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- Maxime Descoteaux**
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Department of Computer Science (Canada)
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Division of Neurosurgery
Ospedale Le Molinette, Turin
- Hugues Duffau**
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INSERM and Department of Neurosurgery
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- Marco Farneti**
Division of Neurosurgery "S. Anna"
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- Ernesto Gastaldo**
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- Miran Skrap**
Division of Neurosurgery
"S. Maria della Misericordia" University-
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- Natalie Voets**
Oxford University
Nuffield Department of Clinical Neurosciences
Medical Sciences Division, Oxford (UK)
- Umberto Rozzanigo**
Division of Radiology
"S. Chiara" Hospital, APSS Trento
- Marco Fontanella**
Division of Neurosurgery
University of Brescia

Accommodation

Info & booking

Azienda per il Turismo Trento, Monte Bondone, Valle dei Laghi
Via Torre Verde, 7 - 38122 Trento
Tel. +39 0461 216027
Rif. Sabrina Giuliani
E-mail: sabrina.giuliani@discovertrento.it
www.discovertrento.it



Registration and admission fee

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Registration Form

servizioformazione@apss.tn.it

SURNAME _____ NAME _____

QUALIFICATION _____

SPECIALIZATION _____

WARD _____

E-MAIL _____ MOBILE _____

I desire to enroll me in:

theoretical session theoretical session and practice

Da compilare a cura dei **dipendenti dell'APSS**

Matricola n. _____

FIRMA _____ FIRMA del RESPONSABILE _____

Per i dipendenti dell'APSS il seminario si qualifica come formazione interna con riconoscimento dell'orario di servizio.

Da compilare a cura dei **professionisti non dipendenti dell'APSS**

NATO IL _____ A _____ PROV. _____

CODICE FISCALE _____

INDIRIZZO _____ CAP _____ CITTÀ _____

Dipendente da ente pubblico Dipendente/Titolare (da società/ente privato) Libero professionista

ENTE/SOCIETÀ _____ FIRMA _____

QUOTA DI PARTECIPAZIONE

SESSIONE TEORICA: 70 posti

- € 300 early registration (entro 15.04.2019)
 - € 350 late registration (oltre 15.04.2019 e non oltre il 15.05.2019).
- La quota comprende: iscrizione e materiale didattico su supporto USB; aperitivi di benvenuto e buffet di saluto; lunch e coffee break.

SESSIONI TEORICA e PRATICA: 20 posti

- € 800 early registration (entro 15.04.2019)
 - € 1000 late registration (oltre 15.04.2019 e non oltre il 15.05.2019).
- La quota comprende: iscrizione e materiale didattico su supporto USB; aperitivi di benvenuto e buffet di saluto; lunch e coffee break; cena del 21/06/2019 per docenti e partecipanti.

Alle quote sopra indicate va aggiunta l'aliquota IVA (22%) se dovuta.
LE MODALITÀ DI PAGAMENTO DELLA QUOTA DI PARTECIPAZIONE SARANNO COMUNICATE VIA E-MAIL UNITAMENTE ALLA CONFERMA DELL'ISCRIZIONE.

CONDIZIONI RILASCIO ATTESTATI ECM

Il rilascio dell'attestato è subordinato alla partecipazione all'intera durata dell'attività seminariale ed al superamento della prova finale di apprendimento.

Accreditata la figura del medico.

In collaboration with:



Under the patronage of:



Azienda provinciale per i servizi sanitari
Via Degasperi 79, 38123 Trento
Finito di stampare nel mese di marzo 2019

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Info: servizioformazione@apss.tn.it

Trento June 20-22, 2019
Sala Stringa - FBK
Via Sommarive, 18 - Povo Trento



Theoretical and practical course on clinical and surgical applications of structural and functional connectivity

COURSE DIRECTORS

Franco Chioffi

Silvio Sarubbo

Division of Neurosurgery

Emergency Area - "Santa Chiara" Hospital

Azienda Provinciale per i Servizi Sanitari (APSS)

Trento (Italy)

SCIENTIFIC COMMITTEE

Luciano Annicchiario

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Umberto Rozzanigo

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S. Chiara" Hospital, APSS Trento

