MASSACHUSETTS GENERAL HOSPITAL

HARVARD MEDICAL SCHOOL

Massachusetts General Hospital Intraoperative Ultrasound Course

Harvard Medical School

April 29, 2021 10:30 am EST

Course Directors: Brian Nahed, MD, MsC and Geirmund Unsgard, MD

10:30 AM	**Introduction** Brian Nahed, MD, MsC & Geirmund Unsgard, MD
10:35 AM	**Overview of Intra-operative imaging (ioUS, iCT, iMRI)** Brian Nahed MD, MsC
10:45 AM	**Mastering ioUS – Skills and techniques required** Aliasgar Moiyadi, MBBS, MS, DNB General Surgery, MCh, DNB Neurosurgery
11:00 AM	**Ultrasound in Brain Tumor Resection. (Anatomy, landmarks)** Francesco DiMeco, MD
11:15 AM	**Navigated 3D Ultrasound in Brain Tumor Resection (Tricks/tips)** Geirmund Unsgard, MD
11:25 AM	**Contrast-Enhanced Ultrasound and Elastography** Francesco Prada, MD
11:35 AM	**Ultrasound in Hydrocephalus, Endoscopy, Chiari Decompression** Llewellyn Padayachy, MD
11:45 AM	**Panel Discussion on Ultrasound in Neurosurgery** Geirmund Unsgard, MD; Moiyadi, DiMeco, MBBS, MS, DNB General Surgery, MCh, DNB Neurosurgery; Alessandro Perin, Francesco Prada, MD Llewellyn Padayachy, Brian Nahed, MD, MsC
11:55 PM	**Hands on Ultrasound Simulation** Alessandro Perin, MD, PhD
12:25 PM	**Adjourn**

Aliasgar V. MOIYADI

Professor Aliasgar V Moiyadi, MS, MCh . Chief of Neurosurgery, Tata Memorial Centre, Mumbai, INDIA

Dr Aliasgar Moiyadi presently heads the neurosurgery services at Tata Memorial Centre (TMC), Mumbai, India.Dr Moiyadi completed his neurosurgical training from the National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore, a premier neuroscience training institute in India. He was instrumental in establishing the Neurosurgical Oncology services at TMC, one of the few neurosurgical departments in India catering to neuro-oncology exclusively. His areas of interest include novel strategies for improving visualization and resection of gliomas particularly navigated ultrasound and optical imaging (which he has pioneered in the country), intraoperative brain mapping including awake surgeries, minimally invasive neurosurgery, skull base surgery and biology of malignant brain tumors. He has over 150 peer reviewed publications and is on the editorial board of many neurosurgical journals, besides being the Tumor section Editor for World Neurosurgery, one of the leading neurosurgical journals. He is a member of the World Federation of Neurosurgical Societies (WFNS) – Technology committee and on the Executive committee of the Indian Society of Neuro-oncology. He is also involved in many clinical trials and translational research projects with collaborators within and outside of TMC. He is passionate about teaching and training especially in the application of intraoperative ultrasound in neurosurgical oncology.

Francesco DI MECO

Professor of Neurosurgery, University of Milan

Francesco is Director of the Department of Neurosurgery at Fondazione Istituto Neurologico Carol Besta and Full Professor of Neurosurgery at University of Milan. Focusing on neurosurgical oncology, he has published more than 190 peer-reviewed papers and several book chapters (h-index: 52, Scopus). He has gained considerable experience in the loco-regional treatment of brain tumours and distinguished himself as a co-author of the first worldwide research that lead to the identification of tumour stem cells in glioblastomas and alternative treatment strategies by inducing tumour cells differentiation, publishing a pioneering article in Nature. Recently, his research has broaden to embrace the field of intraoperative imaging, becoming one of the world's leaders on intraoperative ultrasound in neurosurgery. He founded the first neurosurgical simulation centre in Europe (Besta Neurosurgical Simulation Center) which is also one of the best equipped simulation centers in the world.

