

**NeuroConnect**  
**Brain Connectivity and White Matter Dissection**  
**Friday, October 13, 2023**

Time	Session
<b>11:00 - 12:00</b>	<b>Registration + Sponsorship Exhibitor Booths</b>
<b>12:00—12:10</b>	<p><b>Welcome / Opening Remarks</b></p> <p>Dr. G. Zadeh, Dr. P. Kongkham, Dr. A. Kalyvas</p>
<b>12:10—12:30</b>	<p><b>Introduction to DTI-Based Tractography</b></p> <p>Dr. P. Leon-Alcaide</p> <p>The focus of this lecture is to instill the Basic principles of the DTI tractography in the participants. Different algorithms (deterministic vs probabilistic) will be comprehensively explained.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. Understand and Articulate the Core Principles: Upon completing this lecture, participants will be able to comprehensively explain the key principles underpinning diffusion tensor imaging (DTI), and the scientific concepts that make this neuroimaging possible.</li> <li>2. Differentiate between Tractography Algorithms: Participants will be able to differentiate between deterministic and probabilistic tractography, explaining the underlying algorithms and detailing the unique benefits and potential drawbacks of each approach.</li> <li>3. Apply Knowledge to Clinical Scenarios: Participants will gain an understanding of the clinical applications of tractography, particularly emphasizing the importance of these techniques when dealing with tumors located in motor or speech areas. They will be able to evaluate potential clinical scenarios where tractography could be utilized, and discuss how it could influence patient outcomes.</li> <li>4. Identify and Describe Limitations: Participants will be able to articulate key limitations of tractography, including distortion associated with edema, user dependency, and software limitations. They will develop a critical perspective on the application of tractography, understanding where its use is advantageous and where caution may be needed.</li> </ol>

	<p>5. <b>Initiate Informed Discussions:</b> Upon understanding the principles, applications, and limitations of tractography, participants will be equipped to participate in and initiate informed discussions about DTI-based tractography, demonstrating a strong foundational knowledge of this essential aspect of modern neuroimaging.</p>
<p><b>12:30—15:00</b></p>	<p><b>Mapping the Mind's Highways: An Exploration of Tractography with DSI Studio Software: 12:30-13:30</b></p> <p>Dr. F. Yeh (Online lecture)</p> <p><b>Hands-on reconstruction of white matter tracts: 13:30-15:00</b></p> <p>Drs. Alcaide, Skandalakis</p> <p>13:30-14:00: Reconstructing the Corticospinal Tract (CST)  14:00-14:30: Reconstructing the Arcuate Fasciculus (Language Dorsal Stream)  14:30-15:00: Reconstructing the Inferior Fronto-Occipital Fasciculus (Language Ventral Stream)</p> <p>Participants will gain practical skills using DSI-Studio, focusing on tractography applications in neuro-oncology and the reconstruction of key white matter tracts. The session equips them with directly applicable skills for their clinical practice.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. <b>Familiarize with DSI-Studio:</b> By the end of the session, participants will have hands-on experience with DSI-Studio, a widely-used, free, fiber-tracking software. They will understand its functionalities, and its role in the reconstruction of white matter tracts.</li> <li>2. <b>Grasp the Fundamentals of Tractography:</b> Participants will comprehend the basic principles of tractography, particularly in relation to the reconstruction of the corticospinal tract (CST) and the main fiber tracts of the dorsal and ventral language streams.</li> <li>3. <b>Appreciate the Clinical Applications of Tractography:</b> Participants will understand how tractography can be instrumental in preoperative planning, intraoperative navigation, and the postoperative assessment of potential damage to white matter tracts, allowing them to foresee its utility in clinical practice.</li> <li>4. <b>Apply Skills to Clinical Scenarios:</b> The session will equip participants with the essential knowledge to initiate tractography planning for common clinical cases, ensuring that they can apply their learning in a practical, patient-focused manner.</li> <li>5. <b>Understand Neuroanatomical Correlations:</b> Participants will understand the detailed anatomy associated with the CST and language streams, fostering an appreciation for the intricate relationship between anatomical structures and their imaging representations.</li> </ol>
<p><b>15:00—15:30</b></p>	<p><b>Break + Sponsorship Exhibitor Booths</b></p>

