



FINAL SCIENTIFIC PROGRAM

Save  
the date

96<sup>th</sup> Anniversary  
of Neurosurgery  
in Serbia

81<sup>th</sup> Anniversary  
of Clinic for  
Neurosurgery,  
Belgrade, Serbia



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**Under the auspices of the  
President of the Republic of Serbia  
H.E. Mr. Aleksandar Vucic**

# WFNS 2019 INTERNATIONAL MEETING

ONE WORLD, ONE NEUROSURGERY

March 21<sup>st</sup>-24<sup>th</sup> 2019  
Crowne Plaza, Belgrade



Serbian Neurosurgical Society (SNSS)

ORGANIZED BY



Italian Society of Neurosurgery (SINCH)



IN CONJUNCTION WITH  
Southeast Europe Neurosurgical Society (SeENS)

ENDORSED BY

Ministry of Health, Republic of Serbia  
Ministry of Education, Science and Technological Development, Republic of Serbia  
School of Medicine, University of Belgrade  
Serbian Academy of Sciences and Arts

## TOPICS:

- Neuro-oncology
- Neurovascular
- Neurotrauma and Intensive Care
- Spine and Peripheral Nerve
- Pediatrics
- Functional and Stereotactic Neurosurgery
- Varia

## WFNS PRE-MEETING COURSES

- Education
  - Endoscopy
  - Surgical Anatomy
- ## PRE-MEETING COURSES
- Global Neuro
  - AO Spine
  - Spine Intraoperative Navigation
- ## MEETING COURSE
- Besta Neurosim Center

WFNS SPINE  
COMMITTEE  
CONSENSUS  
CONFERENCE

wfnsbelgrade2019.talkb2b.net





## Under the auspices of the President of the Republic of Serbia H.E. Mr. Aleksandar Vucic

### PRESIDENTS OF THE MEETING



**Prof. Dr. Lukas Rasulic, Serbia**  
SNSS President, SeENS President



**Prof. Dr. Marco Cenzato, Italy**  
SINCH President

### HONORARY PRESIDENTS OF THE MEETING



**Prof. Dr. Franco Servadei, Italy**  
WFNS President



**Prof. Dr. Francesco Tomasello, Italy**  
WFNS  
Honorary President



**Prof. Dr. Paolo Cappabianca, Italy**  
SINCH Secretary



**Prof. Dr. Kresimir Rotim, Croatia**  
SeENS  
Honorary President

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- **Mr. Mladen Sarcevic**  
Minister of Education, Science and Technological Development, Republic of Serbia
- **H.E. Mr. Carlo Lo Cascio**  
Ambassador Extraordinary and Plenipotentiary, Embassy of the Republic of Italy
- **Academician Vladimir Kostic**  
Serbian Academy of Sciences and Arts
- **Prof. Dr. Ivanka Popovic**  
Rector, University of Belgrade, Serbia
- **Academician Nebojsa Lalic**  
Dean, School of medicine, University of Belgrade, Serbia
- **Prof. Dr. Zoran Radojicic**  
Mayor of Belgrade



## WELCOME ADDRESSES

Dear colleagues and friends,

It is my honour, privilege and pleasure to invite you to the upcoming WFNS 2019 International Meeting in Belgrade, Serbia, on March 21-24, 2019.

Hosted by the Serbian Neurosurgical Society (SNSS) and the Italian Society of Neurosurgery (SINch), in conjunction with the Southeast Europe Neurosurgical Society (SeENS), the WFNS 2019 International Meeting will bring together leading experts who share the vision of “one world, one neurosurgery”. The main topics to be explored include neuro-oncology, neurovascular, neurotrauma & intensive care, spine & peripheral nerve, pediatrics, functional & stereotactic neurosurgery, with the aim of highlighting the state-of-the-art advances and challenges in the field.

The opportunity to hold this event of utmost scientific and social importance in Belgrade is a special honour for the neurosurgical community in Serbia and a much-appreciated acknowledgement of the enhanced regional and international cooperation fostered by the Serbian Neurosurgical Society and the Southeast Europe Neurosurgical Society over the past years. We are delighted to be able to co-host it together with the Italian Society of Neurosurgery, thus reaffirming our strong and long-lasting professional and personal links with neurosurgeons from Italy.

“The noblest pleasure is the joy of understanding”, said the great Leonardo da Vinci. We are convinced that the upcoming WFNS 2019 INTERNATIONAL MEETING in Belgrade will enrich us all with the joy of understanding – in terms of pushing the boundaries of both knowledge and friendship.

Belgrade, the capital of Serbia, at the crossroads between East and West, South and North, is a vibrant city widely reputed for its open heart and mind. Over recent years, it has also proved to be a welcoming host city of a number of international neurosurgical gatherings, and we will do our best to make the WFNS 2019 INTERNATIONAL MEETING in Belgrade a particularly memorable and inspiring intellectual and social experience.

Welcome!

**Prof. Dr. Lukas Rasulic,  
Serbia**  
Co-President of the Meeting  
SNSS President  
SeENS President





## WELCOME ADDRESSES

Dear colleagues,

It is my great pleasure to announce, on behalf of ITALIAN Society of Neurosurgery (SINCH), the WFNS 2019 International Meeting to be held in Belgrade, Serbia, from March 21st to 24th, 2019, organized with the Serbian Neurosurgical Society (SNSS) in collaboration with the Southeast Europe Neurosurgical Society (SeENS).

Today the exchange of information and the profession updating via Web has become a daily reality, but it is precisely the opportunity for direct confrontation, the construction of fruitful relationships and useful exchanges with colleagues, the comparison and joint verification of results, that project us on a wider scene, facing an international panorama of world experts. This meeting is focused on balancing the experience of young colleagues together with the experts.

All of us have to deal with cases of increasing complexity for which often we have no certain answers and we find ourselves constantly challenged by difficult and complex clinical choices. The opportunity to confront the experts from different countries, will widen the horizon of the younger, while older colleagues will receive the due recognition. But above all it is for everyone an important and instructive moment of professional growth, where competence, experience, preparation and skills always remain a strong drive for all of us.

It is really an important moment that sees the Serbian, Italian and South-Eastern European neurosurgical societies, under the aegis of the World Federation of Neurosurgical Societies (WFNS), committed to sharing all the information and the most advanced resources in training, technology and the practice of neurosurgery.

As a president of the Italian Neurosurgical Society, it is a great honor for me to have the opportunity to share with Serbian colleagues the organization of this meeting and as a neurosurgeon, committed every day in the surgery room, I am sure that this will be a great opportunity to learn.

**Prof. Dr. Marco Cenzato, Italy**  
Co-President of the Meeting  
President of the  
Italian Society of Neurosurgery





## WELCOME ADDRESSES

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Welcome!

**Prof. Dr. Franco Servadei, Italy**  
President WFNS  
Past President SINch  
Honorary President of the Meeting





## WELCOME ADDRESSES

### WELCOME ADDRESS

The WFNS 2019 INTERNATIONAL MEETING, which will be held in Belgrade on March 21-24, 2019, is expected to be a memorable scientific and networking event!

I have the great honor, as Co-President, to serve this important event which will represent a novelty in the European Neurosurgical Scenario as a result of an exciting and renewed synergy between Serbian, Italian and South east European Neurosurgical Societies.

There is to some extent a common ancient history between Italy and Serbia, named Moesia Superior in the Roman era lasting about 400 years.

It was the birthplace of seventeen Roman Emperors, including Constantine the Great. There is evidence of this Roman presence in some archeological sites as Palace of Galerius, Gamzigrad-Romuliana, inscribed in UNESCO's world heritage list.

It is noteworthy that the President of WFNS has approved this joint project in order to have an high standing Neurosurgical platform where these Societies will share the latest advances with the global Neurosurgical community!

This event witnesses that the relationships between Serbian, Italian and South eastern Neurosurgery were strengthened in recent years and their role was growing up in the EANS as well in the WFNS initiatives.

All these scientific organizations are working hard to join the best resources and promote the most advanced opportunities in the area of Education, Research and Care in order to benefit patients worldwide!

Belgrade, with its great neurosurgical tradition and its geographical position of cultural connection between East and West, is an ideal venue for this Meeting. This will open new perspectives in sharing neurosurgical knowledge and meeting the healthcare demands in different settings.

I would like to emphasize the educational impact of the pre-meeting Courses with learning objectives which will be fulfilling the expectations of the young Neurosurgeons and even more the Mission of WFNS.

I had the privilege to appreciate the warm hospitality of Belgrade Neurosurgical Team since the time of my participation at the first SeENS Congress. I am absolutely confident that colleagues and friends will find the nice atmosphere I always appreciated in Belgrade!

Definitely, there are all the ingredients to make the WFNS 2019 INTERNATIONAL MEETING as an exciting and unforgettable event!

**Prof. Dr. Francesco Tomasello,**  
**Italy**  
WFNS Honorary President  
Honorary President of the Meeting





## WELCOME ADDRESSES

It is with great pleasure to announce the forthcoming WFNS 2019 INTERNATIONAL MEETING – organized by Serbian Neurosurgical Society (SNSS), Italian Society of Neurosurgery (SINch), and Southeast Europe Neurosurgical Society (SeENS)- to be held in Belgrade in March 21-24, 2019.

On behalf of SINch, I would like to kindly invite you to participate to this extraordinary event; this time the congress will feature an incredible exchange of scientific information at the highest level and will provide a glimpse over the most advanced neurosurgical treatments and care along with recent innovations. This sounds timely for the modern neurosurgical scenario, boosted by easier diffusion of ideas and methods throughout the new technologies. Innovation is the key for progress and no doubt that neurosurgery fits this requirement.

This Congress is going to take place in the “white city”, the scientific and multicultural capital of Serbia. This city is an emblematic example of optimization of results, through perseverance and devotion for working. All of us are strongly tied to the Belgrade group, and the past, present and future collaborations remain dedicated to build bridges of knowledge and experience for keeping a scientific, professional, academic and social networking.

I trust in the Serbian hospitality and in our friendship for having a memorable social and scientific moment.

Thank you.

**Prof. Dr. Paolo Cappabianca,**  
Italy  
SINCH Secretary  
Honorary President of the Meeting





## WELCOME ADDRESSES

Dear Colleagues, Friends, Ladies and Gentlemen,

It is my great pleasure and honor to announce and invite You to the WFNS 2019 INTERNATIONAL MEETING, hosted by Serbian Neurosurgical Society (SNSS), Italian Society of Neurosurgery (SINch) in conjunction with the Southeast Europe Neurosurgical Society (SeENS) and taking place in Belgrade, Serbia, on March 21<sup>st</sup> -24<sup>th</sup> 2019.

The Southeast Europe Neurosurgical Society (SeENS, [www.seens.eu](http://www.seens.eu)) has been founded in 2012. In a 5 years period (2012-2017) SeENS has become an affiliated member of the European Association of Neurosurgical Societies (EANS) and full member of the World Federation of Neurosurgical Societies (WFNS). SeENS has succeeded to rebuilt liasons and to make new once after a period of almost 20 years of poor communication between colleagues in the SE Europe region. Currently SeENS is gathering neurosurgeons from 14 countries of the Southeast Europe region and Turkey. SeENS is recognized as a very active Society organizing or co-organizing up to 10 events each year.

Co-organizing the WFNS INTERNATIONAL MEETING represents a great honor and privilege for our Society, but also highlights the confidence of WFNS in our Society being able to participate in organization of such an important event.

Concerning the attractiveness of invited speakers at this WFNS INTERNATIONAL MEETING we expect a strong academic and high social level event.

This Meeting will have the patronage and support of all important State and Academic Institutions of Republic of Serbia.

It is my great honor to invite You to participate at this WFNS INTERNATIONAL MEETING and to discover and enjoy the beautiful city of Belgrade, capital of Serbia, the only European city built on the confluence of two great rivers, a city that «never sleeps».

I cordially invite You to Belgrade, Serbia to experience and share noteworthy scientific and social moments during the WFNS INTERNATIONAL MEETING 2019.

Sincerely,

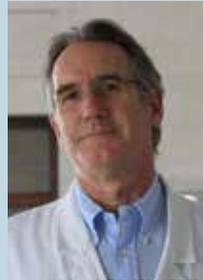
**Prof. Dr. Kresimir Rotim,**  
**Croatia**  
SeENS Honorary President  
Honorary President of the Meeting



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“The WFNS 2019 International Meeting - One world, one neurosurgery, Belgrade, Serbia, 21/03/2019-24/03/2019 has been accredited by the European Accreditation Council for Continuing Medical Education (EACCME®) with **29 European CME credits (ECMEC®s)**. Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity.”

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### EACCME® credits

**Each participant can only receive the number of credits he/she is entitled to according to his/her actual participation at the event once he/she has completed the feedback form.**

## SCIENTIFIC PROGRAM - SCHEME

21st, Thursday		22nd, Friday		23rd, Saturday		24th, Sunday	
Time Table	Activity	Time Table	Activity	Time Table	Activity	Time Table	Activity
08:00-08:15	Premeeeting Courses	08:00-08:15	Opening Remarks  Penary-1  COFFEE BREAK  GLOBAL NEUROSURGERY WOMEN IN NEUROSURGERY LUNCH  Main Topics-1 Main Topics-2 Main Topics-3 Main Topics-4  COFFEE BREAK  3D Course  Beta NeuroSim Center Simulation  WFNs SPINE COMMITTEE CONSENSUS CONFERENCE	08:00-08:15	Beta NeuroSim Center Simulation  Penary-2  COFFEE BREAK  Main Topics-5 Main Topics-6 Main Topics-7 Main Topics-8  LUNCH  YOUNG NEUROSURGEON FORUM OP-9 OP-10 OP-11 OP-12 OP-13 OP-14 OP-15 OP-16  Social Dinner	08:00-08:15	Main Topics-9 Main Topics-10 Main Topics-11 Main Topics-12  COFFEE BREAK  Penary-3  OP Best/Awards & Closing Ceremony
08:15-08:30		08:15-08:30		08:15-08:30		08:15-08:30	
08:30-08:45		08:30-08:45		08:30-08:45		08:30-08:45	
08:45-09:00		08:45-09:00		08:45-09:00		08:45-09:00	
09:00-09:15		09:00-09:15		09:00-09:15		09:00-09:15	
09:15-09:30		09:15-09:30		09:15-09:30		09:15-09:30	
09:45-10:00		09:45-10:00		09:45-10:00		09:45-10:00	
10:00-10:15		10:00-10:15		10:00-10:15		10:00-10:15	
10:15-10:30		10:15-10:30		10:15-10:30		10:15-10:30	
10:30-10:45		10:30-10:45		10:30-10:45		10:30-10:45	
10:45-11:00	10:45-11:00	10:45-11:00	10:45-11:00				
11:00-11:15	11:00-11:15	11:00-11:15	11:00-11:15				
11:15-11:30	11:15-11:30	11:15-11:30	11:15-11:30				
11:30-11:45	11:30-11:45	11:30-11:45	11:30-11:45				
11:45-12:00	11:45-12:00	11:45-12:00	11:45-12:00				
12:00-12:15	12:00-12:15	12:00-12:15	12:00-12:15				
12:15-12:30	12:15-12:30	12:15-12:30	12:15-12:30				
12:30-12:45	12:30-12:45	12:30-12:45	12:30-12:45				
12:45-13:00	12:45-13:00	12:45-13:00	12:45-13:00				
13:00-13:15	13:00-13:15	13:00-13:15	13:00-13:15				
13:15-13:30	13:15-13:30	13:15-13:30	13:15-13:30				
13:30-14:15	13:30-14:15	13:30-14:15	13:30-14:15				
14:00-15:15	14:00-15:15	14:00-15:15	14:00-15:15				
15:15-15:30	15:15-15:30	15:15-15:30	15:15-15:30				
15:30-15:45	15:30-15:45	15:30-15:45	15:30-15:45				
15:45-16:00	15:45-16:00	15:45-16:00	15:45-16:00				
16:00-16:15	16:00-16:15	16:00-16:15	16:00-16:15				
16:15-16:30	16:15-16:30	16:15-16:30	16:15-16:30				
16:30-16:45	16:30-16:45	16:30-16:45	16:30-16:45				
16:45-17:00	16:45-17:00	16:45-17:00	16:45-17:00				
17:00-17:15	17:00-17:15	17:00-17:15	17:00-17:15				
17:15-17:30	17:15-17:30	17:15-17:30	17:15-17:30				
17:30-17:45	17:30-17:45	17:30-17:45	17:30-17:45				
17:45-18:00	17:45-18:00	17:45-18:00	17:45-18:00				
18:00-19:15	18:00-19:15	18:00-19:15	18:00-19:15				
19:30-22:00	19:30-22:00	19:30-22:00	19:30-22:00				
	Opening Ceremony						



*Save  
the date*

96<sup>th</sup> Anniversary  
of Neurosurgery  
in Serbia  
81<sup>th</sup> Anniversary  
of Clinic for  
Neurosurgery,  
Belgrade, Serbia



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# **WFNS 2019 INTERNATIONAL MEETING**

**ONE WORLD, ONE NEUROSURGERY**

**March 21<sup>st</sup>-24<sup>th</sup> 2019  
Crowne Plaza, Belgrade**

**PRE-MEETING  
COURSES**

[wfnsbelgrade2019.talkb2b.net](http://wfnsbelgrade2019.talkb2b.net)





## WFNS PRE-MEETING COURSES

March 21<sup>st</sup>, 2019

- **EDUCATION**  
**Chairmen of the WFNS Education & Training Committee:**  
**Prof. Dr. Isabelle Germano and Prof. Dr. Hiroyuki Kinouchi**  
Venue: Hotel Crowne Plaza Belgrade
- **ENDOSCOPY**  
**Chairmen of the WFNS Neuroendoscopy Committee**  
**Prof. Dr. Mahmood Qureshi and Dr. Chandrashekhar E. Deopujari**  
Venue: University of Belgrade, Institute for Anatomy “Niko Miljanic”
- **SURGICAL ANATOMY**  
**Chairmen of the WFNS Neurosurgical Anatomy Committee:**  
**Prof. Dr. Vladimir Benes and Prof. Dr. Imad N. Kanaan**  
Venue: Hotel Crowne Plaza Belgrade



