | Abdul Rauf, Kiel (D) | Jan Raethjen, Kiel (D) | Günther Deuschl, Kiel (D)

- P38 Subthalamic nucleus: a key structure for emotional component synchronization in humans**
Julie Péron, Geneva (CH) | Sascha Frühholz, Geneva (CH) | Marc Vérin, Rennes (F) | Didier Grandjean, Geneva (CH)
- P39 Effect of unilateral and bilateral STN stimulation and levodopa on distal and proximal alternating movement of the upper limb in Parkinson's disease**
Peter Radics, Budapest (HU) | Lorand Eross, Budapest (HU) | Annamaria Takats, Budapest (HU) | Dustin A. Heldman, Cleveland, OH (USA) | Joseph P. Giuffrida, Cleveland, OH (USA) | Laszlo Entz, Budapest (HU) | Daniel Fabo, Budapest (HU) | Gertrud Tamas, Budapest (HU)
- P40 Clinical outcome 5 years after STN-DBS in Parkinson's disease**
Eva Skawiniak, Liege (B) | Bruno Kaschten, Liege (B) | Valérie Delvaux, Liege (B) | Gaëtan Garraux, Liege (B)
- P41 (OP3) Influence of deep brain stimulation (DBS) on different speech parameters in Parkinson's disease: a perceptual and acoustic analysis**
Sabine Skodda, Bochum (D) | Wenke Grönheit, Bochum (D) | Uwe Schlegel, Bochum (D) | Martin Südmeyer, Düsseldorf (D) | Alfons Schnitzler, Düsseldorf (D) | Lars Woitecki, Düsseldorf (D)
- P42 One Year Complications in Deep Brain Stimulation**
Philipp J. Slotty, Düsseldorf (D) | Gregor Bara, Düsseldorf (D) | Christian Wille, Düsseldorf (D) | Jan Vesper, Düsseldorf (D)
- P43 Increased therapeutic window with shorter pulse widths (<60µs) of Deep Brain Stimulation in Parkinson's disease**
Frank Steigerwald, Würzburg (D) | Rene Reese, Würzburg (D) | Cordula Matthies, Würzburg (D) | Jens Volkmann, Würzburg (D)
- P44 Effect of 80Hz STN-DBS on gait disorders (including FOG) in Parkinson's Disease**
Frank Steigerwald, Würzburg (D) | Linda Nuth, Würzburg (D) | Ioannis Isaias, Würzburg (D) | Alberto Marzegan, Milano (IT), | Jens Volkmann, Würzburg (D)
- P45 (OP4) Subthalamic Coordinated Reset stimulation has sustained effects on motor symptoms in MPTP treated non-human primates**
Peter Tass, Juelich (D) | Li Qin, Beijing (CN) | Erwan Bezaud, Bordeaux (F) | Thomas Boraud, Bordeaux (F) | Christian Hauptmann, Juelich (D) | Wassilios Meissner, Bordeaux (F)
- P46 Deep brain stimulation for Parkinson's disease**
Vladimir Tjurnikov, Moscow (RU) | Artem Goushcha, Moscow (RU) | Ludmila Metelkina, Moscow (RU) | Sergey Illarioshkin, Moscow (RU) | Alexey Kashcheev, Moscow (RU)

Abstracts

P47 (OP12) Subthalamic nucleus stimulation induces cortical plasticity and facilitates corticospinal synchrony

Daniel Weiss, Tübingen (D) | Rosa Klotz, Tübingen (D) | Rathinaswamy Govindan, Washington D.C. (USA) | Friedemann Bunjes, Tübingen (D) | Alireza Gharabaghi, Tübingen (D) | Rejko Krüger, Tübingen (D)

P48 (OP13) Relation of lead location to neuropsychological outcomes of subthalamic neurostimulation in Parkinson's disease: results from a randomized trial

Karsten Witt, Kiel (D) | Oliver Granert, Kiel (D) | Christine Daniels, Kiel (D) | Jens Volkmann, Würzburg (D) | Daniela Falk, Kiel (D) | Thilo van Eimeren, Kiel (D) | Günther Deuschl, Kiel (D)

P49 Reward- and effort-related neuronal activity in the subthalamic nucleus of Parkinson's disease patients.

