



Michael Schulder

LETTER FROM THE PRESIDENT

Plans are well under way for the June 2019 meeting of the WSSFN, and we expect to finalize arrangements to hold this in New York City – not a frequent venue for neurosurgical meetings. For those who have never been, we hope this will give you a good reason to check out La Gran Manzana. For the many returning attendees, I hope you will welcome this opportunity for a visit. Details to follow soon – check your

email and please don't automatically delete the messages from your favorite organization (i.e. this one). More importantly, if you have any specific ideas for workshops, sessions, symposia, etc. please contact Joseph Neimat, who will be chairing the Scientific Program Committee.

We are looking into running WSSFN-sponsored webinars. Our able administrator, Melody Dian, will arrange the logistics, and our first planned topics are on DBS with directional leads, and TMS -- transcranial magnetic stimulation.

Why TMS? Isn't that, like, ECT? I suggest it could be more like stereotactic radiosurgery, endovascular neurosurgery, or MR guided focused ultrasound: a minimally to noninvasive technique that may prove effective in treating patients with a wide variety of disorders, including many that we think of as neurosurgical when medical therapy fails. But TMS as

currently practiced is image-guided, focused, and episodic – all factors that make it appropriate for neurosurgeons to adopt the method. At a minimum we should know more about TMS. There is a growing peer-reviewed literature on its use to treat patients with depression, obsessive-compulsive disorder, pain, Parkinson's disease, tremor, you name it. And it is being done in some centers with infrared-based navigation – yet another neurosurgical invention. None of us would deny patients a treatment that is safe, effective, and minimally or noninvasive. Neurosurgeons have become leaders in advancing the techniques noted above. There is no reason we shouldn't seek to do the same with TMS.

Stay tuned for more information, as I hope these webinars will be a valuable benefit for WSSFN members. As in the case of the biennial meeting, please send along your ideas for topics in the future (along with your interest in moderating and speaking in these events). It's worth noting again that the WSSFN is a volunteer organization. It is your society, and it will be what we all make of it. It is the place where neurosurgeons from the world over can meet in person or virtually to share new ideas in stereotactic and functional neurosurgery, so let's hear from you!

Thanks

Michael Schulder
WSSFN President
United States

FROM THE EDITOR



Erich Richter

In this final newsletter for 2017, we look back and celebrate the accomplishments of the society this year and in years past, and also look ahead to the many challenges that await us. Dr. Hodaie and Dr. Krauss highlight the accomplishments of the XVII Quadrennial meeting of the society in Berlin, which was the largest WSSFN meeting ever. This accomplishment was the culmination of many years of effort lead by Dr.

Krauss with a host of others to re-engage regional societies within the structure of the WSSFN. The photograph of the regional presidents is a great tribute to this long process and the important promise it holds for the future of our society. As the society has grown and the pace of development

grows ever more rapid, we are entering a new era, moving to a biennial meeting. Dr. Schulder shares his vision for the next two years and the meeting in New York, but we also draw your attention to the Canadian Neuromodulation Society meeting in February, the ASSFN meeting in Denver in June, and the ESSFN meeting in Edinburgh in September. Each of these important regional events are vital to the continued conversation that is the lifeblood of our society. Dr. Hariz, Dr. Blomstedt, and Dr. Chabardes draw our attention to the many important anniversaries of functional neurosurgery we have celebrated this year. Dr. Enslin pays tribute to the regional contributions of Dr. Roger Melvill in South Africa, but in fact, we have also chosen Dr. Enslin as our featured neurosurgeon for this edition of the newsletter. We hope you enjoy these contributions and we look forward to seeing you at the many offerings of 2018!

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THE 17TH WSSFN CONGRESS JUNE 2017 IN BERLIN

Dear colleagues, dear friends,

First of all I would like to take this opportunity to thank each and every one of you who helped to make this congress such a tremendous success – the officers of the society, the board of directors, the scientific program committee chaired by Jean Regis and Mojgan Hodaie, the committee heads and the continental vice presidents, the keynote lecturers, the faculty, the speakers and the poster presenters, our partners from the industry, all others involved in the organization of this event including the staff of MCO, and last, but not least all those who came there to learn and listen.

The 17th WSSFN congress became a record-breaking event. The weeks and months of preparation finally paid off. We were all very anxious to make the congress an extraordinary event having had busy telephone conferences until the very last day and working on hundreds of emails. The general motto of the congress was "Emerging Techniques and Indications," and I must say that the material which was presented exceeded my expectations by far. The scientific quality was outstanding!