## WFNS EDUCATION PRE-MEETING COURSE

### “Updates in Brain Tumors and Trauma”

WFNS Education Committee Chair: Isabelle M. Germano, MD, MBA

7:30-8:00 Introductory remarks  
Franco Servadei, WFNS President  
Lukas Rasulic, Co-President of the Meeting  
Isabelle Germano, WFNS Education Committee Chair

### BRAIN TUMORS

Moderator: Lukas Rasulic and Isabelle Germano

*\*Each lecture will be followed with Q&A- discussion 10 min*

8:00-8:20	DNA methylation-based classification of CNS tumors	Manfred Westphal (Germany)
8:20-8:50	Molecular and other advanced imaging of brain tumors	Colin Watts (UK)
9:00-9:20	Awake craniotomy and intraoperative resection techniques	Isabelle Germano (USA)
9:30-9:50	Adjuvant treatments of primary brain tumors	Petar Vulekovic (Serbia)
<b>10:00-10:30</b>	<b>Coffee Break</b>	
10:30-10:50	Approaches to intraventricular tumors	Ekkard Kasper (Canada)
11:00-11:20	Skull base surgery: CSF Leak prevention and repair	Christian Matula (Austria)
11:30-11:50	Brain stem tumors	Miguel Arraez Sanchez (Spain)
12:00-12:20	Pediatric Tumors	Frederick Boop (USA)
12:30-12:50	TBA	
<b>13:00-14:00</b>	<b>Lunch</b>	

### BRAIN AND SPINE TRAUMA

Moderator: Franco Servadei and Mehmet Zileli

*\*Each lecture will be followed with Q&A- discussion 10 min*

14:00-14:20	Advanced images of TBI	Alexander Potapov (Russia)
14:30-14:50	Adult Head Trauma	Franco Servadei (Italy)
15:00-15:20	Pediatric head trauma	David Adelson (USA)
15:30-15:50	Trauma system evaluation in developing countries	Fatos Ollidashi (Albania)
<b>16:00-16:30</b>	<b>Coffee break</b>	
16:30-16:50	Brachial Plexus Surgery: early or delayed	Lukas Rasulic (Serbia)
17:00-17:20	Intra-operative CT Scan: always necessary	Maurizio Fornari (Italy)
17:30-17:50	Cervical Spine trauma	Mehmet Zileli (Turkey)
18:00-18:20	Cranial and spine missile injuries	Tariq Khan (Pakistan)
18:30-18:50	Spine trauma education for the young neurosurgeon	Francesco Costa (Italy)

**Venue: Hotel Crowne Plaza, Belgrade**

***This course has limited number of 40 participants based on the principle first come first served.***



## WFNS ENDOSCOPY PRE-MEETING COURSE

**WFNS Neuroendoscopy Committee Chair:  
Dr. Chandrashekhar E. Deopujari**

08.15-08.30	Welcome and Introduction of faculty Paolo Cappabianca, Chandrashekhar Deopujari	
<b>08.30-09.30</b>	<b>Instructional talks: Moderators: A. Grotenhuis, P. Cappabianca</b>	
08.30-08.45	Anatomy 1: Osteology of Nose, PNS and Midline Skullbase and importance of bony landmarks and blood supply	Milan Milisavljevic
08.45-09.00	Anatomy 2: Endoscopic anatomy for endonasal transsphenoidal approach and principles of reconstruction	Nishit Shah
09.00-09.15	Principles and Nuances of Endoscopic Pituitary surgery	Paolo Cappabianca
09.15-09.30	Cavernous Sinus and ICA management	Daniel Kelly
09.30-10.30	Dissection Demo	Nishit Shah, Domenico Solari, Daniel Kelly
10.30-12.30	Hands on for delegates Supervised by faculty	
12.30-13.15	Lunch	
<b>13.15- 14.45</b>	<b>Instructional talks: Moderators: H. Schroeder, C. Deopujari</b>	
13.15-13.30	Extended Approaches: corridors	Andre Grotenhuis
13.30-13.45	Endonasal approaches to Craniopharyngiomas	Davide Locatelli
13.45-14.00	Endonasal approaches to Meningiomas	Fred Gentili
14.00-14.15	Endonasal Chordomas and other clival lesions	Henry Schroeder
14.15-14.30	Endonasal Approach to CV junction	Domenico Solari
14.30-14.45	Demo dissection:ACF, Parasellar, Clivus	Mihajlo Milicevic, Henry Schroeder, Andre Grotenhuis
15.15-17.30	Hands on dissection for delegates	

**Venue: University of Belgrade, School of Medicine, Institute for Anatomy "Niko Miljanic"**

**This course has limited number of 20 participants, based on the principle first come first served.**



## WFNS NEUROSURGICAL ANATOMY COMMITTEE PRE-MEETING COURSE: „CRANIAL NERVES“

WFNS Neurosurgical Anatomy Committee, Chair:  
Prof. Dr. Vladimir Benes

07.55-08.00	Introduction	Vladimir Benes
08.00-09.30	Anatomy of cranial nerves	Thomas Santarius, Pablo Gonzales-Lopez
09.30-09.50	Relation of CN to brain vessels	Igor Lima Maldonado
09.50-10.10	Imaging of cranial nerves	Arya Nabavi
10.10-10.40	Break	
10.40-11.00	Spinal cord and nerve roots	Vicotr Hugo Perez, Kazadi Kalangu
11.00-11.20	Tumor cases and related anatomy	Eka Wahjoepramono
11.20-11.40	Cranial nerves in Dolenc approach	Iype Cherian
11.40-12.00	Optic nerves in Suprasellar Tumor surgery	Imad Kanaan
12.00-12.20	Preserving the olfactory nerve	Thomas Santarius
12.20-13.30	Lunch	
13.30-13.50	Neurovascular conflict	Keki Turel
13.50-14.10	Schwannomas	Roy Thomas Daniels
14.10-14.30	Ependymomas	Ekkehard Kasper
14.30-15.00	Posterior fossa meningiomas	Vladimir Benes
15.00-15.20	CC junction and foramen jugulare	Thomas Santarius
15.20-15.40	Intramedullary tumors	Julius July
15.40-16.00	Break	
16.00-18.00	Case discussion: <i>10 mins each</i>	

**Venue: Hotel Crowne Plaza Belgrade**

***This course has limited number of 40 participants, based on the principle first come first served.***



## PRE-MEETING COURSES

March 21<sup>st</sup>, 2019

- **GLOBAL NEURO**  
Prof. Dr. Fatos Olldashi (Albania), Prof. Dr. Andras Buki (Hungary),  
Prof. Dr. Maurizio Iacoangeli (Italy)  
Venue: Hotel Crowne Plaza Belgrade
- **AO SPINE**  
Prof. Dr. Alessandro Ducati  
Venue: Hotel Crowne Plaza Belgrade
- **SPINE INTRAOPERATIVE NAVIGATION**  
Venue: Hotel Crowne Plaza Belgrade



## GLOBAL NEURO SEMINAR - NEUROTRAUMA

March 21<sup>st</sup>, 2019

### Preliminary event program

#### Goal of the course

The Global Neuro Course—Neurotrauma covers the theoretical basis and practical principles for managing neurotrauma, addressing complications, and performing state-of-the-art reconstructive surgery.

#### Target participants

The course has been developed for surgeons who manage neurotrauma and reconstruction and who have a strong interest in these fields. It has a focus on interdisciplinary care and is appropriate for neurosurgeons, CME, ENT, trauma, and other surgeons.

#### Course objectives

By completing the course, participants will be better able to:

- Apply current classification systems and guidelines in neurotrauma
- Manage neurotrauma in adult, pediatric, and polytrauma patients
- Conduct advanced neuromonitoring
- Plan and perform appropriate triage strategies

#### Course description

This course covers the current best strategies and considerations for managing neurotrauma patients and is based on competencies defined in GlobalNeuro's curriculum. The content is delivered using multiple methods. Comprehensive lectures concentrate on the understanding of core material. Interactive case presentations further deepen this knowledge and enrich the discussion in trauma management and involve preselected cases submitted by participants in advance. Such case-based discussions link the lecture material with the clinical problems encountered in everyday practice.

#### Faculty

**Chair** Fatos Olldashi (Albania)

Andras Buki (Hungary)

Maurizio Iacoangeli (Italy)

#### International Faculty

Kenan Arnautovic (USA)

#### Regional faculty

Andreas Demetriades (UK)

Marek Czosnyka (UK)

Stefan Florian (Romania)

Angelo Pompuccii (Italy)

Francesco Biroli (Italy)

Arthur Xhumari (Albania)

#### National faculty

Djula Djilvesi (Serbia)

#### Special guest

Franco Servadei (Italy)

Lukas Rasulic (Serbia)

**Venue:** Hotel Crowne Plaza, Belgrade

**This course has limited number of 40 participants based on the principle first come first served.**



TIME	AGENDA ITEM	FACULTY
	<b>Introduction</b>	<b>Moderator: F Olldashi</b>
08:00–08:05	Welcome and why a neurotrauma course (in alternative: and why a neurotrauma course in eastern europe?)	Lukas Rasulic
08:05–08:10	Course structure and objectives	Maurizio Iacoangeli
08:10–08:15	Precourse assessment?	Andras Buki
	<b>Module 1 Basics of neurotrauma</b>	<b>Moderator: F Biroli</b>
08:20–08:40	The global burdeon of traumatic brain injury	Christian Matula
08:40–09:00	Management of polytrauma patient with TBI: Initial assessment, priorities and multidisciplinary treatment	Andreas Demetriades
09:00–09:30	Interactive case discussion: Polytrauma management <ul style="list-style-type: none"> <li>• case I: faculty</li> <li>• case II: pre-sent by participants, selected by faculty</li> </ul>	All Faculty
	<b>Module 2 Diagnostics, imaging, and pathologies</b>	<b>Moderator: Lukas Rasulic</b>
09:30–09:50	Basic imaging–advanced imaging in TBI	Iona Stefan Florian
09:50–10:20	Interactive case discussion: Reading the imaging <ul style="list-style-type: none"> <li>• case I: faculty</li> <li>• case II: pre-sent by participants, selected by faculty</li> </ul>	All Faculty
10:20–10:40	COFFEE BREAK	
	<b>Module 3 Hot Topics : Guidelines, Education, Complications and Outcome</b>	<b>Moderator: Djula Djilvesi</b>
10:40–11:00	Overview of current guidelines in TBI	Franco Servadei
11:00–11:30	Interactive case discussion: Adherence to guidelines, complex and complicated cases <ul style="list-style-type: none"> <li>• case I: faculty</li> <li>• case II: pre-sent by participants, selected by faculty</li> </ul>	All Faculty
11:30–11:50	TBI outcome: Importance of epidemiological studies	Francesco Biroli
11:50–12:00	Questions and discussion	All Faculty
12:00–13:00	LUNCH BREAK	
	<b>Module 4 ICP management and multimodal monitoring</b>	<b>Moderator: Kenan Arnautovic</b>
13:00–13:20	Pathophysiology in traumatic brain injury	Marek Czosnyka
13:20–13:40	Multimodal neuromonitoring and intensive treatment	Andras Buki
13:40–14:10	Intensive treatment <ul style="list-style-type: none"> <li>Interactive case discussion: Increased ICP (nonoperative cases) <ul style="list-style-type: none"> <li>• case I: faculty</li> <li>• case II: pre-sent by participants, selected by faculty</li> </ul> </li> </ul>	All Faculty
14:10–14:30	Decompressive Craniectomy-Indications and Technique	Angelo Pompucci
14:30–14:50	Cranioplasty complications	Maurizio Iacoangeli
14:50–15:20	Interactive case discussion: Increased ICP (operative cases) <ul style="list-style-type: none"> <li>• case I: faculty</li> <li>• case II: pre-sent by participants, selected by faculty</li> </ul>	All Faculty
15:20–15:30	Questions and discussion	All Faculty
15:30–15:50	COFFEE BREAK	
	<b>Module 5 Organization and education</b>	<b>Moderator: Arthur Xhumari</b>
15:50–16:10	Organization of neurotrauma care and the role of regional centers in neurotrauma	Fatos Olldashi
16:10–17:10	Role of education in neurotrauma: Round table with expert opinion	Moderator: Christian Matula
17:10–17:20	Global Neuro: present and future	Christian Matula
17:20–17:30	Questions and discussion	All faculty
17:30–17:40	Course evaluation	Chairs
17:40–17:45	Closure and certificates	All faculty



## AO SPINE ADVANCED SEMINAR - CERVICAL SPINE

**Chairperson: Alessandro Ducati, Turin, Italy**

**Faculty :**

**Giuseppe Barbagallo, Catania, Italy**

**Bernhard Meyer, Munich, Germany**

**Claudius Thome, Innsbruck, Austria**

**Stefano Romoli, Firenze, Italy**

Thursday, March 21, 2019		
TIME	AGENDA ITEM	LECTURER
13:00 - 13:10	Welcome and AOSpines presentation	Giuseppe Barbagallo
13:10 - 13:15	Presentation of the Seminar, Faculty and Objectives	Alessandro Ducati
13:15 - 13:35	Cervical Spine: pathology and reconstruction	Claudius Thomé
13:35 - 14:15	Presentation and discussion of 2 difficult cases	Claudius Thomé
14:15 - 14:35	When and how to approach primary and secondary tumors of the cervical spine?	Bernhard Meyer
14:35 - 15:15	Presentation and discussion of 2 difficult cases	Bernhard Meyer
15:15 - 15:45	COFFEE BREAK	
15:45 - 16:05	Deformity of the cervical spine secondary to degenerative and infectious diseases	Giuseppe Barbagallo
16:05 - 16:45	Presentation and discussion of 2 difficult cases	Giuseppe Barbagallo
16:45 - 17:05	Traumatic lesions of the cervical spine: the AO classification and its significance to treatment	Stefano Romoli
17:05 - 17:45	Presentation and discussion of 2 difficult cases	Stefano Romoli
17:45 - 18:00	Closing remarks, Certificates	Alessandro Ducati

**Venue: Hotel Crowne Plaza, Belgrade**

***This course has limited number of 40 participants based on the principle first come first served.***



## SPINE INTRAOPERATIVE NAVIGATION

March 21<sup>st</sup>, 2019 • 09:00 AM – 16:00 PM

Workshop presented by: Southeast Europe Neurosurgical Society (SeENS)

### Goal of the Course

The Intraoperative Spine Navigation Course covers theoretical and practical principles of using the Spinal Navigation system during spine fusion and instrumentation surgery.

### Course Description

This workshop seeks to fulfill the need of neurosurgeons, orthopedics, neurologists, physiatrists, and interested allied health practitioners to improve the fund of knowledge and to increase competence in evaluating, counseling, managing, and/or referring patients who present with low back spine complaints. The course will include lectures, question & answer discussions, along with practical part of using spinal navigation system and instrumentation on models.

### Course Objectives

At the conclusion of this workshop, participants will be able to optimally counsel, diagnose and manage patients with the following spine conditions: Lumbar stenosis, lumbar spondylolisthesis, failed back surgery syndrome, determine appropriate patients to refer to surgery, order appropriate diagnostic imaging familiarize with minimal invasive spine surgery with the use of spinal navigation.

### COURSE DIRECTOR

**Professor Krešimir Rotim, MD, PhD**  
Head, Department of Neurosurgery  
Sestre milosrdnice UHC, Zagreb, Croatia

### COURSE CO-DIRECTOR

**Asist. Prof. Tomislav Sajko, MD, PhD**  
Department of Neurosurgery  
Sestre milosrdnice UHC, Zagreb, Croatia

### FACULTY

**Professor Mehmet Zileli**  
WFNS Spine Committee Chairman  
Izmir, Turkey

**Professor Francesco Costa**  
Head Spine Oncology Surgery  
Humanitas Research Hospital, Milano, Italy

### FACULTY

**Mr. Csaba Eles**  
Product Manager Neurosurgery  
Budapest, Hungary



## PROGRAM

08:00–09:00	Registration	
09:00–09:10	Welcome and Announcements	
09:10–09:40	TBA	Professor Krešimir Rotim
09:40–10:10	TBA	Asist Professor Tomislav Sajko
10:10–10:40	TBA	Professor Mehmet Zileli
10:40–11:00	Discussion	
11:00–11:30	Coffee break	
11:30–12:00	TBA	Mr. Csaba Eles
12:00–12:30	TBA	
12:30–13:00	TBA	Professor Francesco Costa
13:00–13:30	Discussion	
13:30–14:00	Break	
14:00–15:30	Practical workshop	
15:30–16:00	Discussion and adjourn	

**Venue: Hotel Crowne Plaza, Belgrade**

***This course has limited number of 40 participants based on the principle first come first served.***



## BESTA NEUROSIM CENTER COURSE

### I<sup>ST</sup> International Neurosurgery Simulation Course at WFNS March 22<sup>nd</sup>-23<sup>rd</sup>, 2019

The WFNS, in collaboration with the Besta NeuroSim Center, are proud to announce the upcoming event as the first edition of the International Neurosurgery Simulation Course held within the WFNS International Meeting.

The Besta NeuroSim Center is the first and largest European simulation and training center entirely dedicated to neurosurgery. Virtual reality simulation with haptic feedback is endowed in the top-notch simulators available at the center in order to allow residents to rehearse and operate virtual human brain in a 3D virtual reality setting. This is probably the future of neurosurgical training, because it may allow residents to improve their skills in a safe environment, without harming patients because of the operator's inexperience.

In this proposed course, trainees can simulate both interventions carried out under the microscope (e.g. removal of a brain tumor) and neurosurgical operations which do not require the use of a microscope (e.g. EVD placement).