Paolo Avesani

Bruno Kessler, Foundation

Jorge Jovicich

CiMeC, University of Trento



Azienda Provinciale
per i Servizi Sanitari
Provincia Autonoma di Trento



Course Introduction

Over the last 15 years the knowledge about the brain functional organization experienced new energy and remarkable advancements, as effect of technical and conceptual improvements that lead us in the connectome era. The comprehension of this intricate anatomic-functional maze and the application of the new concepts about the connectome organization to the clinical-surgical practice, are two crucial steps to tailor and improve surgical and non-surgical treatments of brain diseases. In this light, invasive and non-invasive brain mapping techniques are complementary, and not alternative, tools to explore functional organization and neural plasticity. As never before, the integration between techniques and concepts coming from basic and clinical neurosciences should be strictly integrated to improve, reciprocally, competences and knowledges. Based on the experience of the previous edition on 2015 we designed the ConnectBrain Volume II, a theoretico-practical course providing an updated overview about tools and concepts coming from neuroscientific research, and the most reliable mapping and monitoring techniques used in brain surgery.

Aims of the theoretical session are to provide:

- a detailed and complete overview about the recent models of organization of brain functions and the structural and functional connectivity of the main networks;
- theoretical and practical principles for the clinical application of neuroimaging (fMRI, resting-state fMRI, tractography), neuropsychological (pre-operative assessment, intraoperative tasks, follow-up) and neurophysiological (cortical and subcortical mapping and monitoring) techniques;
- open discussions with different experts about use, experiences and reliability of the main tools for brain anatomic-functional mapping and monitoring during brain surgery.

Aims of the practical session are to provide the general principles of:

- human white matter anatomy;
- tractography elaboration and tracking;
- non-invasive brain mapping with RS-fMRI.

We imagined an international opportunity for facing off clinical practice and basic neurosciences, in order to improve our skills in the exploration of the brain functional processing for medical purposes. We hope you will share this belief and to meet you in Trento in June 2019.

Franco Chioffi and Silvio Sarubbo

Division of Neurosurgery

Emergency Area

"Santa Chiara" Hospital

Azienda Provinciale per i Servizi Sanitari (APSS), Trento

Theoretical Session

Thursday June 20th, 2019

Congress Venue for Theoretical Session

Sala Stringa - FBK

Via Sommarive, 18
Povo Trento

- 13:00 Registration and welcome drink
- 13:30 Authorities welcome
- 14:15 Course Introduction: Silvio Sarubbo and Franco Chioffi (Division of Neurosurgery, "Santa Chiara" Hospital, Trento APSS)

SESSION I

Exploration of brain structures and functions – Principles

Chairmen: Bruno Giometto, Laurent Petit

- 14:30 *Principles of RS-fMRI for human brain mapping*
Bernard Mazoyer (GIN, University of Bordeaux)
- 14:50 *Techniques and limitations in tractography*
Maxime Descoteaux (University of Sherbrooke)
- 15:10 *How to track the brain: tools*
Paolo Avesani (NiLab, FBK)
- 15:30 Discussion and Questions
- 16:00 Coffee break

SESSION II

Exploration of brain structures and functions – Tools

Chairmen: Umberto Rozzanigo, Alessandro De Benedictis

- 16:30 *The human brain pathways by tractography*
Laurent Petit (GIN, University of Bordeaux)
- 16:50 *Extracting brain networks by rs-fMRI*
Jorge Jovicich (CiMeC, University of Trento)
- 17:10 *Neurophysiology tools for neurosurgery*
Francesco Sala (University of Verona)
- 17:30 Discussion and Questions
- 18:00 **Lecture** (introduced by Ernesto Gastaldo, Ospedale dell'Angelo Mestre-Venice)
Variability in hemispheric specialization for cognitive processing
Bernard Mazoyer (GIN, University of Bordeaux)
- 18:30 Remarks and Closure

Theoretical Session

Friday June 21st, 2019

SESSION III

Brain mapping for surgery

Chairmen: Alessandro Ducati, Silvio Sarubbo

- 09:00 **Lecture**
Awake surgery for brain gliomas: cognition through the anatomy
Hugues Duffau (University of Montpellier)
- 09:40 *Pre-surgical mapping with fMRI and rs-fMRI*
Natalie Voets (Oxford University)
- 10:00 *Language and motor mapping: intra-operative techniques*
Rocco Quatralè (Ospedale dell'Angelo, Mestre-Venice)
- 10:20 Discussion
- 10:30 Coffee break