Francesco PRADA

Visiting Professor, University of Milan

Francesco obtain his medical and dental degrees from the University of Milan. He received neurosurgical training at the Policlinico of Milan (also known as Ospedale Maggiore di Milano) and St. Anne's Hospital in Paris. Francesco is currently a neurosurgeon in the Department of Neurosurgery at the Fondazione IRCCS Istituto Neurologico Carol Besta in Milan. His clinical and research interests are skull base and pituitary surgery, and neuro-oncology, particularly focusing on intra-operative applications of ultrasound for the treatment of brain tumours and vascular lesions.Francesco is also Visiting Professor in the Department of Neurological Surgery, UVA Health Science Center, where he conducts clinical and pre-clinical research in focused ultrasound.

Geirmund UNSGÅRD

Professor, Norwegian University of Science and Technology

Professor UNSGÅRD has been a Professor at NTNU for 30 years, where he also was Dean of the Medical Faculty for 6 years. He was Chief of Neurosurgical Dept and Head of Neuro-division, St Olav University Hospital for 22 years. He has been using navigated 3D Ultrasound in neurosurgical operations for 23 years. He has published 195 scientific articles in peer reviewed journals and 8 book chapters. The research encompasses cell biology, MR technology and in the last 20 years mostly the use of ultrasound technology to guide and improve neurosurgical operations. He has been entrusted different national and international professional positions. As a politician he was a member of the City Council of Trondheim for 7 years. He left politics about two decades ago when he moved out of the city to a farm nearby with his wife and five children. Here they have a lot of space for their two horses and for receiving visits from family including their 6 grandchildren. In 2009 Professor UNSGÅRD was knighted by the King of Norway ("Knight of St Olavs Order") for his scientific and professional achievements

Alessandro PERIN

Adjunct Professor of Neurosurgery, University of Milan
Alessandro is a medical graduate of the University of Padua, Italy (2003) where he finished his neurosurgical training (2009). He received his training in Neurosurgical Oncology at the Montreal Neurological Institute, McGill University (2010-2011) and earnt his PhD degree in Neuroscience/ Neurobiology (Neuro-Oncology) from the University of Trieste in 2012.Alessandro has joined Carol Besta Neurological Institute (Fondazione IRCCS Istituto Neurologico Carlo Besta) as a Neurosurgical Specialist. He also serves as the Scientific Director of the Besta Neurosurgical Simulation Center and Adjunct Professor of Molecular Neuro-Oncology at the University of Trieste. His interests are Advanced 3D reality applied to Neurosurgery He contributed to developing the first ioUS web-based platform (https://neurostream.academy) and the first ioUS simulation and rehearsal app (USim). He believes new technologies may help both training and performance in neurosurgery.

Llewellyn PADAYACHY

Llewellyn is currently Full Clinical Professor and Head of Department of Neurosurgery, University of Pretoria, South Africa. He is also the Chief Specialist and Pediatric Neurosurgeon at the Steve Biko Academic Hospital, Pretoria. Llewellyn received the Rowland Krynauw award for distinction in his fellowship examination (2008) and subsequently obtained his Master degree in Medicine and Ph.D in 2010 and 2015 from the University of Cape Town. He furthered his training in Paediatric Neurosurgery at Boston Children's Hospital, Harvard University (2014) and Functional MRI at Brain Unit of Oxford University (2016). Llewellyn is widely recognized for his expertise in Paediatric Neurosurgery, minimally invasive surgical techniques and the use of intra-operative ultrasound in brain tumor surgery. He is an Executive Board member of the International Society of Pediatric Neurosurgery (ISPN) and Neuroendoscopy Committee Member of the World Federation of Neurosurgical Societies (WFNS)

Brian Nahed

Brian is currently Associate Professor and Program Director of the Neurosurgery Residency Program at the Massachusetts General Hospital and Harvard Medical School. Dr. Nahed specializes in brain tumors of the eloquent cortex, awake surgery, language and motor mapping, and subcortical stimulation and in intraoperative technology. Dr. Nahed graduated from the Yale School of Medicine, awarded the Doris Duke Clinical Research Fellowship. He completed his internship and neurosurgery residency at the Massachusetts General Hospital; and a postdoctoral fellowship at the MGH Cancer Center. Dr Nahed;s research focuses on developing the first blood based test to diagnose and monitor brain tumors. Dr. Nahed serves on the Executive Committee of the Congress of Neurological Surgeons and the CNS/AANS Executive Committee For Brain Tumors. He serves as the co-chair of the CNS Leadership Institute and Annual Meeting Chair for the CNS 2021 Meeting.

Faculty Bios

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Alessandro Perin

Franscesco DiMeco

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