There are only 36 seats for the course, if you want to participate please contact ASAP:

Dr. Roberta Ayadi: [roberta.ayadi@istituto-besta.it](mailto:roberta.ayadi@istituto-besta.it)

Alessandra Rocca: [alessandra.rocca.1994@gmail.com](mailto:alessandra.rocca.1994@gmail.com)

Congress secretariat: [wfn2019belgrade@snss.org.rs](mailto:wfn2019belgrade@snss.org.rs)

**TOTAL COURSE HOURS: 8 (4 per day)**  
**TOTAL N° OF PARTICIPANTS: 36 (18 per day)**

Moreover, the Simulation Centre at the congress venue will be open from 09.00 am until 12.00 pm and from 02.00 pm until 06.00 pm to showcase the simulators and allow all residents and attending neurosurgeons to briefly try our simulators.

## THE SIMULATORS

### NEUROVR

It allows any neurosurgeon (resident or attending) to simulate in a virtual reality and three-dimensional environment, many neurosurgical interventions carried out under the operative microscope, such as the removal of brain tumours, or endoscopic procedures within the cerebral ventricles or transnasosphenoidal. NeuroVR is designed for training neurosurgeons, using the same principle of pilot training in aircrafts. This is the most accurate and realistic neurosurgical simulator available today. The system provides an automatic registration of each candidate's performance in order to see if his/her technical skills improves and track the learning curve.

### IMMERSIVE TOUCH

Immersive Touch can be used for planning interventions, so as to better define the times and access corridors to the areas to be treated, or more practical procedures on patients such as placing an external ventricular drain. The simulator provides a three-dimensional view of images completely in digital graphics and it is a "high fidelity" simulation system endowed with visual and tactile feedback.

### USIM

It is an intraoperative Ultrasound Simulation app that can be downloaded on any smartphone that becomes a virtual probe to simulate and rehearse intraoperative ultrasound on a library of cases that were previously acquired at C. Besta Institute.

### SURGICAL THEATER

CT and MRI scans of are used to reconstruct a patient-specific 3D model that helps neurosurgeons to pre-operatively evaluate and rehearse the operative case, decrypt the surgical anatomy and determine the best corridor to follow, practice different surgical procedures. It can be connected to the intraoperative navigation system in the OR and it allows case-specific rehearsal, performing some neurosurgical procedures (e.g. aneurysm clipping), along with post-operative debriefing.



## SCHEDULE

### DAY 1

Welcoming Presentation.

Presentation and introduction to simulation in neurosurgery and its latest developments. Presenters: Prof DiMeco, Prof Meling, Prof Tessitore, Prof Del Maestro, Prof Grotenhuis, and Prof Perin.

Four-hour course: 18 participants

After the course, the simulation centre is open to the public.

### DAY 2

Four-hour course: 18 participants

After the course, the simulation centre is open to the public.

### ACTIVITIES' SCHEDULE

The candidates will be asked to perform different tasks:

- Tumor (meningioma) debulking case at NeuroVR.

Different parameters will be assessed: percentage of tumor removed, percentage of brain parenchyma removed, strength applied to the tissue, volume of blood lost.

- External ventricular drain (EVD) at ImmersiveTouch

Different parameters will be assessed: number of attempts needed to reach the ventricles, accuracy in positioning the catheter.

- Visualization of an MCA left aneurysm with the aid of virtual reality glasses and clipping of that aneurysm at Surgical Theatre

- Identification of ten anatomical structures, displaying the brain in B-mode ultrasound at USim

The candidates will be evaluated in their ability to orientate using b-mode ultrasound, before and after the help of MRI images of the case

**Venue: Hotel Crowne Plaza, Belgrade**

***This course has limited number of 20 participants per day based on the principle first come first served.***



## WFNS SPINE COMMITTEE CONSENSUS CONFERENCE

Friday, March 22<sup>nd</sup>, 2019  
14.30-18.30

Chairmen of the WFNS Spine Committee:  
Prof. Dr. Mehmet Zileli  
Prof. Dr. Michael Fehlings  
Prof. Dr. Daniel Hoh

### “Lumbar Spinal Stenosis” consensus meeting

Meeting description: A half day program with 6 speakers summarizing the Milan meeting’s panel topics. Each speaker will summarize the previous speakers’ documents and place exact statements of our first decisions.

After 20 minutes talks, each topic will be discussed by all participants (15 minutes discussion).

Then the statements are voted by the WFNS spine committee members only. (5 minutes voting and declaration of the results)

### PROGRAM

- |   |                    |
|---|--------------------|
| <b>1: Natural course and diagnosis of lumbar spinal stenosis</b><br>Discussion<br>Declaration of the consensus statements   | Mehmet Zileli      |
| <b>2: Conservative treatment or follow up</b><br>Discussion<br>Declaration of the consensus statements                      | Maurizio Fornari   |
| <b>3: Percutaneous techniques for lumbar spinal stenosis</b><br>Discussion<br>Declaration of the consensus statements       | Scott C. Robertson |
| <b>4: Decompressive surgery for lumbar spinal stenosis</b><br>Discussion<br>Declaration of the consensus statements         | Francesco Costa    |
| <b>5: Fusion surgery for lumbar spinal stenosis</b><br>Discussion<br>Declaration of the consensus statements                | Salman Sharif      |
| <b>6: Mobility preserving surgeries for lumbar spinal stenosis</b><br>Discussion<br>Declaration of the consensus statements | Ben Roitberg       |

**Venue: Hotel Crowne Plaza, Belgrade**



*Save  
the date.*

*96<sup>th</sup> Anniversary  
of Neurosurgery  
in Serbia  
81<sup>th</sup> Anniversary  
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# **WFNS 2019 INTERNATIONAL MEETING**

## **ONE WORLD, ONE NEUROSURGERY**

**March 21<sup>st</sup>-24<sup>th</sup> 2019  
Crowne Plaza, Belgrade**

**FINAL  
SCIENTIFIC PROGRAM**

**\*Final scientific program is subject to change.**





**Thursday, March 21<sup>st</sup>, 2019**

**PRE-MEETING COURSES**

<b>07:30-18:50</b>	<b>WFNS Education Pre-meeting Course</b> Chair: Isabelle Germano Venue: Crowne Plaza	<b>Hall 6</b>
<b>07.55-18.00</b>	<b>WFNS Neurosurgical Anatomy Committee Pre-meeting Course</b> Chair: Vladimir Benes Venue: Crowne Plaza	<b>Hall 5</b>
<b>08.15-17.30</b>	<b>WFNS Endoscopy Pre-meeting Course</b> Chairs: Chrandrashekhar Deopujari and Paolo Cappabianca Venue: University of Belgrade, Institute for Anatomy "Niko Miljanic"	
<b>08.00-17.45</b>	<b>Global Neuro Seminar</b> Chairs: Fatos Olldashi, Andras Buki, Maurizio Iacoangeli Venue: Crowne Plaza	<b>Hall 7</b>
<b>09.00-16.00</b>	<b>Spine Intraoperative Navigation</b> Course director: Kresimir Rotim Venue: Crowne Plaza	<b>Hall 2</b>
<b>13.00-18.00</b>	<b>AO Spine Advanced Seminar - Cervical Spine</b> Chair: Alessandro Ducati Venue: Crowne Plaza	<b>Hall 4</b>
<b>19:30-22:00</b>	<b>OPENING CEREMONY AND WELCOME RECEPTION</b> Venue: Hotel Crowne Plaza	<b>Hall 1</b>



## Friday, March 22<sup>nd</sup>, 2019

08:00-08:15 Opening remarks

Hall I

### PLENARY SESSION I

Chairs: Lukas Rasulic , Marco Cenzato

Hall I

08:15-08:30 **Surgical treatment of intramedullary spinal cord tumor: experience of more than 750 cases**  
Nikolay Konovalov, Russia

08:30-08:45 **From simulation through cadaver training to patient care: a safe way to educate spinal surgeons**  
Karl Schaller, Switzerland

08:45-09:00 **Visual function preservation in microsurgical management of parasellar meningiomas**  
Francesco Tomasello, Italy

09:00-09:15 **The revolution of DAVF treatment in the neurovascular section**  
Ling Feng, China

09.15-09:30 **Neurosurgical management of craniopharyngiomas**  
Rudolf Fahlbusch, Germany

09.30-09.45 **Problems of geriatric spine surgery**  
Mehmet Zileli, Turkey

09.45-10.00 **Coffee break**

### 10.00-12.45 GLOBAL NEUROSURGERY SESSION

Moderators: Gail Rosseau, Franco Servadei

PANELISTS: Graham Fieggen, Miroslav Vukic, Edgardo Spagnuolo, Amr El Shawarby, Ioan Stefan Florian

### WOMEN IN NEUROSURGERY

Chairs: Souad Bakhti, Ling Feng

12.45-12.55 **Association of opium addiction with rupture of intracranial aneurysms**  
Samira Zabihyan, Iran

12.55-13.05 **Pineal region tumors: surgical strategy**  
Danica Grujicic, Serbia

13.05-13.15 **Pitfalls and avoidance of complications in neuroendoscopy**  
Najia El Abbadi, Morocco



- 13.15-13.25 Multidisciplinary treatment of brain metastases**  
Isabelle Germano, USA
- 13.25-13.35 Women in neurosurgery: a young italian neurosurgeon**  
Teresa Somma, Italy
- 13.35-13.45 Men's Contribution for Development of WINS**  
Hari Chandran, Malaysia
- 13:45-14:30 Lunch**

**13.45-15.15 3D SPECIAL LECTURES \***

Hall 12

**Surgery of Brainstem Cavernous Angiomas**  
Eka J Wahjoepramono, Indonesia

**Surgical approaches for tumors in the 3rd and 4th ventricles**  
Thomas Santarius, UK

**Microvascular Decompression and cranial nerves in posterior fossa**  
Julius July, Indonesia

*\* Lunch will be served within the session*

**14.30-18.30 WFNS SPINE COMMITTEE CONSENSUS CONFERENCE  
"Lumbar Spinal Stenosis"**

Executive Board Room

MT-I

**PEDIATRICS**

Chairs: Concezio Di Rocco, Graham Fieggen

Hall I

- 14.30-14.45 Shuntscope in pediatric patients**  
Joachim Oertel, Germany
- 14.45-15.00 Pituitary Adenomas in pediatric age: an endoscopic approach**  
Davide Locatelli, Italy
- 15.00-15.15 Breakthroughs in Medulloblastoma management. Can it be cured?**  
Alexandru-Vlad Ciurea, Romania
- 15.15-15.30 Surgical approach to thalamic tumors**  
Memet Özek, Turkey
- 15.30-15.45 Spinal tumors in children**  
Concezio Di Rocco, Germany
- 15.45-16.00 Rosette forming glioneuronal tumors of the 4th ventricle**  
Nejat Akalan, Turkey



- 16.00-16.15 Management of Spina Bifida**  
Graham Fieggen, South Africa
- 16.15-16.30 Long-term surgical results on craniopharyngiomas**  
Abdeslam El Khamlichi, Morocco
- 16.30-16.45 Affordable (Paediatric) Neurosurgery in the third world**  
Alistair Jenkins, UK
- 16:45-17:00 Many a slip between the cup and the lip: Management dilemmas in congenital craniovertebral junction anomalies**  
Sanjay Behari, India
- 17.00-17.15 Coffee break**

**MT-2**

## **TUMOR**

**Chairs: Miguel Arraez, Kenan Arnautovic**

**Hall 2**

- 14.30-14.45 Surgical management of petrous apex lesions**  
Miguel Arraez, Spain
- 14.45-15.00 Endonasal approach to craniopharyngiomas**  
Luigi Cavallo, Italy
- 15.00-15.15 Meningiomas of the CP angle**  
Panagiotis Selviaridis, Greece
- 15.15-15.30 Cranio-orbital pretemporal skull base approach to sellar/juxtaseilar lesions**  
Kenan Arnautovic, USA
- 15.30-15.45 Long-term morbidity of meningioma**  
Tiit Mathiesen, Denmark
- 15.45-16.00 Management of foramen magnum Meningioma**  
Najia El Abbadi Bendahane, Morocco
- 16.00-16.15 High-grade gliomas surgery: combined fluorescence, IOUS and CEUS experience**  
Natale Francaviglia, Italy
- 16.15-16.30 Management of giant pituitary adenomas**  
Nicolas Foroglou, Greece
- 16.30-16.45 Olfactory groove meningiomas - results of transcranial resection in relation to imaging-based selection criteria for endoscopic approach**  
Thomas Santarius, UK
- 16.45-17.00 Endonasal transsphenoidal surgery for pituitary tumors**  
Julius July, Indonesia
- 17.00-17.15 Coffee break**



MT-3

## NEW HORIZONS

Chairs: Ihsan Solaroglu, Amir Samii

Hall 3

- 14:30-14:45 Arachnoid membrane in meningioma surgery**  
Vladimir Benes, Czech Republic
- 14:45-15:00 Intraneural ganglion cysts**  
Robert Spinner, USA
- 15:00-15:15 First Experiences with a Dedicated Hybrid OR for Spine Surgery**  
Amir Samii, Germany
- 15:15-15:30 Cerebral Revascularization Surgery: Techniques And Applications**  
Yong Kwang Tu, Taiwan
- 15:30-15:45 Posterior Fossa Pilocytic Astrocytomas**  
Domenico D' avella, Italy
- 15:45-16:00 Anticoagulation and Hemostasis in Neurosurgery**  
Christopher Loftus, USA
- 16:00-16:15 Extent of surgical resection of malignant astrocytoma of the spinal cord**  
Vincenzo Paterno, Germany
- 16:15-16:30 The surgery of intramedullary spinal cord tumors in the era of neuromonitoring**  
Francesco Sala, Italy
- 16:30-16:45 Overcoming Fracture Progression in Complicated Kümmell's Disease: Single-stage Transpedicular Vertebral Body Reconstruction**  
Se-Hoon Kim, Korea
- 16:45-17:00 Comprehensive Management of Spinal Cord Lesions**  
Manfred Westphal, Germany
- 17:00-17:15 Coffee break**



MT-4

## VASCULAR

Chairs: Antonino Raco, Abdessamad El Ouahabi

Hall 4

- 14.30-14.45 New Technologies in Aneurysm Surgery**  
Jorge Mura, Chile
- 14.45-15.00 Surgery of complex aneurysms**  
Edgardo Spagnuolo, Uruguay
- 15.00-15.15 Management of ruptured intracranial aneurysms in the Post Isat era: current indications and place of microsurgical clipping**  
Abdessamad El Ouahabi, Morocco
- 15.15-15.30 Giant aneurysms multimodal treatments**  
Marco Cenzato, Italy
- 15.30-15.45 Future challenges of vascular microsurgery**  
Kresimir Rotim, Croatia
- 15.45-16.00 New endovascular aneurysm technology**  
Daniel Hoit, USA
- 16.00-16.15 The Role of Intraoperative MRI in Neurovascular Surgery: Our Experience**  
Antonino Raco, Italy
- 16.15-16.30 ICA blister aneurysms**  
Torstein Meling, Switzerland/Norway
- 16.30-16.45 Surgical treatment of cerebral AVM – cohort from 2005-4/2018**  
Martin Smrcka, Czech Republic
- 16.45-17:00 TBA**  
Gopal Raman Sharma, Nepal
- 17:00-17:15 Coffee break**

09.00-18.00 **BESTA NEUROSIM CENTER SIMULATION**

Hall 7



## KEYNOTE LECTURES & ORAL PRESENTATIONS

### TUMOR (OP-1)

Chairs: Maurizio Iacoangeli, Danica Grujicic

Hall I

- 17.15-17.30 KEYNOTE LECTURE: Skull base and cranio-facial approaches to minimize approach-related morbidity for intradural neoplastic and vascular lesions**  
Maurizio Iacoangeli, Italy
- 17.30-17.45 KEYNOTE LECTURE: Transcallosal approach to midline tumors**  
Danica Grujicic, Serbia
- 17.45-18.00 KEYNOTE LECTURE: Surgical treatment of the lateral ventricle tumors**  
Vincenzo D'Angelo, Italy
- 18:00-18:10 Factors affecting the length of survival of patients with glioblastoma**  
Vesna Nikolov, Serbia
- 18:10-18:20 GRANT WINNER: Enhanced B7-H4 expression in gliomas with low PD-L1 expression identifies an immune-desert phenotype**  
Di Chen et al., China
- 18:20-18:26 Gemistocytic astrocytomas: A 15-year, multicenter study**  
Atef Ben Nsir et al., Tunisia
- 18:26-18:32 Results following transsphenoidal endoscopic pituitary surgery – a retrospective analysis in regards to the learning curve, a single department experience**  
Aleksandar Stanimirovic, et al., Serbia
- 18:32-18:38 Single cell sequencing identifies cellular heterogeneity in human microglia**  
Adam Young et al., UK
- 18:38-18:44 Role of trans-nasal endoscopic surgery for suprasellar meningiomas**  
Salman Mohammed Shaikh et al., India
- 18:44-18:50 Identification of prognostic factors for survival in series of 110 patients with newly diagnosed glioblastoma – A single-center observational study.**  
Rosanda Ilić et al., Serbia
- 18:50-18:56 Long term outcome and prognostic factors in adults with medulloblastoma**  
Claudia Pasquali et al., Italy
- 18:56-19:02 Remote cerebellar hemorrhage following surgery for supra-tentorial pathology**  
Rajesh Meena et al., India
- 19:02-19:08 The evolution of surgical treatment strategies for olfactory groove meningiomas: Historic and contemporary open surgical approaches and proposal of new classification system**  
Farhan Mirza et al., US
- 19:08-19:14 Differential DNA methylome and gene expression analysis of growth hormone pituitary adenomas revealing the correlation of cell-cell adhesion and tumor invasiveness**  
Silin Wu et al., China