The stakes for this congress were high considering the very successful congress which had been convened by our past president Takaomi Taira in Tokyo in 2013. Nevertheless, we managed to do well. Finally, this was the best attended WSSFN congress ever in the long history of WSSFN since it was founded in 1961. We counted 971 registered attendees in Berlin including participants from 56 different countries. The set-up of the conference made it possible that our partners from industry could communicate well with all of the attendees. I should also mention that we could secure appropriate funds for the future educational activities of our society.

Of course another important aspect of this meeting was the social interaction reflecting the multitude and the diversity of our society. It was a particular pleasure for me to moderate the speeches of the seven presidents of the continental and regional societies constituting WSSFN. Some of my favourite scientific highlights of the congress included the workshop sessions on Monday which nicely reflected the growth both in scope and in technology of our superspecialty, including the Education and Training Workshop giving particular insights regarding the worldwide impact of functional neurosurgery. Other unique topics were the history sessions, the debates and the seminars.

Note also that this was the last Quadrennial Meeting of the society due to the growth and the increasing impact of the society we decided to go ahead from now on with biennial meetings.

My term as president of this prestigious society has come to an end with the Berlin congress. It has been a pleasure to serve the society and to be involved in so many interesting and vibrant activities. My special thanks go to our administrative secretary Melody Dian. I remain with my best wishes for the future of the society. I was proud to hand over business to my successor Michael Schulder in Berlin. I am very confident that he will lead the society to further success.

Godspeed and good fortune!

Joachim K. Krauss
Germany



Dr. Taira, Dr. Hodaie, Dr. Regis, Dr. Krauss, Dr. Schulder, Dr. Chang and Dr. Slavin



Mojgan Hodaie

WSSFN SCIENTIFIC MEETING REPORT

It has been a pleasure to chair the Scientific Committee of the XVII Quadrennial Meeting of the World Society of Stereotactic and Functional Neurosurgery in Berlin. The goal of the committee was to highlight the best science within the field of functional neurosurgery across the world, expand our knowledge on emerging techniques, think of new ideas, new targets, and create a new level of scientific dialogue amongst like-minded scientists and clinicians. Jean Regis, co-chair of the Committee and I are enormously grateful for the effort that went into the detailed planning of this event. The

workshop day alone included nearly one hundred faculty members. Participants had the benefit of listening to experts in the field, and focussed on fundamental questions that have specific therapies. The workshops were followed by 3 days focussed on emerging techniques and indications. These 3 days had an outstanding set of submitted abstracts, oral and flash presentations as well as posters.

The grants and awards given at the meeting were a special highlight. As has become customary, travel grants were provided by the Society for international residents and fellows. A total of 24 grants were made possible, with awardees arriving from Asia, Middle East, the Americas, Africa and Europe. In addition, awards to the best science

presented at the meeting were given in several categories for both oral and poster presentations. Awardees in these categories included Dr. Alessandra Gorgulho (best oral presentation, clinical), Dr. Yasushi Okamura (best oral presentation, basic science), Dr. Eun Jung Lee (best poster presentation, clinical), Dr. Walid Bouthour (best poster presentation, basic science), Dr. Guenane Lakdar and Dr. Basant Pant (Karger book awards). The Reichert awards were presented to Dr. Dario Englot and Dr. Hemmings Wu. The Mundinger award was presented to Dr. Itzhak Fried. These awards were in recognition of the best upcoming basic or clinical research projects in the field of stereotactic and functional neurosurgery, and the best published paper in the field, respectively. Lastly, we celebrated our Spiegel & Wycis and Tasker awardees – Dr. Francisco Velasco, Dr. Yves Lazorthes and Dr. David Roberts. These awards recognize their lifetime contributions to our field of science.

I will take the opportunity to thank all committee members, Drs. Joachim Krauss, Michael Schulder, Konstantin Slavin, Jin Woo Chang, Marwan Hariz, Sameer Sheth, Joseph Neimat, Paresh Doshi, Takaomi Taira, as well as Andres Lozano, Osvaldo Vilela Filho and Jurgen Voges. It is hard to believe that this meeting is now over, but we are all eagerly waiting for the next world society meeting, which will take place in 2019. I look forward to seeing many familiar faces and many new friends there.

Mojgan Hodaie, Chair
Jean Regis, Co-Chair
Scientific Committee, WSSFN XVII Quadrennial Meeting

CONGRATULATIONS TO THE WSSFN 2017 TRAVEL GRANT WINNERS!

