

17/18th Annual SBMT

World Congress of Society for Brain Mapping
and Therapeutics, Los Angeles, California, USA
(In Person & Virtual Event Focused on Brain and Spine)

Breaking Boundaries of Science, Technology, Medicine, Art & Healthcare Policy

July 8 - July 11, 2021, LA Convention Center, 1201 S. Figueroa St, Los Angeles, CA 90015

Exhibition, Workshops, Didactics, Bio-skills/Cadaver Labs (Brain and Spine) and Brain Mapping Foundation Gala

Audience includes: neurosurgeons, radiologists, neurologists, psychiatrists, rehabilitation medicine physicians, cardiologists, pulmonologists, bio-ethicists, oncologists, radiation oncologists, neuroscientists, engineers, physicists, psychologists, industry leaders, Orthopedic/Spine Surgeons, biochemists, nanotechnologists, pharmacists, stem cell scientists, computer/data scientists, post-docs, residents, and fellows



For more information visit:

www.WORLDBRAINMAPPING.ORG





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TOPICS COVERED BY WORLD LEADERS IN THIS MEETING:

Neurosurgery (e.g. image guided therapy, intraoperative navigation, nanoneurosurgery, stereotactic radiosurgery, minimally invasive therapy, vascular neurosurgery, functional neurosurgery, neurotrauma/military medicine, neurosurgical oncology, surgical simulation, Peripheral nerve disorders...)

Neurology (e.g. EEG, ERP, movement disorders, neurodegenerative diseases (Alzheimers, Parkinson, and huntington), neurooncology, neuromodulation, epilepsy, neuroanesthesia and brain and spinal cord function...)

Psychiatry (e.g. opiod and addiction, anxiety disorder, autism, sleep, medical imaging for psychiatric conditions such as schizophrenia, depression, PTSD...)

Radiology (e.g. fMRI, MEG, PET, nuclear medicine, MRSI, MR-PET, DTI, CT-PET, focused ultrasound, MSI/MEG, ultra-high and low field MRI and interventional radiology...)

Neuroscience (e.g. stem cell, molecular neuroscience, image guided mapping of genes, proteomics, genomics, neurophysiology, nanoneuroscience, aging CBD...)

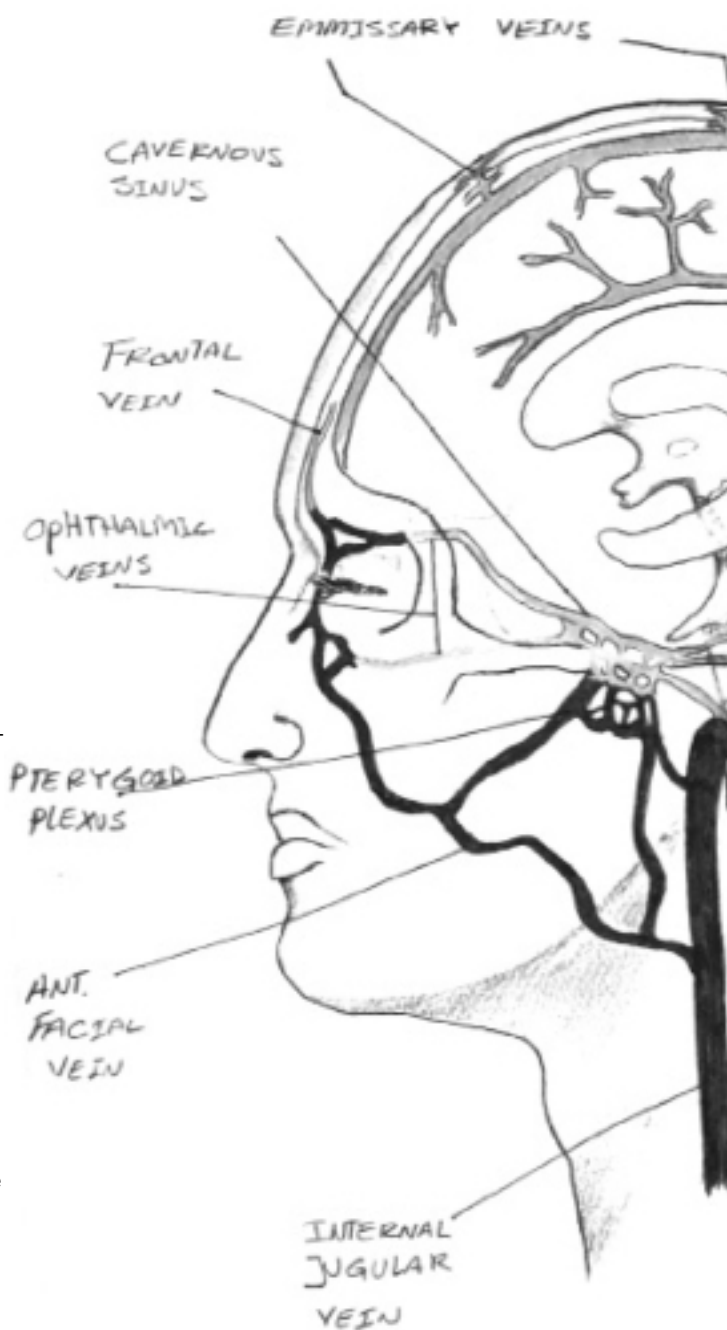
Vascular/Neurovascular (e.g. risk of Spinal Cord Injury and Stroke during Aortic procedures and new protective measures, new dynamic modalities of MRA & MRV in diagnostic of vascular diseases, Neurovascular imaging, Angiogenesis stimulation and stem cells research, new aggressive approach to Stroke management, endovascular treatment of Cerebral aneurysms, Vascular Disease in Patients with Multiple Sclerosis, Chronic Cerebrospinal Venous Insufficiency (CCSVI) in Pathophysiology of MS, carotid disease identification & management in Stroke prevention)

Neuroengineering (e.g. artificial intelligent, fractal geometry, super computing, neuro-photonics, biomaterial & tissue engineering, human brain machine interface, brain and spinal cord devices, nanomedicine, extraterrestrial/space medicine & clinical practice, software engineering, electrical and material engineering, aeronautic engineering/space medicine and radiation physics/oncology as well as robotics...)

Nano-Bio-Electronics (e.g. integration of stem cell/cellular therapy with nanotechnology, medical devices and imaging...)

Spine (e.g. regeneration, stem cell, imaging, implants and biologics, materials, hardware and techniques...)

Policy and Business Development (e.g. business plan workshops, health care policy issues that affect the treatment delivery, and usage of certain devices/drugs/ imaging technologies, FDA regulations and reimbursements, federal and regional regulation impacting health care delivery and research funding...)



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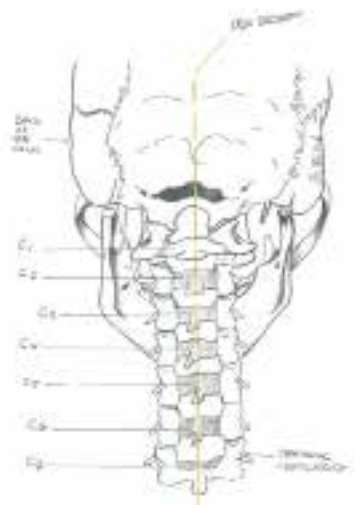


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CONTINUING MEDICAL EDUCATION NEEDS ASSESSMENT



In recent years, astonishing advances have contributed to amazing discoveries and breakthroughs in fields of neurology, neuroscience, neurosurgery, radiology, engineering, computer science, nanotechnology, medical imaging, medical devices and cellular/stem cell therapy.

These scientific advances also have contributed to the large gap of knowledge amongst the scientists in different disciplines. One of the major challenges of 21st century for the scientific community is how to close such gaps of knowledge amongst multiple disciplines. We have designed the annual meeting of SBMT to address such challenges by bringing together world class experts across multiple disciplines.

Moreover, we have identified a need for progressive integration of nanotechnology, cellular therapy with medical devices and imaging. This is why we have chosen "Nano-Bio-Electronics: Translation, Integration and Commercialization" as the theme of the 17th Annual World Congress of SBMT at Los Angeles Convention Center. The purpose of the annual meeting is to create an interactive environment, which fosters cross-pollination of ideas and paves the way for birth of new treatment and diagnostic modalities in the field.

REASONS TO PARTICIPATE

Link in with near 200,000+ scientists, engineers, surgeons and physicians on SBMT global network.

Network with our attendees during social events held during the conference.

Present in a World Class Multidisciplinary Biomedical Association.

Meet Funding Agencies (Foundations, government and industry).

Meet leaders and Pioneers in your field.

Market your research and ideas to investors / grant makers.

Commercialize your ideas.

Publish in PlosOne NeuroMapping and Therapeutics.

Demonstrate your state of the art technologies at one of the top brain and spinal cord conventions in the world.

Gain Access to our scientists, engineers, surgeons and physicians from multiple different disciplines at once.

Promote your company through multiple net-working opportunities and develop business-to-business contacts.

Return On Investment and increase your bottom line with face-to-face contact with potential investors.

Competitive Advantage Your participation at the conference provides you the opportunity to spend quality time with the leaders in the community and get your message across more effectively and efficiently.

Obtain Continuing Medical Education (CME) is provided by Johns Hopkins School of Medicine and Saint Louis University School of Medicine

Interact with a focused and attentive audience during scientific and educational activities, such as exhibitor-hosted workshops, division programming, poster sessions, and other meeting activities.

Make The Difference and reinforce your visibility beyond the exhibition area through discussion groups, workshops and hands on courses.

Attract and influence attendees at every stage of their career, from students to entry level scientists to acknowledged leaders in their scientific fields.

Enhance your know-how and stay abreast of industry changes and state-of-the-art in the field.

Visit the beautiful city of Los Angeles with its amazing sights.



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CONTINUING MEDICAL EDUCATION JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE



JOHNS HOPKINS
MEDICINE



Accreditation Statement

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of John Hopkins University School of Medicine and the Society of Brain Mapping & Therapeutics. The Johns Hopkins University School of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

Credit Designation Statement

Johns Hopkins University School of Medicine designates this live activity for a maximum of 13.5 **AMA PRA Category 1 Credits™**. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Policy on Presenter and Provider Disclosure

It is the policy of the Johns Hopkins School of Medicine that the presenter and provider globally disclose conflict of interest. The Johns Hopkins School of Medicine OCME has established policies in place that will identify and resolve conflicts of interest prior to this educational activity. Detailed disclosure will be made prior to presentation of the education.

Johns Hopkins University School of Medicine will provide non-physician certificates. The certificate will state that the activity was designated for a maximum of 13.5 **AMA PRA Category 1 Credits™**. Follow your board's requirements for reciprocal CE credits.

Friday, July 9, 2021

Session A5 Advances In Movement Disorders I: DBS & Beyond (1.5)
Session A7 Neural Engineering I: Addressing Challenges in Cochlear Implants (1.5)
Session A9 Complex Spine Surgery, Imaging and Reconstruction Techniques (1.5)
Session A17 The Eye: Window to the Mind and Body (1.5)
Session A18 Epilepsy and Intraoperative Brain Mapping (1.5)
Session A21 Rehabilitation and Biologics in Spine Surgery (1.5)
Session A29 Advance in Parkinson's Disease II: Imaging and New Treatments (1.5)
Session A30 MEG/EEG Clinical Applications (1.5)
Session A31 Neural Engineering III: Computational Models for Neural Prosthesis (1.75)
Session A33 Management of Spinal Cord Trauma (1.75)

Saturday, July 10, 2021

Session B45 Management of Spine Disorders (1.75)
Session B55 Neural Engineering V: Multiscale (Hierarchal) Model of the Nervous System (1.5)
Session B65 Updated Retinal Research (1.5)
Session B66 Epilepsy & Neurophysiology (1.5)
Session B69 Neurovascular Disorders (1.5)

Sunday, July 11, 2021

Session C77 Advanced Therapeutics: Ketamine for the Treatment of Depression (1.5)
Session C78 MEG Sensors (1.5)
Session C81 Neurovascular Disorders (1.5)
Session C89 Brain Mapping in Neuro-Psych Behavior (1.5)
Session C91 Neural Engineering VIII: Artificial Retina (1.5)
Session C93 Neurovascular Disorders (1.5)
Session C101 Impact of Stable Visual Skills on Quality of Life (1.5)
Session C105 Neurovascular / Skull Base Disorders (1.75)



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JOHNS HOPKINS CME CERTIFICATES

Within twenty days after the close of the activity, you will be sent an email from JHU office of continuing medical education, to the address provided during registration, notifying you that your CME certificate is available for download.

You will need to log-in to the online registration site and complete the activity evaluation, **CLAIM THE HOURS THAT YOU ATTENDED THE JHU APPROVED SESSIONS** in order to access and print your certificate.

The link to log-in and your username will be included in the email.

OBJECTIVES FOR JOHNS HOPKINS UNIVERSITY CME APPROVED ACTIVITIES:

NEUROENGINEERING (Room 150A):

OBJECTIVES

1. Discuss recent advances in sensory Neuro-prostheses.
2. Discuss advances in the brain as a computing machine.
3. Employ recent advances in methodologies to solve complex multi-scale problems in the nervous system.
4. Analyze the latest advances in neuro-technology from the DOE national labs.
5. Explore the latest state of science in neuro-engineering and neural interface technologies.

MEG (Room 410):

OBJECTIVES

1. Discuss the latest advances in MEG and EEG Techniques, software applications and future directions, and the state of Science of MEG and EEG
2. Perform detailed localization of cortically and subcortically abnormalities, seizure localization, autistic spectrum and other neurological disorders.
3. Discuss the latest advances in the use of scalp derived biometrics measures for localizing brain function.
4. Utilize objective measurements in movement disorders.
5. Discuss the latest state of science, technology and clinical application of neuromodulation
6. Demonstrate how EEG, MEG, QEEG and scalp derived Biometrics are applied in the treatment of brain function associated with the cerebellum and movement disorders.



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OBJECTIVES FOR JOHNS HOPKINS UNIVERSITY CME APPROVED ACTIVITIES:

Spine (Room 150 B):

OBJECTIVES

1. Share the latest advances in complex spine disorders and injury, including care, techniques, rehabilitation, and technology.
2. Discuss the rehabilitation of spinal cord injury, including sports injury in athletes.
3. Analyze the latest approaches to the management of the spinal cord trauma and disorders..

Neurovascular (Room 150 B):

OBJECTIVES

1. Discuss the most recent advances in the management of cerebral aneurysms, cerebral AVMs and acute ischemic stroke
2. Address the challenges involved in the treatment of complex neurovascular disorders
3. Compare and contrast approaches to skull base extra-axial tumors with a focus on surgical anatomy
4. Relate artificial intelligence to the treatment of neurovascular disease

Optometry (Room 406 A):

OBJECTIVES

1. Articulate that the eye is an easily accessible portal into the brain and body.
2. Utilize retinal stimulation as a treatment modality, rather than just a diagnostic tool, to affect physical, physiological, and psychological functions.
3. Integrate brain science and computer technology.



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SAINT LOUIS UNIVERSITY
SCHOOL OF MEDICINE



ACCME Accreditation

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Credit Designation

Saint Louis University School of Medicine designates this live activity for a maximum of 12.0 **AMA PRA Category 1 Credits™**. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Saint Louis University School of Medicine will provide Other learner certificates (for NPs, nurses, and other types of learners). The certificate will state that the activity was designated for **12.0 AMA PRA Category 1 Credits™**. Follow your board's requirements for reciprocal CE credits.