**SPINE (OP-2)**  
**Chairs: Tito Arcadio Perilla Cepeda, Reza Ghadirpour**

Hall 2

- 17.15-17.30 KEYNOTE LECTURE: Spinal intramedullary tumors**  
Hakan Emmez, Turkey
- 17.30-17.45 KEYNOTE LECTURE: Intraoperative monitoring in spinal cord tumor surgery**  
Reza Ghadirpour, Italy
- 17.45-18.00 KEYNOTE LECTURE: Management of Complications after transpedicular fixations**  
Tito Arcadio Perilla Cepeda, Colombia
- 18:00-18:10 GRANT WINNER: Use of intra-facet fixation in lumbar spine**  
Tossif Ghodiwala et al., Russia
- 18:10-18:16 Cervical radiculopathy vs. carpal tunnel syndrome-the shared territory;**  
**Miljan Bulatović-Clinical Hospital Centre Zemun-Belgrade, Belgrade, Serbia**  
Miljan Bulatović et al., Serbia
- 18:16-18:22 A new titanium alloy interbody cervical cage: preliminary reports**  
Natale Francaviglia et al., Italy
- 18:22-18:28 Intraoperative neurophysiological monitoring and clinical assessment in patients with anterior cervical discectomy and fusion**  
Vedrana Karan et al., Serbia
- 18:28-18:34 Anatomic and radiologic characteristics of the craniocervical junction and their significance for the choice of neurosurgical approach**  
Marina Milic et al., Serbia
- 18:34-18:40 Tandem spinal stenosis; Searching for the best clinical approach: Case report and Review of literature**  
Marko Samardzic et al., Serbia
- 18:40-18:46 Clinico-radiological outcome assesment of minimal invasive transforaminal lumbar interbody fusion for spondylolisthesis**  
Deepak Bhangale et al., India
- 18:46-18:52 Surgical technique for cervical pedicle screw insertion using O-Arm navigation plus mini screws**  
Nobuyuki Shimokawa et al., Japan
- 18:52-18:58 Lumbar Angiolipoma Removal Via Percutaneous Endoscopic Interlaminar Approach,**  
Márcio Robertti, Ramalho da Cunha et al., Brazil
- 18:58-19:04 Are we punishing the innocent: Relevance of Ganglion preservation in the cases of craniovertebral anomalies with C1/C2 instrumentation and joint manipulation?**  
Arun Srivastava et al., India
- 19:04-19:10 Severity of the spinal stenosis – A novel classification method**  
Milenko Stanic et al., Serbia
- 19:10-19:16 Is it necessary to plate after multilevel anterior cervical discectomy and fusion?**  
Marios Theologou et al., Greece



**VASCULAR (OP-3)**  
**Chairs: Marco Fontanella, Harjinder Bhatoe**

Hall 3

- 17.15-17.30 KEYNOTE LECTURE: Cerebral Cavernomas: treatments and problems**  
Marco Fontanella, Italy
- 17.30-17.45 KEYNOTE LECTURE: Microsurgery for brain arteriovenous malformations**  
Harjinder Bhatoe, India
- 17.45-18.00 KEYNOTE LECTURE: Neurovascular conflicts**  
Barbara Masotto, Italy
- 18:00-18:10 GRANT WINNER: Predicting long-term outcomes after poor-grade aneurysmal subarachnoid hemorrhage using machine learning algorithms**  
Bing Zhao et al., China
- 18:10-18:20 GRANT WINNER: The optimal operation time for rapid progression pediatric Moyamoya disease**  
Wenjun Shen et al., China
- 18:20-18:26 Thrombolysis in acute ischemic stroke patients with Tenecteplase in a developing nation: Challenges and experience**  
Neeraj Basantani et al., India
- 18:26-18:32 Cerebral aneurysm progression: smooth muscle cell, endothelial cell and extracellular matrix**  
Peixi Liu et al., China
- 18:32-18:38 Transciliary keyhole approach for middle cerebral artery aneurysms**  
Abhay Singh et al., India
- 18:38-18:44 The application of hybrid surgery in the treatment of brain arteriovenous malformation**  
Jianping Song et al., China
- 18:44-18:50 Neural network in neurovascular surgery: first experience in vasospasm prediction**  
Aleksi Trubkin et al., Russia
- 18:50-18:56 Non-endoscopic minimally invasive evacuation of intracerebral haematoma**  
Tomaz Velnar et al., Slovenia
- 18:56-19:02 Internal maxillary artery bypass for the treatment of complex middle cerebral artery aneurysms**  
Long Wang et al., China
- 19:02-19:08 Microsurgical resection of Intracranial arteriovenous malformation: Result in 197 patients**  
Ismail Yuca et al., Turkey
- 19:08-19:14 Patterns and predictors of in- hospital aneurysmal rebleed**  
Ranjit Rangnekar et al., India



## TUMOR (OP-4)

Chairs: Tomislav Sajko, Giuseppe Talamonti

Hall 4

- 17:15-17:30 **KEYNOTE LECTURE: Temporal DNET: seizure and functional outcome**  
Tomislav Sajko, Croatia
- 17:30-17:45 **KEYNOTE LECTURE: Neuroendoscopy and combined therapy in ventricular tumors**  
Piero Andrea Oppido, Italy
- 17:45-18:00 **KEYNOTE LECTURE: Endoscopic endonasal approach to treat craniopharyngiomas**  
Diego Mazzatenta, Italy
- 18:00-18:10 **GRANT WINNER: Endoscopic endonasal and supraorbital keyhole surgery for the management of anterior skull base meningiomas: Overcoming the barriers between above and below approaches**  
Davide Nasi et al., Italy
- 18:10-18:16 **New trends in glioblastoma treatment in Vojvodina Province (Serbia): progress and achievements**  
Igor Djan et al., Serbia
- 18:16-18:22 **Surgical outcome in intracranial lower cranial nerves (LCNs) schwannomas. Recent experience**  
Vincenzo Fontana et al., Italy
- 18:22-18:28 **Hydatid cyst, an extinct, rare entity (we hope so) – single centre experience**  
Adrian - Mircea Furtos et al., Romania
- 18:28-18:34 **Pediatric glioblastomas: study of a Tunisian surgical series**  
Ghassen Gader et al., Tunisia
- 18:34-18:40 **Foramen magnum meningiomas: clinical presentation and surgical management**  
Mario Giarletta et al., Italy
- 18:40-18:46 **Middle cerebellar peduncle: niche for a spectrum of high grade lesions**  
Jaskaran Singh Gosal et al., India
- 18:46-18:52 **Endoscopic treatment of the 3rd ventricle colloid cyst, total resection is real**  
Jalal Najjar et al., Turkey
- 18:52-18:58 **Deep white matter ischemia after awake surgery for gliomas**  
Yoshitaka Narita et al., Japan
- 18:58-19:04 **Supratentorial cerebellar liponeurocytoma, a benign tumor with malignant features**  
Alejandro Feria et al., USA
- 19:04-19:10 **Surgical management of thalamic glial lesion: a retrospective study of 60 patients**  
Marco Paolo Schiariti et al., Italy
- 19:10-19:16 **Surgical treatment of Jugular Foramen Schwannoma: Surgical approaches and techniques**  
Shao-bo Su et al., China



## TUMOR (OP-5)

Chairs: Milos Jokovic, Ibrahim Omerhodzic

Hall 5

- 17:15-17:30 **KEYNOTE LECTURE: Low grade gliomas - follow up, radical surgery, radiotherapy, chemotherapy, or...**  
Milos Jokovic, Serbia
- 17:30-17:45 **KEYNOTE LECTURE: Cerebellar gliomas**  
Ibrahim Omerhodzic, Bosnia and Herzegovina
- 17:45-18:00 **KEYNOTE LECTURE: Clinoid area meningiomas, lessons from 48 personal cases**  
Mentor Petrela, Albania
- 18:00-18:10 **GRANT WINNER: The accuracy and complications of frame-based stereotactic brain biopsy - The value of histopathological analysis**  
Bojan Jelaca et al., Serbia
- 18:10-18:16 **Controversies in the management of vestibular schwannomas**  
Shankar Athawale et al., India
- 18:16-18:22 **Recent evidence in diagnosis and treatment of meningiomas: A brief systematic review**  
Naci Balak et al., Turkey
- 18:22-18:28 **Prognostic factors in vestibular schwannoma surgery for hearing function preservation**  
Marco Cancedda et al., Italy
- 18:28-18:34 **Is Medulloblastoma associated with systemic immunomodulation? - A comparative analysis of pre-operative inflammatory markers**  
Varidh Katiyar et al., India
- 18:34-18:40 **Prognostic factors associated with pituitary microscopic dural invasion**  
Ronald Murambi et al., Australia
- 18:40-18:46 **Atypical intracranial meningiomas: a case series analysis of outcomes and treatment modalities**  
Filip Vrban et al., Croatia
- 18:46-18:52 **Ruptured Intracranial Dermoid Cysts: A Retrospective Review**  
Nishanth Sadashiva et al., India
- 18:52-18:58 **Local selective chemotherapy in recurrent glioblastoma with doxorubicine  
First clinical experience with 2 cases.**  
Tatiana Rusu et al., Moldova
- 18:58-19:04 **Completely extraarachnoidal dissection for giant acoustic schwannomas:  
Institutional experience**  
Venkata Ramesh Chandra Vemula et al., India
- 19:04-19:10 **Improving efficiency of initial management in neuro-oncology through implementation of a digital referral process**  
Mei Yin Wong et al., UK
- 19:10-19:16 **Surgical treatment of intramedullary ependymomas in the intraoperative neurophysiological monitoring era**  
Giampietro Pinna et al., Italy



## SPINE (OP-6)

Chairs: Nebojsa Stojanovic, Massimiliano Visocchi

Hall 6

- 17.15-17.30 **KEYNOTE LECTURE: Indications for reconstructive surgery of the cervical spine**  
Nebojsa Stojanovic, Serbia
- 17.30-17.45 **KEYNOTE LECTURE: 360° surgical approaches to the craniovertebral junction: a fearless revolution around the skull base**  
Massimiliano Visocchi, Italy
- 17.45-18.00 **KEYNOTE LECTURE: Saggital Balance and importance for spine surgery**  
Onur Yaman, Turkey
- 18:00-18:10 **GRANT WINNER: Short term outcome of surgical treatment of patients with lumbar disc herniation**  
Miroslav Fimic et al., Serbia
- 18:10-18:16 **Surgical management of subaxial cervical fractures: Our experience**  
Geldon Fejzo et al., Albania
- 18:16-18:22 **Propofol infusion versus combination of isoflurane with nitroglycerine for controlled hypotensive anesthesia in spine surgery: A randomized controlled study**  
Mohamed Gaber et al., Egypt
- 18:22-18:28 **Surgical management of upper cervical fractures: Our experience**  
Irgen Hodaj et al., Albania
- 18:28-18:34 **Transforaminal endoscopic discectomy for L5-S1 disc herniations- is it a myth or reality?**  
Karlo Houra et al., Croatia
- 18:34-18:40 **Intramedullary spinal cavernoma about a series of 7 cases**  
Ahmed Maatoug et al., Tunisia
- 18:40-18:46 **Dynamic stabilization of the lumbar spine in high biomechanic demand individuals: analysis of a series of 70 military patients**  
Carlos Roberto Massella Junior et al., Brazil
- 18:46-18:52 **Evaluation of surgical procedures for thoracolumbar body fracture due to high-energy trauma**  
Hiroaki Matsumoto et al., Japan
- 18:52-18:58 **Lateral extended TLIF using a novel apophyseal resting TLIF cage: three year experience**  
Ronald J. Sabitzer et al., Austria
- 18:58-19:04 **Herniated discs. Open microsurgical or endoscopic approach? What is better for the surgeon and what is better for the patient?**  
Mikhail Safronov et al., Russia
- 19:04-19:10 **Long-term outcome of lumbar disc surgery: five years follow up**  
Mohamed Shabaan et al., Egypt
- 19:10-19:16 **Water-sports related cervical injuries- last summer season experience of 5 cases**  
Rajeev Sharma et al., India



## VASCULAR (OP-7)

Chairs: Eka J Wahjoepramono, Talat Kiriş

Hall 7

- 17.15-17.30 KEYNOTE LECTURE: Wisdom in management of Giant Aneurysms**  
Eka J Wahjoepramono, Indonesia
- 17.30-17.45 KEYNOTE LECTURE: Clipping Strategies in Complex Aneurysms**  
Talat Kiriş, Turkey
- 17.45.-18.00 KEYNOTE LECTURE: Surgery of MCA Aneurysm**  
Abdessamad El Azhari, Morocco
- 18:00-18:10 GRANT WINNER: Squalenoyl adenosine nano-assemblies enhance cerebral blood flow in filament perforation SAH model in mice**  
Ilkay Isikay et al., Turkey
- 18:10-18:20 GRANT WINNER: Perimesencephalic subarachnoid haemorrhage (PMSAH): Proposal of modified UK rinkel criteria**  
Amad Khan et al., UK
- 18:20-18:26 How to manage and reduce the risk of Intraoperative Rupture of Intracranial Aneurysms**  
Said, Ait Benali et al., Morocco
- 18:26-18:32 Gamma knife radiotherapy for arteriovenous malformations located in midbrain region of the brain**  
Atmaranjan Dash et al., India
- 18:32-18:38 Management of ruptured intracranial aneurysms in the Post Isat era: current indications and place of microsurgical clipping**  
Abdessamad EL Ouahabi et al., Morocco
- 18:38-18:44 Intracranial artery tortuosity: association with risk of aneurysm rupture**  
Kornelia Klis et al., Poland
- 18:44-18:50 Prognosis value of ICH Score in patients with intracerebral hemorrhage: first study analysis in the Moroccan population**  
Salma Mrichi et al., Morocco
- 18:50-18:56 Outcome analysis in operated cases of Distal anterior cerebral artery aneurysms; An Institutional experience in forty consecutive cases**  
Bimal Sahoo et al., India
- 18:56-19:02 Intracranial dural arteriovenous fistulas with cortical venous drainage: Gamma knife radiosurgery as the treatment of choice**  
Hardik Sardana et al., India
- 19:02-19:08 Clipping versus coiling, in posterior circulation intracranial aneurysms: A meta-analysis**  
Eleni Tsianaka et al., Kuwait
- 19:08-19:14 Evaluation of wall structure corresponding to high-resolution vessel wall imaging in unruptured intracranial aneurysms**  
Kai Quan et al., China



## TRAUMA (OP-8)

Chairs: Stefano Signoretti, Imad Talahma

Hall 8

- 17.15-17.30 KEYNOTE LECTURE: Post-traumatic cranioplasty: Time for a Consensus Conference**  
Corrado Iaccarino, Italy
- 17.30-17.45 KEYNOTE LECTURE: Correct decompressive craniectomy when no ICP monitoring is available**  
Imad Talahma, Palestine
- 17.45-18.00 KEYNOTE LECTURE: Avoidance of complications in spine trauma**  
Keki Turel, India
- 18:00-18:10 GRANT WINNER: Prognostic computed tomography scores in traumatic brain injury**  
Muhammad Rafay et al., Pakistan
- 18:10-18:20 GRANT WINNER: Diagnostic of mild traumatic brain injury – Is there anything more we can do?**  
Mladen Karan et al., Serbia
- 18:20-18:26 Blood glucose levels for prediction of absence of intracranial injuries in minor head trauma**  
Georgios Alexiou et al., Greece
- 18:26-18:32 Efficacy of single burr hole for the treatment of chronic subdural hematoma: An institutional study of 150 cases**  
Sudhendoo Babhulkar et al., India
- 18:32-18:38 Single burr-hole surgery with or without membranectomy for chronic subdural hematoma**  
Milena Roganovic et al., Montenegro
- 18:38-18:44 How can we increase the efficacy of DC? (Fresh Cadaver Study)**  
Andras Csokay et al., Hungary
- 18:44-18:50 Missile traumatic adult brain injury in the north of Palestine: management and outcomes of 380 patients**  
Mazhar Darwazeh et al., Palestine
- 18:50-18:56 Chronic traumatic encephalopathy (CTE): Causes, diagnosis, role of the neurosurgeon and medico-legal implications**  
Domenic Esposito et al., UK
- 18:56-19:02 Controversies on post traumatic hydrocephalus. A retrospective study and review of the literature**  
Charalampos Gatos et al., Greece
- 19:02-19:08 The Dubrava Model- a novel approach in treating acutely neurotraumatized patients in rural areas, a proposal for management**  
Darko Oreskovic et al., Croatia
- 19:08-19:14 Improved outcomes in chronic subdural hematoma with etizolam: Magic Pill?**  
Saraswati S. Shenoy et al., India



08.00-19.00

**WFNS 2019 BELGRADE E-POSTER SESSION**

Area for Poster presentation

17.30-19.00

**WFNS 2019 BELGRADE POSTER EVALUATION  
AND DISCUSSION SESSION**

Moderators: Martin Smrcka, Petar Vulekovic, Luigi Cavallo

Area for Poster presentation



**Saturday, March 23<sup>rd</sup>, 2019**

**PLENARY SESSION 2**

**Chairs: Kresimir Rotim, Francesco Tomasello**

**Hall I**

- 08:00-08:15**    **Reconstructive Neurosurgery After TBI**  
Alexander Potapov, Russia
- 08:15-08:30**    **Historical Reflections on Nerve Surgery Since World War II**  
David Kline, USA
- 08:30-08:45**    **Clipping aneurysms - lessons I have learnt after over 1000 operated aneurysms**  
Ioan Stefan Florian, Romania
- 08:45-09:00**    **Lateral skull base meningiomas: Philosophy and Techniques**  
Jacques Morcos, USA
- 09:00-09:15**    **Endoscopic endonasal approach for anterior fossa meningiomas**  
Paolo Cappabianca, Italy
- 09.15-09:30**    **Craniocervical junction chordomas**  
Sebastien Froelich, France
- 09:30-09:45**    **Soccer and Neurosurgery**  
Nelson Oyesiku, USA
- 09:45-10:00**    **New insights into the surgical management of diffuse low-grade gliomas**  
Hugues Duffau, France
- 10:00-10:15**    **Education in spine surgery in the XXI century**  
Jesus Lafuente, Spain
- 10.15-10.30**    **Brain Mapping for Tumors in Eloquent Areas**  
Isabelle Germano, USA
- 10:30-10:45**    **Growth Patterns of Pituitary Adenoma with Parasellar Growth: Anatomy, Surgery and Results**  
Engelbert Knosp, Austria
- 10:45-11:00**    **Coffee break**