<p><b>15:30—16:15</b></p>	<p><b>TMS Mapping and TMS-Based Tractography for Brain Tumors</b></p> <p>Dr. S. Krieg (online lecture)</p> <p>The application and utility of transcranial magnetic stimulation (TMS) in the context of neuro-oncology will be explored. How this non-invasive stimulation technique can be utilized for mapping brain function and performing tractography will be examined, particularly in the case of patients with tumors located in eloquent brain areas. The aim of the session is to shed light on the potential of TMS to inform preoperative planning and contribute to the optimization of patient outcomes.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. Grasp Foundational Principles of TMS: Participants will understand the core principles of transcranial magnetic stimulation, including its mechanism of action and general applications in neuroscience and neurology.</li> <li>2. Understand TMS in the Context of Neuro-Oncology: Learners will appreciate the specific indications for TMS mapping in the preoperative planning for patients with tumors located in eloquent areas of the brain.</li> <li>3. Explore TMS for Preoperative Tractography: The session will detail how TMS can contribute to preoperative tractography, illustrating the potential of this technique to enhance surgical planning and patient management.</li> <li>4. Connect Theory and Practice: Through relevant case studies and clinical examples, participants will gain insights into how TMS and TMS-based tractography can be practically applied in the care of patients with brain tumors.</li> <li>5. Encourage Critical Evaluation: Learners will be encouraged to critically evaluate the strengths and limitations of TMS and its role within the broader landscape of neuroimaging and neurosurgical planning tools.</li> </ol>
<p><b>16:15—16:45</b></p>	<p><b>fMRI in Neurosurgical Planning</b></p> <p>Dr. MP McAndrews</p> <p>The role and utilization of functional Magnetic Resonance Imaging (fMRI) in the planning of neurosurgical procedures is explored. The focus is given to understanding the basic principles of fMRI, to interpreting its results, and to exploring its applications and limitations in the context of brain tumor surgery.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. Grasp the Foundations of fMRI: Participants will understand the fundamental principles of functional MRI and become acquainted with task selection based on the brain region of interest.</li> <li>2. Learn the Role of fMRI in Neurosurgery: The session will help participants recognize the essential applications of fMRI in the surgical management of brain tumors.</li> </ol>

	<p>3. <b>Develop Interpretative Skills:</b> Attendees will gain proficiency in interpreting fMRI results while being cognizant of its inherent limitations. This knowledge will allow for an informed and comprehensive approach to neurosurgical planning.</p>
<p><b>16:45—17:15</b></p>	<p><b>Neuro-Mapper: Comprehensive Mapping of Cognitive Functions During Awake Craniotomy</b></p> <p>Dr. D. Sabsevitz</p> <p>A deep exploration of a tablet-based testing platform. This tool, vital for intraoperative mapping of cognitive functions, provides paradigms to map not only speech but also non-language functions, such as attention and multitasking. The specific tasks required for mapping different areas, dependent on tumor location, will be thoroughly covered.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. <b>Platform familiarity:</b> Participants will gain familiarity with a tablet-based testing platform used for intraoperative cognitive mapping, expanding their understanding of its functionality and range of applications.</li> <li>2. <b>Comprehensive Cognitive Mapping:</b> Participants will delve into a wide array of paradigms and tasks used for intraoperative mapping of eloquent areas, enhancing their ability to adapt to different surgical scenarios.</li> <li>3. <b>Tailoring Tasks to Tumor Location:</b> Participants will learn how to select and implement specific tasks to map different areas, with a focus on aligning these tasks to the tumor's location, to improve surgical planning and patient outcomes.</li> </ol>
<p><b>17:15—18:00</b></p>	<p><b>Case Studies in Context: Exploring the Functional Neuroanatomy of Speech and Language through Neuropsychological Analysis</b></p> <p>Dr. D. Sabsevitz</p> <p>This talk will guide attendees through the multidimensional landscapes of the cortical language anatomy, emphasizing the functional implications seen in our clinical cases. We'll provide in-depth analyses of specific eloquent gyri, their interconnectedness, and their direct relevance to patient experiences. Anchored in our case-based approach, attendees will have the opportunity to see theory in practice, understanding how nuanced disruptions in cortical structures can manifest in diverse language processing challenges.</p>