Friday, July 9, 2021

- Session A2-AD Alzheimer's Disease Mechanisms I: Beyond A β and Tau (1.5)
- Session A16 Neuro-Oncology: Stem Cell Immunology and Molecular Targeting (1.5)
- Session A3 Military Medicine: Novel Therapeutics for Combat-Related PTSD (1.5)
- Session A15 Military Medicine: Innovative Diagnostic and Treatment Approaches in Military TBI (1.5)
- Session A27 Suicide (1.5)

Saturday, July 10, 2021

- Session B38 Alzheimer's Disease Diagnosis I: Biomarkers (1.5)
- Session B62 Alzheimer's Disease: AD Diagnosis III: Brain Imaging (1.5)
- Session B40 Neuro-Oncology: Hyperthermia & Other Ablative Therapies (1.5)
- Session B52 Neuro-Oncology: Personalized Medicine (1.5)
- Session B39 Military Medicine: Subconcussive Blast Exposure (1.5)
- Session B51 Military Medicine: Diagnostic, Pathology and Epidemiology of TBI in Veterans (1.5)

Sunday, July 11, 2021

- Session C86 Alzheimer's Disease Treatment I: Traditional Targets and New Horizons (1.5)
- Session C98 Alzheimer's Disease Treatment II: Mechanistic & Alternative Targets (1.5)
- Session C88 Neuro-Oncology: Tumor Treating Fields (1.5)
- Session C100 Neuro-Oncology: Radiation Technologies (1.5)
- Session C87 Military Medicine: Advances in Neurorehabilitation for Veterans with TBI (1.5)



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You will need to log-in to the online registration site and complete the activity evaluation, **CLAIM THE HOURS THAT YOU ATTENDED THE SLU APPROVED SESSIONS** in order to access and print your certificate.

The link to log-in and your username will be included in the email.

OBJECTIVES FOR SAINT LOUIS UNIVERSITY CME APPROVED ACTIVITIES:

Military Medicine and Neurotrauma Session Room 406B

OBJECTIVES

1. Describe the results of completed and active clinical trials assessing new approaches with which to treat PTSD.
2. Illustrate the mechanisms of action of novel PTSD therapies.
3. Assess the significance of the results accumulated to date, and whether they are sufficient to support the implementation of new PTSD therapies at this time.
4. Articulate the value of art therapy in military service members with mTBI.
5. Describe neuropathologic findings that can be used to distinguish between those dying of suicide and those dying of other causes.
6. Identify measures that may be useful in documenting the impact on the brain of subconcussive blast exposure during military training exercises.
7. Compare the impact of subconcussive forces on the athletic field vs. those on the battlefield.

Neuro-Oncology Session Room 407

OBJECTIVES

1. Identify modern treatment options and their variants for malignant brain tumors and their integration.
2. Recognize personalized treatment options and their combinations based on molecular characteristics of malignant brain tumors.
3. Assess preclinical research activities that may lead to discoveries and new clinical trials in the treatment of malignant brain tumors.

Alzheimer's Disease Session Room 409

1. Articulate the latest in pathophysiological theories of Alzheimer's Disease.
2. Utilize diagnostic and biomarker approaches to determine dementia and Alzheimer's Disease.
3. Review established, emerging, and future directions of treatments to manage dementia and Alzheimer's patients.



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In recent years astonishing advances have contributed to amazing discoveries and breakthroughs in fields of neurology, neuroscience, neurosurgery, radiology, engineering, computer science, nanotechnology, medical imaging, medical devices and cellular/stem cell therapy. For example: SBMT has been instrumental in introducing Infrared technology into the OR of the future by taking an engineering approach toward solving the problem of intraoperative tumor and vascular mapping. These scientific advances also have contributed to the large gap of knowledge amongst the scientists in different disciplines. One of the major challenges of 21st century for the scientific community is how to close such gaps of knowledge amongst multiple disciplines. The clear example of a gap of knowledge is lack of communication between engineers (Electrical, Material, Biomedical,...) and physicians (Neurosurgeons, neurologists and radiologists).

As the result of SBMT annual meeting we have been able to bring these fields closer together so we could also find engineering solutions to neurological disorders such as brain cancers, Alzheimer, Parkinson's and neurotrauma. Clear examples of such solutions are reflected in more than 60 publications in our last 3 special issues of neuroimage and our current PLoSOne NeuroMapping and Therapeutics journal. We have designed the annual meeting of SBMT to address neurological disorders by bringing together world class experts across multiple disciplines of engineering, neuroscience, nanoscience, imaging, molecular biology and computer science. SBMT is been leading force behind progressive integration of nanotechnology, cellular therapy with medical devices and imaging because we believe the next generation of therapies requires a creative and multidisciplinary approach. The purpose of the annual meeting is to create an interactive environment, which foster cross pollination of ideas and pave the way for birth of new treatment and diagnostic modalities in the field.

Financial Disclosures

In accordance with the Standards for Commercial Support established by the Accreditation Council for Continuing Medical Education (ACCME), faculty, abstract reviewers, paper presenters/authors, planning committee members, staff and any others involved in planning the educational content (and the significant others of those mentioned) must disclose any relationship they or their co-authors have with commercial interests which may be related to their content. The ACCME defines "relevant financial relationships" as financial relationships in any amount occurring within the past 12 months that create a conflict of interest.

EDUCATIONAL OBJECTIVES

Upon completion of the scientific meeting, participants should be able to:

- identify and apply new findings in brain mapping (BM) & therapeutics most relevant to their own sub-specialty (i.e., imaging, image guided therapy, nanotechnology, stem cell and/or device)..
- Describe the effect of the newly developed methods in medical imaging, medical devices, nanotechnology, and stem cell/cellular therapy.
- Discuss and design the possible future research and developments in BM, therapeutics and nano-bio-electronics and assess the possible impact of such research and development on their own clinical and scientific work in the future.
- Describe and assess the latest cutting-edge technological advancement in BM & therapeutics such as the emerging field of nano-bio-electronics (integration of nanotechnology with stem cell/cellular therapy, medical imaging and medical devices).
- Explain ways to build a bridge amongst multiple disciplines.
- Build bridges amongst multiple disciplines.
- Recognize advancements in other disciplines and explain how such advancements could help them formulate new diagnostics and treatment modalities.
- Discuss and describe governmental agencies, foundations, and industry roles in research and development of the field.



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SBMT MISSION STATEMENT



SBMT is a non-profit society organized for the purpose of encouraging basic and clinical scientists as well as engineers who are interested in areas of Brain Mapping and Therapeutics to improve the diagnosis, treatment and rehabilitation of patients afflicted with neurological disorders.

This society promotes the public welfare and improves patient care through the translation of new technologies into life saving diagnostic and therapeutic procedures. The society is committed to excellence in education, and scientific discovery. The society achieves its mission through multi-disciplinary collaborations with government agencies, patient advocacy groups, educational institutes and private sector

(industry) as well as philanthropic organization. SBMT legal name and Tax ID: International Brain Mapping Society-20-2793206

ANNUAL SBMT WORLD CONGRESS

The annual SBMT World Congress is a multi-disciplinary forum designed to facilitate crossdisciplinary dissemination of technological and medical advances and scientific discovery. Thus the attendees are a mixture of neurosurgeons, radiologists, neurologists, neuro-oncologists, psychiatrists, physiatrists, and other physicians, bioethicists, policy makers, government officials, engineers, physicists, graphic designers, neuroscientists, allied healthcare professionals, healthcare executives, students, post-docs, residents and fellows. SBMT's annual meetings are world class scientific events designed to have a significant impact on cross-disciplinary flow of information and scientific advancements





CHARTER OF SBMT

The Society for Brain Mapping and Therapeutics (SBMT) was founded in 2004 to break boundaries in healthcare. The society promotes policies that support rapid, safe, and cost-effective translation of new technology into medicine. The SBMT globally promotes interdisciplinary research to improve the diagnosis, treatment, and rehabilitation of patients with central nervous system diseases regardless of race, creed, color, national origin, gender, or age. The SBMT catalyzes interactions between clinical, biological, physical and engineering sciences. The Society builds transdisciplinary and translational consortia which break down traditional barriers that impede application of new technology to medical problems. Translational research applies cutting edge basic science and advanced technologies to clinical neurosciences. The Society examines emerging disciplines such as nanotechnology, image-guided therapy, stem cell therapy, multi-modality imaging, biophotonics, and biomaterial and tissue engineering for their application to the diagnosis, treatment, and rehabilitation from neurological diseases. The Society seeks to apply these technologies to clinical problems such as brain tumors, stroke, epilepsy, neurodegenerative diseases (Parkinson, Alzheimer, multiple sclerosis and ALS), traumatic brain and spinal cord injuries, autism, post traumatic stress disorder and other psychiatric illnesses. The Society achieves its goals through meetings, fellowships, publications, international collaborations, consortiums, and policy forums. The SBMT is a nonprofit society which has obtained support from many government agencies (USA, EU and Asia), foundations, and multi-national corporations. The Society maintains its headquarters in West Hollywood, California.



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SBMT EXECUTIVE BOARD



Babak Kateb

Chairman/CEO SBMT & President of
Brain Mapping Foundation
Research Scientist, Maxine Dunitz Neu-
rosurgical Institute



Ken Green

Senior VP of Brain Mapping Foundation



Aaron G. Filler

13th President of SBMT (2015-2016)
Medical Director Institute for Nerve Medi-
cine & Neurography Institute



Vicky Yamamoto

Member of the Executive Board of the
Brain Mapping Foundation



Kuldip Sidhu

11th President, SBMT (2013 - 2014)
Associate Professor, Stem Cell Research,
University of New South Wales



Warren W. Boling

15th President of SBMT (2017-2018)
Professor of Neurosurgery and Chairman,
Department of Neurosurgery, Loma Linda
University Medical Center



Wes Ashford

14th President of SBMT (2016-2017)
Director of the WRIISC, VA Palo Alto
Health Care System



Jeffrey C. Wang

16th President of SBMT (2018-2019)
Professor of Orthopedic Surgery and
Neurosurgery, Co-Director of the USC
Spine Center



Robert Hariri

SBMT President 2020-21

SBMT BOARD MEMBERS



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Pain Management. Board Certified in
Physical Medicine & Rehabilitation. Board
Certified in Pain Medicine



Prof. Dr. med. Katrin Amunts

Director Institute of Neuroscience and
Medicine (INM-1), Research Center
Juelich, Germany



Saleem I. Abdulrauf

Professor & Chairman, Department
of Neurological Surgery, Saint Louis
University



Christoph Ebell

COO of a German software company
for next generation High Performance
Computing



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SBMT BOARD MEMBERS



Mike Y. Chen

Associate Professor of Department of Neurosurgery, City of Hope Cancer Center



Maya Koronyo-Hamaoui

Associate Professor, Neurosurgery & Biomedical Sciences, Cedars-Sinai Medical Center



Theodore W. Berger

Professor of Biomedical Engineering, David Packard Chair of Engineering, Director, Center for Neural Engineering - USC Viterbi School of Engineering



Eric Kandel

Nobel Laureate, neuroscientist and a University Professor of biochemistry and biophysics at the College of Physicians and Surgeons at Columbia University



Howard Federoff

Dr. Howard Federoff named UCI vice chancellor for health affairs and dean of medicine



Dawn S. Eliashiv

A Professor of Neurology and Co-Director of the UCLA Seizure Disorders Center



Rudolph E. Tanzi

Dr. Tanzi has published roughly 500 scientific papers including the top three most cited papers in the field of Alzheimer's disease research.



K. Nevzat Tarhan

President, Üsküdar University



Michael J. Roy

9th President SBMT (2011 - 2012), Director of Internal Medicine, Arlington, Virginia, Uniform Services University Health Sciences



Reinhard Schulte

Professor, Basic Sciences, Division of Biomedical Engineering Sciences, School of Medicine, Loma Linda University



Denise Kandel

Dr. Denise Kandel's major research interests are in the epidemiology, risk factors and consequences of drug use; the epidemiology of substance dependence; comorbidity between substance use and psychiatric disorders.



Venkat Sadanand

Professor of Pediatric Neurosurgeon Department of Neurosurgery Loma Linda University School of Medicine



Jeffrey C. Wang

Jeffrey C. Wang, MD is Professor of Orthopedic Surgery and Neurosurgery, Co-Director of the USC Spine Center with an expertise in the surgical treatment of all neck and back disorders.



Maheen Mausoo Adamson

Senior Scientific Research Director, Defense and Veterans Brain Injury Center (DVBIC); Clinical Associate Professor Neurosurgery/Psychiatry & Behavioral Sciences, Stanford School of Medicine - VA Palo Alto Health Care System



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SBMT BOARD MEMBERS



Seung-Schik Yoo

Seung-Schik is an associate professor of Radiology at Harvard Medical School, and is a director of Neuromodulation and Tissue Engineering Laboratory (NTEL), Brigham and Women's Hospital



Robert Thatcher

Robert Thatcher, President & CEO of Applied Neuroscience, Inc.



Deborah Zelinsky

Deborah Zelinsky, O.D. is an optometrist noted for her work in neuro-optometric rehabilitation. She is the founder of The Mind-Eye Institute, based in Northbrook, IL.



Katherine Chiu

Katherine Chiu is an Assistant Professor of Clinical Anesthesiology, University of Southern California Keck School of Medicine



Robert Hariri

Robert Hariri, The Chairman, Founder, Chief Scientific Officer, and former Chief Executive Officer of Celgene Cellular Therapeutics.



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SBMT EXECUTIVE STAFF

Babak Kateb

Chairman/CEO SBMT & President of Brain Mapping Foundation

Vicky Yamamoto, PhD

Executive Director

Marko Mijat, M.H.A

Chief Operating Officer

David Grimes

Director of Industry and Nonprofit Partnership

Afsaneh Kateb

Event coordinator

Bryan Aroz

Global Director for Conventions and Events

Commander Ken Green, DMD (Ret. USA NAVY)

Vice President of Foundation

Harry Kloor, PhD (Chem) and PhD (Physics)

Director of Strategic Alliance

Christopher Wheeler, Ph.D.

Senior Research Scientist

SBMT RESEARCH FELLOWS

Jonathan Dang, M.D.

Research Fellow

Joe F Bolanos, M.D.

Research Fellow

Marco Amaya, M.D., MPH

Research Fellow

John Fiallos, M.D.

Research Fellow

Kyona Jarrett

Research Fellow

Indira Sakibova, M.B.A.

Policy Fellow

Susanne Strand, M.Sc.

Research Fellow

Brian Meshkin

Entrepreneur in Resident

Janne Huhtala

Entrepreneur in Resident



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SCIENTIFIC COMMITTEE

Alzheimer's Disease Conference 2021



Chris Wheeler, Ph.D.

(Senior Research Scientist at Brain Mapping Foundation; Chief Science Officer at T-Neuro Pharma, Inc.)



John Wesson Ashford, MD, Ph.D.

Director, War Related Illness & Injury Study Center, VA Palo Alto Health Care System; Clinical Professor (Affiliated), Psychiatry and Behavioral Science, Stanford University



Maya Koronyo-Hamaoui, Ph.D.

(Associate Professor of Neurosurgery, Associate Professor of Biomedical Sciences, Research Scientist Maxine Dunitz Neurosurgical Institute, Cedars Sinai)



Margaret Fahnstock, Ph.D.

(Professor, Department of Psychiatry & Behavioural Neurosciences, McMaster University)

Military Medicine Conference 2021



Michael Roy, MD, MPH

Director, Division of Military Internal Medicine and Professor of Medicine, Uniformed Services University, Bethesda, MD



Ken Green, DMD

Vice President of Strategic Initiatives for Government and Nonprofit Partnerships, SBMT



Rick Starrs, MBA



Stuart Hoffman, Ph.D.

MEG/EEG Conference 2021:

Judith Ann Thatcher Memorial Session



Robert Thatcher, Ph.D.