**MT-5**

## **HOW TO IMPROVE QUALITY OF PUBLICATIONS**

**Chairs: Tiit Mathiesen, Nelson Oyesiku**

**Hall 1**

- 11:00-11:15**    **What is the editor looking for**  
Tiit Mathiesen, Denmark
- 11:15-11:30**    **Randomized controlled trials in neurosurgery: an assessment of discontinuation and publication outcomes**  
Andreas Demetriades, UK
- 11:30-11:45**    **Publication Quality Improvement by Plagiarism Detection. Acta Clinica Croatica Experience**  
Kresimir Rotim, Croatia
- 11:45-12:00**    **The state of the journal Neurosurgery**  
Nelson Oyesiku, USA
- 12:00-12.15**    **When will I recommend publication of a single case**  
André Grotenhuis, Netherlands
- 12:15-12.30**    **How to convince reviewer?**  
Ihsan Solaroglu, Turkey
- 12:30-12:45**    **Top tips for publishing your papers in the Journal of Neurosurgery**  
David Adelson, USA
- 12:45-13:00**    **Publications in Neurosciences: A self-improvement exercise or drudgery?**  
Sanjay Behari, India
- 13:00-13:15**    **TBA**
- 13.15-14.00**    **Lunch**

**MT-6**

## **TRAUMA**

**Chairs: Corrado Iaccarino, Tariq Khan**

**Hall 2**

- 11:00-11:15**    **Pediatric Decompressive Craniectomy for Severe TBI**  
David Adelson, USA
- 11:15-11:30**    **Traumatic brain injury biomarkers: State of the center - TBI study**  
Andras Buki, Hungary
- 11:30-11:45**    **The antiseptory factor I6 and the ICP management**  
Mohammad Alolama, UAE
- 11:45-12:00**    **Decompressive Craniectomies without ICP Monitoring**  
Tariq Khan, Pakistan
- 12:00-12.15**    **Skull Base Trauma – Worthwhile dealing with that?**  
Christian Matula, Austria



- 12:15-12.30 Severe traumatic brain injury patients management - institutional experience and protocol**  
Djula Djilvesi, Serbia
- 12:30-12.45 Brain injury in elderly patients: a new scoring system**  
Dariusz Jaskólski, Poland
- 12.45-13.00 Disasters and surgery: mass casualty centers benefit global healthcare**  
Russell Andrews, USA
- 13.00-13.15 Gunshot Injury to the spine: An institutional experience of management and complications from a developing country**  
Aneela Darbar, Pakistan
- 13.15-14.00 Lunch**

**MT-7**

**FUNCTIONAL & PAIN**  
Chairs: Marc Sindou, Piero Picozzi

**Hall 3**

- 11:00-11:15 The treatment of Arnold neuralgia: Can we rewrite the history?**  
Stefano Ferraresi, Italy
- 11:15-11:30 Endoscope-assisted microvascular decompression for hemifacial spasm**  
Henry Schroeder, Germany
- 11:30-11:45 Classical trigeminal neuralgias: from imaging to surgery**  
Marc Sindou, France
- 11:45-12:00 Pudendal neuralgia - Experience with the transgluteal approach**  
Gregor Antoniadis, Germany
- 12:00-12.15 Denervation for durable treatment of spasticity**  
Mark Mahan, USA
- 12:15-12.30 New Era in Gamma Knife Radiosurgery**  
Selçuk Peker, Turkey
- 12:30-12.45 Everything You Always Wanted to Know about Radiosurgery of AVM (But Were Afraid to Ask)**  
Mikhail Chernov, Russia / Japan
- 12.45-13.00 Brain stimulation in Disorder of Consciousness from theory to practice**  
Darko Chudy, Croatia
- 13.15-14.00 Lunch**



MT-8

## SPINE

Chairs: Jesus Lafuente, Roberto Delfini

Hall 4

- 11:00-11:15 **New classification for lumbar microinstability: clinical and radiological results at 2 years follow up**  
Roberto Delfini, Italy
- 11:15-11:30 **Long Term Results with Minimally Invasive Plif In Degenerative Lumbar Spondylolisthesis**  
Matjaz Vorsic, Slovenia
- 11:30-11:45 **Combined anterior and posterior approach for complex cervical cases**  
Maurizio Fornari, Italy
- 11:45-12:00 **MITLIF: State of the art**  
Jose Antonio Soriano Sanchez, Mexico
- 12:00-12.15 **Cervical myelopathy: how to identify best responders to surgery**  
Enrico Tessitore, Italy
- 12:15-12.30 **Cervical Intramedullary tumors and its mimicks; How to avoid Maslows Hammer?**  
Suresh Nair, India
- 12:30-12.45 **Skeptical approach to the spine surgery**  
Michalakis Spyrou, Cyprus
- 12.45-13.00 **Decision making in spine surgery**  
Kantha Rasalingam, Malaysia
- 13.00-13.15 **Management of Anterior Cervical Fusion Complications**  
Scott Robertson, USA
- 13.15-14.00 **Lunch**

## YOUNG NEUROSURGEON FORUM

Chairs: Andreas Demetriades, Ihsan Solaroglu, Tomislav Sajko, Enrico Tessitore, Djula Djilvesi

- 14:00-14:07 **Pathohistology of ligamentum flavum and correlation with neurogenic claudications**  
Vuk Aleksic et al., Serbia
- 14:07-14:14 **Serum biomarkers as predictors of severity of injury and functional outcome after acute traumatic spinal cord injury**  
Raheja Amol et al., India
- 14:14-14:21 **Not-aneurysm-related bleeding after aneurysmal subarachnoid hemorrhage: Causes and impact**  
Marvin Darkwah Oppong et al., Germany
- 14:21-14:28 **Age at brain AVM presentation – Why it matters**  
Ioan-Alexandru Florian et al., Romania
- 14:28-14:35 **Effect of humic acid on acute spinal cord injury and oxidant/antioxidant levels in spinal cord injury model: An experimental study**  
Burak Kinali et al., Turkey



- 14:35-14:42**    **Thromboembolic and hemorrhagic complications after operative treatment of intracranial meningiomas**  
Nebojsa Lasica et al., Serbia
- 14:42-14:49**    **Implications for maxillary and middle meningeal artery insonation in neurosurgery**  
Milan Lepic et al., Serbia
- 14:49-14:56**    **Flow 800 vascular map model in predicting onset of vasospasm following micro vascular clipping of ruptured intracranial aneurysms**  
Sunil Munakomi et al., Nepal
- 14:56-15:03**    **Use of Autologous multipotent cables as interposition grafts for sciatic nerve regeneration in rat models**  
Suyash Singh et al., India
- 15:03-15:10**    **Digital aid in neurosurgery: Is this the era of deep neural networks?**  
Jagos Golubovic et al., Serbia

09.00-18.00

**BESTA NEUROSIM CENTER SIMULATION**

Hall 7



## KEYNOTE LECTURES & ORAL PRESENTATIONS

### TUMOR (OP-9)

Chairs: Petar Vulekovic, Paolo Ferroli

Hall I

- 15.15-15.30 KEYNOTE LECTURE: Role of stereotactic biopsy of brain tumors in neurosurgical practice**  
Petar Vulekovic, Serbia
- 15.30-15.45 KEYNOTE LECTURE: Aggressive multimodal management of brain metastasis**  
Alfredo Conti, Italy
- 15.45-16.00 KEYNOTE LECTURE: TBA**
- 16.00-16.10 Brain metastasis- current therapeutic options**  
Vladimir Papic, Serbia
- 16.10-16.20 GRANT WINNER: Navigated transcranial magnetic stimulation brain mapping in glioma patients**  
George Petrescu et al., Romania
- 16.20-16.26 Sodium balance disorders post-transsphenoidal adenomectomy: Systematic review.**  
Mohammad Abdoh et al., Saudi Arabia
- 16.26-16.32 Full endoscopic removal of third ventricular colloid cysts technique, results and limitations**  
Ilyas Dolas et al., Turkey
- 16.32-16.38 Tuberculum sellae meningiomas: Grading scale to assess surgical outcomes in endoscopic endonasal surgery**  
Federico Frio et al., Italy
- 16.38-16.44 Attitudes towards high-grade gliomas in the elderly: An international neurosurgical survey**  
Aimee Goel et al., UK
- 16.44-16.50 Single session hybrid operation combining embolization and microsurgical resection is safe and effective in central nervous system (CNS) hypervascular tumors management**  
Peiliang Li et al., China
- 16.50-16.56 Intraoperative objective assessment of tumor fluorescence reveals biological heterogeneity within histologically seemingly homogenous tumor zones in glioblastoma**  
Aliasgar Moiyadi et al., India
- 16.56-17:02 Interest of brain mapping by direct electrical stimulation in surgery of gliomas near or within eloquent areas**  
Idir Moulla et al., Algeria
- 17:02-17:08 Endoscopic assisted supraorbital “key hole” approach to suprasellar tumors. Our experience**  
Arthur Mumliev et al., Ukraine
- 17:08-17:14 Long term outcome and prognostic factors in adults with medulloblastoma**  
Ema Tot et al., Italy



## SPINE & PERIPHERAL NERVE (OP-10)

Chairs: Robert Spinner, Kartik Krishnan

Hall 2

- 15.15-15.30 KEYNOTE LECTURE: Perineuriomas**  
Robert Spinner, USA
- 15.30-15.45 KEYNOTE LECTURE: Endoscopic Nerve Surgery**  
Kartik Krishnan, Germany
- 15.45-16.00 KEYNOTE LECTURE: Peripheral nerve injury at war: Yemen war experience**  
Khaled AlAly, UAE
- 16:00-16:10 GRANT WINNER: Comparison of surgical versus conservative treatment of sciatica due to lumbar disc herniation**  
Noor-ul-Huda Maria et al., Pakistan
- 16:10-16:20 GRANT WINNER: A novel classification for the treatment of lumbar foraminal stenosis**  
Orhun Mete Cevik et al., Turkey
- 16:20-16:26 Epidural hematoma causes acute hydrocephalus after foramen magnum decompression surgery for chiari I malformation**  
Levent Aydin et al., Turkey
- 16:26-16:32 Endoscopic surgery for recurrent disc herniation after open and endoscopic lumbar discectomy**  
Salih Aydin et al., US
- 16:32-16:38 Surgical treatment of the subaxial cervical spine injury: About 60 cases**  
Abdelmoumene Ryad Ayoun et al. Algeria
- 16:38-16:44 Neurophysiological demonstration of surface electrodes polyelectromyography [sPEMG] for assessment of motor control of lower trunk muscles**  
Boban Joksimovic et al., Serbia
- 16:44-16:50 The image guided transtubular extracavitary costo-trasversectomy (TECT) for the treatment of giant thoracic disk herniations: description of the technique and results**  
Rodolfo Maduri et al., Switzerland
- 16:50-16:56 Results of surgical treatment of cavernous malformations of the spinal cord**  
Bahromhon Zakirov et al., Russia
- 16:56-17:02 Radiological differences in spinal cord diameters based on surgical approach for Potts spine with neurologic deficits- are clinical outcomes also different?**  
Manoj Phalak et al., India
- 17:02-17:08 Recurrence of trigeminal neuralgia after microvascular decompression. What to do?**  
Mihai Alexandru Stanciuc et al., Romania
- 17:08-17:14 Structural and functional Changes of the median nerve in carpal tunnel syndrome**  
Mahmoud Wahdan et al., Egypt



## FUNCTIONAL & PAIN (OP-11)

Chairs: Amr El Shawarbi, Angelo Lavano

Hall 3

- 15:15-15:30 KEYNOTE LECTURE: Vagal nerve stimulation for intractable Epilepsy**  
Amr El Shawarbi, UAE
- 15:30-15:45 KEYNOTE LECTURE: Spinal cord stimulation for failed back surgery syndrome**  
Angelo Lavano, Italy
- 15:45-16:00 KEYNOTE LECTURE: Thoracic outlet syndrome: a common, frequently overlooked cause of non discogenic brachialgia**  
Debora Garozzo, UAE
- 16:00-16:10 GRANT WINNER: Relationship between tremor rate and MRI thalamic lesion appearance in a series of 30 patients treated by 1.5Tesla transcranial magnetic resonance-guided focused ultrasound for movement disorders**  
Giuseppe Roberto Giannelva et al., Italy
- 16:10-16:20 GRANT WINNER: 2 years follow-up of the first clinical series of patients with essential tremor and tremor-dominant Parkinson's disease treated MRgFUS-thalamotomy using 1.5Tesla scanner**  
Rosario Maugeri et al., Italy
- 16:20-16:26 Neurovascular conflict syndromes. Physiological approach to an anatomical problem**  
Harjinder Singh Bhatoe et al., India
- 16:26-16:32 Minimally invasive disconnection of hypothalamic hamartomas using robotic and O arm guidance**  
Ramesh Doddamani et al., India
- 16:32-16:38 Puzzling technique for fixation of poly-methyl methacrylate cranioplasty flaps**  
Ahmed EL-Fiki et al., Egypt
- 16:38-16:44 Improving targeting accuracy leading to successful treatment of secondary dystonia with deep brain stimulation of globus pallidus internus**  
Sarah Hendrickx et al., Belgium
- 16:44-16:50 Subthalamic and pallidal deep brain stimulation in primary meige syndrome: Long-term outcomes**  
Zhiqi Mao et al., China
- 16:50-16:56 Acupuncture for pain management in evidence-based medicine**  
Taqee Ansari Mohammed et al., India
- 16:56-17:02 Classical trigeminal neuralgias: from imaging to surgery**  
Marc Sindou et al., France
- 17:02-17:08 Functional hemispherectomy for uncontrollable epilepsy: a single center experience**  
Sergio Sousa et al., Portugal
- 17:08-17:14 Brain stereotaxic transplantation of human neural stem cells for chronic stroke patients: a review**  
Yassine Yachou et al., Russia



## SPINE (OP-12)

Chairs: Pasquale De Bonis, Danilo Radulovic

Hall 4

- 15.15-15.30** **KEYNOTE LECTURE:**The evolution of intraoperative navigated 3D fluoroscopic imaging for surgery of spine degenerative diseases  
Salvatore Cardali, Italy
- 15.30-15.45** **KEYNOTE LECTURE:**Anterior cervical approach for the treatment of cervical myelopathy  
Danilo Radulovic, Serbia
- 15.45-16.00** **KEYNOTE LECTURE:** The influence of age on cervical lordosis restoration after anterior cervical discectomy and fusion with bone allograft  
Bruno Splavski, Croatia
- 16.00-16.10** **Minimally invasive unilateral approach for extensive bilateral decompression of lumbar spinal canal stenosis using tubular retractors and over the top technique**  
Robert Saftic, Croatia
- 16:10-16:20** **GRANT WINNER:** Is a picture worth a thousand words? Correlation between new scale for MRI findings and clinical presentation in patients with one level lumbar disc herniation and nerve root compression  
Filip Pajicic et al., Serbia
- 16:20-16:26** **Cervical disc arthroplasty versus anterior cervical discectomy and fusion**  
Ahmed Abdelkhalek et al., Egypt
- 16:26-16:32** **Vertebral augmentation** Dr. Salah Albishawi, FRCS (Glasg.), FRCS. SN (Eng.Ed.Glasg.Ire,) Consultant neurosurgeon, Jordan Hospital Dr. Mohamed Idris, MD neurosurgical resident  
Salah Albishawi et al., Jordan
- 16:32-16:38** **Cervical collars for the management of type II odontoid fractures in the elderly; Are they necessary?**  
Lauren Harris et al., UK
- 16:38-16:44** **Novel use of recombinant tissue plasminogen activator in an acute extensive spinal epidural haematoma in a patient with coagulopathy**  
Stavros Koustais et al., Ireland
- 16:44-16:50** **Clinical outcome related to C2 nerve-root sacrifice and the feasibility of its preservation in patients with congenital atlantoaxial dislocation**  
Karthigeyan Madhivanan et al., India
- 16:50-16:56** **Our experiences in surgical treatment of neck discus hernia and neck trauma with cervical cage with anterior cervical plate system, Ohrid, Macedonia**  
Mitre Miloshevski et al., Macedonia
- 16:56-17:02** **The morphology of the cod dorsal horn - implications for DREZ surgery using suction of the gray substance as the lesioning method**  
Milan Spaic et al., Serbia
- 17:02-17:08** **Minimally invasive techniques for lumbar disc herniation**  
Ante Subasic et al., Croatia
- 17:08-17:14** **Full-endoscopic utilization for decompression of nerve structures on lumbar level of the spine: first experience report**  
Vasily Korolishin et al., Russia