	<p>Objectives:</p> <ol style="list-style-type: none"><li>1. Deep Dive into Clinical Case Studies: Participants will navigate through real-life clinical cases, observing firsthand the manifestations of language disruptions due to cortical anomalies, and relating these findings to the specific roles of various eloquent gyri.</li><li>2. Grasp the Clinical Implications of Cortical Disruptions: By dissecting case studies, attendees will discern the effects of disruptions in cortical structures on language processing, and will appreciate the intricate interplay between these structures.</li><li>3. Implement Neuropsychological Assessments in Awake Brain Mapping: Through these case studies, attendees will witness the importance of neuropsychological evaluations, and how they can be utilized alongside anatomical knowledge for precision in awake brain mapping procedures.</li></ol>
<b>18.00</b>	<b>Happy Hour / Social Event</b>

**NeuroConnect**  
**Brain Connectivity and White Matter Dissection**  
**Saturday, October 14, 2023**

Time	Session
<b>7:00 - 8:00</b>	<b>Breakfast + Sponsorship Exhibitor Booths</b>
<b>8:00— 8:30</b>	<p><b>Mastering the Maze: a cartographer’s guide to the cerebral sulci and gyri</b></p> <p>Dr. A. Kalyvas</p> <p>This lecture will provide a comprehensive overview of the cortical surface anatomy including the insula. We will delve into the correlation between cadaveric and radiographic (MRI) anatomy, enabling us to achieve precise pre-operative localization of pathologies. By the end of this session, participants will possess the skills to navigate the cerebral maze with confidence and accuracy</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. Achieve Mastery of Cortical Surface Anatomy: Participants will gain a comprehensive understanding of the sulci and gyri, including the insular surface.</li> <li>2. Establish Radiographic-Cadaveric Correlations: Participants will learn to draw parallels between cadaveric anatomy and radiographic (MRI) representations, enhancing their ability to accurately localize brain pathologies.</li> <li>3. Accurate Preoperative Localization: Through the integration of the aforementioned skills, participants will be equipped to perform more precise preoperative localization of various pathologies, a crucial skill in neurosurgical planning.</li> </ol>

<p><b>8:30—9:00</b></p>	<p><b>Decoding Dialogues in the Brain: Understanding Cortical Language Anatomy and Mapping Considerations</b></p> <p>Dr. P. Kongkham</p> <p>Our exploration will be centered around understanding the intricate cortical anatomy of language. We'll delve into the specific functions of eloquent gyri, and discuss their implications in the context of awake brain mapping cutting-edge functional studies. Through this comprehensive analysis, attendees will gain a deeper understanding of the complex interplay between cortical structures and their roles in language processing</p> <p>Objectives:</p> <ol style="list-style-type: none"> <li>1. Comprehend Cortical Language Anatomy: Participants will gain an in-depth understanding of the intricate cortical anatomy of language and the specific roles of various eloquent gyri.</li> <li>2. Delve into Functional Implications: Participants will learn about the implications of cortical anatomy on language function, particularly in the context of awake brain mapping and state-of-the-art functional studies.</li> <li>3. Understand Cortical Interplay in Language Processing: Participants will gain insights into the complex interplay between various cortical structures and their combined roles in language processing.</li> <li>4. Apply Anatomical Knowledge to Mapping: Through an understanding of cortical language anatomy, participants will be able to consider and apply this knowledge effectively during awake brain mapping procedures.</li> </ol>
<p><b>9:00—10:30</b></p>	<p><b>Hands-on/Wet Lab Surface Anatomy and Grey Matter Dissection</b></p> <p>All tutors (Kalyvas, Kongkham, Koutsarnakis, Lau, Martino, Skandalakis, Velasquez)</p> <p>The participants will review the sulci and gyri of the brain in their hemispheres; ask questions and discuss surgical aspects with the instructors. Then they will perform grey matter dissection to reveal the u-fibers of the lateral surface.</p> <p>Objectives:</p> <ol style="list-style-type: none"> <li>1. Expand Brain Surface Anatomy Understanding: Participants will review sulci and gyri, focusing on their surgical implications.</li> <li>2. Foster Interactive Learning: Engage in discussions with tutors about brain surface anatomy and surgical aspects.</li> <li>3. Develop Dissection Skills: Perform hands-on grey matter dissection, specifically revealing the lateral surface u-fibers.</li> </ol>