Applied Neuroscience, Inc., CEO and Director Applied Neuroscience Research Institute, (www.appliedneuroscience.com)



Warren Boling, MD

(Professor and Chairman, Department of Neurosurgery Loma Linda University)



Zoltan Mari, MD

Ruvo Family Chair and Director Parkinson's & Movement Disorders Center, Cleveland Clinic Lou Ruvo Center for Brain Health, Member of the Science Committee, Chair of Movement Disorders/Neurodegenerative Diseases Subcommittee



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SCIENTIFIC COMMITTEE

Neuro-Engineering Conference 2021 Warren Grundfest Neuro-Engineering Memorial



Ted Berger, Ph.D.
(Director, Center for Neural Engineering,
Professor of Biomedical Engineering, USC)



Roger Werne, Ph.D.
(Senior Advisor Innovation and Partnerships
Lawrence Livermore National Laboratory &
Lawrence Livermore National Laboratory)



Dong Song, Ph.D.
(Research Associate Professor Center for
Neural Engineering
Department of Biomedical Engineering
Neuroscience Graduate Program University of
Southern California)



Jean-Marie C Bouteiller, Ph.D.
(Research Assistant Professor Department
of Biomedical Engineering Viterbi School
of Engineering University of Southern
California)



Dr. Seung-Shick Yoo
Seung-Schik is an associate professor of
Radiology at Harvard Medical School, and
is a director of Neuromodulation and Tissue
Engineering Laboratory (NTEL), Brigham and
Women's Hospital

Neuro-Oncology Conference 2021



Vicky Yamamoto, PhD
Executive Director, Society for Brain Mapping
and Therapeutics



Reinhard Schulte, MD, MS
Professor-Division of Biomedical Engineering
Science, Loma Linda University



Jennifer Yu, MD
Radiation Oncology, Cleveland Clinic Cancer
Center

Neuro-Oncology Conference 2021



Mark Torchia
Vice-Provost, Executive Director-Centre Ad-
vancement of Teaching & Learning



Colin Watts
Professor of Neurosurgery; Chair Birmingham
Brain Cancer Program,
University of Birmingham, UK



Terry Burns, MD, PhD
Assistant Professor of Neurosurgery and Neuro-
science, Mayo Clinic



Jethro Hu, MD
Cedars-Sinai - Department of Neurology
Department of Neurosurgery



AjitKumar Mulavara, PhD
CNS/BMed/Sensorimotor (CBS) Portfolio Scien-
tist, NASA, JSC



Thomas Williams, PhD
Element Scientist, NASA, JSC



Mohammad Avanaki



Fartash Vasefi, MD
Chief Technology Officer at
Safety Spect, Inc



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SCIENTIFIC COMMITTEE

Parkinson/Optometry/Opioid/Psychiatry Conference 2021



Deborah Zelinsky, OD
Founder of the Mind-Eye Institute,



Mark Ereth, MD
Emeritus Professor of Anesthesiology, Mayo Clinic College



Daniel Sipple, DO
Midwest Spine and Brain Institute



Nevzat Tarhan, MD
Professor, Uskudar University



Barish Metin, MD
Assistant Professor, Uskudar University



Zoltan Mari, MD
Ruvo Family Chair and Director
Parkinson's & Movement Disorders Center,
Cleveland Clinic Lou Ruvo Center for Brain Health, Member of the Science Committee,
Chair of Movement Disorders/Neurodegenerative Diseases Subcommittee



Andres Lozano, MD, PhD, FRCSC, FRSC, FCAHS
Senior Scientist, University of Toronto.



Jonathan Dang, MD
Research Fellow, Society for Brain Mapping and Therapeutics

Parkinson/Optometry/Opioid/Psychiatry Conference 2021



Brian Norling
Chief Executive Officer at MEMS Precision Technology, Inc

Spine Conference 2021: John McDonald III Memorial Spine Program



Dr Tobias Mattei
(Assistant Professor, Neurosurgery Division
Saint Louis University)



Dr Namath Hussain
(Neurosurgeon, Loma Linda University,
Department of Neurosurgery)



Dr Ann Choe
(Assistant Professor of Radiology and
Radiological Science, Johns Hopkins School
of Medicine)



Dr Joson Cormier
(Neurosurgeon, Acadiana Neurosurgery)

Legally Mind 2021



Art McComber,
(Presenter, Legally Mind
Art spent his first career as a special agent for the FBI. Now, he devotes his time to teaching and helping thousands of people protect themselves from becoming victims of crime and lawsuits.



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SCIENTIFIC COMMITTEE

Neurovascular Conference 2021



Dr. Justin Dye

(Assistant Professor of Neurosurgery, Loma
Linda University)



Dr. Saleem Abdulrauf

(MD, MSCR, FAANS, FAHA, Professor of Neu-
rosurgery, Saint Louis University)



Dr. Robert Hariri

Robert Hariri, The Chairman, Founder, Chief
Scientific Officer, and former Chief Executive
Officer of Celgene Cellular Therapeutics.



Dr. Martin Mortazavi

MD, FICS, Chairman and Director, Cerebrovas-
cular, Skull Base & Tumor Program California
Institute of Neuroscience



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LETTER FROM THE FOUNDER



With President Obama at the White House;
Brain Initiative announcement April 2, 2013

Babak Kateb, MD

*Founding Chairman of the
Board of Directors
CEO and Scientific Director
Society for Brain Mapping &
Therapeutics (SBMT)*

*President & Scientific Director
Brain Mapping Foundation*

*Director / National Centre for
Nano-Bio-Electronics / Los Angeles / CA*

*Director / Brain Technology and Innova-
tion Park / Los Angeles / California*

*Chairman / Neuroscience-20+/G20
Summit World Brain Mapping and
Therapeutics Initiative*

*Editor / The Textbook of Nanoneurosci-
ence and Nanoneurosurgery*

*Editor / Textbook of NeuroPhotonics
and Brain Mapping*

Let me start by congratulating our 17th President of SBMT Dr. Saleem Abdulrauf for his visionary leadership and for working closely with me and 12 different committees who helped us organizing one of the largest world congresses for brain mapping so far! We thank our corporates, non-profits, government agencies and academic partners. This program could not be possible without their generous supports and contributions. I also thank our supporters, staff, fellows and volunteers for their amazing dedication and assistance with this convention.

This year, we have more than 500 speakers in 100 scientific sessions, practical sessions, cadaver labs (brain and spine) and 12 keynote speakers, who highlight advances made in their own respective disciplines, which could impact our field. Dr. Abdulrauf and I worked with 100+ scientists to build a scientific program that showcases current advances in the fields such as AI-Neuro, Nanoneurosurgery, Neurophotonics, MEMS/NEMS and their application in clinical neuroscience.

SBMT and its members are proud to be a part of over a decade of scientific accomplishments, which include more than 2000 publications, more than 4000 presentations, significant involvement in President Obama's BRAIN Initiative, establishment of G20 Brain Mapping and Therapeutics Initiative/Neuroscience-20, establishment of African Brain Initiative, establishment of Middle East and North Africa Brain Mapping Initiative, passing of a congressional report language on the defense appropriation bill, and the Brain Technology and Innovation Park (BTIP) Initiative.

In the past 17 years, SBMT has recognized 127 top scientists, technologists, policymakers, students, humanitarians, and advocates. The organization has published the inaugural textbooks of NanoNeurosurgery and Neurophotonics, facilitated countless game-changing clinical trials on Alzheimer's disease, Parkinson's disease, brain cancer and neurotrauma. SBMT also established our Atlas, student chapters in colleges and universities, partnership with major associations, and new guideline committee for standardization.

SBMT members have been pioneers in the field by introducing a new retinal imaging to diagnose Alzheimer's disease, creating microwave device to treat cancers (brain, breast, prostate, lung, liver, head and neck), inventing new nano-drugs to treat brain diseases, implementing policies that could support such game-changing approach and introducing new metadata analysis repository data in the field.

I congratulate the award recipients this year who have made a huge stride in advancing the field from basic science and engineering to medicine and policy.

While we are celebrating our past and current achievements this year, we are planning the future for the organization as we expand globally. Our work has just begun, and it will not be finished until we find cures for neurological disorders such as ALS, autism, brain cancer, Alzheimer's, Parkinson's, and traumatic brain injuries, just to name a few. However, we can only achieve this if we work together.



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Alzheimer's disease, and Parkinson's disease.

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I hope you will enjoy this remarkable scientific meeting this year, which is all recorded and will be available online for our members and hope to see you in 17th annual World Brain Mapping Congress in Los Angeles, CA! (July 9, 10, 11, 2021).

Respectfully yours,

Dr. Babak Kateb,

Founding Chairman of the Board of SBMT, President of Brain Mapping Foundation, Director of National Center for NanoBioElectronics



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SBMT - PRESIDENT'S LETTER

I am honored and humbled to be elected the 17th President of the Society of Brain Mapping and Therapeutics (SBMT). I fully embrace the concept that led to the founding of this society by Dr. Babak Kateb. This concept is based on bringing together innovators from the scientific, technology, industry, and government arenas to form a "Think Tank" to fast forward our understanding of the Brain and the treatment of diseases that affect it.

As the President of the Walter E Dandy Neurosurgical Society, I have developed relationships with key leaders within this specialty worldwide. Perhaps more importantly, the Dandy Society is becoming the educational home for young neurosurgeons globally. These young leaders in the field of neurosurgery could significantly expand their contributions in the educational and research arenas by collaborating with the SBMT clinicians and scientists. I envision collaborative educational forums between the two societies in multiple continents. Likewise, I envision collaborations in basic science, clinical and translational research trials (institutional, national, and multinational).

My key role will be to deepen the neurosurgical footprint of the SBMT while at the same time reach out to our colleagues from the various clinical and scientific disciplines that make up this organization to make sure that their ideas and contributions are welcomed and expanded.



Saleem Abdulrauf

President, SBMT 2019-21

17th President of the SBMT

*Professor and Chairman, Department
of Neurosurgery*

Saint Louis University, St. Louis. USA.



SBMT PROGRAM

1 - Scientific Meetings

This includes national meetings, international meetings, and world congress. The world congress is the society's annual meeting that invites prominent scientists and clinicians from all areas of expertise.

SCIENTIFIC EXHIBITS & POSTERS	SPECIAL FOCUS SESSIONS	STUDENT FUNDING OPPORTUNITIES
Basic and Clinical Research in image guided therapy. Novel research and development in brain mapping and intra-operative surgical planning. Clinical trials. Bio-Ethics.	Governmental Regulation Government Education Patient Advocacy Healthcare Policy Funding Opportunities	Graduate and Post Graduate Interdisciplinary Fellowships Student Travel awards University Student chapters mentorship programs Scholarships for undergraduate students studying neurological disorders.

2 – Student Chapters

The student chapters are organized to promote and encourage multi-disciplinary research across disciplines. Universities with Student Chapters qualify for student travel award starting 2012.

3 – Fellowships

SBMT fellowships are focused on interdisciplinary training of neurosurgeons, neurologists, radiologists and rehabilitation physicians, neuroscientists and engineers on diseases that has major Social impact such as Traumatic brain and spinal cord injuries, neuro-oncology and neurodegenerative diseases. The fellowships are design to apply state-of-the-art research through the study of biomedical science and cutting edge technologies to clinical problems. These scholarship are awarded to masters students, pre-doctoral, and post-doctoral fellows.

4 – Visiting Scholars Program

Visiting scholars program facilitates exchange of scientific investigators and policy experts with other countries and institutions through participating SBMT centers. The goal of the visiting scholar program is to develop collaborations between physical and biological sciences and address major policy issues relevant to the society.



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5 – World Congresses

2019 - LA Convention Center

2018 - Millenium Biltmore Hotel, LA, California

2017 - Millenium Biltmore Hotel, LA, California

2016 - Miami Convention Center, Florida

2015 - LA Convention Center

2014 - Sydney, Australia

2013 - Baltimore, MD, USA

2012 - Toronto, Ontario, Canada

2011 - San Francisco, CA, USA

2010 - USUHS, Bethesda, Maryland, USA

2009 - HARVARD Medical School Boston, MA,

2008 - UCLA California Nano-system Institute,
Los Angeles, CA, USA

2007 - Washington DC, USA

2006 - Clairmont-Ferrand, France

2005 - Pasadena, CA, USA

2004 - USC Keck School of Medicine, CA, USA

SBMT Annual Meeting Organizers Encourage Cross-Disciplinary Subjects:

- Image guided systems
- Neurovascular coupling and Perfusion imaging
- ISP & Image guided surgery (OR of the future)
- BM and ISP in Stereotactic Radiosurgery (proton Therapy, Novalis, Tomo-therapy, Varian system, Xknife, gamma knife and cyberknife technologies will be compared and contrasted)
- Molecular and cellular imaging including: the use of nanoparticles for stem cell and T-cell imaging
- Neuro Anatomy and histopathology in brain mapping
- Nanoscience, genomics, computational informatics genetics in brain mapping
- Rehabilitation Medicine (e.g. TBI, Stroke, Spinal Cord Injury)
- Novel imaging techniques for TBI and PTSD (eg. DTI, PET,SPECT) NeuroImaging for Psychiatric Diseases (eg. PTSD, Autism,Schizophrenia)
- Nanoscience, genomics, computational informatics genetics in brain mapping
- Neurophysiology (EEG, MEG, Evoked Potentials, EMG/NCS,ESM) · Functional brain mapping (fMRI, PET, SPECT, Intrinsic Signal Optical Imaging)
- Brain Mapping and Intra-operative Surgical Planning using Endoscopy Biophotonic techniques for Brain Mapping · Multi-modality imaging techniques
- Ultrasound Imaging
- Magnetic Resonance Spectroscopic Imaging
- High-field and low-field magnetic resonance High-field and low-field MRI, MR Spectroscopic Imaging, micro MRI Magneto encephalographic
- Transcranial Magnetic Stimulation Cerebral White Matter Mapping and Imaging, (eg. Diffusion Tensor Imaging)
- Neural Prosthesis & Robotics (Human Brain machine Interface technology)
- Minimally invasive therapy for traumatic brain injury (TBI) imaging modalities for detecting mild/mod TBI, micro-TBI Socioeconomic, Ethical, and Healthcare issues related to the brain mapping and intra-operative surgical planning



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6 – Seed Grants

SBMT, in partnership with Brain mapping Foundation and other foundations is planning to provide seed grants to encourage cross disciplinary collaboration. The purpose of these grants is to bridge physical and biological sciences and encourage cross disciplinary collaboration.

7 – Industry Partners

SBMT encourages support from private industry and provides industry with a forum to present their latest advances. The society recognizes the role of industry in translating cutting-edge research and technology into the market. SBMT is currently partnering with more than 100 multi-national corporations.

8 – Society Publications

The Society has successfully published 3 special issues with NeuroImage. We have reached out to more than 50,000 scientists worldwide through our partnership with Elsevier in the last several years. Recently, SBMT partnered with PloSOne publishing giant to launch special Collection /publication called: NeuroMapping and Therapeutics (www.PloSOne.org) PloSOne is one of the largest Open access Publishers in the world. This partnership has enabled SBMT to reach out to a larger audience of scientists. <https://www.worldbrainmapping.org/Publications/>

9 – Legislation and Initiatives

The society works actively with the representatives of various governments in order to leverage its resources and focus attention on healthcare issues through interdisciplinary collaborations. In this regard, SBMT has partnered with Brain Mapping Foundation (BMF) and held 9 Annual Brain Mapping Days at the US Congress. The organization has held Brain Mapping Days at the Australian and Canadian Parliaments. Please visit the following link for a list of current initiatives: <https://www.worldbrainmapping.org/Legislation-and-Initiatives/>

10 – Healthcare Policy

The first healthcare policy advocacy of SBMT was done in 2004 when the organization pushed for funding for a collaborative network through the office of the Honorable Barbara Boxer and Dian Feinstein of California. In 2008 SBMT introduced formation of Science, Technology, Medicine and Law- Healthcare Policy (STML-Hub) to the US Congress and house of representative in order to establish a center for introducing technological and scientific advancements to the policy makers. The organization hoped that through this hub we could educate policymakers about the state-of-the-art science. This could help policy In 2012 with the help and support of Congressman Moran and Congressional Neuroscience Caucus SBMT advocated report language on “Multidisciplinary Brain Research”. The report language passed through the House and Senate with significant and overwhelming bipartisan support. This legislation



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may enable DoD to better focused on integrating nanotechnology, stem cell and cellular therapy and medical imaging/devices in order to rapidly provide solutions for the wounded warriors and civilians with neurological disorders such as PTSD and TBI.

11 – Outreach Program / Student Chapters

Outreach programs including woman and minority in sciences and community awareness of new technology, science and medical advancements. This includes high school and college educational programs run through student chapters worldwide.