## SPINE (OP-13)

Chairs: Gualtiero Innocenzi, Fatos Olldashi

Hall 5

- 15.15-15.30 KEYNOTE LECTURE: Neuronavigation in Dorso-Lumbar Surgery**  
Gualtiero Innocenzi, Italy
- 15.30-15.45 KEYNOTE LECTURE: How Much Fusion Do We Need?**  
Fatos Olldashi, Albania
- 15.45-16.00 KEYNOTE LECTURE: Treatment of spinal disraphism. A single center experience**  
Aleksandar Caparoski, Macedonia
- 16:00-16:10 GRANT WINNER: Intradural spinal tumors: Surgical considerations and institutional experience**  
Domagoj Gajski et al., Croatia
- 16:10-16:16 Validation of Enneking oncologic principles applied to primary osseous tumours of spine: A single centre retrospective cohort study**  
Nitish Agarwal et al., India
- 16:16-16:22 Open Carpal Tunnel Release: A Retrospective Surgical Demographic Data of a Single Center Experience**  
Ibrahim Alhalal et al., Saudi Arabia
- 16:22-16:28 Transpedicular screw fixation in degenerative lumbosacral spine disease - surgical outcome**  
Osama Arim et al., Turkey
- 16:28-16:34 Vertico-horizontal atlantoaxial index A new craniovertebral radiographic index**  
Rami Darwazah et al., Palestine
- 16:34-16:40 Minimally invasive non endoscopic carpal tunnel release**  
Peter Hwang et al., Singapore
- 16:40-16:46 Efficacy of transplantation fibrin matrix with neuroinduced mesenchymal stem cells for restoration sciatic nerve function after its complete rupture in rats**  
Vladyslav Kaliuzhka et al., Ukraine
- 16:46-16:52 Results of surgical treatment of patients with carpal tunnel syndrome by decompression with endoscopic assistance**  
Artur Pogosyan et al., Russia
- 16:52-16:58 Our Experience In Secondary Repair In Peripheral Nerve Injury 2017-2018, Ohrid, Macedonia**  
Micun Micunovic et al., Macedonia
- 16:58-17:04 A Comparative study of anterolateral versus posterolateral decompression and spinal fixation in thoracic and thoraco-lumbar potts spine**  
Siddarthreddy Musali et al., India
- 17:04-17:10 Posterior pedicle fixation-based dynamic lumbar stabilization versus rigid fusion: A pilot study with critical analysis**  
Shashivadhanan Sundaravadhanan et al., India
- 17:10-17:16 Somatosensory evoked potentials evaluations of patients with spina bifida occulta**  
Gokhan Canaz et al., Turkey



## GENERAL (OP-14)

Chairs: Miroslav Vukic, Davide Milani

Hall 6

- 15.15-15.30 **KEYNOTE LECTURE: Influence of normal hydrostatic pressure gradient on CSF physiology and hydrocephalus treatment**  
Miroslav Vukic, Croatia
- 15.30-15.45 **KEYNOTE LECTURE: FET-PET diagnostic in recurrent gliomas**  
Roberto Stefani, Italy
- 15.45-16.00 **KEYNOTE LECTURE: Facial nerve integrity in CPA tumor surgery**  
Imad Kanaan, Saudi Arabia
- 16:00-16:10 **GRANT WINNER: Are Neurosurgeons fearful of artificial intelligence (AI) replacing them in the future?: Initial Insights**  
Varadaraya S. Shenoy et al., India
- 16:10-16:16 **High-tech simulation and psychometric assessment for neurosurgery residents: new paradigms for a better training**  
Alessandro Perin et al., Italy
- 16:16-16:22 **The Impact of thymoquinone on cerebral vasospasm in an experimental subarachnoid hemorrhage (SAH) model**  
Enes Akkaya et al., Turkey
- 16:22-16:28 **Factors predicting need for post-operative ventilation after microsurgical clipping of cerebral aneurysms – A Multivariate analysis**  
Saad Bin Anis et al., Pakistan
- 16:28-16:34 **Hematoma recurrence in burr hole drainage compared to burr hole irrigation as treatment of chronic subdural hematoma: A Systematic review and meta-analysis**  
Made Bhuwana Putra et al., Indonesia
- 16:34-16:40 **A Clinical experience with decompressive craniectomy**  
Ozgur Demir et al., Turkey
- 16:40-16:46 **A Review of neurosurgical research validation: The absence of direct replication studies**  
Neal Kerr et al., New Zealand
- 16:46-16:52 **Antioxidant and neuroprotective effects of dexpanthenol in traumatic brain injury-induced rats**  
Pinar Kuru Bektasoglu et al., Turkey
- 16:52-16:58 **Effect of pycnogenol on ischemia/reperfusion induced inflammatory and oxidative brain injury in rats**  
Baris Ozoner et al., Turkey
- 16:58-17:04 **Academic vs. non-academic neurosurgeons in China: Comparison in terms of workload, burnout, and engagement**  
Yirui Sun et al., China
- 17:04-17:10 **A chronic CSF over-shunting condition causing cervical cord signs: Miyazaki Syndrome Case report and review of pathomechanism**  
Dušan Vitanovic et al., Serbia
- 17:10-17:16 **The status quo of working and living among Chinese neurosurgeons: Results of a cross-sectional nationwide survey**  
Jinli Yu et al., China



## PEDIATRICS (OP-15)

Chairs: Carlo Giussani, Venelin Gerganov

Hall 7

- 15.15-15.30 KEYNOTE LECTURE: Management of low grade gliomas in children**  
Souad Bakhti, Algeria
- 15.30-15.45 KEYNOTE LECTURE: Surgical treatment of Chiari I malformation**  
Venelin Gerganov, Germany
- 15.45-16.00 KEYNOTE LECTURE: Photometric evaluation of cranial and facial symmetry in hemicoronal single suture synostosis treated with open fronto-orbital remodelling and rigid internal fixation**  
Carlo Giussani, Italy
- 16:00-16:10 GRANT WINNER: Heterogeneity of cerebrospinal fluid diversion sites in the treatment of adult and pediatric hydrocephalus**  
Cezar Octavian Morosanu et al., UK
- 16:10-16:16 The predictive role of electrodiagnostic evaluations in recovery of children with obstetrical brachial plexus lesion in first year of life**  
Jasna Stojkovic et al., Serbia
- 16:16-16:22 The Outcome of surgical excision of giant supratentorial brain tumors in pediatrics: a study of consecutive 70 cases at our institute**  
Ahmed Ashry et al., Egypt
- 16:22-16:28 VP shunt complications**  
Ala Belhaj et al., Tunisia
- 16:28-16:34 An alternative and complementary medicine method in vulnerable pediatric cancer patients: Yoga**  
Emmanuel Gazdama Hamatu et al., Nigeria
- 16:34-16:40 Treatment of pediatric brain tumors: single institution experience**  
Mirsad Hodzic et al., Bosnia and Herzegovina
- 16:40-16:46 Correlation between the radiological disappearance of syrinx and clinical improvement in surgical decompression of chiari malformation type I (CM- I)**  
Ahmed Kamal Abdelaziz et al., Egypt
- 16:46-16:52 Shunt anal extrusion in a type 2 chiari malformation**  
Brighton Valentine Nyamapfene et al., Zimbabwe
- 16:52-16:58 Surgical treatment for pediatric caudate nucleus tumors**  
Bahattin Tanrıkuş et al., Turkey
- 16:58-17:04 Outcomes of ventriculo-peritoneal shunt placement by conventional or laproscopic techniques with or without supra-hepatic fixation an observational study**  
Medha Vyas et al., India
- 17:04-17:10 Trajectory planning with the use of image guidance system for endoscopic third ventriculostomy and its effect in reducing complications**  
Muhammad Samir Irfan Wasi et al., Pakistan
- 17:10-17:16 Severe positional plagiocephaly: safe surgical technique and results**  
Bojana Zivkovic et al., Serbia



## SPINE (OP-16)

Chairs: Michael Bruneau, Yavor Petkov Enchev

Hall 8

- 15.15-15.30 KEYNOTE LECTURE: Management of cervical tumors**  
Michael Bruneau, Belgium
- 15.30-15.45 KEYNOTE LECTURE: Vertebroplasty and/or kyphoplasty?**  
Yavor Petkov Enchev, Bulgaria
- 15.45-16.00 KEYNOTE LECTURE: The venous drainage of the spinal cord and it's implications in spinal cord surgery**  
Victor Hugo Perez Perez, Mexico
- 16:00-16:10 GRANT WINNER: Minimally invasive approach for surgical treatment of craniovertebral junction meningiomas**  
Stanislav Kaprovoy et al., Russia
- 16:10-16:16 Posterior transpedicular corpectomy and circumferential reconstruction in thoraco-lumbar burst fractures: a feasible and safer approach**  
Carla Daniela Anania et al., Italy
- 16:16-16:22 Pain is the recovery priority for patients with degenerative cervical myelopathy**  
Oliver Mowforth et al., UK
- 16:22-16:28 Transdural approach for upper lumbar disc herniation**  
Khalil Ayadi et al., Tunisia
- 16:28-16:34 The management of traumatic spine injury in a territorial Hub and Spoke system of a northern region of Italy. Analysis of one year of activity**  
Corrado Iaccarino et al., Italy
- 16:34-16:40 Intraoperative computed tomography and surgical navigation system combination in spinal surgery: effectiveness and safety**  
Dmirty Asyutin et al., Russia
- 16:40-16:46 Intraoperative video angiography experience in surgical treatment of spinal cord hemangioblastomas**  
Stanislav Timonin et al., Russia
- 16:46-16:52 Modern aspects of treatment of extramedullary spinal cord tumors**  
Roman Onoprienko et al., Russia
- 16:52-16:58 Sagittal balance in spinal surgery**  
Evgeniy Brinyuk et al., Russia
- 16:58-17:04 Dynamic stabilization of the lumbar spine in patients with degenerative spondylolisthesis and lumbar spine instability. 5 Years follow-up**  
Arkadii Kazmin et al., Russia
- 17:04-17:10 Endoscopic detethering of cord**  
Sumeet Pawar et al., India
- 17:10-17:16 Cervical alignment following open door laminoplasty for cervical spondylotic myelopathy (CSM) and ossified posterior longitudinal ligament (OPLL)**  
Ravi Sharma et al., India



08.00-17.00

**WFNS 2019 BELGRADE E-POSTER SESSION**

Area for Poster presentation

15.30-17.00

**WFNS 2019 BELGRADE POSTER EVALUATION  
AND DISCUSSION SESSION**

Moderators: Dariusz Jaskólski, Selcuk Peker, Marcel Ivanov

Area for Poster presentation

20.00-00.00

**SOCIAL DINNER**



**Sunday, March 24<sup>th</sup>, 2019**

**MT-9**

**ENDOSCOPY & TUMOR**

**Chairs: Claudio Yampolsky, Daniel Kelly**

**Hall I**

- 08:00-08:15**    **Surgical strategies and outcomes for craniopharyngioma in the endoscopic era**  
Daniel Kelly, USA
- 08:15-08:30**    **Combined endoscopic management of craniopharyngioma**  
Chrandrashekhar Deopujari, India
- 08:30-08:45**    **Complications of endoscopic endonasal skull base surgery and their avoidance**  
Andre Grotenhuis, Netherlands
- 08:45-09:00**    **Endoscopic approach to clival chordomas and chondrosarcomas**  
Savaş Ceylan, Turkey
- 09:00-09:15**    **Skull base reconstruction in endoscopic endonasal skull base surgery**  
Domenico Solari, Italy
- 09:15-09:30**    **Usefulness of minimally invasive surgery (MIS) for the management of thoracolumbar spinal metastasis**  
Claudio Yampolsky, Argentina
- 09:30-09:45**    **Research Laboratory for Microsurgical and Endoscopical Anatomy as a translational approach**  
Peter Winkler, Austria
- 09:45-10:00**    **Endoscopic approaches to colloid cysts**  
Alberto Delitala, Italy
- 10:00-10:15**    **Transplanum transtubercler removal of suprasellar meningiomas and craniopharyngiomas**  
Roman Bosnjak, Slovenia
- 10:15-10:30**    **Endoscope Assisted Microneurosurgery for Intracranial Expansive and Vascular Lesions**  
Renato Galzio, Italy
- 10:30-10:45**    **Endoscopic odontoidectomy: our experience and literature review**  
Davide Milani, Italy
- 10:45-11:00**    **Coffee break**



MT-10

## TUMOR

Chairs: Konstantinos Fountas, Raymond Sawaya

Hall 2

- 08:00-08:15**    **Language mapping for parietal gliomas**  
Igor Maldonado, France
- 08:15-08:30**    **Exoscope-guided (VITOM 3D) single-stage removal of supratentorial cavernous angioma and hemangioblastoma**  
Antonino Germano, Italy
- 08:30-08:45**    **Surgery around the corticospinal tract**  
Vincenzo Esposito, Italy
- 08:45-09:00**    **Extraoperative cortical stimulation and mapping for epilepsy and tumors in eloquent areas.**  
Konstantinos Fountas, Greece
- 09:00-09:15**    **Fluorescence assisted surgery for brain tumors**  
Giovanni Broggi, Italy
- 09:15-09:30**    **Supracerebellar transtentorial approach to the mediobasal temporal region in prone position**  
Feridun Acar, Turkey
- 09:30-09:45**    **Advantages of perilesional resections for glioblastoma**  
Raymond Sawaya, USA
- 09:45-10:00**    **Precision Neurosurgery for the Gliomas: An Old Concept in New Clothes**  
Colin Watts, UK
- 10:00-10:15**    **Management of Craniopharyngiomas; open vs endoscopic techniques-current state of the art**  
Fred Gentili, Canada
- 10:15-10:30**    **The use of different technologies in the OR to optimize the extent of resection of brain tumors**  
Alessandro Olivi, Italy
- 10.30-10.45**    **The neurosurgical treatment of the malignant brain tumors**  
Branko Djurovic, Serbia
- 10:45-11:00**    **Coffee break**



MT-11

**SPINE & PERIPHERAL NERVE**  
Chairs: Stefano Ferraresi, Marcos Masini

Hall 3

- 08:00-08:15**    **Surgical approach to peripheral neuropathy**  
Line Jacques, USA
- 08:15-08:30**    **Surgical challenges in the management of giant nerve sheath spinal tumors. Multidisciplinary approach**  
Marcel Ivanov, UK
- 08:30-08:45**    **Minimally invasive and keyhole neurosurgery**  
Sumit Sinha, India
- 08:45-09:00**    **Can scoring system predict outcome in metastasis spine**  
Salman Sharif, Pakistan
- 09:00-09:15**    **Management of complication in peripheral nerve surgery**  
Lukas Rasulic, Serbia
- 09.15-09:30**    **Microsurgical Treatment of Lumbar Spondylolysis and Spondylolisthesis**  
Marcos Masini, Brazil
- 09:30-09:45**    **Role of minimal invasive techniques and new classification system in the surgical treatment of pathologies situated in the spinal canal**  
Peter Banczerowski, Hungary
- 09:45-10:00**    **MISS (minimally invasive spinal surgery, the concept. MISS is not a miss-surgery)**  
Nikolay Peev, UK
- 10:00-10:15**    **Minimalistic approaches to cranio-vertebral junction tumors**  
Mario Ammirati, USA
- 10:15-10:30**    **We've Got Your Back: How the Nerve Surgeon Can Bail Out the Spine Surgeon**  
Eric Zager, USA
- 10.30-10.45**    **Management of Durotomy and CSF Leaks in Spinal Injury**  
Regunath Kandasamy, Malaysia
- 10:45-11:00**    **Coffee break**



MT-12

## ONE WORLD, ONE NEUROSURGERY

Chairs: Djula Djilvesi, Edgardo Spagnuolo

Hall 4

- 08:00-08:15**    **Moyamoya, surgical experience**  
Artur Xhumari, Albania
- 08:15-08:30**    **Hybrid visualization systems and floresanas guided microsurgery for high grade glialtumors**  
Y. Sukru Caglar, Turkey
- 08:30-08:45**    **Molecular cellbiology of glioma invasion**  
Ather Enam, Pakistan
- 08:45-09:00**    **Intraoperative flow evaluation in vascular surgery**  
Paolo Ferroli, Italy
- 09:00-09:15**    **Anterolateral skullbase approaches**  
Iype Cherian, Nepal
- 09.15-09:30**    **Surgical treatment of trigeminal neuralgia**  
Paolo Perrini, Italy
- 09:30-09:45**    **Use of bypasses in neurosurgery**  
Goran Mrak, Croatia
- 09:45-10:00**    **The role of radiosurgery in pain treatment**  
Piero Picozzi, Italy
- 10:00-10:15**    **Cognitive biases in neurosurgery**  
Nikolay Gabrovsky, Bulgaria
- 10:15-10:30**    **Can evidence based medicine help us in achieving supreme results in degenerative lumbar surgery?**  
Tomislav Cigic, Serbia
- 10.30-10.45**    **Surgical Treatment of Orbital Tumors**  
Jamil Rzaev, Russia



08.00-11.00

### **WFNS 2019 BELGRADE E-POSTER SESSION**

Area for Poster presentation

09.30-11.00

### **WFNS 2019 BELGRADE POSTER EVALUATION AND DISCUSSION SESSION**

Moderators: Ioan Stefan Florian, Nebojsa Stojanovic, Vincenzo Paterno

Area for Poster presentation

### **PLENARY SESSION 3**

Chairs: Franco Servadei, Ioan Stefan Florian, Ihsan Solaroglu

Hall I

- 11:00-11:15 **Surgery of Brainstem Cavernomas**  
Ying Mao, China
- 11:15-11:30 **Surgical management of focal brain stem tumors in kids**  
Frederick Boop, USA
- 11:30-11:45 **The microsurgical approach to medulla oblongata**  
Ugur Ture, Turkey
- 11:45-12:00 **The role of augment and virtual reality in neurosurgery: how the digital era is changing training and surgery**  
Antonio Bernardo, USA
- 12:00-12:15 **Treatment options for intracranial vessel dissections**  
Alexandros Andreou, Greece
- 12:15-12:30 **A high-tech playground for the next generation neurosurgeons: real-time intraoperative imaging**  
Francesco Di Meco, Italy
- 12:30-12:45 **Craniopharyngiomas: a lifetime of lessons, pitfalls and surgical results**  
Alexander Konovalov, Russia
- 12.45-13.00 **Hearing preservation in acoustic or surgical approaches to parasellar meningioma**  
Ian Dunn, USA
- 13.00-13.30 **Surgical approaches for midline tumors**  
Madjid Samii, Germany
- 13.30-14.00 **YOUNG NEUROSURGEONS AWARD, BEST ORAL PRESENTATION AND BEST E-POSTER PRESENTATION AWARDS & CLOSING CEREMONY**