Alexandre Zenon, Brussels (B) | Yann Duclos, Marseille (F) | Tatiana Witjas, Marseille (F) | Romain Carron, Marseille (F) | Jean Regis, Marseille (F) | Jean-Philippe Azulay, Marseille (F) | Peter Brown, Oxford (UK) | Alexandre Eusebio, Marseille (F)

Other Movement disorders

P50 Deep brain stimulation of the internal pallidum in X-chromosomal dystonia-parkinsonism

Norbert Brüggemann, Lübeck (D) | Aloysius Domingo, Lübeck (D) | Anne Weissbach, Lübeck (D) | Jose A. Aguilar, Metro Manila (PH) | Simone Zittel, Lübeck (D) | Lillian V. Lee, Quezon City (PH) | Dirk Rasche, Lübeck (D) | Marcus Heldmann, Lübeck (D) | Roland Dominic Jamora, Quezon City (PH) | Thomas Münte, Lübeck (D) | Tobias Bäumer, Lübeck (D) | Alexander Münchau, Lübeck (D) | Raymond L. Rosales, Manila (PH) | Christine Klein, Lübeck (D) | Volker Tronnier, Lübeck (D)

P51 Deep brain stimulation in a 12 year-old boy with movement disorder after anoxic brain trauma

Alexander Diers, Hamburg (D) | Katharina Lauritsch, Berlin (D) | Gerd-Helge Schneider, Berlin (D) | Andrea Kühn, Berlin (D)

P52 Efficacy and Safety of Deep Brain Stimulation in Patients With Medication-Induced Tardive Dyskinesia and/or Dystonia: A Systematic Review

Charlotte Mentzel, Maastricht (NL) | Peter van Harten, Maastricht (NL) | Diederik Tenback, Amersfoort (NL) | Marina de Koning, Groningen (NL)

P53 (OP7) Connectivity patterns of pallidal DBS (Deep Brain Stimulation) electrodes in focal dystonia

Verena Rozanski, Munich (D) | Christian Vollmar, Munich (D) | Kai Bötzel, Munich (D) | Joao Paulo Cunha, Porto (PT)

P54 (OP14) A prospective pilot trial for Pallidal Deep Brain Stimulation (DBS) in Huntington's Disease (HD) – 12 month follow-up of chorea, dystonia, hypokinesia, cognition, mood and quality of life

Lars Wojtecki, Düsseldorf (D) | Stefan Jun Groiss, Düsseldorf (D) | Saskia Elben, Düsseldorf (D) | Stefano Ferrea, Düsseldorf (D) | Jan Vesper, Düsseldorf (D) | Alfons Schnitzler, Düsseldorf (D)

Neuropsychiatric disorders

P55 (OP15) Memory modulation by weak synchronous deep brain stimulation: A pilot study

Nikolai Axmacher, Bonn (D) | Bernhard Staresina, Cambridge (UK) | Anne Do Lam, Bonn (D) | Guido Widman, Bonn (D) | Christoph Helmstaedter, Bonn (D) | Christian E. Elger, Bonn (D) | Juergen Fell, Bonn (D)

P56 (OP16) Phase-Amplitude Cross-Frequency Coupling in the Human Nucleus Accumbens Tracks Action Monitoring during Cognitive Control

Stefan Dürschmid, Magdeburg (D) | Tino Zaehle, Magdeburg (D) | Klaus Kopitzki, Magdeburg (D) | Jürgen Voges, Magdeburg (D) | Friedhelm Schmitt, Magdeburg (D) | Hans-Jochen Heinze, Magdeburg (D) | Robert T. Knight, Berkeley, CAL (USA) | Hermann Hinrichs, Magdeburg (D)

P57 Off-stimulation relapses after lateral habenular complex deep brain stimulation for refractory major depression

Martin Jakobs, Heidelberg (D) | Alexander Sartorius, Mannheim (D) | Andreas Unterberg, Heidelberg (D) | Karl Kiening, Heidelberg (D)

P58 Emotion recognition and empathy in depressed patients after deep brain stimulation in the Cg25 area

Angela Merkl, Berlin (D) | Wolf-Julian Neumann, Berlin (D) | Julius Huebl, Berlin (D) | Gerd-Helge Schneider, Berlin (D) | Malek Bajbouj, Berlin (D) | Andrea A. Kühn, Berlin (D)

P59 Neurobiological Mechanisms of Nucleus Accumbens Deep Brain Stimulation in a SSRI-Insensitive Mouse Model of High Anxiety- and Depression-Like Behaviour

Claudia Schmuckermair, Innsbruck (A) | Anupam Sah, Innsbruck (A) | Rainer Landgraf, Munich (D) | Simone B. Sartori, Innsbruck (A) | Nicolas Singewald, Innsbruck (A)