12 – Global Physician and Scientists (GPS)

GPS is a humanitarian program, which is focused on mobilizing physicians, scientist and surgeons to serve for few weeks in the poor and rural areas of the United States and abroad. This program will collaborate with industry and government officials and will use the national and international SBMT centers as bases of operations.

13 – Neuroscience 20

The G20 World Brain Mapping & Therapeutic Scientific Summit aims to contribute to President Obama's BRAIN initiative and to expand action on the current and upcoming initiatives across the G20 nations, bringing the finest scientists, engineers, physicians and surgeons across the globe in order to rapidly introduce clinical solutions for neurological disorders, which cost the world economy hundreds of billions of dollars annually. G20 World Brain Mapping Summit was launched in 2014 on the initiative of The Society for Brain Mapping and Therapeutics (SBMT).[1]

<https://www.worldbrainmapping.org/G20-World-Brain-Mapping-Therapeutics-Initiative/>

14. Brain Technology and Innovation Park (BTIP)

Purpose of the Brain Technology & Innovation Park (BTIP) Initiative:

To expedite introduction of diagnostics & therapeutics for neurological disorders by facilitating strategic partnership amongst governmental agencies, academia, various stage biotech & pharmaceutical companies, startups, non-profit organizations, philanthropists, venture funds, hedge funds & angel investors for an Investor Symposium & Workshop



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Maps and Talk Locations





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2021 KEYNOTE SPEAKERS

Marianne Gausche-Hill - "COVID-19"

Friday, July 9, 8:30 AM, Concourse Hall 152



Medical Director, Los Angeles County Emergency Medical Services (EMS) Agency; Professor of Clinical Medicine and Pediatrics, David Geffen School of Medicine at UCLA; Clinical Faculty, Harbor-UCLA Medical Center; ACEP awards, National Education Award, 2004; "Heroes of Emergency Medicine", 2008; Outstanding Contribution in EMS, 2014; Speaker of the Year, 2016; PEMSOFT/EBSCO, by ACEP

Biography

<https://www.acep.org/acep19/faculty/Profile?id=A062665>

Saleem Abdulrauf - "Presidential Lecture: The Future of Neurovascular and Skull-base Neurosurgery" - Friday July 9, 5:10 pm, Concourse Hall 152

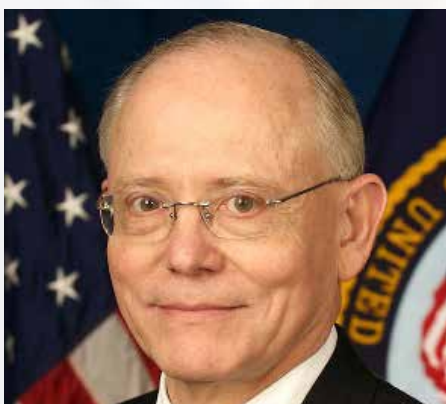


Saleem Abdulrauf is a physician specializing in neurosurgery in St. Louis, Missouri, who has helped develop high-flow brain bypass surgery, a procedure for treating intracranial aneurysm,[1] a less-invasive procedure than traditional methods.

Read more https://en.m.wikipedia.org/wiki/Saleem_Abdulrauf

James Peake - "TVA Past and Future"

Friday July 9, 9 AM, Concourse Hall 152



Former Secretary of the VA General James Peak

James Benjamin Peake (born June 18, 1944) was the sixth United States Secretary of Veterans Affairs, serving from 2007 to 2009. In 2004, he retired from a 38-year United States Army career. He also served as the 40th Surgeon General of the United States Army.

Read more https://en.m.wikipedia.org/wiki/James_Peake



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2021 KEYNOTE SPEAKERS

Qin Wang - "The Adrenergic Link Between Amyloid and tau"

Sunday July 11, 12 PM, 151 Concourse hall



Dr. Wang is a Professor in the Department of Cell, Developmental and Integrative Biology at University of Alabama at Birmingham. She is an active member of the American Society for Pharmacology and Experimental Therapeutics, where she was elected as Secretary/Treasurer of the Molecular Pharmacology Executive Committee and organized symposiums in Experimental Biology annual meetings. She has served on the Advisory Board for several international congresses and as regular member on multiple review panels for National Institutes of Health and American Heart Association. .

Biography

<http://apps.medicine.uab.edu/facultyDirectory/FacultyData.asp?FID=20614>

Deepak Chopra - "Nature of Reality"

Saturday July 10, 9 AM, Concourse Hall 152



Deepak Chopra, born October 22, 1946) is an Indian-American author and alternative-medicine advocate.[4][5] A prominent figure in the New Age movement,[6] his books and videos have made him one of the best-known and wealthiest figures in alternative medicine.[7]

Read more https://en.m.wikipedia.org/wiki/Deepak_Chopra

Biography

Montel Williams - "Epidemics and Neuroscience of Gun Violence: A Big Data Analytic Approach" - Saturday, July 10, 12:45 pm, 151 Concourse hall



Montel Brian Anthony Williams (born July 3, 1956) is a former American television personality, radio talk show host, and actor. He is best known as host of the long-running daytime tabloid talk show *The Montel Williams Show*, which ran in syndication from 1991 to 2008. Williams is active with the nonprofit MS Foundation, which he founded after being diagnosed with multiple sclerosis in 1999. Additionally, Williams is noted for his service in both the U.S. Marine Corps and the U.S. Navy, from which he was honorably discharged after 15 years of service.

https://en.m.wikipedia.org/wiki/Montel_Williams



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2021 KEYNOTE SPEAKERS

William Tarver - "Spaceflight Associated Neuro-ocular Syndrome (SANS): Should Astronauts Get Occupational Lumbar Punctures?" - Sunday, July 11, 9 am, 151 Concourse hall



Nasa Flight Surgeon and Sans Clinical Lead - CNS, and Nasa IRB Physician Member

Biography

<https://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20100020255.pdf>

Martin Motazavi - "Talk Title"

Friday, July 9, 12 pm Time & 151 Concourse hall



MD, FICS, Chairman and Director, Cerebrovascular, Skull Base & Tumor Program California Institute of Neuroscience

Biography

<https://www.worldbrainmapping.org/About/Martin-Mortazavi>



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Alzheimer's Disease Conference 2021: Room 409

Organized by: Chris Wheeler, J. Wes Ashford, Maya Koronyo-Hamaoui, Margaret Fahnestock and Babak Kateb

Friday, July 9th 10:00-11:30 am

A2 (SLU CME): Alzheimer's Disease Mechanisms I: Beyond A β and Tau

Chairs:



Margaret Fahnestock, Ph.D.
(Professor, Department of Psychiatry & Behavioural Neurosciences, McMaster University)



John Wesson Ashford, MD, Ph.D.
Director, War Related Illness & Injury Study Center, VA Palo Alto Health Care System; Clinical Professor (Affiliated), Psychiatry and Behavioral Science, Stanford University

10:00-10:15 am:

Role of the NGF receptor in age-related axonal degeneration

Margaret Fahnestock, Ph.D. Professor, Department of Psychiatry & Behavioural Neurosciences, McMaster University.

10:15-10:30 am: A metabotropic glutamate receptor agonist maintains oligodendrocyte function in Alzheimer's disease.

Cheryl Dreyfus, Ph.D. Distinguished Professor and Chair, Department of Neuroscience & Cell Biology, Rutgers - Robert Wood Johnson Medical School

10:30-10:45 am: Astrocytes in Alzheimer's disease: Protective or toxic?

Michael V. Sofroniew, Ph.D. Professor of Neurobiology, Brain Research Institute, UCLA

10:45-11:00 am: TDP-43 cytoplasmic sequestration is regulated by the hypusination of eIF5A in stress induced cellular models.

Maj-Linda Selenica, Ph.D. Assistant Professor, Sanders Brown Center on Aging. UK, KY

11:00-11:15 pm: Mitochondrial unfolded protein response dysfunction during the progression of AD.

Scott E. Counts, Ph.D. Associate Professor of Translational Neuroscience, Michigan State University

11:15-11:30 am:

Session Discussion



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Alzheimer's Disease Conference 2021: Room 409

Friday, July 9th 1:30-3:00 pm

A14: Alzheimer's Disease Mechanisms II: Genetics

Chair:



Carr J. Smith, Ph.D.
(Toxicology Advisor at Albemarle Corporation)

1:30-1:45: Putative Survival Advantages in Young Apolipoprotein $\epsilon 4$ Carriers are Associated with Increased Neural Stress.

Carr J. Smith, Ph.D. Toxicology Advisor, Albemarle Corporation

1:45-2:00: Does large dose DHA supplementation slow cognitive decline in APOE4 carriers? PREVENTE4 trial.

Hussein Yassine M.D. Assistant Professor of Medicine, Keck School of Medicine, University of Southern California

2:00-2:15: Isoform-specific effects of histone variants on memory.

Iva Zovkic, Ph.D. Assistant Professor of Psychology, University of Toronto

2:15-2:30: New insights into subcellular A β oligomers in Alzheimer's Disease cells and brains.

Giovanni Meli, Ph.D. Group Leader, European Brain Research Institute, Rome

2:30-2:45: Spastic Paraparesis in Autosomal Dominant Alzheimer's disease: What's up with that?

John Ringman, M.D. Professor of Clinical Neurology, University of Southern California

2:45-3:00 pm: Session Discussion



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Alzheimer's Disease Conference 2021: Room 409

Friday, July 9th 3:30-5:00 pm

A26: Alzheimer's Disease Mechanisms III: Brain-Immune Interactions & Inflammation

Chairs:



Maya Koronyo-Hamaoui, Ph.D.
(Associate Professor of Neurosurgery, Associate Professor of Biomedical Sciences, Research Scientist Maxine Dunitz Neurosurgical Institute, Cedars Sinai)



Chris Wheeler, Ph.D.
(Senior Research Scientist at Brain Mapping Foundation; Chief Science Officer at T-Neuro Pharma, Inc.)

3:30-3:45 pm: ACE-overexpressing Macrophages Alleviate Alzheimer's-Related Pathology and Cognitive Function

Maya Koronyo-Hamaoui, Ph.D. Associate Professor, Cedars-Sinai Medical Center

3:45-4:00 pm: APOE4 and neuroinflammation in Alzheimer's disease: mechanisms and insights.

Hussein Yassine M.D. Assistant Professor of Medicine, Keck School of Medicine, University of Southern California

4:00-4:15 pm: Neuroinflammation in a hypertensive transgenic Alzheimer rat model of mixed model of dementia.

Sally Frautschy, Ph.D. Professor in Residence of Neurology, David Geffen School of Medicine, University of California Los Angeles

4:15-4:30 pm: Role of hematopoietic aging in cognitive decline

Helen S. Goodridge, Ph.D. Associate Professor of Biomedical Sciences and Medicine, Cedars-Sinai Medical Center

4:30-4:45 pm: Antigen-specific CD8 T cells in blood elicit AD-like neurodegeneration in mice and track AD occurrence in patients

Chris Wheeler, Ph.D. Senior Research Scientist, Brain Mapping Foundation; Chief Science Officer, T-Neuro Pharma, Inc.

4:45-5:00 pm: Session Discussion



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Alzheimer's Disease Conference 2021: Room 409

Saturday, July 10th 10:00-11:30 am

B38 (SLU CME): Alzheimer's Disease Diagnosis I: Biomarkers

Chair:



Dr. Howard Federoff
Distinguished Professor of Neurology
University of California, Irvine
CEO, Aspen Neuroscience

10:00-10:15 am: Insights into cognitive dysfunction from analysis of supernormals.

Howard Federoff M.D, Ph.D. Distinguished Professor of Neurology, University of California, Irvine
CEO, Aspen Neuroscience

10:15-10:30 am: APTUS-A β TM: Measurement of plasma A β 42/40 concentration ratios by mass spectrometry predicts brain amyloidosis in banked samples from multiple, diverse cohorts.

Tim West, Ph.D. VP, Research and Development, C2N Diagnostics

10:30-10:45 am: Rise, fall, or maintain: latent cognitive aging trajectories and neurobiological associations

Auriel Willette, Ph.D. Assistant Professor of Food Science and Human Nutrition, Iowa State University

10:45-11:00 am: Is the p3 (A17-40, A17-42) peptide relevant to the pathology of Alzheimer's Disease?

Jevgenij Raskatov Ph.D. Assistant Professor, Physical & Biological Sciences Division, University of California Santa Cruz

11:00-11:15 am: Neuroimaging biomarkers for Alzheimer disease in Down syndrome.

Elizabeth Head, Ph. D. Professor of Pathology, University of California Irvine

11:15-11:30 am:

Session Discussion



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Alzheimer's Disease Conference 2021: Room 409

Saturday, July 10th 1:00-2:30 pm

B50: Alzheimer's Disease Diagnosis II: Retinal Imaging

Chair:



Dr. Maya Koronyo-Hamaoui
(Associate Professor of Neuro-
surgery, Associate Professor of
Biomedical Sciences, Research
Scientist Maxine Dunitz Neuro-
surgical Institute, Cedars Sinai)

1:00-1:15 pm: Imaging amyloid beta in the retina.

Steven Verdooner, CEO, Neurovision Imaging

1:15-1:30 pm: Retinal amyloid imaging in patients with amnesic MCI

Oana Dumitrascu, M.D. Assistant Professor of Neurology, Cedars-Sinai Medical Center

1:30-1:45 pm: Investigating Retinal Blood Flow Characteristics during the processes underlying amyloidosis using a non-invasive, laser speckle-based retinal imager.

Delia Cabrera DeBuc, Ph.D. Research Associate Professor of Ophthalmology, University of Miami Health System

1:45-2:00 pm: Snapshot hyperspectral retinal imaging for early diagnosis of AD

Liang Gao, Ph.D. Adjunct Assistant Professor of Electrical and Computer Engineering, University of Illinois

2:00-2:15 pm: Hyperspectral Imaging Signatures Detect Amyloidopathy in the Retina of Alzheimer's Disease patients

Swati S. More, Ph.D. Associate Professor, Center for Drug Design (CDD), University of Minnesota

2:15-2:30 pm:

Session Discussion



17/18th Annual

World Congress of Society for
Brain Mapping and Therapeutics

Breaking Boundaries of Science, Technology, Medicine, Art, and Healthcare Policy

Alzheimer's Disease Conference 2021: Room 409

Saturday, July 10th 3:00-4:30 pm

B62 (SLU CME): Alzheimer's Disease Diagnosis III: Brain Imaging, Brain Stimulation (rTMS)

Chairs:



Dr. Allyson Rosen
(Clinical Associate Professor
(Affiliated) [Vapahcs], Psych/Pub-
lic Mental Health & Population
Sciences Staff, Psychiatry and
Behavioral Sciences)



Dr. Joy Taylor
(Clinical Professor in the Depart-
ment of Psychiatry and Behavior-
al Sciences at Stanford University
School of Medicine, Associate
Director of the Stanford/VA
California Alzheimer's Disease
Center and the Associate Director
of the Stanford/VA Aging Clinical
Research Center)

3:00-3:15 pm: Tracking pathways in the brain related to AD, TBI

Ansgar Furst, Ph.D. Associate Director of Neuroimaging Laboratory, War Related Illness & Injury Study Center, (WRIISC), VA Palo Alto Health Care System, Stanford University

3:15-3:30 pm: Neuronavigation for brain stimulation / rTMS

Allyson Rosen, Ph.D. Director of Dementia Education, Mental Illness Research & Education Center, MIRECC, VA Palo Alto Health Care System, Stanford University

3:30-3:45 pm: Network-targeted Transcranial Magnetic Stimulation (TMS) for Mild Cognitive Impairment

Joy Taylor, Ph.D. Clinical Researcher, Mental Illness Research & Education Center, MIRECC, VA Palo Alto Health Care System, Stanford University

3:45-4:00 pm: rTMS for Alzheimer's disease

Joseph Cheng, M.D. Mental Illness Research & Education Center, MIRECC, VA Palo Alto Health Care System, Stanford University

4:00-4:15 pm: Diffusion Tensor Tractography of the Brainstem and Relevant for rTMS

Yu Zhang, Ph.D. War Related Illness & Injury Study Center, (WRIISC), VA Palo Alto Health Care System, Stanford University

4:15-4:30 pm:

Session Discussion



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Alzheimer's Disease Conference 2021: Room 409

Sunday, July 11th 10:00-11:30 am

C74: Lifestyle Intervention in Alzheimer's Disease Prevention and Treatment

Chairs:



Dr. Carl W. Cotman
(Professor of Neurology, School
of Medicine. Director, Institute for
Brain Aging and Dementia, Re-
search and Graduate Studies)



Dr. Margaret Fahnestock
(Professor, Department of Psy-
chiatry & Behavioural Neurosci-
ences, McMaster University)

10:00-10:15 am: Exercise and Cognitive Stimulation Drive Youthful Gene Signatures in the Aging Human Hippocampus

Carl W. Cotman, Ph.D. Professor of Neurology, University of California Irvine

10:15-10:30 am: Exercise opens a 'molecular memory window' to facilitate memory and synaptic plasticity

Ashley Keiser, Ph.D. Postdoctoral Fellow, University of California Irvine

10:30-10:45 am: Use it and boost it with physical and mental activity: A role for BDNF in brain plasticity associated with lifestyle enrichment

Donna Korol, Ph.D. Associate Professor of Biology, Syracuse University

10:45-11:00 am: Beneficial effects of a single session of high-intensity interval training (HIIT)

Margaret Fahnestock, Ph.D. Professor, Department of Psychiatry & Behavioural Neurosciences, McMaster University

11:00-11:15 am:

Single cell substrates of AD pathology and dietary treatment

Fernando Gomez-Pinilla, Ph.D. Professor and Director of the Neurotrophic Research Laboratory with secondary appointment in Physiological Science, University of California Los Angeles

11:15-11:30

Session Discussion



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Alzheimer's Disease Conference 2021: Room 409

Sunday, July 11th 1:00-2:30 pm

C86 (SLU CME): Alzheimer's Disease Treatment I: Traditional Targets and New Horizons

Chairs:



Dr. Maj-Linda Selenica
(Assistant Professor, Sanders
Brown Center on Aging)



Dr. Chris Wheeler
(Senior Research Scientist at
Brain Mapping Foundation; Chief
Science Officer at T-Neuro
Pharma, Inc.)