## WFNS 2019 BELGRADE E-POSTERS

- EP1 Minimally invasive microscopic decompression for focal lumbar spinal canal stenosis**  
Ahmed Abdelkhalek et al., Egypt
- EP2 Spontaneous meningoencephalocele of the temporal lobe in the sphenoid sinus in an adult: a case report and review of the literature**  
Souhir Abdelmouleh et al., Tunisia
- EP3 Hydatid cyst of the posterior fossa: two cases report and a review of literature**  
Souhir Abdelmouleh et al., Tunisia
- EP4 The Lhermitte-Duclos Syndrome: A rare bilateral cerebellar location of a rare pathology**  
Souhir Abdelmouleh et al., Tunisia
- EP5 Cerebral hydatid cyst, about a case**  
Daira Abdennour et al., Algeria
- EP6 Chronic Dural Hematoma, experience of our service about 87 cases**  
Daira Abdennour et al., Algeria
- EP7 Complexe C5 fracture, about a case**  
Daira Abdennour et al., Algeria
- EP8 Dysembryoplastic neuropithelial tumors (DNET), about a case**  
Daira Abdennour et al., Algeria
- EP9 Meningioma in the form of acute subdural hemorrhage, unusual presentation: A case report**  
Mohammad Abdoh et al., Saudi Arabia
- EP10 How a mortality and morbidity review (MMR) can reduce complications in a Department of neurosurgery**  
Said Ait Benali et al., Morocco
- EP11 How to reduce the risk of post operative pain and complications in lumbar degenerative spine surgery**  
Said Ait Benali et al., Morocco
- EP12 Clinical and radiological aspects of ruptured spinal dermoid cyst: Report of a case and review of literature**  
Firas Akrouf et al., Tunisia
- EP13 Cervical spondylosis Dr. Salah Albishawi, FRCS (Glasg.), FRCS. SN (Eng.Ed.Glasg.Ire.) Consultant neurosurgeon, Jordan Hospital Dr.Mohamed Idris ,MD,neurosurgical resident**  
Salah Albishawi et al., Jordan
- EP14 Keeping it safe and simple- securing external ventricular drains**  
Cristina Caterina Aldea et al., Romania
- EP15 Single stage, single opening surgical strategy for multiple intracranial aneurysms- a single surgeon experience of 20 years**  
Cristina Caterina Aldea et al., Romania
- EP16 Intraoperative flow cytometry may predict prognosis in glioblastoma**  
Georgios Alexiou et al., Greece
- EP17 Rosmarinic acid induce apoptosis in glioblastoma cells**  
Georgios Alexiou et al., Greece



- EP18 Bilateral sixth cranial nerve palsy following lumboperitoneal shunt**  
Ibrahim Alhalal et al., Saudi Arabia
- EP19 Arachnoid cyst management**  
Raed Aljubour et al., Jordan
- EP20 Insurance and flow alteration STA-MCA bypass in management of complex anterior intracranial circulation aneurysms in postendovascular era**  
Raheja Amol et al., India
- EP21 An observational analysis of costs and -effectiveness study of an intraoperative compared with a preoperative image-guided system in spine surgery fixation. Analysis of 10 years of experience**  
Carla Daniela Anania et al., Italy
- EP22 Surgical treatment of dropped head syndrome (DHS), a rare and invalidating pathology**  
Carla Daniela Anania et al., Italy
- EP23 Von Hippel-Lindau Disease. Cerebellar hemangioblastoma: Case report**  
Anita Andersone et al., Latvia
- EP24 The topographical influence of nanomaterials on neuroregeneration in the central nervous system**  
Ya Lyn Samantha Ang et al., Singapore
- EP25 The relationship of the dentate nucleus with the pyramid of vermis: a microneurosurgical anatomical study**  
Santhosh Kumar Annayappa et al., India
- EP26 Enhanced recovery after spine surgery: the journey from evidence to effect**  
Ahmed Ashry et al., Egypt
- EP27 Risk factors for white cord syndrome after decompressive surgery for cervical spondylotic myelopathy**  
Ahmed Ashry et al., Egypt
- EP28 Spine and spinal cord tumor surgery: advanced treatment concept**  
Dmitry asyutin et al., Russia
- EP29 Metastasis of small-cell lung carcinoma with a fourth ventricle localization: a rare case report**  
Aysegul Aydin et al., Turkey
- EP30 Intradural migration of a bullet following gunshot injury: management and technical difficulties**  
Levent Aydin et al., Turkey
- EP31 Ventriculo pleural shunts: management and surgical challenges**  
Levent Aydin et al., Turkey
- EP32 Management of acute colloid cysts: surgical management and nuances**  
Levent Aydin et al., Turkey
- EP33 Percutaneous vertebroplasty in vertebra plana: 20 year experience**  
Levent Aydin et al., Turkey
- EP34 Full endoscopic lumbar decompression of spinal stenosis through uniportal approach: techniques and preliminary results**  
Salih Aydin et al., US
- EP35 Interest of decompression craniectomy in the management of cerebral venous thrombosis: case report**  
Abdelmoumene Ryad Ayoun et al., Algeria



- EP36 Management and outcome of neural tube defects:A report of 370 cases**  
Abdelmoumene Ryad Ayoun et al.,Algeria
- EP37 Surgical managment of cervical disc herniation**  
Abdelmoumene Ryad Ayoun et al.,Algeria
- EP38 Surgical treatment of intra-cranial aneurysms:About 10 cases**  
Abdelmoumene Ryad Ayoun et al.,Algeria
- EP39 Tumors of the orbit:About 11 cases**  
Abdelmoumene Ryad Ayoun et al.,Algeria
- EP40 A case of decompressive craniectomy after multiple arterial territorial cerebral infarctions**  
Naci Balak et al.,Turkey
- EP41 A method for simulation of the resection of intracranial tumors in training**  
Naci Balak et al.,Turkey
- EP42 Surgical anatomy and the technique of cervical oblique corpectomy**  
Naci Balak et al.,Turkey
- EP43 Dynamic magnetic resonance imaging parameters for objective assessment of the magnitude of tethered cord syndrome in patients with spinal dysraphism**  
Sanjay Behari et al., India
- EP44 A rare tumor of the pituitary region**  
Ala Belhaj et al., Tunisia
- EP45 Management of a special kind of adenomas**  
Ala, Belhaj et al., Tunisia
- EP46 Mediastinal chordoma: an unusual location of a rare tumor**  
Ala, Belhaj, et al., Tunisia
- EP47 Pineal Meningioma:A case report and review of Literature**  
Ala, Belhaj et al., Tunisia
- EP48 Brown tumors mimicking bone metastases: a case report with literature review**  
Atef Ben Nsir et al., Tunisia
- EP49 Epidural spinal meningiomas - Diagnostic dilemmas and treatment options**  
Atef Ben Nsir et al., Tunisia
- EP50 Giant cervical dumbbell-shaped neurinoma: case report refining the anatomic boundaries of the posterolateral approach**  
Atef Ben Nsir et al., Tunisia
- EP51 Malignant transformation of thoracic schwannoma in a patient without Von Recklinghausen s disease:A case report**  
Atef Ben Nsir et al., Tunisia
- EP52 Severe fracture-dislocation of the thoracolumbar spine with complete conus medullaris transection: a case report with special insight to surgical management**  
Atef Ben Nsir et al., Tunisia
- EP53 Surgical management of pyogenic spondylodiscitis: a review of 14 consecutive patients**  
Atef Ben Nsir et al., Tunisia



- EP54 Vertebral artery injury following cervical spine trauma: a case report and literature review**  
Atef Ben Nsir et al., Tunisia
- EP55 Intraventricular meningiomas**  
Harjinder Singh Bhatoe et al., India
- EP56 Tension pneumocephalus following cerebrospinal fluid drainage through lumbar puncture for cerebrospinal fluid leakage: a case report**  
Made Bhuwana Putra et al., Indonesia
- EP57 Complications of ventriculo-peritoneal shunts**  
Sofiene Bouali et al., Tunisia
- EP58 Sagittal balance correction in degenerative lumbar spinal stenosis treatment using I-CT with navigation system**  
Evgeny Brinyuk et al., Russia
- EP59 An unusual case of spontaneous spinal epidural hematoma**  
Gokhan Canaz et al., Turkey
- EP60 Endovascular treatment of multiple intracranial aneurysms in granulomatosis with polyangiitis**  
Orhun Mete Cevik et al., Turkey
- EP61 Feasibility of robotic implementation in neurosurgery: fourth ventricle and paramedian supracerebellar transtentorial approach**  
Orhun Mete Cevik et al., Turkey
- EP62 Isolated central nervous system metastasis in pediatric wilms' tumor: a case report and review of literature**  
Ines Cherif et al., Tunisia
- EP63 Pediatric esthesioneuroblastoma: a case report**  
Ines Cherif et al., Tunisia
- EP64 Perforating head injury with iron rod: A case report and review of literature**  
Ines Cherif et al., Tunisia
- EP65 Ruptured central nervous system dermoid cyst of the suprasellar region manifesting as unusual epileptic seizure: a case report**  
Ines Cherif et al., Tunisia
- EP66 Serious cranio-facial wound by disc wheel: a case report**  
Ines Cherif et al., Tunisia
- EP67 Testicular non-seminomatous germ cell tumors (NSGCT) and brain metastases: About a rare location of the posterior fossa**  
Ines Cherif et al., Tunisia
- EP68 Challenges in cranioplasty**  
George-Mihai Cosma et al., Romania
- EP69 Daily fast fresh cadaver practice as novel training method in vascular neurosurgery**  
Andras Csokay et al., Hungary
- EP70 How can we reduce the complications in neurosurgical mission? (Daily fast fresh cadaver practice help us)**  
Andras Csokay et al., Hungary
- EP71 Prognostic factors of surgically treated spinal meningiomas and long-term surgical outcomes**  
Gábor Czegléczki et al., Hungary



- EP72 Cervical spinal cord toxoplasmosis in a patient with AIDS: case report and review of the literature**  
Rami Darwazeh et al., Palestine
- EP73 Sphenoorbital Meningiomas: diagnosis, surgical management, and recurrence rate**  
Rami, Darwazeh, et al., Palestine
- EP74 Surgical strategies for removing the intracanalicular portion of vestibular schwannoma and the clinical outcomes**  
Rami Darwazeh et al., Palestine
- EP75 Sub temporal preauricular infratemporal approach combined with Fronto temporo orbitozygotomy in single stage for lateral and posterior skull base tumor: Experience in 18 patients**  
Atmaranjan Dash et al., India
- EP76 Intracranial complications of sinusitis - a case series**  
Ana Luisa De Pinho Pardilho et al., UK
- EP77 Brain hydatid cyst in three years old child**  
Slavko Duraskovic et al., Montenegro
- EP78 Intra-arterial tirofiban thrombolysis after flow-diverter stent thrombosis: case report**  
Slavko Duraskovic et al., Montenegro
- EP79 Parasagittal meningioma surgery**  
Ashraf Elbadry et al., Egypt
- EP80 Can hydrogen peroxide enhance hemostasis in meningioma surgical excision without preoperative embolization?**  
Ashraf Elbadry et al., Egypt
- EP81 Can sonography replace electromyography and nerve conduction velocity in carpal tunnel syndrome**  
Ashraf Elbadry et al., Egypt
- EP82 Chronic subdural haematoma in liver disease patients with coagulopathy, local experience**  
Ashraf Elbadry et al., Egypt
- EP83 Extent of hyperostotic bone removal in convexity meningioma to achieve pathologically free margins**  
Ahmed EL-Fiki et al., Egypt
- EP84 Chronic Traumatic Encephalopathy (CTE): causes, diagnosis, role of the neurosurgeon and medico-legal implications**  
Domenic Esposito et al., US
- EP85 Microspheres of ebm-titanium: a valid alternative to pmma in the treatment of vertebral fracture**  
Natale Francaviglia et al., Italy
- EP86 One-step surgery: a custom-made technic in oncological cases**  
Natale Francaviglia et al., Italy
- EP87 Cranioplasty of calvarial skull defects: A comparative study between using three dimensional custom-made cranioprotheses versus hand-made bone cement in restoring skull configuration**  
Mohamed Gaber et al., Egypt
- EP88 Endoscopic assisted microscopic fenestration of inner membrane in cases of chronic subdural hematoma**  
Mohamed Gaber et al., Egypt



- EP89 Pediatric glioblastomas: study of a tunisian surgical series**  
Ghassen Gader et al., Tunisia
- EP90 Complete Cauda Equina Syndrome (CES) due to lumbar disc herniation  
Report of 10 cases and review of the literature**  
Charalampos Gatos et al., Greece
- EP91 Complications after Cranioplasty autologous and heterologous. A single institute experience of 50 cases in a 5 years period and review of the literature**  
Charalampos Gatos et al., Greece
- EP92 Supratentorial hemorrhage after posterior fossa surgery. Report of two cases and review of the literature**  
Charalampos Gatos et al., Greece
- EP93 A survey on the adherence of European Neurosurgical Centers to Brain Trauma Foundation guidelines on Severe TBI**  
Antonino Germano et al., Italy
- EP94 Exoscope-guided (VITOM 3D) single-stage removal of supratentorial cavernous angioma and hemangioblastoma**  
Antonino Germano et al., Italy
- EP95 On the road to new therapies in the treatment of glioblastoma: role of Dkk-3 and Claudin-5**  
Antonino Germano et al., Italy
- EP96 Costotransversectomy: an option for surgical approach to challenging anterior thoracic spine pathologies.**  
Tossif Ghodiwala et al., Russia
- EP97 Results of surgical treatment of patients with focal drug-resistant MR-negative epilepsy**  
Tossif Ghodiwala et al., Russia
- EP98 Surgical management of brain tumors in language areas**  
Tossif Ghodiwala et al., Russia
- EP99 Surgical tactics for dealing with pseudoarthrosis after spinal fusion**  
Tossif Ghodiwala et al., Russia
- EPI00 Foramen magnum meningiomas: clinical presentation and surgical management**  
Mario Giarletta et al., Italy
- EPI01 Intracranial pressure monitoring: The patient experience**  
Aimee Goel et al., UK
- EPI02 Retrospective study on syndrome of trephined following decompressive craniectomy**  
Ravi Kiran Gorijala et al., India
- EPI03 Surgical management of Cushing's disease**  
Khalida Grine et al., Algeria
- EPI04 Pediatric multiple meningioma: case report and review**  
William Gump et al., US
- EPI05 Surgery of severe open cranio-orbital injury with regional tissue defect**  
Zhilin Guo et al., China
- EPI06 Clinical and imaging findings in a rare case of sinus pericranii**  
Mohamed Amine Hadj Taieb et al., Tunisia



- EP107 Evaluation of neurological recovery after cervical cord decompression for cervical myelopathy**  
Mohamed Amine Hadj Taieb et al., Tunisia
- EP108 Intraparenchymal meningioma: case report**  
Mohamed Amine Hadj Taieb et al., Tunisia
- EP109 Pediatric supratentorial anaplastic oligodendroglioma: a rare tumor in children**  
Mohamed Amine Hadj Taieb et al., Tunisia
- EP110 Deaths by craniocerebral trauma due to road traffic accidents: socio-demographic and forensic data in Sfax**  
Mohamed Amine Hadj Taieb et al., Tunisia
- EP111 Fatal rupture of intracranial aneurysm of the internal carotid artery due to emotion: an autopsy case**  
Mohamed Amine Hadj Taieb et al., Tunisia
- EP112 About a rare case of osteolytic epidermoide cyst of the skull: an overview**  
Mechergui Haifa et al., Tunisia
- EP113 Abscess on cerebellar ischemic stroke**  
Mechergui Haifa et al., Tunisia
- EP114 Conus medullaris syndrome caused by epidural lymphangioma**  
Mechergui Haifa et al., Tunisia
- EP115 Cranio-facial traumatism by trans-orbit penetrating object**  
Mechergui Haifa et al., Tunisia
- EP116 Intracerebral hematoma: unusual mode of revealing an acute lymphoblastic leukemia**  
Mechergui Haifa et al., Tunisia
- EP117 Multifocal glioblastoma in adults with brainstem involvement: a case report**  
Mechergui Haifa et al., Tunisia
- EP118 Multiple and bilateral cerebral hydatid cyst: a case report**  
Mechergui Haifa et al., Tunisia
- EP119 Post traumatic carotido-cavernous fistula: an unusual vascular complication**  
Mechergui Haifa et al., Tunisia
- EP120 Septic neurological manifestations of osler weber disease: about two cases**  
Mechergui Haifa et al., Tunisia
- EP121 Spinal epidural lipomatosis: a rare cause of sciatica**  
Mechergui Haifa et al., Tunisia
- EP122 The paraganglioma of cauda equina: a case report**  
Mechergui Haifa et al., Tunisia
- EP123 The vault metastases of a thyroid carcinoma miming a meningioma: about two cases**  
Mechergui Haifa et al., Tunisia
- EP124 Traumatic high-grade spondyloptosis at C7-T1: a case report**  
Mechergui Haifa et al., Tunisia
- EP125 A review on the importance of nursing approaches in nutrition of children with cancer**  
Emmanuel Gazdama Hamatu et al., Nigeria