SESSION IV

Principles of functional anatomy of the human brain

Chairmen: Domenico D'Avella, Marco Fontanella

- 11:00 *Language networks: anatomy and functions*
Alessandro De Benedictis (Bambino Gesù Pediatric Hospital, Rome)
- 11:20 *Motor networks: physiology and surgical mapping*
Lorenzo Bello (University of Milan)
- 11:40 *Insula and temporal stem anatomy*
Emmanuel Mandonnet (Lariboisière University-Hospital, Paris)
- 12:00 Discussion and Questions

SESSION V

Surgical Techniques

Chairmen: Benedetto Petralia, Rocco Quatralè

- 12:20 *Insular tumors: techniques and pitfalls*
Miran Skrap ("S. Maria della Misericordia" Hospital, Udine)
- 12:40 *Awake surgery for unruptured cerebral aneurysms*
Franco Chioffi, ("S. Chiara" Hospital, APSS Trento)
- 13:00 Discussion and Questions
- 13:30 Lunch

Theoretical Session

Friday June 21st, 2019

SESSION VI

Neuropsychology

Chairmen: Flavio Angileri, Andreas Schwarz

- 15:00 Extensive neuropsychological monitoring for resection of brain gliomas
Tamara Ius ("S. Maria della Misericordia" Hospital, Udine)
- 15:20 Cognitive rehabilitation: techniques and tools
Lorella Battelli (Italian Institute of Technology, Trento)
- 15:40 Discussion and Questions
- 16:00 Coffee break

SESSION VII

Epilepsy Surgery

Chairman: Marco Farneti, Alberto Morini

- 16:30 *Disconnection approaches in epilepsy surgery*
Carlo Marras (Bambino Gesù Children Hospital, Rome)
- 16:50 *Imaging post-processing in epilepsy surgery*
Michele Rizzi, Francesco Cardinale ("C. Munari" Epilepsy Surgery Center, Milan)
- 17:10 Discussion and Questions
- 17:30 **Lecture** (introduced by Franco Chioffi, APSS Trento)
Brain Mapping, extent of resection and new trends in neuro-oncological surgery
Mitchell Berger (University of California, San Francisco)
- 18:40 Closure and Certificates

Practical Session

Tractography dissection and resting-state fMRI Mapping

Saturday June 22nd, 2019

Congress Venue for Practical Session

Open space - FBK

Via Sommarive, 18
Povo Trento

Planning practice Connect Brain Vol. II

Tutors for rs-fMRI: Voets N., Jovicich J., Zigiotta L., Novello L., Saviola F., Corsini F., Annicchiarico L.
Tutors for Tractography: Petit L., Descoteaux M., Sarubbo S., De Benedictis A., Avesani P., Olivetti E., Astolfi P.

- 08:30 *Activities overview and team introduction*
S. Sarubbo
- 08:45 *Practical introduction: cases presentation*
S. Sarubbo, L. Annicchiarico
- 09:00 *Pattern recognition of resting state-fMRI networks: Language, Visual, Motor, Default Mode and Speech Arrest Networks*
N. Voets
- 09:15 *Launching ReStNeuMap tool and results exploration*
L. Novello, F. Saviola
- 09:30 *ReStNeuMap launch (case 1)*
- 09:30 *Practical demonstration of tracking: pyramidal tract (case 1 with CSD)*
L. Petit, A. De Benedictis
- 09:45 Tracking at tables: pyramidal tract (case 1)
- 10:45 *Motor network and Speech Arrest network identification (case 1)*
N. Voets, L. Novello, F. Saviola
- 11:00 Comments on results and open coffee
- 11:15 *Practical demonstration of tracking: AF and SLF III*
L. Petit, A. De Benedictis
- 11:45 Tracking at tables: AF and SLF III (case 2)
- 12:45 Comments on results
- 13:00 Lunch
- 14:00 *Language, Default Mode Network and Speech Arrest Network identification (case 2)*
N. Voets, L. Novello, F. Saviola
- 14:30 *Practical demonstration of tracking: IFOF/UF*
L. Petit, A. De Benedictis
- 14:45 Tracking at tables: IFOF/UF (case 2)
- 15:45 Comments on results and open coffee
- 16:00 *Visual network identification (case 3)*
N. Voets, L. Novello, F. Saviola
- 16:15 *Practical demonstration of tracking: Optic Radiation*
L. Petit, A. De Benedictis
- 16:30 Tracking at tables: Optic Radiation (case 3)
- 17:30 Comments on results and open coffee
- 17:45 *Functional considerations from the operating room (video and photo) on the cases planning*
S. Sarubbo, L. Zigiotta
- 18:15 Closure remarks
- 18:30 Certificates