1:00-1:15 pm: Immunotherapeutic strategies in Alzheimer's disease: pre-clinical studies in transgenic mice
Hayk Davtyan, Ph.D. Associate Research Professor, University of California Irvine.

1:15-1:30 pm: Astrocyte signaling as a therapeutic target for Alzheimer's disease and related disorders.
Christopher Norris, Ph.D. Professor, Pharmacology and Nutritional Sciences, University of Kentucky

1:30-1:45 pm: Therapeutic targeting of the oxytocin receptor for vascular and mixed dementia
Scott Counts, Ph.D. Associate Professor of Translational Neuroscience, Michigan State University

1:45-2:00 pm: ApoE genotypes differentially regulate central carbon metabolism
Ron Bruntz, Ph.D. Scientist III, Molecular & Cellular Biochemistry, University of Kentucky.

2:00-2:15 pm: Immunotherapy against cit-tau.
Maj-Linda Selenica, Ph.D. Assistant Professor, Sanders Brown Center on Aging. UK, KY

2:15-2:30 pm: Session Discussion



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Alzheimer's Disease Conference 2021: Room 409

Sunday, July 11th 3:30-5:00 pm

C98 (SLU CME): Alzheimer's Disease Treatment II: Mechanistic & Alternative Targets

Chair:



Dr. Bruce Teter
(Associate Professor of Neurology,
UCLA; Associate of GRECC at
GLA Veterans Administration)

3:30-3:45 pm: C5a and Traumatic Brain Injury.

Paul Denver, Ph.D. Postdoctoral Research Fellow, Department of Neurology, University of California Los Angeles

3:45-4:00 pm: Dietary Lipids, ApoE4 and Alzheimer Prevention.

Gregory M. Cole, Ph.D. Professor of Medicine and Neurology and Associate Director of the UCLA Alzheimer's Center, University of California Los Angeles

4:00-4:15 pm: ApoE4-targeted therapeutic candidate that normalizes SirT1 and improves cognition in an AD model

Patricia Spilman, M.A. Senior Staff Scientist at Drug Discovery Laboratory, Department of Neurology, University of California Los Angeles

4:15-4:30 pm: Massive internet testing of theoretical but practical AD treatments (Statins, NSAIDs, Lithium, Magnesium, exercise and diet).

Wes Ashford, Ph.D. Director, War Related Illness & Injury Study Center, (WRIISC), VA Palo Alto Health Care System, Stanford University

4:30-4:45 pm: Apolipoprotein E and Exercise in Epigenetic Regulation of microRNA146a.

Bruce Teter, Ph.D. Associate Professor of Neurology, University of California Los Angeles

4:45-5:00 pm: Session Discussion



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MEG/EEG Conference 2021: Judith Ann Thatcher Memorial Session - Room 410

Organized by: Dr. Robert Thatcher, Dr. Warren Boling, Dr. Zoltan Mari, Dr. Babak Kateb

Friday, July 9th 10:00-11:30 am

A6: New Advancements in Electrical Neuroimaging: Neuro-Surgical Planning and Pre vs Post Surgery Assessment

CHAIR:



**Chair & Recipient of SBMT
2021 Pioneer in Medicine**

Award:

Robert Thatche, Ph.D.
(Applied Neuroscience, Inc., CEO
and Director Applied Neurosci-
ence Research Institute,
www.appliedneuroscience.com)

10:00-10:15 am: Neuro-navigation of Functional and Effective Connectivity in Epilepsy

Dr. Robert Thatcher, Ph.D. CEO and Director Applied Neuroscience Research Institute

10:15-10:30 am: Dr. Joel Lubar, Ph.D. Electrical Neuroimaging of Epileptic Foci and Affected Networks

President Southeastern Neurofeedback Institute

10:30-10:45 am: Electrical Neuroimaging for Pre vs Post Treatment Evaluation

Dr. Dale Foster, Ph.D. Clinical Neuropsychologist; NeuroSource, LLC

10:45-11:00 am: 3-Dimensional EEG Evaluation of Brain Networks

Dr. William Lambos, Ph.D. Licensed Psychologist, BCN & Certified Neuropsychologist NESTRE Health and Performance, LLC

11:00-11:15 am: Electrical Neuroimaging and Diffusion Tensor Imaging

Dr. Richard Abbey, Ph.D. Clinical Neuropsychologist, Clinical Psychologist, Abbey Neuropsychology Clinic

11:15-11:30 am: Session Discussion



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MEG/EEG Conference 2021: Judith Ann Thatcher Memorial Session - Room 410

Friday, July 9th, 1:30-3:00 pm

A18: Epilepsy and Intraoperative Brain Mapping (JHU CME)

Chairs:



Dawn Eliashiv, MD (Professor
Co-Director, UCLA Seizure Disorder Center UCLA Department of Neurology)



Warren Boling, MD (Professor
and Chairman, Department of Neurosurgery Loma Linda University)

1:30-1:45 pm: Post-traumatic Epileptogenesis and Its Biomarkers

Dr. Mohammad Dastjerdi, MD Assistant Professor, Department of Neurology, Loma Linda University

1:45-2:00 pm: Surgical Treatment of Epilepsy. A Brief History and Future Directions

Dr. Warren Boling, MD Professor and Chairman, Department of Neurosurgery, Loma Linda University

2:00-2:15 pm: The challenges in converting research and development into successful commercial products or services

Dr. Gordon Baltzer President of MEGIN

2:15-2:30 pm: Neuro stimulation network-based therapy for Epilepsy

Dr. Dawn Eliashiv, MD Professor, Co-Director, UCLA Seizure Disorder Center UCLA Department of Neurology

2:30-2:45 pm: The State of High-quality Dry and 'Almost-Dry' EEG Electrodes for Research and Clinical Applications

Dr. Yu Mike Chi, Ph.D. CEO, Cognionics, Inc. and CGX LLC.

2:45-3:00 pm: Session Discussion



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MEG/EEG Conference 2021: Judith Ann Thatcher Memorial Session - Room 410

Friday, July 9th, 3:30-5:00 pm

A30: MEG/EEG Clinical Applications (JHU CME); The EEG and MEG NeuroNavigator for the Evaluation of Epilepsy and Brain Network Dysregulation Using a Lifespan Normative Database from Birth to Senescence.

Chair:



Robert Thatche, Ph.D.
(Applied Neuroscience, Inc., CEO
and Director Applied Neurosci-
ence Research Institute,
www.appliedneuroscience.com)

3:30-3:45 pm: Real-Time Electrical Neuroimaging of the Cerebellum, Red Nucleus and Sub-Thalamus: Future Applications in Parkinsonism and Ataxia.

Dr. Robert Thatcher, Ph.D. CEO and Director Applied Neuroscience Research Institute

3:45-4:00 pm: Real-Time swLORETA EEG Neurofeedback of Veterans with PTSD

Dr. Dale Foster, Ph.D. Clinical Neuropsychologist; NeuroSource, LLC

4:00-4:15 pm: Real-Time swLORETA EEG Neurofeedback of Autistic Spectrum Disorder

Dr. Richard Abbey, Ph.D. Clinical Neuropsychologist, Clinical Psychologist, Abbey Neuropsychology Clinic

4:15-4:30 pm: Electrical Neuroimaging of in Epilepsy Patients

Dr. Joel Lubar, Ph.D. President Southeastern Neurofeedback institute

4:30-4:45 pm: Real-Time swLORETA EEG Neurofeedback of TBI Patients

Dr. William Lambos, Ph.D. Licensed Psychologist, BCN & Certified Neuropsychologist NESTRE Health and Performance, LLC

4:45-5:00 pm: Session Discussion



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MEG/EEG Conference 2021: Judith Ann Thatcher Memorial Session - Room 410

Saturday, July 10th, 10:00-11:30 am

B42: Practical Advances in Electrical Neuroimaging: Hands On Training

Chair:



Robert Thatche, Ph.D.
(Applied Neuroscience, Inc., CEO
and Director Applied Neurosci-
ence Research Institute,
www.appliedneuroscience.com)

10:00-10:15 am: Electrical Neuroimaging and Diffusion Tensor Imaging of Functional and Effective Connectivity
Dr. Robert Thatcher, Ph.D. CEO and Director Applied Neuroscience Research Institute

10:15-10:30 am: Time Domain Evaluation of Epileptic Foci and Networks
Dr. Ernesto P. Soler, Ph.D. Applied Neuroscience, Inc., Senior Scientist & Software Engineer

10:30-10:45 am: Real-time Electrical Neuroimaging of the Cerebellum, Red Nucleus and Subthalamus
Dr. Joel Lubar, Ph.D. President Southeastern Neurofeedback Institute

10:45-11:00 am: Wireless Neuro-navigation with Dry EEG Electrodes
Dr. Yu Mike Chi, Ph.D. CEO, Cognionics, Inc. and CGX LLC.

11:00-11:15 am: Real-Time swLORETA EEG Neurofeedback in PTSD
Dr. William Lambos, Ph.D. Licensed Psychologist, BCN & Certified Neuropsychologist NESTRE Health and Performance, LLC

11:15-11:30 am: Session Discussion



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MEG/EEG Conference 2021: Judith Ann Thatcher Memorial Session - Room 410

Saturday, July 10th, 1:00-2:30 pm

B54: MEG/EEG Clinical Applications II

Chairs:



Dr. Leslie S. Prichep (Chief Scientific Officer, BrainScope Company, Inc.)



Robert Thatche, Ph.D.
(Applied Neuroscience, Inc., CEO
and Director Applied Neuroscience
Research Institute,
www.appliedneuroscience.com)

1:00-1:15 pm: Triage of acute traumatic brain injury using electrophysiological biomarkers

Dr. Leslie S. Prichep, Ph.D. Chief Scientific Officer BrainScope Company

1:15-1:30 pm: QEEG optimization of TMS treatment

Dr. Robert Isenhardt, M.S. Chief Scientist, Wave Neuroscience

1:30-1:45 pm: Electrical Neuroimaging: Linking Symptoms to Dysregulated Networks

Dr. Richard Abbey, Ph.D. Clinical Neuropsychologist, Clinical Psychologist, Abbey Neuropsychology Clinic

1:45-2:00 pm: MEG and EEG Neuroimaging of Functional and Effective Connectivity

Dr. Ernesto P. Soler, Ph.D. Applied Neuroscience, Inc., Senior Scientist & Software Engineer

2:00-2:15 pm: Real-Time Electrical Neuroimaging and EEG Neuromodulation

Dr. William Lambos, Ph.D. Licensed Psychologist, BCN & Certified Neuropsychologist NESTRE Health and Performance, LLC

2:15-2:30 pm: Session Discussion



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MEG/EEG Conference 2021: Judith Ann Thatcher Memorial Session - Room 410

Saturday, July 10th, 3:00-4:30 pm

B66: Epilepsy & Neurophysiology (JHU CME)

Chairs:



Dr. Antal Berenyi, MD PhD
Principal Investigator/senior lecturer; Interdisciplinary Center of Excellence, University of Szeged, Szeged, Hungary / Chief Scientific Officer, Neunos Ltd, Szeged, Hungary / Adjunct Assistant Professor, Neuroscience Institute, New York University, NY



Dr. Zoltan Mari
Ruvo Family Chair and Director Parkinson's & Movement Disorders Center, Cleveland Clinic Lou Ruvo Center for Brain Health, Member of the Science Committee, Chair of Movement Disorders/Neurodegenerative Diseases Subcommittee

3:00-3:15 pm: Transcranial direct current stimulation to improve motor function in Parkinson's disease

Dr. Brach Poston, PhD Assistant Professor University of Nevada Las Vegas, Department of Kinesiology and Nutrition Sciences

3:15-3:30 pm: Natural typing as a digital biomarker for fine motor impairment

Dr. Teresa Arroyo-Gallegos, PhD Chief Data Scientist at nQ Medical

3:30-3:45 pm Neuro-engineering and Neuro-Ventures: Neuro-sensing Innovations and a War Story on the Launching of a Venture to Treat Epilepsy

Dr. Daniel DiIorenzo, MD, PhD, MBA Assistant Professor, Neurosurgery and Biomedical Sciences, Loma Linda University / Attending Neurosurgeon, Loma Linda VA Medical Center / President Barinetics Corporation

3:45-4:00 pm Multi Electrode Array (MEA) Technology: Understanding the Neurophysiological Characteristics of Neural Networks Modeling Neurological Disorders In-vitro

Dr. Laszlo Grand, PhD Senior Researcher, Peter Pazmany University, Budapest, Hungary Adjunct Assistant Professor, Department of Neurology and Neurosurgery, The Johns Hopkins Hospital, Baltimore CEO, APPERCELL Biotech Ltd., Budapest, Hungary R&D Director, Polaritas-GM Ltd., Budapest, Hungary

4:00-4:15 pm "Oscillotherapy – Closed-loop transcranial electric stimulation in epilepsy and PTSD"

Dr. Antal Berenyi, MD, PhD Principal Investigator/senior lecturer; Interdisciplinary Center of Excellence, University of Szeged, Szeged, Hungary / Chief Scientific Officer, Neunos Ltd, Szeged, Hungary / Adjunct Assistant Professor, Neuroscience Institute, New York University, NY

4:15-4:30pm: Session Discussion



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MEG/EEG Conference 2021: Judith Ann Thatcher Memorial Session - Room 410

Sunday, July 11th 10:00-11:30 am

C78: MEG Sensors (JHU CME)

Chairs:



Dr. Peter Schwindt (Distinguished Member of Technical Staff Sandia National Laboratories)



Dr. Amir Borna (Senior Member of Technical Staff Sandia National Laboratories)

10:00-10:15 am: Moving Closer to the Brain: Introduction to On-Scalp Magnetoencephalography

Dr. Peter Schwindt, PhD Distinguished Member of Technical Staff

10:15-10:30 am: Next Generation Magnetoencephalography (MEG)

Dr. Vishal Shah, PhD Chief Scientist, QuSpin, Inc., CO, US

10:30-10:45 am: Next Generation Neuroimaging with Optically Pumped Magnetometer Magnetoencephalography (OPM-MEG)

Mr. Ryan Hill MEG Researcher, University of Nottingham, United Kingdom

10:45-11:00 am: Towards a MEG system with microfabricated OPMs

Dr. Svenja Knappe, PhD Associate Research Professor, University of Colorado, Fieldline, Inc.