ASIA: Na Young Jung, Nicholas Au Yong, Jeong Hwa Kim, Chang Kyu Park, Seong-Cheol Park, Adi Sulistyanto, Ryosuke Tomio and Jie Ren.

EUROPE: Harith Akram, Philippe De Vloo, Bobby Sachdev, Elad Etingold, Ma Ángeles García Pallero and Emmanuel De Schlichting.

AMERICAS: Garrett P. Banks, Sarah Bick, Dario Englot, Mauricio Armando Esqueda Liquidano, Cameron A. Elliott and Jesus Q. Beltran.

GERMANY: Ann-Kristin Helmers and Aaron Lawson McLean.

WSSFN AND DR. KRAUSS THANK THE SUPPORT OF OUR REGIONAL PRESIDENTS



Dr. Carillo-Ruiz (SLANFE), Dr. Ahn (KSSFN), Dr. Sakas (ESSFN), Dr. Doshi (ISSFN), Dr. Krauss (WSSFN, Past President), Dr. Eskandar (ASSFN), Dr. Hirabayashi (JSSFN) and Dr. Alkhani (MSSFN)

TASKER, SPIEGEL AND WYCIS AWARD WINNERS



Dr. Roberts, Dr. Velasco and Dr. Lazorthes

2017: A YEAR OF MULTIPLE JUBILEES FOR THE WSSFN

In this last issue of the WSSFN Newsletter for 2017, we wish to highlight the importance of the year 2017 as a year of multiple jubilees for our field and our society, and also highlight the importance of the number 7 in history and humanity in general.

Let's start with the number 7: aside from it being a mythological and versatile number (7th heaven, 7 wonders of the world, the 7 pillars of wisdom, the 7 days of the week, the 7 orifices of the face, the 7 colours of the rainbow, 7UP, 007, etc) our very society's full name consists in fact of 7 words: "World Society for Stereotactic and Functional Neurosurgery;" and the seventeenth meeting of the WSSFN took place in this year of two thousand and seventeen in a

country whose name consists of 7 letters: Germany!

Beyond the number 7, what is more special with the year 2017?

In history, 2017 marks, among many other events, the 100th anniversary of the Russian revolution (1917), and the 1000th anniversary of the foundation of the Druze faith (1017).

For our specific field of functional and stereotactic neurosurgery, we can celebrate this year the 200th anniversary of publication of "an essay on the shaking palsy" by James Parkinson (1817), the 160th birthday anniversary of Victor Horsley (1857), the 120th anniversary of the invention by Gaston C ontr emou ulins of the first head-mounted localisation device used with X-rays (1897), the 80th anniversary of the publication of the "somatic motor and sensory representation in the cerebral cortex of man studied by electrical stimulation" by Wilder Penfield (1937).

Most of all, and most pertinent for our "raison d'être" as a society and as functional stereotactic neurosurgeons, we celebrate in this year of 2017 the 70th anniversary of the introduction of human stereotaxis by neurologist Ernst Spiegel and neurosurgeon Henry Wycis (1947), and the 30th anniversary of introduction of modern DBS, the DBS as we know it today, by neurosurgeon Alim-Louis Benabid and neurologist Pierre Pollak (1987).

Hence, we extend our wishes of multiple happy birthdays to all WSSFN's current and honorary emeritus members, and we dedicate this piece to Philip Leon Gildenberg, the original historian of the WSSFN.

Marwan Hariz
United Kingdom

Patric Blomstedt
Sweden





Roger Melvill

ROGER MELVILL: THE GODFATHER OF SOUTH AFRICAN FUNCTIONAL NEUROSURGERY

South Africa has a rich history of pioneers in functional neurosurgery, this is often overlooked and rarely celebrated. The names of Krynauw (innovations in hemispherectomy for the treatment of epilepsy) and Warwick Peacock (innovation in Selective Dorsal Rhizotomy), come to mind. Prof Krynauw was the first official neurosurgeon in South Africa. He started the neurosurgical

unit in Johannesburg, WITS University. He was also the pioneer worldwide of using the hemispherectomy as a treatment for refractory epilepsy. Warwick Peacock was interested in treating cerebral palsy spasticity in children, and he developed the techniques of dorsal rhizotomy, as done by Gros and Foerster, but his concern about bladder and bowel fall-out after these procedures prompted the modifications to the technique like we currently still practice it – the “Peacock SDR.” We were fortunate to do the 30 year follow-up of his original 14 patients in 2016 and the team at Red Cross Hospital is still continuing this innovative legacy that he left us.