- EPI26 Phenytoin versus levetiracetam for post traumatic brain injury seizure prophylaxis; a retrospective study at a UK major trauma centre**  
Lauren Harris et al., UK
- EPI27 Subtemporal extradural approach for superior semicircular canal dehiscence: results in three consecutive patients**  
Sarah Hendrickx et al., Belgium
- EPI28 Triple Conjoint nerve root syndrome: a special case of sciatic pain**  
Sarah Hendrickx et al., Belgium
- EPI29 Epidemiology of traumatic brain injury and traumatic spine injury: 10-years-interval of telemedicine experience in a region of Northern Italy**  
Corrado Iaccarino et al., Italy
- EPI30 Patient management with chronic subdural ematoma in non-specialist neurosurgery. 10 years of experience of the Hub & Spoke Siat Emilia North West System**  
Corrado Iaccarino et al., Italy
- EPI31 Validation of NIH recurrent glioblastoma scale to predict survival after surgery for recurrent glioblastoma multiforme**  
Rosanda Ilic et al., Serbia
- EPI32 Outcome of traumatic subarachnoid hemorrhage in patients presenting to neurosurgery department lady reading hospital Peshawar**  
Muhammad Ishfaq et al., Saudi Arabia
- EPI33 Assessment of postural control of lower back by galvanic vestibular stimulation**  
Boban Joksimovic et al., Serbia
- EPI34 Clinical program for assessment of low back postural control in subjects with chronic back pain**  
Boban Joksimovic et al., Serbia
- EPI35 Pain and motor control of the lumbopelvic region**  
Boban Joksimovic et al., Serbia
- EPI36 Spinal subdural abscess mimicking an extradural tumor: case report and review of literature**  
Stanislav Kaprovoy et al., Russia
- EPI37 Survival and functional outcomes after surgical treatment intramedullary spinal cord astrocytomas**  
Stanislav Kaprovoy et al., Russia
- EPI38 Role of erythropoietin in traumatic brain injury: A systematic review, meta-analysis and trial sequential analysis of randomized controlled trials**  
Varidh Katiyar et al., India
- EPI39 3D modeling in the planning of spinal deformity surgeries**  
Arkadii Kazmin et al., Russia
- EPI40 Chevron decompression in the treatment of multilevel lumbar spinal canal stenosis**  
Arkadii Kazmin et al., Russia
- EPI41 Indications for surgical treatment of thoracolumbar kyphosis in patients with mucopolysaccharidosis**  
Arkadii Kazmin et al., Russia
- EPI42 Pregnancy and childbirth in patients with idiopathic scoliosis**  
Arkadii Kazmin et al., Russia



- EPI 143 Risk factors and surgical treatment of craniovertebral stenosis in patients with Maroteaux-Lamy syndrome (mucopolysaccharidosis type VI)**  
Arkadii Kazmin et al., Russia
- EPI 144 Tactics of preoperative preparation of patients for surgical treatment on the spine, depending on the correlation with Pylilinks-D levels**  
Arkadii Kazmin et al., Russia
- EPI 145 Effectiveness of four-rod fixation in patients undergoing pedicle subtraction osteotomy of the spine**  
Arkadii Kazmin et al., Russia
- EPI 146 Posterior fossa ICP monitoring: a tale of two compartments**  
Amad Khan et al., UK
- EPI 147 Remote control: intradural spinal tumour resection complicated by remote cerebellar haemorrhage**  
Amad Khan et al., UK
- EPI 148 Straight to the point: an updated technique for performing lumbar puncture safely in obese patients**  
Amad Khan et al., UK
- EPI 149 The role of thalamotomy for treatment of tremor in the era of deep brain stimulation**  
Amad Khan et al., UK
- EPI 150 A retrospective study of infectious complications in patients with severe traumatic brain injury: Bacteriological profile, its impact on treatment cost & short-term outcome with a review of literature**  
Muhammad Mukhtar Khan et al., Pakistan
- EPI 151 Fracture of the dorsum sellae**  
Mansour Khrifech et al., Tunisia
- EPI 152 Whether to recommend operation when benign brain tumor was found in elderly patients in the age 70 or older**  
Chang Hyun Kim et al., Republic of South Korea
- EPI 153 Co-existence of cavernous meningioma with para-ophtalmic aneurysm: A case report with stepwise approach of endovascular surgery and stereotactic radiosurgery**  
Burak Kinali et al., Turkey
- EPI 154 Modern aspects of minimally invasive spinal surgery, ICT & navigation**  
Nikolay Konovalov et al., Russia
- EPI 155 A rare case of giant primary orbital hydatid cyst**  
Ambuj Kumar et al., India
- EPI 156 Minimally invasive microendoscopic technique for management of deep seated intracranial lesions: Experience of 463 cases**  
Ambuj Kumar et al., India
- EPI 157 Amelioration of cerebral vasospasm and secondary injury by vigabatrin following experimental subarachnoid hemorrhage in the rabbit**  
Pinar Kuru Bektasoglu et al., Turkey
- EPI 158 Antifibrotic effect of boric acid in rats with epidural fibrosis**  
Pinar Kuru Bektasoglu et al., Turkey



- EPI 159 Neuroprotective effects of mildronate in a rat model of traumatic brain injury**  
Pinar Kuru Bektasoglu et al., Turkey
- EPI 160 The effects of cinnamaldehyde on early brain injury and cerebral vasospasm following experimental subarachnoid hemorrhage in the rabbit**  
Pinar Kuru Bektasoglu et al., Turkey
- EPI 161 The vasorelaxant and neuroprotective effects of mildronate in a rabbit subarachnoid hemorrhage model**  
Pinar Kuru Bektasoglu et al., Turkey
- EPI 162 Augmentation of regeneration in peripheral nervous system surgery**  
Milan Lepic et al., Serbia
- EPI 163 Sitting position craniostomy for chronic subdural hematoma - a pilot study**  
Milan Lepic et al., Serbia
- EPI 164 Supplementation, nutrition and diet role in peripheral nervous system injuries**  
Milan, Lepic et al., Serbia
- EPI 165 A case of a B cell lymphoma revealed by a dorsal spinal cord compression with review of literature**  
Ahmed Maatoug et al., Tunisia
- EPI 166 A rare case of cerebellar metastasis of osteosarcoma**  
Ahmed Maatoug et al., Tunisia
- EPI 167 Abdominal pseudocyst as a complication of ventriculoperitoneal shunt placement: review of the literature**  
Ahmed Maatoug et al., Tunisia
- EPI 168 Brain metastasis from ovarian cancer: a case report**  
Ahmed Maatoug et al., Tunisia
- EPI 169 Brain metastasis from renal cell carcinoma**  
Ahmed Maatoug et al., Tunisia
- EPI 170 Ependymomas of the terminal filum**  
Ahmed Maatoug et al., Tunisia
- EPI 171 Growing fracture of the orbital roof**  
Ahmed Maatoug et al., Tunisia
- EPI 172 Hemimegalencephaly revealed by belated epilepsy in adulthood: An overview**  
Ahmed Maatoug et al., Tunisia
- EPI 173 Intraventricular meningioma case report and literature review**  
Ahmed Maatoug et al., Tunisia
- EPI 174 Ossified cephalhematoma**  
Ahmed Maatoug et al., Tunisia
- EPI 175 Primary liposarcoma of the thoracic spine: case report**  
Ahmed Maatoug et al., Tunisia
- EPI 176 Septic neurological manifestations of Osler-Weber-Rendu syndrome: Report of 2 cases**  
Ahmed Maatoug et al., Tunisia
- EPI 177 Spontaneous regression of intracranial meningioma: a case report**  
Ahmed Maatoug et al., Tunisia



- EPI178 Intratumoral hemorrhage in pediatric primary spinal intradural Ewing's sarcoma presenting with acute neurological decline**  
Karthigeyan Madhivanan et al., India
- EPI179 CASE REPORT: Cerebral toxoplasmosis infection by T.gondii in young patient with AIDS**  
Noor-ul-Huda Maria et al., Pakistan
- EPI180 CASE REPORT: 36 yrs old young man with post traumatic dural arteriovenous fistula**  
Noor-ul-Huda Maria et al., Pakistan
- EPI181 Case Report: Central neurocytoma in a 26 yrs old girl**  
Noor-ul-Huda Maria et al., Pakistan
- EPI182 Postoperative rise in serum sodium level, an indicator of diabetes insipidus after pituitary adenoma surgery**  
Noor-ul-Huda Maria et al., Pakistan
- EPI183 The effect of psychosocial factors in the success of conservative management for low backache**  
Noor-ul-Huda Maria et al., Pakistan
- EPI184 Cervical Tarlov cyst mimicking a spinal hydatid cyst: a case report**  
Hammoud Marouane et al., Morocco
- EPI185 Endoscopic endonasal transsphenoidal surgery of 43 pituitary adenomas. Experience of university hospital of Fez Morocco**  
Hammoud Marouane et al., Morocco
- EPI186 Cortical and subcortical mapping of the language area in the cavernoma of the perisylvian area: case report**  
Carlos Roberto Massella Junior et al., Brazil
- EPI187 Palliative care in dorso-lumbar vertebral malignant neoplasms by the use of radiofrequency ablation with or without vertebroplasty. Clinical and radiological findings in a series of 41 patients.**  
Rosario Maugeri et al., Italy
- EPI188 TcMRgFUS thalamotomy as a repeatable option for treating relapsing movement disorder. Report of a second treatment in a patient affected with refractory essential tremor combined with parkinsonism**  
Rosario Maugeri et al., Italy
- EPI189 Readmission rates of patients with intracranial injuries in the United States**  
Chelsea Mendonca et al., US
- EPI190 Spinal dysraphism: University Clinic Of Neurosurgery, Skopje, Macedonia, 2012-2017**  
Micun Micunovic et al., Macedonia
- EPI191 Case of large mixopapillary ependymoma presented with back pain**  
Vladimir Miladinovic et al., Serbia
- EPI192 Complications of Gamma Knife surgery: cross analysis between three medical centers (2 Canadian centers and 1 Serbian center)**  
Aleksandar Miljkovic et al., Serbia
- EPI193 Presentation of clinical picture in patients with spontaneous subarachnoid hemorrhage**  
Aleksandar Miljkovic et al., Serbia
- EPI194 Surgical treatment of posterior circulation aneurysms**  
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Nenad Zivkovic et al., Serbia



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Nenad Zivkovic et al., Serbia

**EP301 Periradicular transforaminal infiltration for lumbar radiculopathy**  
Nenad Zivkovic et al., Serbia

**EP302 Tubular microscopes discectomy (TMD): retrospective study of 47 patients**  
Nenad Zivkovic et al., Serbia



## REGISTRATION FORM

Please complete online Registration on our website [www.wfnobelgrade2019.talkb2b.net](http://www.wfnobelgrade2019.talkb2b.net)

### PRE-MEETING COURSES, MARCH 21<sup>ST</sup>, 2019

Each Course has limited number of participants based on principle first come first served. Endoscopy Course has limited number of up to 20 participants and all other Courses have limited number of up to 40 participants.

Course	Registration fee
WFNS Education	FREE
WFNS Endoscopy	€500,00
WFNS Surgical Anatomy	€50,00
Global Neuro	€50,00
AO Spine	€50,00
Spine Intraoperative Navigation	€50,00

### MEETING COURSE, MARCH 22<sup>nd</sup>-23<sup>rd</sup>, 2019

This Course has limited number of 15 participants per day based on principle first come first served.

Course	Registration fee
Day I	Included in Congress Registration Fee
Day II	Included in Congress Registration Fee

### WFNS 2019 INTERNATIONAL MEETING, March 22<sup>nd</sup>-24<sup>th</sup>, 2019

Registration is mandatory for all categories

Category:	Early registration by October 01 <sup>st</sup> , 2018	Late registration from October 02 <sup>nd</sup> 2018 until February 01 <sup>st</sup> , 2019	On-site registration
Faculty	FREE	FREE	FREE
Board exam neurosurgeons	300 €	350 €	400 €
Reduced Category*	100 €	150 €	150 €
Medical students	FREE	FREE	FREE



\*Residents / Young neurosurgeons below age of 40 / Participants from Low income Countries [link 1](#) / Lower middle income [link 2](#) (refer to list qualified by World Bank). Please upload the photocopy of passport with registration form.

REGISTRATION FEES INCLUDES: Congress materials, admission to all scientific sessions, buffet lunches, refreshments and coffee breaks indicated in the program and VAT.

**According to the decision of the Scientific Committee,  
30 best oral presentations will be awarded  
with free registration and accommodation.**

#### **SOCIAL PROGRAM**

Social Dinner, March 23 <sup>rd</sup> , 2019	50 €
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#### **REGISTRATION CANCELLATION TERMS**

- Requests for registration cancellation must be submitted in writing to the Secretariat at [wfn2019belgrade@snss.org.rs](mailto:wfn2019belgrade@snss.org.rs)
- For cancellations received until October 01<sup>st</sup>, 2018 refund of registration fees will be 100%.
- For cancellations received until February 01<sup>st</sup>, 2019 refund of registration fees will be 50%.
- After that the registration fee will not be refunded.
- Please note that registration refunds will be processed within 30 days after the end of Meeting, bank charges will be deducted from the refund.
- If no refund is required but a change in participant registration is needed, then the Secretariat must be informed in writing via email to [wfn2019belgrade@snss.org.rs](mailto:wfn2019belgrade@snss.org.rs)



## CALL FOR ABSTRACTS

### Abstract guidance & Online submission

The Scientific Committee of the WFNS 2019 International Meeting welcomes the submission of scientific abstracts. Authors are invited to submit abstracts in the following sub-categories:

- Neuro-oncology
- Neurovascular
- Neurotrauma and Intensive Care
- Spine and Peripheral Nerve
- Pediatrics
- Functional and Stereotactic Neurosurgery
- Varia

**Abstract(s) should be submitted online on the web site**

**The abstract should be submitted by January 15<sup>th</sup>, 2019.**

**All abstracts will be reviewed. Accepted abstracts will be published in the Abstract Book.**

**The best abstracts will be included in the main scientific program.**

Carefully read the guidelines before submitting your abstract. Acknowledgement of receipt of your submission will be returned to your e-mail address. Please note, that acknowledgement of receipt of your abstract submission does not mean that your abstract is accepted by the Scientific Committee.

#### SUBMISSION GUIDELINES

- Abstracts must be submitted in English.
- Titles should contain no more than 200 characters.
- Abstract text should contain no more than 300 words.
- Use standard abbreviations. Place a special or unusual abbreviation in parenthesis after the full word when it appears for the first time.
- Abstracts must be written in comprehensible English and must conform to the guidelines or they will not be accepted. It is the author's responsibility to submit a correct abstract.
- Any tables, graphs or diagrams should be upload together with the abstract.
- The organizers of this event take no responsibility for any published abstracts submitted. Any issues or errors arising from the abstracts are solely the responsibility of the authors.
- Changes to abstract can only be accepted until the deadline
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#### NOTIFICATION OF ACCEPTANCE

- Upon submission, you will receive an acknowledgement email notifying that your abstract has been received with your Abstract ID.
- Once the Abstract Submission closes, all abstracts will be reviewed by the Scientific Committee. The Scientific Committee reserves the right to select the abstracts relevant to the sessions and decide on the final form of presentation.
- Notification of acceptance/rejection will be e-mailed to you no later than February 15<sup>th</sup>, 2019. (contact Scientific Committee if you have not received your notification e-mail by [wfn2019belgradeabstract@snss.org.rs](mailto:wfn2019belgradeabstract@snss.org.rs)).
- If the abstract is accepted, applicant MUST register and pay registration fee.
- All successfully accepted abstract submitters must present their abstract in the form of Oral or Poster Presentation during the Congress.
- The corresponding author will receive any correspondence concerning the abstract.

For any inquiries, please contact the Scientific Committee at [wfn2019belgradeabstract@snss.org.rs](mailto:wfn2019belgradeabstract@snss.org.rs)  
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## WFNS 2019 INTERNATIONAL MEETING HOST CITY - BELGRADE

### Welcome to Belgrade, capital of Serbia!

City of many nations, BELGRADE is a city with a tumultuous, but also frequently tragic past, primarily due to its unique position at the confluence of the Sava and Danube rivers, on the border between the East and the West. Due to its position it was rightfully named “Gates of the Balkans” and the “Doors of Middle Europe”. Belgrade is one of the oldest cities in Europe with a 7000-year history. The space around the large rivers of the Sava and Danube was already populated in the Stone Age. The Celts named the populated fortress SINGIDUNUM, where the first part of the word „Singi“ means round, and „dunum“ fortification or town. In the Byzantine Age, Singidunum became an important city of the vast empire. The Slavic name BEOGRAD (Beli grad – White City – probably because its ramparts were made of white limestone) may first be found in records from the 9<sup>th</sup> century.

Belgrade flourished in 19<sup>th</sup> and 20<sup>th</sup> centuries during the reign of the Obrenovic dynasty and Karadjodjevic dynasty. It was then and it still is an important strategic point, the crossroads from the East to the West and one of the most significant cities in the Balkans.

Visitors who come to Belgrade for the first time, never leave indifferent, and always come back to it with joy.

More importantly, Belgraders like everyone, so get to know Belgrade by getting to know Belgraders!



## WFNS 2019 INTERNATIONAL MEETING VENUE & ACCOMMODATION



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<https://www.ihg.com/crowneplaza/hotelsus/en/belgrade/begcp/hoteldetail>



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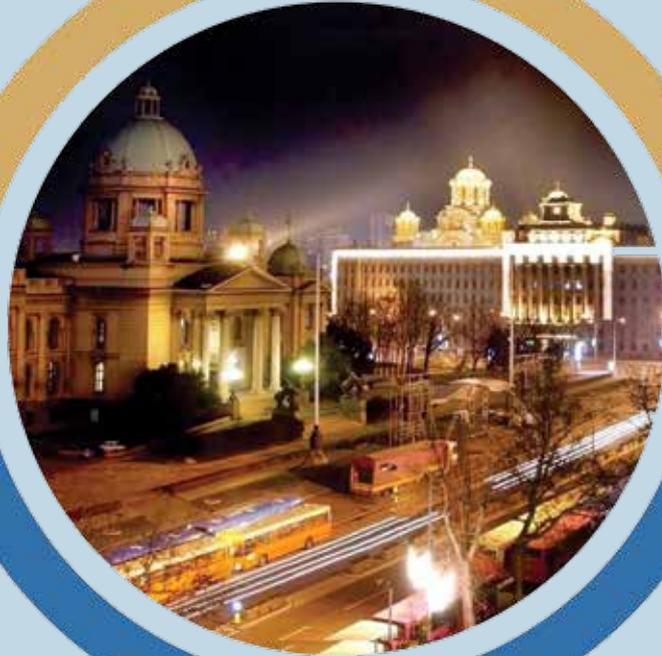


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