11:00-11:15 am: Non-Invasive Functional-Brain-Imaging with an OPM-based Magnetoencephalography System

Dr. Amir Borna, PhD Senior Member of Technical Staff, Sandia National Laboratories, NM, US

11:15-11:30 am: Session Discussion



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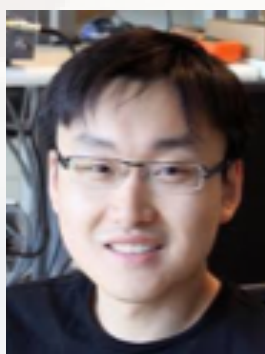
Breaking Boundaries of Science, Technology, Medicine, Art, and Healthcare Policy

MEG/EEG Conference 2021: Judith Ann Thatcher Memorial Session - Room 410

Sunday, July 11th, 1:00-2:30 pm

C90: MEG/EEG Sensors

Chair:



Dr. Yu Mike Chi, Ph.D.
(Cognionics, Inc., CEO
and CGX LLC)

1:00-1:15 pm: Tripolar Concentric Ring Electrodes for Two-Way Brain Communication

Dr. Prof. Walt Besio, PhD Dept. of Electrical Computer and Biomedical Engineering, University of Rhode Island

1:15-1:30 pm: EEG biomarkers of stroke recovery

Dr. Prof. Steven Cramer, MD Profesor of Neurology, UCLA

1:30-1:45 pm: Soft Molded Dry EEG Electrodes

Dr. Gary Vissing Business Development Manager, Datwyler Sealing Solutions)

1:45-2:00 pm: Studying volition by combining EEG with physiological monitoring, TMS, flotation tank, and other measures

Dr. Prof. Uri Maoz, PhD Assistant Professor, Member of the Institute for Interdisciplinary Brain and Behavioral Sciences

2:00-2:15 pm: Big and Crucial Issues (BCIs) in taking BCIs outside the Laboratory

Prof. Tzyy-Ping Jung, PhD Co-Director, Center for Advanced Neurological Engineering, Institute for Neural Computation (INC) and Institute of Engineering in Medicine (IEM), University of California, San Diego (UCSD)

2:15-2:30 pm: Session Discussion



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MEG/EEG Conference 2021: Judith Ann Thatcher Memorial Session - Room 410

Sunday, July 11th, 3:30-5:00 pm

C102: Software Session for MEG/EEG; The Neuro-Navigator for EEG Source and Connectivity Analyses of Cortical and Cerebellar Network Nodes

Chairs:



Robert Thatcher, Ph.D.
(Applied Neuroscience, Inc., CEO
and Director Applied Neurosci-
ence Research Institute,
www.appliedneuroscience.com)



Ernesto Palmero Soler, Ph.D.
(Applied Neuroscience, Inc.,
Senior Scientist & Software En-
gineer)

3:30-3:45 pm: Real-Time swLORETA Cerebellar EEG Neurofeedback of Parkinson Patients

Dr. Robert Thatcher, Ph.D. CEO and Director Applied Neuroscience Research Institute

3:45-4:00 pm: Modern Software Tools for MEG/EEG

Dr. Nicholas Peatfield Ph.D. CEO, Proto-Me

4:00-4:15 pm: MEG and EEG Neuroimaging of Functional and Effective Connectivity

Dr. Ernesto P. Soler, Ph.D. Applied Neuroscience, Inc., Senior Scientist & Software Engineer

4:15-4:30 pm: Electrical Neuroimaging and Seizure Localization

Dr. Joel Lubar, Ph.D. President Southeastern Neurofeedback Institute

4:30-4:45 pm: Neuronavigation of EEG Functional and Effective Connectivity and Diffusion Tensor Imaging in TBI patients

Dr. Dale Foster, Ph.D. Clinical Neuropsychologist; NeuroSource, LLC

4:45-5:00 pm: Session Discussion



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Military Medicine Conference 2021: Room 406B

Organized by: Dr. Robert Thatcher, Dr. Warren Boling, Dr. Zoltan Mari, Dr. Babak Kateb and Dr. Alejandro Mercado

Friday, July 9th, 10:00-11:30 am

A3: (SLU CME) Novel Therapeutics for Combat-Related PTSD



Michael Roy, MD, MPH
Director, Division of Military Internal Medicine and
Professor of Medicine, Uniformed Services University,
Bethesda, MD.

10:00-10:15: Deep Data Analysis of Blood and Imaging Correlates of Post-traumatic Stress Symptoms Following Military Concussive TBI

Pashtun Shahim, MD, PhD, Staff Scientist, RMD at Clinical Center, National Institutes of Health Research Scientist Center for Neuroscience and Regenerative Medicine, Bethesda, MD.

10:15-10:30 Reconsolidation of Traumatic Memories (RTM) protocol: a novel intervention for PTSD

Rick Gray, PhD, Research Director, Research & Recovery Project, Cornell, NY.

10:30-10:45. Update on Realtime Amygdala-Focused Neurofeedback to Treat PTSD (Video Teleconference)

Jerzy Bodurka, PhD, Laureate Institute: Chief Technology Officer, Director, MRI and EEG Facility, Laureate Institute for Brain Research and Associate Professor, University of Oklahoma

10:45-11:00 Symptoms, Imaging, and Autonomic Outcomes after HIRREM for Symptoms of Military-related Traumatic Stress

Charles Tegeler, MD, Professor of Neurology, Wake Forest University School of Medicine.

11:00-11:15 Art Therapy and creative self-expression for service members and veterans with PTSD, TBI and Gulf War Illness

Girija Kaimal, EdD, MA, ATR-BC, Associate Professor, PhD Program in Creative Arts Therapies Department of Creative Arts Therapies President Elect, American Therapy Association Faculty Senate representative (CNHP) Drexel University.

11:15-11:30 Session Discussion



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Military Medicine Conference 2021: Room 406B

Friday, July 9th, 1:30-3:00 pm

A15: (SLU CME) Innovative Diagnostic and Treatment Approaches in Military TBI.

Chairs:



Michael Roy, MD, MPH
Director, Division of Military Internal Medicine and Professor of Medicine, Uniformed Services University, Bethesda, MD.



Ken Green, DMD, BS
Executive Director elect, and member of the Board of Directors of the Society for Brain Mapping and Therapeutics (SBMT).

1:30-1:45: Allostatic Neurotechnology, a Novel Approach for Re-setting the Brain to Relieve Postconcussive Symptoms

Michael Roy, MD, MPH, Director, Division of Military Internal Medicine and Professor of Medicine, Uniformed Services University, Bethesda, MD.

1:45-2:00: Rehabilitation and Neuromarker Identification for mTBI Patients using Immersive Virtual Reality Environments

Pinata Sessoms, PhD, Director, CAREN Naval Health Research Center, San Diego, CA

2:00-2:15: Preliminary Results of the 3MDR Clinical Trial to Treat PTSD after Mild TBI with and without Eye Movement

Michael Roy, MD, MPH, Director, Division of Military Internal Medicine and Professor of Medicine, Uniformed Services University, Bethesda, MD.

2:15-2:30: Analyzing the NICOE Experience—What Works and What Does Not in treating complex TBI?

Tom DeGraba, MD., Senior Research Scientist National Intrepid Center of Excellence, Bethesda, MD.

2:30-2:45: State of the Science on TBI in 2021

Dallas Hack, MD, Colonel, US Army (Retired), Cohen Veterans Bioscience

2:45-3:00 Session Discussion



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Military Medicine Conference 2021: Room 406B

Friday, July 9th, 3:30-5:00 pm

A27: (SLU CME) Suicide

Chair:



Michael Roy, MD, MPH
Director, Division of Military Internal Medicine and
Professor of Medicine, Uniformed Services University,
Bethesda, MD.



Ken Green, DMD, BS
Executive Director elect,
and member of the Board of
Directors of the Society for
Brain Mapping and Therapeutics (SBMT).

3:30-3:45: Neuropathologic Findings that Distinguish Suicide from other Causes of Death

Daniel Perl, MD, USU TBI Research Center, Director of Brain Bank and Neuropathology

3:45-4:00: Disseminating Evidence Based Practice in Suicide Prevention and Treatment for Military Communities

Sharon Birman USU

4:00-4:15: Understanding and Preventing Suicide. What we Know, What we Think We Know, and What We Will Never Know

Ken Green, MD Vice President of Strategic Initiatives for Government and Nonprofit Partnerships, SBMT

4:15-4:30: Can AI Save Lives? Big Data and Machine Learning in Suicide Prevention

David Luxton, PhD, MS, Associate Professor of Psychiatry University of Washington School of Medicine, Seattle, WA
and Rona Margaret Relova, MD VA Palo Alto Healthcare System

4:30-4:45: Addressing Suicide in the US Air Force

Colonel Caesar Junker, USAF Surgeon General's Office

4:45-5:00 Session Discussion



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Military Medicine Conference 2021: Room 406B

Saturday, July 10th, 10:00-11:30 am

B39: (SLU CME) Subconcussive Blast Exposure

Chair:



Michael Roy, MD, MPH
Director, Division of Military Internal Medicine and
Professor of Medicine, Uniformed Services University,
Bethesda, MD.



Josh Duckworth, MD
Bremerton Naval Hospital,
Bremerton, WA

10:00-10:15: Assessment of Blast in U.S. Military Special Forces

Jennifer N. Belding, PhD, Behavioral health researcher at Naval Health Research Center, San Diego California.

10:15-10:30: Investigating Training-Associated Blast Pathology: The INVICTA Study

David Keyser, USU.

10:30-10:45: Combat and training Queryable Exposure/event Repository: The CONQUER Program (Video Teleconference)

Josh Duckworth, Bremerton Naval Hospital, Bremerton, WA

10:45-11:00: Audiologic Impact of SCBE

Doug Brungart, WRNMMC

11:00-11:15: Service Academy Athletes and the NCAA Study (Video Teleconference)

Paul Pasquina, Chair, Dept of Rehabilitation Medicine, and Director, Center for Rehabilitation Sciences Research, USU

11:15-11:30: Session Discussion



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Military Medicine Conference 2021: Room 406B

Saturday, July 10th, 1:00-2:30 pm

B51: (SLU CME) Diagnostic, Pathology and Epidemiology of TBI in Veterans

Chair:



Stuart Hoffman, DO

1:00-1:18: Association of Blast with VA Service Connected Disability, Comorbidities, Health-Services Utilization and Costs: Initial CENC Findings

Clara E. Dismuke, PhD, Health Services Research Enhancement Award Program Ralph H. Johnson VA Medical Center Medical University of South Carolina Center for Health Economics and Policy Studies

1:20-1:38: TBI and Medical Imaging: A picture is worth a thousand words, but is it really saying anything important

David Tate, PhD, University of Utah School of Medicine, Neurology Associate Professor.

1:40-1:58: Opioid and Sedative-Hypnotic Medication Use among Veterans with TBI

Kathleen Carlson, Ph.D., HSR&D Center to Improve Veteran Involvement in Care (CIVIC), VA Portland Health Care System (R&D 66)

2:00-2:18: Long Term Impact of Mild TBI on Bone Metabolism: Brain-Bone Connection

Mohan Subburaman, Ph.D, VA Loma Linda Healthcare System

2:18-2:30 Session Discussion



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Military Medicine Conference 2021: Room 406B

Saturday, July 10th, 3:00-4:30 pm

B63: Social Impact, Cost and Initiatives relating to Opioid Epidemic

Chair:



Daniel Sipple
Pain Management. Board
Certified in Physical Medi-
cine & Rehabilitation. Board
Certified in Pain Medicine



Brian Norling
Chief Executive Officer at MEMS
Precision Technology, Inc

3:00-3:15 Impact and initiatives relating to California's opioid epidemic

Mr. Ken Cooley, California State Assembly, 8th Assembly District

3:15-3:30: TBD

3:30-3:45: Outcome-based compensation for Behavioral Healthcare Providers.

Tom Meier, PhD, CAO NUWAY Minneapolis, Minnesota

3:45-4:00: PACE model for disenfranchised Veterans

Dave Wensel, MD, Midland Care Connection

4:00-4:15: Methamphetamine use and HIV-1/NeuroHIV disease

Marcus Kaul, Ph.D, Associate Professor of Biomedical Sciences

4:15-4:30 Session Discussion



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Military Medicine Conference 2021: Room 406B

Sunday, July 11th, 10:00-11:30 am

C75: Portable Neuromodulation Stimulation and the treatment of symptoms of disease or trauma: Experimental and clinical evidence

Chair:



Ken Green, DMD, BS
Executive Director elect,
and member of the Board of
Directors of the Society for
Brain Mapping and Thera-
peutics (SBMT).



Teodoro "Jun" Tigno, MD
Senior Research Scientist
(HJF), Assistant Professor
Neurosurgery Service, Dept.
of Surgery Uniformed Ser-
vices University Walter Reed
National Military Medical
Center

10:00-10:15am: Using Advanced Radiology Techniques to Diagnose Traumatic Brain Injury in 2021

Keyne Johnson, MD, Pediatric Neurosurgeon, Brain and Spine Institute for Children, American Association of Neuro-
logical Surgeons, Cognitive Neuroscience Society..

10:15-10:30: Preliminary Report on Venous Thrombosis Chemoprophylaxis in the Management of Wartime Head Injuries

Teodoro "Jun" Tigno, MD, USU Dept of Surgery

10:30-10:45am: Potential Applications of MRI with Ultra-high Performance Gradients for TBI Microstructure Imaging

Robert Shih, MD, (WRNMMC Radiology)

10:45-11:00am: The PoNS™ journey: a multidisciplinary collaboration

Phil Deschamps, CEO (Helius Medical Technologies)

11:00-11:15am: Clinical trials of PoNS™ in various neurological diseases

Harry Kovelman, MD , CEO/President (Helius Medical Technologies)

11:15-11:30 Session Discussion



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Military Medicine Conference 2021: Room 406B

Sunday, July 11th, 1:00-2:30 pm

C87: (SLU CME) Advances in Neurorehabilitation for Veterans with TBI

Chair:



Stuart Hoffman, DO
Professor of Medicine,
Division of Military Internal
Medicine and Uniformed
Services University,
Bethesda, MD

1:00-1:18: Sleep Disturbances in TBI: From Bench to Bedside, and Beyond

Miranda Lim, MD, PhD., OHSU Assistant Professor of Neurology School of Medicine Behavioral Neuroscience Graduate Program School of Medicine

1:20-1:38: Non-pharmacological interventions for insomnia in mild TBI

Ansgar Furst, PhD., Stanford University, Clinical Associate Professor (Affiliated) [VAPAHCS]

1:40-1:58: Compensatory Cognitive Training Interventions to Improve Cognition and Functioning in Neuropsychiatric Disorders

Elizabeth Twamley, PhD, Professor in Residency, USCD Health Sciences.

2:00-2:18: Treatment of Persistent Cognitive Symptoms Following Concussion

Amy Jak, Ph.D Associate Director, Clinical Research Unit University of California, San Diego (UCSD) and a Staff Neuropsychologist and Director of the TBI Cognitive Rehabilitation Clinic at the Veterans Affairs San Diego Healthcare System.

2:18-2:30 Session Discussion



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Military Medicine Conference 2021: Room 406B

Sunday, July 11th, 3:30-5:00 pm

C99: Acquired Spine and Brain Injuries

Chairs:



Michael Roy, MD, MPH
Director, Division of Military Internal Medicine and
Professor of Medicine, Uniformed Services University,
Bethesda, MD.



Alejandro Esteban
Mercado Santori, MD
Professor and Chairman of
Neurosurgery, Hospital Militar,
Mendoza Argentina

3:30-3:45: Decompressive Craniectomy: Past, Present and Future.