Abstracts

- P60 (OP17) Boosting memory via deep brain stimulation of nucleus accumbens in patients with obsessive-compulsive disorder**
Bryan Strange, Madrid (ES) | Paola Rivera Rivera, Madrid (ES) | Javier Gonzalez Rosa, Madrid (ES) | Blanca Reneses Prieto, Madrid (ES) | JJ Lopez Ibor, Madrid (ES) | Juan Barcia, Madrid (ES)
- P61 (OP18) Nucleus accumbens high frequency stimulation induces gaba release in freely moving rats**
Ramya Varatharajan, Luebeck (D) | Kevin Joseph, Luebeck (D) | Anja Richter, Luebeck (D) | U.G. Hofmann, Freiburg (D) | Volker Tronnier, Luebeck (D) | Andreas Moser, Luebeck (D)
- P62 Chronic vmPFC DBS boosts serotonergic neuroplasticity and normalizes behavioral sequelae of social defeat in the mouse**
Avin Veerakumar, Philadelphia, PA (USA) | Collin Challis, Philadelphia, PA (USA) | Janette Boulden, Philadelphia, PA (USA) | Preetika Gupta, Philadelphia, PA (USA) | Sheryl Beck, Philadelphia, PA (USA) | Olivier Berton, Philadelphia, PA (USA)
- P63 Deep brain stimulation as a potential treatment in therapy refractory depression: an animal experimental study**
Mareike Voget, Dresden (D) | Julia Rummel, Dresden (D) | Ellis Rea, Berlin (D) | Julia Klein, Berlin (D) | Aleksander A. Mathé, Stockholm (SE) | Barbara Vollmayr, Mannheim (D) | Christine Winter, Dresden (D)

Dementia / epilepsy / pain

- P64 The electrostimulation of the nucleus caudatus and mediodorsal/reticular thalamic nuclei in the artificial hypothermia-induced absence-like seizures**
Zoran Ostojić, Belgrade (RS) | Tihomir Ilić, Belgrade (RS) | Pavle Andjus, Belgrade (RS)
- P65 (OP8) Electrophysiological properties of the centro-median nucleus in anesthetized humans**
Jesús Pastor, Madrid (ES) | Lorena Vega, Madrid (ES) | Oscar Garnés, Madrid (ES) | Angela de Abreu, Madrid (ES) | Cristina Torres, Madrid (ES) | Marta Navas, Madrid (ES) | Rafael G. Sola, Madrid (ES)
- P66 Clinical significance of deep brain stimulation for chronic refractory pain syndromes**
Dirk Rasche, Lübeck (D) | Volker Tronnier, Lübeck (D)

Ethics

P67 Ethical issues in Deep Brain Stimulation

V. Antonio Amodio, Turin (IT)

P68 (OP19) The practice of Deep Brain Stimulation - An international survey on clinical and ethical issues

*Markus Christen, Zurich (CH) | Christian Ineichen, Zurich (CH) |
Merlin Bittlinger, Berlin (D) | Hans-Werner Bothe, Münster (D) |
Sabine Müller, Berlin (D)*

P69 Should Deep Brain Stimulation be offered to Parkinsonian patients with pedophilia?

Sabine Müller, Berlin (D) | Markus Christen, Zurich (CH)

Technical aspects

P70 Impedance Measurements in Deep Brain Stimulation

*Gregor A. Bara, Düsseldorf (D) | Philipp J. Slotty, Düsseldorf (D) |
Stefan Schu, Düsseldorf (D) | Martin Südmeyer, Düsseldorf (D) |
Lars Wojtecki, Düsseldorf (D) | Alfons Schnitzler, Düsseldorf (D) |
Jan Vesper, Düsseldorf (D)*

P71 Multiple source current steering – a novel deep brain stimulation concept for customized programming in a Parkinson's Disease patient

*Michael T. Barbe, Cologne (D) | Mohammad Maarouf, Jülich (D) |
Francois Alesch, Vienna (A) | Lars Timmermann, Cologne (D)*

P72 StereoTaxi - a powerful neuronavigation tool for DBS research

*Ulrich Fickel, Hamburg (D) | Wolfgang Hamel, Hamburg (D) |
Johannes A. Koeppen, Hamburg (D) | Andreas K. Engel, Hamburg
(D) | Christian K. Moll, Hamburg (D)*