With the recent WSSFN meeting, held in Berlin, and the wonderful celebratory lectures and awards given to innovators and key historical figures in the stereotactic and functional neurosurgical field, we thought it the opportune time to celebrate our mentor in Functional Neurosurgery in South Africa, Dr Roger Melvill.

From humble beginnings, building roads in Swaziland and Barberton area in South Africa, Roger dreamed big, but never thought of himself as a doctor, until he and a friend had to register for a course on the first day of university and medicine sounded exciting. He became the single most innovative neurosurgeon in the country, with introduction of previously unused techniques, such as awake craniotomy and mapping techniques for tumor and epilepsy surgery, building one of the world's busiest epilepsy surgery centres – all on his own, with only him and an epileptologist – James Butler, and no support from the university departments. Roger formed the pain clinic at Grootte Schuur hospital and started performing surgery for severe pain – midline myelotomy, DREZotomy, microvascular decompression, etc; all greatly needed in an era before the current myriad of effective analgesics we have to our avail today. Roger has always had concerns about the placing of pledges of Teflon during microvascular decompressions replacing one source of compression for another. He developed a novel dural sling technique that we have been using with great success for many years now. Roger met with and spent time with Dr Lauri Laitinen and invited him to South Africa to perform and learn lesioning techniques in the management of movement disorders. The original stereotactic frame is still today mounted and exhibited in Constantiaberg Mediclinic – the private hospital where Roger works. Marwan Hariz later introduced Roger to Deep Brain Stimulation and this was the beginning of a wonderful friendship between Marwan and Roger, with Roger famously refusing to stay in a hotel while in Umea and opting to stay with Marwan and his family during the time that he spent there.

In 1996 Roger travelled to America to learn awake brain surgery and epilepsy surgery. Upon his return he realised that he would need a neurologist that was open to the idea. As most of us know, it is only a very special few neurologists that are keen on epilepsy surgery. Roger had come to learn of a young neurologist from Cape Town that was doing an epilepsy fellowship in London, Ontario. He called him up and the rest is history, as they say. Today the unit that Roger

and James Butler started is the largest and only one of its kind in Sub-Saharan Africa. They offer this greatly needed service to hundreds of patients each year.

This is key in illustrating Roger Melvill's character: An innovative and talented neurosurgeon that develops the field where no one else deems it needed and all the while remaining firmly grounded in his humility, his undying quest for knowledge and new skills; with a paintbrush in the one hand (Roger is also a very talented artist) and a mountaineering backpack on his shoulders (Roger was a keen adventurer and mountaineer in his younger years, having lead many South African expeditions to various famous mountaineering tours, such as the Andes Mountains in South America).

Roger is a great mentor, humble, an excellent neurosurgeon and he played a pivotal role in harbouring a keen interest in Epilepsy surgery for Graham Fiegen and, later, a motivating role in my life to follow in his footsteps and to continue the rich functional neurosurgical heritage in South Africa and the rest of Africa, with movement disorder surgery, pain surgery, epilepsy surgery and awake surgical techniques forming part of his development and legacy. This combined with the legacy of Prof Jonathan Peter, Warwick Peacock and Graham Fiegen that also allows the development of surgery for spasticity.

We are only because of those who have gone before us, and for me the giant is undoubtedly Dr Roger Melvill.

Thank you Roger, for all the opportunities and your excellent example.

Nico Enslin
South Africa



30TH BIRTHDAY ANNIVERSARY OF MODERN DBS

Most of those who read this piece owe much in their everyday work to Benabid, Pollak and the Grenoble group for having introduced modern DBS, that is, DBS as we know it today.

Indeed, thirty years ago, neurosurgeon Alim-Louis Benabid and neurologist Pierre Pollak published a paper on DBS of the Vim in six patients with tremor (1). This treatment using chronic high frequency stimulation, was rendered possible after the observation in the OR, of the lesion-like effect of acute stimulation at frequencies of 100-130 Hertz. Hence, for the first time, stimulation was applied, on purpose, in the VIM thalamus to mimic a Vim thalamotomy, which was the only way, at that time, to abolish the tremor. The concept of chronic High Frequency Stimulation (HFS) to mimic a lesion was born. This concept was then applied to the Subthalamic nucleus to treat not only tremor, but also akinesia and rigidity of Parkinson's disease, after the seminal paper of Bergman and Delong (2), confirmed by Aziz et al (3), demonstrating the hyperactivity of the STN in parkinsonian monkeys and the beneficial effect of its lesion to reverse parkinsonism. The HFS was then applied successfully in a MPTP monkey model by Benazzouz et al (4) and then in the STN of a parkinsonian patient in 1993 (5), this effect being confirmed in larger series published from Grenoble in 1995 (6). The reversibility of DBS, its adaptability, and the possibility to use it bilaterally convinced many teams worldwide, and the concept of HFS was progressively applied to other subcortical pathways to treat numerous diseases (dystonia, Tics, OCD, epilepsy, depression, cluster headache, etc).