Alejandro Esteban Mercado Santori, MD, Professor and Chairman of Neurosurgery, Hospital Militar, Mendoza Argentina

3:45-4:00: Legal Aspects of Neurotrauma

Mr. Michael Flomenhaft, New York Traumatic Brain Injury (TBI)/Concussion Lawyer The Flomenhaft Law Firm, PLLC

4:00-4:15: Translational Research In The Detection Of Brain Injury

Dr. Meijun Ye, Principal Investigator of Neurological Devices Laboratory, FDA

4:15-4:30: Management of Extreme Cervical Deformity

Haroon F. Choudhri, M.D., FAANS, Hudson Neurosurgery

4:30-5:00 Session Discussion



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Neuro-Engineering Conference 2021: Warren Grundfest Neuro-Engineering Memorial - Room 150A

Organized By: Dr. Ted Berger, Dr. R. Werne, Dr. Dong Song, Dr. Babak Kateb, Dr. Jean-Marie C Bouteiller
and Dr. Seung-Shick Yoo

Friday, July 9th, 10:00-11:30 am

A7: Neural Engineering I: Addressing Challenges in Cochlear Implants (JHU CME)

Chair:



Dr. Fan Gang Zeng PhD.
(Professor and Director Center
for Hearing Research University
of California Irvine)

10:00-10:15 am: Challenges and opportunities in cochlear implants.

Dr. Prof. Fan-Gang Zeng, PhD Professor and Director, Center for Hearing Research, University of California Irvine

10:15-10:30 am: A Manufacturer's Perspective on Challenges in Cochlear Implantation

Dr. Leonid Litvak, PhD Director of Research and Development, Advanced Bionics Corporation

10:30-10:45 am: Neural modeling in auditory prostheses

Dr. Prof. Hiroyuki Mino, PhD Professor of Biomedical Engineering, Kanto Gakuin University

10:45-11:00 am: Unobtrusive in-ear electrophysiology

Dr. Prof. Gert Cauwenberghs, PhD Professor of Bioengineering, Co-Director, Institute for Neural Computation Jacobs School of Engineering; University of California, San Diego

11:00-11:15 am: NIH support for cochlear implant research and development

Dr. Roger Miller, PhD Program Director, National Institutes of Health / National Institute on Deafness and Other Communication Disorders

11:15-11:30 am: Session Discussion



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Neuro-Engineering Conference 2021: Warren Grundfest Neuro-Engineering Memorial -
Room 150A

Friday, July 9th, 1:30-3:00 pm

A19: Neural Engineering II: Neuro-Modulation and Ultrasound

Chairs:



Dr. Seung-Schik Yoo
Associate Professor, Harvard
Medical School
Brigham and Women's Hospital



Dr. Spencer Brinker
Associate Research Scientist
Yale School of Medicine)

1:30-1:45 pm: Modulation of human anti-saccade behavior using transcranial focused ultrasound

Dr. Hyungmin Kim, PhD Senior Researcher, Korea Institute of Science and Technology (KIST) on leave to CalTech)

1:45-2:00 pm: The Safety of Focused Ultrasound in the Treatment of Human Temporal Lobe Epilepsy

Dr. Norman Spivak Department of Neurosurgery, Brain Injury Research Center, Department of Psychiatry and Biobehavioral Sciences, University of California Los Angeles (UCLA)

2:00-2:15 pm: Low Intensity focused ultrasound as a non-invasive intervention in disorders of consciousness

Mr. Joshua Cain on behalf of Dr. Martin Monti Associate Professor, University of California of Los Angeles

2:15-2:30 pm: Big-Beam Transcranial Ultrasound Stimulation: A Human-Scale Benchtop Feasibility Study

Dr. Spencer Brinker, PhD Associate Research Scientist, Yale School of Medicine

2:30-2:45 pm: Transcranial focused ultrasound modulates cortical and thalamic motor areas in awake sheep.

Dr. Hyunuchul Kim, MD, PhD Postdoctoral Fellow, Harvard Medical School, Brigham and Women' Hospital

2:45-3:00 pm: Session Discussion



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Neuro-Engineering Conference 2021: Warren Grundfest Neuro-Engineering Memorial -
Room 150A

Friday, July 9th, 3:30-5:00 pm

A31: Neural Engineering III: Computational Models for Neural Prosthesis (JHU CME)

Chair:



Dr. Dong Song
(Research Associate Professor
Center for Neural Engineering
Department of Biomedical Engineering
Neuroscience Graduate
Program University of Southern
California)

3:30-3:42 pm: Closed-loop BCI for Neuropsychiatric disorders

Dr. Yuxiao Yang, PhD Assistant Professor, University of Southern California

3:42-3:54 pm: Modeling the brain-body axis for diagnostic and closed-loop bioelectronic devices.

Dr. Theodoros Zanos, PhD Assistant Professor, The Feinstein Institute for Medical Research

3:54-4:06 pm: Generating Somatosensory Percepts for Bidirectional Brain-Machine Interfaces.

Dr. Spencer Kellis, MD Research Assistant Professor, Keck School of Medicine of USC

4:06-4:18 pm: Computational Models for Hippocampal Memory Prostheses

Dr. Dong Song, PhD Research Assistant Professor, University of Southern California

4:18-4:30 pm: Building Motor Brain Machine Interface Towards a Smart Learner

Dr. Yiwen Wang, PhD Assistant Professor, The Hong Kong University of Science and Technology

4:30-4:42 pm: Biomimetic sensorimotor control of a dexterous, sensorized bionic arm

Dr. Gregory Clark, PhD Professor, University of Utah

4:45-5:00 pm: Session Discussion



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Neuro-Engineering Conference 2021: Warren Grundfest Neuro-Engineering Memorial -
Room 150A

Saturday, July 10th, 10:00-11:30 am

B43: Neural Engineering IV: Neuro-Engineering Research and Development in the Department of Energy

Chairs:



Roger Werne, Ph.D.
(Senior Advisor Innovation and
Partnerships Lawrence Livermore
National Laboratory & Lawrence
Livermore National Laboratory)



Dr. Elsie Quite-Randall
(Senior Advisor Innovation and
Partnerships Lawrence Livermore
National Laboratory & Lawrence
Livermore National Laboratory)

10:00-10:15 am: Neuro Engineering Research and Development at Lawrence Berkeley National Laboratory.
Dr. Kristofer Bouchard, PhD Principal Investigator Lawrence Berkeley National Laboratory

10:15-10:30 am: Neuro Engineering Research and Development at Argonne National Laboratory.
Dr. Narayanan Kasthuri, MD Assistant Profesor, Argonne National Laboratory

10:30-10:45 am: Neuroscience and Neurotechnology at Lawrence Livermore National Laboratory
Dr. Amy Gryshuk, PhD Director, Strategic Engagements & Alliance Management for the Physical & Life Sciences
Directorate

10:45-11:00 am: Neuro Engineering Research and Development at Sandia National Laboratories.
Dr. Peter Schwindt, PhD Principal Investigator, Sandia National Laboratory

11:00-11:15 am: Accessing unique facilities and expertise at DOE National Laboratories.
Dr. Elsie Quait-Randall, PhD Deputy Director of Innovation and Partnerships; Lawrence Livermore National Laboratory

11:15-11:30 am: Session Discussion



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Neuro-Engineering Conference 2021: Warren Grundfest Neuro-Engineering Memorial -
Room 150A

Saturday, July 10th, 1:00-2:30 pm

B55: Neural Engineering V: Multiscale (Hierarchical) Model of the Nervous System (JHU CME)

Chair:



Dr. Jean-Marie C. Bouteiller
(Research Assistant Professor
Department of Biomedical Engineering Viterbi School of Engineering
University of Southern California)

1:00-1:15 pm: Bridging scales in Multiscale Models of the Nervous System.

Dr. Jean-Marie C. Bouteiller, PhD Research Assistant Professor, University of Southern California

1:15-1:30 pm: Multiscale Population Modeling for Addressing Divergence in Therapeutic Design for Neural Tissue

Dr. James Kozloski PhD Research Staff Member, Manager, Multiscale Computational Modeling — Heart, Brain and Spinal Cord, IBM Research

1:30-1:45 pm: A Computer-Based Quantitative Systems Pharmacology Model for Understanding the Neurobiology Behind; The Effect Of Genotypes On Bold fMRI Readouts.

Dr. Hugo Geerts, PhD Chief Scientific Officer, In Silico Biosciences

1:45-2:00 pm: A large-scale neuronal network model of the tri-synaptic pathway of rat hippocampus.

Dr. Gene Yu, PhD Postdoctoral Research Associate, University of Southern California

2:00-2:15 pm: 3D Mesh Processing Using GAMer 2 to Enable Reaction-Diffusion Simulations in Realistic Dendritic Spine Geometry

Dr. Christopher T. Lee, PhD Hartwell Foundation Postdoctoral Fellow, UC San Diego

2:15-2:30 pm: Session Discussion



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Neuro-Engineering Conference 2021: Warren Grundfest Neuro-Engineering Memorial -
Room 150A

Saturday, July 10th, 3:00-4:30 pm

B67: Neural Engineering VI: Neuromorphic Computing

Chair:



Roger Werne, Ph.D.
(Senior Advisor Innovation and
Partnerships Lawrence Livermore
National Laboratory & Lawrence
Livermore National Laboratory)

3:00-3:15 pm: Constraints from Cortical and Subcortical Global Brain Anatomy for Brain Inspired Computing

Dr. James Kozloski, PhD Research Staff Member, Manager, Multiscale Computational Modeling — Heart, Brain and Spinal Cord, IBM Research

3:15-3:30 pm: Lessons from dragonflies in brain-inspired computing

Dr. Frances S. Chance, PhD Principal Member of Technical Staff
Department of Cognitive and Emerging Computing, Sandia National Laboratory

3:30-3:45 pm: Brain Inspired Computing on a Chip

Dr. Roger Levinson, PhD Chief Operating Officer, BrainChip Inc.

3:45-4:00 pm: Computational Experience with the IBM TrueNorth computer

David Peter Widemann Senior Researcher, Lawrence Livermore National Laboratory

4:00-4:15 pm: Brain Inspired Computing using Spiking Neural Networks

Dr. Prasanna Date, PhD Research Scientist, Oak Ridge National Laboratory

4:15-4:30 pm: Session Discussion



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Neuro-Engineering Conference 2021: Warren Grundfest Neuro-Engineering Memorial -
Room 150A

Sunday, July 11th, 10:00-11:30 am

C79: Neural Engineering VII: New Neural Interface for Recording and stimulation

Chairs:



Dr. Dong Song
(Research Associate Professor
Center for Neural Engineering
Department of Biomedical Engineering
Neuroscience Graduate
Program University of Southern
California)



Dr. Ellis Meng
Professor of Biomedical Engineering and Electrical and
Computer Engineering Vice Dean
for Technology Innovation and
Entrepreneurship Viterbi School
of Engineering University of
Southern California

10:00-10:15 am: Wearable Sensor Suite for Non-invasive Neurophysiological Monitoring in Naturalistic and Virtual Reality Environments.

Dr. Walid Soussou, PhD CEO, Wearable Sensing, QUASAR.

10:15-10:30 am: Next-Generation Interface Systems for Supporting Cortical Prostheses

Dr. Dong Song, PhD Research Assistant Professor, University of Southern California

10:30-10:45 am: Polymer Implantable Microelectrode Array Neural Interfaces

Dr. Ellis Meng, PhD Professor of Biomedical Engineering and Electrical and Computer Engineering Vice Dean for Technology Innovation and Entrepreneurship Viterbi School of Engineering University of Southern California

10:45-11:00 am: EPIC Microelectrodes for Bi-Directional Sensing and Stimulation

Dr. Jack Whalen, PhD CEO, Platinum Group Coatings, LLC (PGC) University of Southern California

11:00-11:15 am: Exploring the link Between Recording Array Design and Biocompatibility

Dr. Patrick Tresco, PhD Professor, University of Utah

11:15-11:30 Session Discussion



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Neuro-Engineering Conference 2021: Warren Grundfest Neuro-Engineering Memorial -
Room 150A

Sunday, July 11th, 1:00-2:30 pm

C91: Neural Engineering VIII: Artificial Retina (JHU CME)

Chair:



Dr. James Weiland (University of
Michigan, BME and Ophthalmology)

1:00-1:15 pm: Microstructural properties of visual pathway in blinding diseases

Dr. Jeiran Choupan, PhD Research Scientist, University of Southern California

1:15-1:30 pm: Predicting the perceptual experience of retinal prosthesis patients

Dr. Michael Beyeler, PhD Assistant Professor, University of California Santa Barbara

1:30-1:45 pm: High-density integrated neural interfaces

Dr. Prof. Gert Cauwenberghs, PhD Professor of Bioengineering

Co-Director, Institute for Neural Computation Jacobs School of Engineering; University of California, San Diego

1:45-2:00 pm: An overview of visual prostheses

Dr. James Weiland, PhD Professor, University of Michigan

2:00-2:15 pm: Neuroimaging in the Blind with Retinal Prostheses: Does Sensory Reorganization During Blindness Limit Visual Restoration?

Dr. Noelle Stiles, PhD Research Associate, University of Southern California

2:15-2:30 pm: Session Discussion



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Neuro-Engineering Conference 2021: Warren Grundfest Neuro-Engineering Memorial -
Room 150A

Sunday, July 11th, 3:30-5:00 pm

C103: Neural Engineering IX: Ultrasound

Chair:



Dr. Qifa Zhou
(Professor of Ophthalmology and
Biomedical Engineering Viterbi
School of Engineering USC)

3:30-3:45 pm: Ultrasound stimulation on the retina and Visual Cortex for Vision restoration

Dr. Qifa Zhou, PhD Professor of Ophthalmology and Biomedical Engineering Viterbi School of Engineering, USC

3:45-4:00 pm: Simultaneous deep brain calcium imaging and ultrasound based neural modulation

Dr. Meng Cui, PhD Assistant Professor of Purdue, ECE and Biology, Purdue University

4:00-4:15 pm: Central and Peripheral Nervous System Modulation with Focused Ultrasound

Dr. Elisa Konofagou, PhD Professor of Biomedical Engineering, Columbia University

4:15-4:30 pm: MR guided focus ultrasound: from high to low frequency

Dr. Zion Zibly, MD Senior Physician, Department of Neurosurgery Member of Israeli Neurosurgical Society, Congress of Neurological Societies, North American Neuromodulation Society, European Neurosurgical Association Boards, The Israeli Journal of Neurology, Sheba Medical Center

4:30-4:45 pm: Photoacoustic brain imaging: smaller, deeper, and more colorful

Dr. Junjie Yao, Ph.D Assistant professor of biomedical engineering, Duke University

4:45-5:00 pm: Session Discussion



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Neuro-Oncology Conference 2021: Room 407

Organized by: Vicky Yamamoto, Babak Kateb, Reinhard Schulte, Jennifer Yu, Mark Torchia, Colin Watt, Terry Burns, Jethro Hu, AjitKumar Mulavara, Thomas Williams, Mohammad Avanaki and Fartash Vasefi

Friday, July 9th, 10:00-11:30 am

A4: Mars Exploration: Impact of Change to CNS on Operational Performance

CHAIRS:



Ajitkumar Mulavara, PhD
CNS/BMed/Sensorimotor (CBS)
Portfolio Scientist, NASA, JSC



Thomas Williams, PhD
Element Scientist, NASA, JSC

10:00-10:10: The CBS Integrated Risk Overview and Problem statement

Thomas Williams, PhD; Element Scientist; NASA, JSC
Ajitkumar Mulavara, PhD, CNS/BMed/Sensorimotor (CBS) Portfolio Scientist.

10:10-10:23: Insights from neuroimaging of astronauts and subjects in space analog conditions

Ruben Gur, PhD, Professor in the Departments of Psychiatry, Radiology & Neurology, Perelman School of Medicine University of Pennsylvania.

10:23-10:37: Operationally-Relevant Performance: Acute & Long-term effects of Galactic Cosmic Radiation on CNS and Behavior

Susanna Rosi, Ph.D, Professor & Director of Neurocognitive Research, University of California San Francisco.