<p><b>10:30—11:00</b></p>	<p><b>White Matter Tracts Functional Anatomy: The language related dorsal and ventral streams</b></p> <p>Dr. Koutsarnakis</p> <p>In this lecture, the primary focus will be on dissecting the functional anatomy of the language-related dorsal and ventral streams. We'll delve into the connectivity of these tracts and scrutinize their functions using data from cutting-edge functional studies. The discussion will be enriched further by observations and insights derived from intra-operative direct subcortical stimulation techniques.</p> <p>Objectives:</p> <ol style="list-style-type: none"> <li>1. Understand Functional Anatomy: Participants will gain an in-depth understanding of the functional anatomy of the language-related dorsal and ventral streams.</li> <li>2. Analyze Connectivity and Function: Participants will examine the connectivity and functionalities of these tracts, utilizing data from advanced functional studies.</li> <li>3. Apply Surgical Insights: Participants will explore insights from intra-operative subcortical stimulation techniques, augmenting their understanding of these tracts in a clinical context.</li> </ol>
<p><b>11:00—11:30</b></p>	<p><b>The temporo-parieto-occipital junction: The Lateral Aspect of the Brain</b></p> <p>Dr. J. Martino</p> <p>The intricate convergence of the temporal, parietal, and occipital lobes will be explored. This region, known for its rich concentration of eloquent white matter tracts, requires a three-dimensional understanding of its complex anatomy for effective surgical intervention. Participants will be guided through practical scenarios and engaging case discussions to solidify their understanding and application of this knowledge.</p> <p>Objectives:</p> <ol style="list-style-type: none"> <li>1. Eloquent Tracts Comprehension: Participants will gain an in-depth understanding of the eloquent white matter tracts present in the temporo-parieto-occipital junction and their significance in neurosurgical procedures.</li> <li>2. Master 3D Anatomical Understanding: Participants will learn to conceptualize the intricate anatomy of the temporo-parieto-occipital junction in three dimensions, a critical skill for effective surgical planning and navigation in this complex region.</li> <li>3. Apply Knowledge to Case Scenarios: Through practical scenarios and case discussions, participants will apply their three-dimensional anatomical understanding, enhancing their ability to plan and execute surgeries involving the temporo-parieto-occipital junction.</li> </ol>



<p><b>11:30—12:00</b></p>	<p><b>Lateral to Medial Dissection: How we do it</b></p> <p>Dr. Kalyvas</p> <p>The dissection technique will be discussed in a stepwise manner revealing the eloquent tracts focusing on the dissection strategy and the comparative anatomy.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. Understand Klingler's Technique: Participants will gain an understanding of the specifics of Klingler's technique, including the unique preparation of specimens.</li> <li>2. Comprehend Dissection Strategy: Participants will learn the stepwise approach of the lateral to medial dissection, including technical details and tips and tricks.</li> <li>3. Master Comparative Anatomy: The session will highlight the comparative anatomy of the different tracts and help create a 3D understanding of the tracts to used during brain surgery.</li> </ol>
<p><b>12:00—13:00</b></p>	<p><b>Lunch + Sponsorship Exhibitor Booths</b></p>
<p><b>13:00—15:00</b></p>	<p><b>Hands-on/Wet Lab: Lateral to Medial Dissection: Part 1</b></p> <p>All tutors (Kalyvas, Kongkham, Koutsarnakis, Lau, Martino, Skandalakis, Velasquez)</p> <p>During this hands-on session, participants will engage in dissection of important dorsal associative fiber tracts, namely the superior longitudinal fasciculus (SLF II and III), arcuate fasciculus, middle longitudinal fasciculus, and frontal aslant tract. Tractographic images of these same tracts, displayed at the master station, will aid in bridging the gap between cadaveric dissection and tractographic anatomy.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. Conduct Hands-On Dissection: Participants will engage in dissection of dorsal associative fiber tracts of the lateral surface, including the superior longitudinal fasciculus (SLF II and III), arcuate fasciculus, middle longitudinal fasciculus, and frontal aslant tract.</li> <li>2. Correlate Cadaveric and Tractographic Anatomy: Participants will gain the ability to correlate cadaveric anatomy with tractographic images, as corresponding tractographic images of the same tracts will be displayed at the master station, enriching their understanding of tract anatomy.</li> <li>3. Apply Dissection Techniques: Participants will apply the dissection strategies and techniques learned in the preceding lecture, fostering a practical and comprehensive understanding of lateral to medial dissection.</li> </ol>