P73 Simultaneous Multiple Target Stimulation – Technical Considerations

*Philipp J. Slotty, Düsseldorf (D) | Gregor A. Bara, Düsseldorf (D) |
Lars Wojtecki, Düsseldorf (D) | Alfons Schnitzler, Düsseldorf (D) |
Jan Vesper, Düsseldorf (D)*

P74 Multipolar Current-Steering Electrode Configuration to increase selectivity in Deep Brain Stimulation

*Virgilio Valente, London (UK) | Andreas Demosthenous, London
(UK) | Richard Bayford, London (UK)*

General information

Venue

Hyatt Regency Düsseldorf
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Date of conference

May 30th - May 31st, 2013

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Jan Vesper, MD

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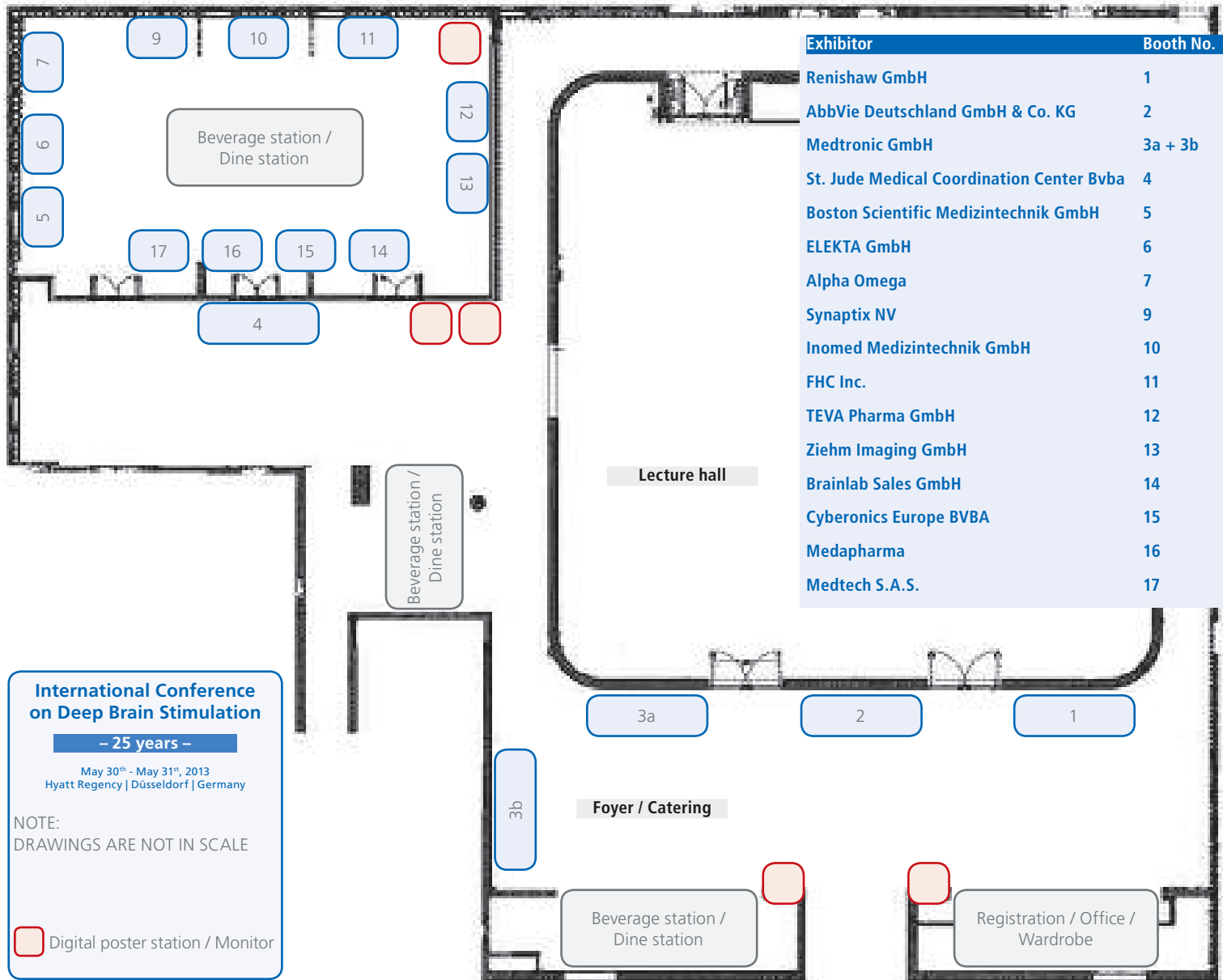
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