Of course, previous workers have investigated electrical stimulation in various diseases (For review, see Hariz et al, 2010) (7) mainly in psychiatric disorders in the 1950s to 1970s and then for tremor in the 1980s (8). And of course, many scientists used various frequencies in the laboratory to map neuronal functions (Albe Fessard et al)(9).

However, it is the seminal paper of Benabid et al in 1987 that paved the way for the modern area of DBS, and this for two main reasons: it was the first paper describing the chronic, fully implanted IPG to treat movement disorders, and second, they used on purpose HFS above 100 Hz to mimic, in a reversible way, a lesion in a deep seated nucleus. This concept was new and the power of the effect was so demonstrative that HFS-DBS became indeed a therapeutic tool used worldwide in routine.

Today, 30 years later, much work remains to minimize the side effects and complications of DBS, to optimize its effects, and above all to increase its dissemination in developing countries, though well performed lesions remain a valuable

and complementary therapeutic option.

In addition, besides the therapeutic solutions allowed by modern HFS-DBS, neuroscience has also greatly benefitted thanks to DBS opening a window to the brain.

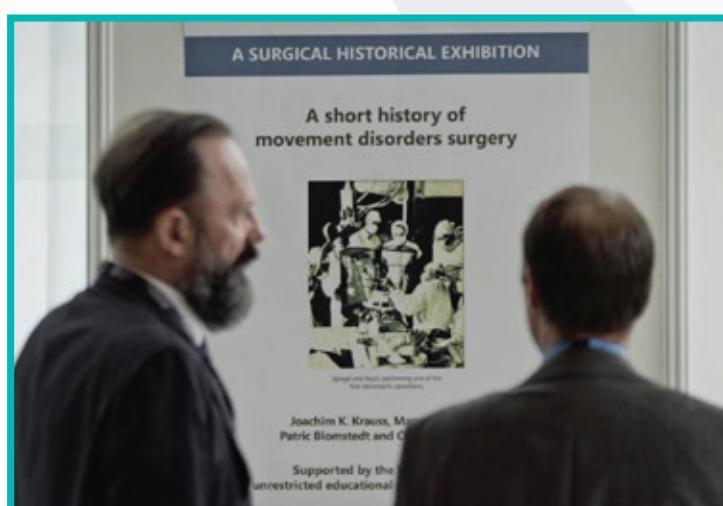
We, whose professional life is built on DBS for clinical and academic purposes, are grateful to the pioneers who introduced and disseminated this exciting scientific advance and in this year of 2017, we wish HFS-DBS a happy 30 year birthday.

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Stéphan Chabardes
France

Marwan Hariz
Sweden



Poster Presentation of Movement Disorder Surgery history - Berlin 2017

THE SHORT HISTORY OF MOVEMENT DISORDERS SURGERY

We are pleased to announce that "The Short History of Movement Disorders Surgery" booklet will be available soon through the WSSFN website.

"This booklet will provide the reader with a short history of movement disorders surgery. We start with early attempts of surgery on the pyramidal system and we conclude when we reach the "goldrush" times of contemporary deep brain stimulation introduced for tremor, Parkinson's disease and dystonia.

The posters which are summarized in this booklet were shown for the first time during the 17th Quadrennial Meeting of the World Society for Stereotactic and Functional Neurosurgery in Berlin, Germany, in June 2017. Since we received

such a nice echo from the visitors we thought it would be worthwhile to make the history as told in these posters available to a wider audience from the forward of the booklet."

From the forward.

Dr. Joachim Krauss
Past President, WSSFN
Germany

It is with great pleasure that WSSFN will be providing this excellent historical booklet for viewing in the future through our website www.wssfn.org

Please visit the website periodically for its inclusion.