<p><b>15:00—16:00</b></p>	<p><b>Hands-on/Wet lab: The trans-opercular approach to the insula</b></p> <p>Dr. J. Martino</p> <p>The trans-opercular approach to the insula will be shown in two stages. In this first opercular stage, the approach through the frontoparietal and temporal operculum with regards to the access to different parts of the insula will be demonstrated and discussed. Also, the relation of different white matter tracts with the opercula will be shown and surgical/mapping considerations discussed. In the second insular stage of the approach, discussing the functional vs the anatomical limits of the resection.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. <b>Mastery of Insular Anatomy:</b> Participants will acquire a thorough understanding of the surgical anatomy of the insula and its adjacent areas, aiding in surgical planning.</li> <li>2. <b>White Matter Tracts Connectivity:</b> Participants will delve into the connectivity and related white matter tracts of the insula, facilitating an enhanced grasp of its functional anatomy and clinical implications.</li> <li>3. <b>Proficiency in the Trans-Opercular Approach:</b> Through the exploration of the two-stage trans-opercular approach, participants will gain a comprehensive understanding of the operative principles, including surgical/mapping considerations, the relation of white matter tracts with the opercula, and understanding the functional versus anatomical limits of resection of insular tumors.</li> </ol>
<p><b>6:00—18:00</b></p>	<p><b>Hands-on/Wet Lab: Lateral to Medial Dissection: Part 2</b></p> <p>All tutors (Kalyvas, Kongkham, Koutsarnakis, Lau, Martino, Skandalakis, Velasquez)</p> <p>The participants will dissect the ventral associative fiber tracts of the lateral surface, along with the tracts of the insula and the central core: Inferior longitudinal fasciculus, Inferior fronto-occipital fasciculus, uncinete fasciculus, external and internal capsule, optic radiations, anterior commissure.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. <b>Perform dissection of ventral associative tracts:</b> Participants will dissect the Inferior longitudinal fasciculus, Inferior fronto-occipital fasciculus, and uncinete fasciculus, bolstering their practical understanding of these ventral associative fiber tracts on the lateral surface.</li> <li>2. <b>Navigate Insular and Central Core Tracts:</b> The session will enhance participants' anatomical comprehension by allowing them to dissect and navigate through the external and internal capsule, anterior commissure and others in the insular region and the central core.</li> <li>3. <b>Correlate Cadaveric and Tractographic Anatomy:</b> Participants will have the opportunity to simultaneously view tractographic images of the dissected tracts, enabling them to directly correlate their hands-on dissection with the corresponding tractographic anatomy, further enriching their learning experience.</li> </ol>

**NeuroConnect**  
**Brain Connectivity and White Matter Dissection**  
**Sunday, October 15, 2023**

Time	Session
7:00 - 8:00	<b>Breakfast + Sponsorship Exhibitor Booths</b>
8:00— 9:00	<p><b>Functional neuroanatomy of the motor and pre-motor system: evidence from intraoperative neurophysiology during brain tumor surgery</b></p> <p>Dr. L. Bello</p> <p>The role and significance of intraoperative neurophysiology in understanding the functional anatomy and connectivity of the motor and pre-motor regions will be explained. The lecture, rooted in tangible experiences from brain tumor surgeries, will provide an in-depth perspective on the methodology and practical aspects of conducting intraoperative mapping in both awake and asleep contexts.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. Understand Functional Anatomy via Intraoperative Neurophysiology: Participants will gain a solid understanding of the functional anatomy and connectivity of the motor and pre-motor regions, emphasising the role of intraoperative neurophysiology.</li> <li>2. Acquire Intraoperative Mapping Proficiency: Participants will learn to perform intraoperative mapping of motor and pre-motor regions, informed by intraoperative neurophysiology</li> <li>3. Incorporate Real-World Surgical Experiences: Participants will apply the insights and techniques discussed in real-world contexts, utilising evidence and experiences from actual brain tumor surgeries to enhance their surgical approach and patient outcomes.</li> </ol>

<p><b>9:00—9:30</b></p>	<p><b>Right On Target: Spotlight on Right Hemisphere Mapping and White Matter Tracts in Attention and other functions</b></p> <p>Dr. C. Velasquez</p> <p>This lecture investigates the essential role of right hemisphere mapping, with an emphasis on cortical and subcortical areas associated with attention, visuospatial cognition, praxis, non-verbal semantics and others. Through the examination of these critical functions, we shed light on the unique capabilities and characteristics of the right hemisphere.</p> <p>Objectives:</p> <ol style="list-style-type: none"> <li>1. Understand Right Hemisphere Mapping: Participants will gain a thorough understanding of the process and significance of right hemisphere mapping, with a specific focus on its role in managing attention, visuospatial cognition, praxis, and non-verbal semantics.</li> <li>2. Investigate White Matter Tracts: Participants will delve into the structure and function of white matter tracts in the right hemisphere, learning how these tracts correlate with various cognitive functions and behaviors.</li> <li>3. Apply Knowledge in Clinical Scenarios: Participants will learn to apply their understanding of right hemisphere mapping to clinical scenarios, leveraging their knowledge to evaluate and address various neurocognitive and behavioral outcomes.</li> </ol>
<p><b>9:30—9:50</b></p>	<p><b>Decoding Motor Cognition and Cognitive Control: Exploring Underlying Connectivity and Task Application in Brain Surgery</b></p> <p>Dr. Gulielmo Puglisi</p> <p>This insightful theoretical talk aims to delve into the intertwined nature of motor mapping and cognitive mapping, spotlighting the shared underlying connectivity of these functions. The session will focus on key aspects such as cognitive control, motor cognition-awareness, and spatial selective attention. Leveraging the Milan's group collective knowledge documented in numerous papers Dr. Puglisi will detail the tasks used to identify and preserve these functions during surgery. This comprehensive understanding will subsequently aid in the practical application of these tasks in the operating theatre.</p>

	<p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. Understanding Shared Connectivity: Participants will gain insights into the shared underlying connectivity between motor and cognitive functions, forming the foundation of motor cognition.</li> <li>2. Exploring Cognitive Control and Motor Cognition-Awareness: Through an in-depth look into cognitive control and motor cognition-awareness, attendees will get a grasp of these intricate concepts and their applications in practical settings.</li> <li>3. Unveiling Spatial Selective Attention: Dr. Puglisi will shed light on the crucial aspect of spatial selective attention and its significant role in cognitive function mapping.</li> </ol>
<p><b>9:50—10:20</b></p>	<p><b>Break + Sponsorship Exhibitor Booths</b></p>
<p><b>10:20—10:50</b></p>	<p><b>Medial Matters: Navigating the Functional Anatomy of White Matter Tracts in the Brain's Core</b></p> <p>Dr. A. Horn (online lecture)</p> <p>This exploration illuminates the configuration and connectivity of white matter tracts in the medial aspect of the brain and underlines their vital role in neurosurgical procedures, particularly in functional neurosurgery.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. Master White Matter Anatomy of the medial aspect of the brain: Participants will acquire a thorough understanding of the structure and anatomy of the white matter tracts located in the brain's medial aspect, enhancing their comprehension of this complex neuroanatomical area.</li> <li>2. Understand Connectivity: Participants will delve into the intricate connectivity within the medial aspect of the brain, deciphering how these connections contribute to various cognitive and neurological functions.</li> <li>3. Appreciate Clinical Applications: Through an exploration of neurosurgical and functional neurosurgical cases, participants will discern the clinical relevance and application of knowledge related to the medial brain's functional anatomy.</li> </ol>
<p><b>10:50—11:20</b></p>	<p><b>Medial to Lateral Dissection: How we do it</b></p> <p>Dr. Lau</p> <p>A detailed, step-by-step guide to the medial-to-lateral dissection technique will be discussed. Focusing on the dissection strategy and comparative anatomy, the session will shed light on eloquent white matter tracts and central core structures critical for intraventricular surgery and functional neurosurgery. Attendees will have the chance to grasp a 3D representation of these tracts, fostering a deeper understanding of the brain's medial aspect intricate spatial relationships.</p>