Dr. Krauss welcomes attendees to Berlin



Dr. Schulder presenting

patient care

teaching

research

WSSFN Winter 2017 7

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XXIII CONGRESS
OF THE EUROPEAN SOCIETY
FOR STEREOTACTIC AND
FUNCTIONAL NEUROSURGERYEuropean Society for
Stereotactic and Functional Neurosurgery

Dear colleagues, dear friends, dear citizens

The XXIII congress of the European Society for Stereotactic and Functional Neurosurgery (ESSFN) will take place in Edinburgh, Scotland on September 26-29, 2018, at The Royal College of Surgeons, a venue with over 500 years of rich surgical history.

This is the first ESSFN meeting jointly organised by neurosurgeons (Ludvic Zrinzo and Marwan Hariz from The National Hospital, Queen Square, London) **and** a psychiatrist, (Keith Matthews, Professor of Psychiatry, University of Dundee, Scotland). Hence, one of the main meeting topics will be neurosurgical approaches for psychiatric disorders. Leading neuroscientists, psychiatrists and neurosurgeons will be invited to discuss and debate the place of surgery in the treatment of depression, OCD, Tourette's Syndrome, anorexia nervosa and other mental disorders.

Pain, Epilepsy, Parkinson's disease and other movement disorders will also be major topics with discussion of the latest advances in clinical management, technology and scientific research. The ESSFN congress will also highlight non-stereotactic functional surgery in epilepsy, pain, spasticity and other conditions, as well as stereotactic non-functional neurosurgery for brain tumours, radiosurgery, and other stereotactic therapies.

The year 2018 marks the 110th anniversary of Victor Horsley's and Robert Henry Clarke's publication on the stereotactic method, and the 25th anniversary of STN DBS. It also marks the 50th anniversary of the famous Parkinson's Disease Symposium at the Royal College of Surgeons of Edinburgh, organised by John Gillingham, one of the pioneers of British Stereotactic and Functional Neurosurgery, and co-founder of the ESSFN in 1970. At that symposium, Robert Schwab presented the now famous Schwab and England ADL scale; Margaret Hoehn and Melvin Yahr described the evaluation of Parkinson's Disease patients after surgery; and the first rudimentary "DBS" procedures targeting two brain areas for tremor, the Vim and the subthalamic area, were presented.

For the culturally interested, Edinburgh, the historic capital of Scotland and centre of the Scottish Enlightenment, offers many delights from its internationally renowned festivals, its many galleries, its impregnable castle and its fine food and drink. Sampling haggis and whisky may be optional, but it is essential.

We hope that the XXIII meeting of the ESSFN will provide intellectual stimulation and unforgettable memories of scientific, neurosurgical, psychiatric, cultural, culinary and social excellence.

Welcome to Edinburgh in September 2018
The local organizing committee

CANADIAN NEUROMODULATION SOCIETY
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FEBRUARY 4-6, 2018

Join us in beautiful Whistler, British Columbia, for the 10th annual CNS meeting.

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in 2018!*

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PRELIMINARY PROGRAM INFORMATION AND REGISTRATION IS NOW OPEN FOR THE
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VISIT WWW.CNS.ORG/ASSFN



Nico Enslin

WSSFN FEATURED NEUROSURGEON: NICO ENSLIN

Nico Enslin spent his childhood in Sabie, a small town in the beautiful Lowveld, close to the iconic Kruger National Park. He studied at the University of Pretoria, qualifying

as a physiotherapist and while working at a sports rehabilitation unit and cerebral palsy school developed a strong interest in functional disorders. He felt this would best be served through a career in neurosurgery, but needed to continue working as a physiotherapist to put himself through medical school.

It was our good fortune that Nico then chose to pursue specialist training at the University of Cape Town, and while working at Red Cross War Memorial Children's Hospital was drawn to pediatric neurosurgery, pursuing fellowship training under the mentorship of Professor Tony Figaji. He is now a consultant paediatric neurosurgeon in our department, with a special

interest in functional neurosurgery, and has a clinical skillset that few neurosurgeons can match. Assessing patients with Nico is a lesson in true functional understanding of the human nervous system.

He and Charlotte-Louise are proud parents of Annabelle, and when he isn't at work or with his family he takes full advantage of the magnificent landscape Cape Town has to offer. Having gained provincial colours in tennis, swimming and cycling at school, he has a wide range of sports to choose from, but is more often found fly-fishing these days. He loves traveling the world gaining new skills in functional neurosurgery, always with a fold-up bicycle in his luggage!

Nico is well set to make his own contribution to functional neurosurgery and with a deep commitment to our continent, I can think of no one better equipped to serve the WSSFN as 2nd Vice President for Africa.

Graham Fieggen



Poster Display - Berlin 2017



President's Dinner - Berlin 2017

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