	<p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. Master Dissection Techniques: Participants will gain a practical understanding of a step-by-step medial-to-lateral dissection technique.</li> <li>2. Develop a 3D Representation: Attendees will cultivate the ability to create a 3D imagery of the white matter tracts, enhancing their spatial understanding of the brain's complex structures.</li> <li>3. Comprehend Tracts' Relation to Ventricular System: The session will provide a detailed overview of the relationship between white matter tracts, the ventricular system, and central core structures, highlighting its significance in the context of intraventricular surgery.</li> <li>4. Understand Comparative Anatomy: Participants will delve into the comparative anatomy of white matter tracts, gaining insights valuable for neurosurgical planning and execution.</li> </ol>
<p><b>11:20—11:40</b></p>	<p><b>Practical session/Wet Lab</b></p> <p><b>Mastering Pre-Motor Gliomas: A Practical Walkthrough of the mapping and resection strategy</b></p> <p>L. Bello</p> <p>In this session, the intricate anatomy associated with motor and premotor gliomas will be dissected at the master station. Concurrently, an analysis of the interrelated cortical and subcortical functions will be provided. Mapping considerations critical for formulating effective resection strategies will be elucidated, bolstered by real case study demonstrations. Attendees are poised to gain a comprehensive understanding of these complex procedures through this focused, practical demonstration</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. Understand Intra-Operative Strategy: Through step-by-step demonstration, participants will learn the intricacies of an intra-operative strategy for handling motor and premotor gliomas, gaining insights into dissecting associated complex anatomy.</li> <li>2. Discuss Practical Scenarios: Attendees will participate in interactive discussions, exploring practical scenarios that illustrate the pertinent anatomy on the cadaver and simulate the mapping and resection strategy.</li> <li>3. Analyze Case Studies: Through the analysis of real-life case studies, participants will further comprehend the application of these strategies, enhancing their understanding of the effective formulation of resection strategies for motor and premotor gliomas.</li> </ol>

<p><b>11:40—12:00</b></p>	<p><b>Practical session/Wet Lab</b></p> <p><b>Cognition and Visuospatial attention in glioma surgery: A Practical Deep Dive into Mapping and Resection Strategies</b></p> <p>L. Bello</p> <p>In this engaging hands-on session, attendees will be guided through an in-depth exploration of the complex strategies involved in mapping and resecting gliomas implicating cognitive and visual attention functions. Drawing on recent innovations in intraoperative neurophysiology and neuropsychology, the workshop will underscore the crucial role of maintaining cognitive functions, including motor haptic and visuospatial capabilities, memory, social interactions, empathy, and emotions. With the aid of a case study demonstration at the master station, participants will understand the nuances of these strategies, correlating them with both preoperative and postoperative neuropsychological evaluations, essential for improving quality of life post-surgery.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>1. Explore Innovations in Cognitive Mapping: Participants will gain an understanding of the latest techniques in cognitive mapping, focusing on preserving cognitive functions that underpin high-quality human functioning.</li> <li>2. Master Mapping and Resection Strategies: Through step-by-step demonstrations and discussions, attendees will gain practical insights into the complex mapping and resection strategies used in managing gliomas implicating cognition and visual attention.</li> <li>3. Understand the Role of Neuropsychological Evaluations: The session will highlight the significance of extensive preoperative and postoperative neuropsychological assessments in diagnosing cognitive impairments, evaluating surgical results, and planning cognitive rehabilitation.</li> </ol>
<p><b>12:10—13:00</b></p>	<p><b>Lunch + Sponsorship Exhibitor Booths</b></p>
<p><b>13:00—17:00</b></p>	<p><b>Hands-on/Wet Lab</b>  <b>Medial to Lateral Dissection</b></p> <p><b>All tutors</b></p>

	<p>The participants will dissect the medial associative tracts such as the cingulum bundle, the superior longitudinal fasciculus I and the sledge runner - major commissural tracts such as the callosal radiations, forceps major, minor, anterior commissure, and parts of the limbic system such as the fornix and the mammillothalamic tract.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"><li>1. Dissect Medial Associative Tracts: Participants will gain practical experience in dissecting crucial medial associative tracts, including the cingulum bundle and the superior longitudinal fasciculus I.</li><li>2. Identify and Understand Commissural Tracts: Attendees will dissect and study major commissural tracts like callosal radiations, forceps major and minor, and the anterior commissure, gaining a comprehensive understanding of their roles and functions.</li><li>3. Explore Limbic System Structures: Participants will have the opportunity to dissect and learn about integral parts of the limbic system, such as the fornix and the mammillothalamic tract, enhancing their practical knowledge of these complex neuroanatomical structures.</li></ol>
<b>17:00—17:15</b>	<b>Closing Remarks</b>