10:37-10:50: Fractionated ion delivery effects vs Acute dose effects on CNS/ behavior and operational performance outcomes

Catherine M. Davis, PhD, Assistant Professor, Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine.

10:50-11:02: Neurobehavioral biomarkers for monitoring behavior and operationally-relevant performances: ISS and ICE effects on CNS and crew Behavioral Medicine

David F. Dinges, PhD, Professor and Director, Unit for Experimental Psychiatry, Perelman School of Medicine

10:02-11:15: Integrating Performance Impacts: Behavioral Medicine, CNS, and Sensorimotor Effects on operational performance in crew – 6 and 12 months

Scott J. Wood, PhD, Sensorimotor Discipline Scientist, NASA, JSC

11:15-11:30 Session Discussion



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Neuro-Oncology Conference 2021: Meeting Room 407

Friday, July 9th, 1:30-3:00 pm

A16: (SLU CME) Neuro-Oncology: Stem Cell Immunology and Molecular Targeting

Chairs:



Vicky Yamamoto, PhD
Executive Director, Society for
Brain Mapping and Therapeutics



Jennifer Yu, MD
Radiation Oncology, Cleveland
Clinic Cancer Center

1:30-1:45: Glioma Stem Cells in Therapeutic Resistance

Jennifer Yu, MD, Radiation Oncology, Cleveland Clinic Cancer Center

1:45-2:00: Targeting mechanisms of acquired temozolomide resistance in glioblastoma

Clark Chen, MD, PhD, Professor, University of Minnesota School of Medicine.

2:00-2:15: The future of Stem cell therapy

Robert Hariri, MD, PhD, Chairman, Founder, Chief Scientific Officer, and former Chief Executive Officer of Celgene Cellular Therapeutic.

2:15-2:30: Precision Oncology: The role of Epigenetic influence and application of a customized epigenetic targeted therapy on Glioma stem cells and reversing radio-resistance

Mohammad Nezami, MD, Assistant Professor of Neurological surgery Department of Neurosurgery, Cleveland Clinic.

2:30-2:45: Ketogenic Metabolic Therapy of GBMs as a Targeted Approach

Jethro Hu, MD, Associate Professor, Department of Medicine, Division of Hematology Oncology, Cedars-Sinai Medical Center, Los Angeles, CA

2:45-3:00 Session Discussion



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Neuro-Oncology Conference 2021: Meeting Room 407

Friday, July 9th, 3:30-5:00 pm

A28: NanoNeuroPhotonics

Chairs:



Babak Kateb, MD
Chairman/CEO, Society for Brain
Mapping and Therapeutics



Ajeet Kaushik, PhD
Assistant Professor, Florida Poly-
technic University

3:30-3:45: Delivery of magnetic nano-drugs to treat CNS diseases/brain cancer

Ajeet Kaushik, PhD, Assistant Professor, Florida Polytechnic University

3:45-4:00: The use of MR guided FUs for the delivery of nanoparticles into the CNS

Zion Zibly, MD, Senior Physician, Sheba Medical Center in Israel

4:00-4:15: Ultra-thin MEMS Contact Stress, Pressure and Temperature Sensors for TBI Studies

Jack Kotovsky, PhD, Micro and Nanotechnology Section Leader, Lawrence Livermore National Laboratory

4:15-4:30: Next Generation of Fiber Photometry Tools

Sage Aronson, PhD, President and CEO, Neurophotometrics Ltd.

4:30-4:45: Magnetofluorescent nanoprobe for the intraoperative resection and image-guided therapy of glioblastoma

Manuel Perez, PhD, Professor, Cedars-Sinai Medical Center

4:45-5:00: Brain Mapping and Intraoperative MRI in Gliomas surgery

Roberto Rafael Herrera, MD, Head of Neurosurgery, Director of the Intraoperative Magnetic Resonance Program, Belgrano Adventist Clinic, Buenos Aires, Argentina



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Neuro-Oncology Conference 2021: Meeting Room 407

Saturday, July 10th, 10:00-11:30 am

B40: (SLU CME) Neuro-Oncology: Hyperthermia & Other Ablative Therapies

Chairs:



Reinhard Schulte, MD, MS
Professor-Division of Biomedical
Engineering Science, Loma Linda
University



Mark G. Torchia, PhD
Vice-Provost, Executive Di-
rector-Centre Advancement of
Teaching & Learning

10:00-10:15: Hyperthermia and Ablative Therapy – Technologies

Mark G. Torchia, PhD, Vice-Provost, Executive Director – Centre for the Advancement of Teaching and Learning.

10:15-10:30: LITT and the Blood Brain Barrier – Opportunities

Albert H. Kim, MD, PhD, Associate Professor of Neurological Surgery, Neurology, and Developmental Biology. Surgical Director, Pituitary Center, Washington University School of Medicine

10:30-10:45: Surgical Management of Post-radiation Metastatic Recurrence in the Brain

Veronica Chiang, MD, Professor of Neurosurgery and Radiation Oncology, Yale University School of Medicine.

10:45-11:00: Laser interstitial thermal therapy in glioma

Alireza Mohammadi, MD, Neurosurgeon, Brain Tumor And Neuro-Oncology Center, Cleveland Clinic.

11:00-11:15: Complete resection of high grade gliomas in eloquent areas

Igor DeCastro, MD, Associate Professor Mercer University Medical School Georgia Neurosurgical Institute Macon, Georgia

11:15-11:30 Session Discussion



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Neuro-Oncology Conference 2021: Meeting Room 407

Saturday, July 10th, 1:00-2:30 pm

B52: (SLU CME) Neuro-Oncology: Personalized Medicine

Chairs:



Reinhard Schulte, MD, MS
Professor-Division of Biomedical
Engineering Science, Loma Linda
University



Terry Burns, MD, PhD
Assistant Professor of Neurosur-
gery and Neuroscience, Mayo
Clinic

1:00-1:15: The use of genomics to personalise therapy in glioblastoma

Colin Watts, MD, Professor of Neurosurgery; Chair Birmingham Brain Cancer Program, University of Birmingham, UK.

1:15-1:30: Translational research in neuro-oncology - clinical trial development

Jing Wu, MD, PhD, Tenure Track Investigator, NCI/NIH

1:30-1:45: An implantable paradigm for in vivo drug testing

Terry Burns, MD, PhD, Assistant Professor of Neurosurgery and Neuroscience, Mayo Clinic, Rochester MN.

1:45-2:00: A personalized targeted approach to treating malignant brain tumors: from bench to bedside

Panagiotis Z. Anastasiadis, PhD, Professor of Cancer Biology, Cell Biology Program Director, Mayo Clinic Cancer Center, Jacksonville, FL.

2:00-2:15: TBD.

2:15-2:30 Session Discussion



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Neuro-Oncology Conference 2021: Meeting Room 407

Saturday, July 10th, 3:00-4:30 pm

B64: AI Neuro: Machine Learning and Computing in Clinical Neuroscience

Chair:



Babak Kateb, MD
Chairman/CEO, Society for Brain
Mapping and Therapeutics

3:00-3:15: Clinical applications of AI in degenerative spondylosis

Dr. J. Pablo Villablanca, MD, FACR, Professor, Interventional Spine Service

3:15-4:30: Avatar in clinical neuroscience

Dr. Harry Kloor, Chairman and CEO, Byond Imagination

3:30-3:45: Ai application in the management of Neurovascular Disorders

Dr. Ambooj Tiwari,

3:45-4:00: bossDB – Data Ecosystem for Volumetric Neuroscience Data and Connectomics

Dr. Brock Wester, Ph.D, Group Supervisor, Johns Hopkins University

4:00-4:15: AI and Medical Imaging: State of the Art, Misconceptions and Future Directions

Dr. Anthony Chang, MD, MBA, MPH, MS, Chief Intelligence & Innovation Officer Medical Director, Children's Hospital of Orange County

4:15-4:30 Session Discussion



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Neuro-Oncology Conference 2021: Meeting Room 407

Sunday, July 11th, 10:00-11:30 am

C76: Neurophotonics

Chairs:



Babak Kateb, MD
Chairman/CEO, Society for Brain
Mapping and Therapeutics



Fartsh Vasefi, MD
Chief Technology Officer at
Safety Spect, Inc

10:00-10:15: The Role of Functional Near Infrared Spectroscopy (FNIRS) in Neural Engineering
Dr. Nasser Kashou, Associate Professor, Wright State University

10:15-10:30: Focusing light inside live tissue using guide stars by wavefront shaping technology
Dr. Jiamiao Yang, PostDoc, Caltech University

10:30-10:45: Development of a low-cost, portable, tablet-based eye-tracking system for cognitive assessment
Dr. Fartash Vasefi, CTO, Photonic Signatures

10:45-11:00: Simultaneous imaging of neural, metabolic, and hemodynamic activity in awake mice
Dr. Adam Bauer, Assistant Professor, Washington University in St. Louis

11:00-11:15: The application of deep learning in the biomedical field
Dr. Meiyang Liang, Professor, Shanxi University in China

11:15-11:30 Session Discussion



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Neuro-Oncology Conference 2021: Meeting Room 407

Sunday, July 11th, 1:00-2:30 pm

C88: (SLU CME) Neuro-Oncology: Tumor Treating Fields

Chair:



Reinhard Schulte, MD, MS
Professor-Division of Biomedical
Engineering Science, Loma Linda
University

1:00-1:15: TTField Mechanisms of cell death: mitotic interference and beyond

Michael Story, PhD, Vice-Chair, Department of Radiation Oncology, University of Texas, Southwestern Medical Center.

1:15-1:30: TTFields and its Effects on Preclinical Models of Cancer

Edwin Chang, PhD, Laboratory Scientist, Molecular Imaging Program, Stanford University

1:30-1:45: Overview of TTFields Clinical Trials

Chirag Patel, MD, PhD, Clinical Assistant Professor of Neurology and Neurological Sciences and, by courtesy, of Radiology, Stanford University School of Medicine

1:45-2:00: Correlating Tumor Treating Fields dosimetry to patient outcome: Computational modeling based analysis

Noa Urman, PhD, Physics and algorithm project manager, Novocure, Haifa, Israel.

2:00-2:15: Tumor Treating Fields – integration of this new paradigm in oncology

Roger Stupp, MD, Paul C. Bucy Professor and Director, Malnati Brain Tumor Institute of the Lurie Compr. Cancer Center, Departments of Neurology, Neurological Surgery and Oncology, Northwestern University

2:15-2:30 Session Discussion



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Neuro-Oncology Conference 2021: Meeting Room 407

Sunday, July 11th, 3:30-5:00 pm

C100: (SLU CME) Neuro-Oncology: Radiation Technologies

Chair:



Reinhard Schulte, MD, MS
Professor-Division of Biomedical
Engineering Science, Loma Linda
University

3:30-3:45: The benefits of FLASH radiotherapy for brain tumor management

Charles Limoli, PhD, Professor, University of California, Irvine

3:45-4:00: Treatment planning for gliomas using a variable RBE model

Jan Eulitz, MS, Physicist, PhD Student, OncoRay – National Center for Radiation Research in Oncology

4:00-4:15: Targeting resistance in glioblastoma with carbon ions

Jennifer Furkel, cand med, Medical Student, Researcher, Heidelberg University, German Cancer Research Center

4:15-4:30: Accelerator based BNCT: New Opportunities for Malignant Brain Tumors

Hanna Koivunoro, PhD, Chief Medical Physicist, Neutron Therapeutics, Inc

4:30-4:45: Boron and Gadolinium Compounds for Cancer Therapy - Presentation by Videoconference

Narayan Hosmane, PhD, Professor, Department of Chemistry, Northern Illinois University, Boron and Gadolinium Compounds for Cancer Therapy.

4:45-5:00 Session Discussion



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Parkinson/Optometry/Opioid/Psychiatry Conference 2021 - Room 406A

Organized By: Deborah Zelinsky, Mark Erth, Daniel Sipple, Nevzat Tarhan, Barish Metin, Zoltan Mari, Andreas Lorano, Jonathan Dang and Brian Norling

Friday, July 9th, 10:00-11:30 am

A5: (JHU CME) Advances in Parkinson's Disease

Chair:



Zoltan Mari, MD
Director, Cleveland Clinic



Mark Liker, MD, FAANS, FACS
Assistant Professor, Dept of
Neurosurgery Keck School of
Medicine
Founder and Partner California
Neurosurgical Institute

10:00-10:15: DBS for pediatric secondary dystonia as a model for targeting novel indications

Dr. Mark Liker, Assistant Professor, Founder and Partner. Surgical Director, Pituitary Center, University of Southern California

10:15-10:30: Dystonia is a pattern disorder, and DBS is a pattern treatment

Dr. Terence Sanger, Chair in Health Science and Technology, University of Southern California.

10:30-10:45: Advances in functional neurosurgery I

Dr. Andres Lozano, Senior Scientist, University of Toronto.

10:45-11:00: Advances in functional neurosurgery II

Dr. Andres Lozano, Senior Scientist, University of Toronto.

11:00-11:15: Parkinson's Disease: General Treatments and Selected Emerging Therapies

Dr. Ejaz A. Shamim, MD, MBA, MS, FAAN", Chief, Department of Neurology, Kaiser Permanente

11:15-11:30 Session Discussion



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Parkinson/Optometry/Opioid/Psychiatry Conference 2021: Room 406A

Friday, July 9th, 1:30-3:00 pm

A17: (JHU CME) The Eye: Window to The Mind and Body

Chair:



Deborah Zelinsky, OD
Founder of the Mind-Eye Institute,

1:30-1:45: Updates to the 150+ year-old 20/20 Eye Testing

DeAnn Fitzgerald, O.D, Vice President of the Neuro-Optometric Association, Owner of Fitzgerald and Associates, Iowa, USA

1:45-2:00: 21st Century Visual Testing with Emphasis on Targets that probe Mind-Eye-Body Functions

Derek Tong, O.D., Neuro-Optometrist at Vision Therapy and Rehabilitation, Center for Vision Development, Pasadena, California USA.

2:00-2:15: The Retina as an Interface to the Autonomic Nervous System

Deborah Zelinsky, O.D, Mind-Eye Institute, Northbrook, IL USA

2:15-2:30: Time and Space Factors in Eye Movements and Fixations

Amy Pruszenski, O.D, Neuro-Optometrist, Visual Victory, Concord, New Hampshire, USA

2:30-2:45: The Impact of Optometry on Brain Function after a TBI

Jenny Garbus, COT, CBIS, NeuroVision Rehab, Family Vision Care Optometry, Santa Clarita, California, USA

2:45-3:00 Session Discussion



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Parkinson/Optomtry/Opioid/Psychiatry Conference 2021: Room 406A

Friday, July 9th, 3:30-5:00 pm

A29: (JHU CME) Advance in Parkinson's Disease II: Imaging and New Treatments

Chair:



Zoltan Mari, MD
Director, Cleveland Clinic

3:30-3:45: Neuroimaging insights into Parkinson's disease

Dr. Virendra Mishra, Project Staff, Cleveland Clinic.

3:45-4:00: Could inflow-based vascular space occupancy (iVASO) MRI be a marker for cognitive change in Parkinson's disease?

Dr. Liana Rosenthal, Director, Johns Hopkins School of Medicine.

4:00-4:15: Phase-dependent neuromodulation for treating Parkinson's disease

Dr. Yousef Salimpour, The John Hopkins Hospital

4:15-4:30 Movement Disorder and PTSD

Feridun Acar, MD, Chairman, Department of Neurosurgery, Pamukkale University, Denizli, Turkey

4:30-4:45: The future role of neuroimaging in Parkinson's Disease, modification trials: progression markers to identifying study populations

Dr. Zoltan Mari, Director, Cleveland Clinic

4:45-5:00 Session Discussion



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Parkinson/Optomtry/Opioid/Psychiatry Conference 2021: Room 406A

Saturday, July 10th, 10:00-11:30 am

B41: Opioid and Substance Abuse: Prevention and Treatment

Chairs:



Mark Ereth, MD
Emeritus Professor of Anesthesiology. Mayo Clinic College



Daniel Sipple, DO
Midwest Spine and Brain Institute

10:00-10:15: Mitigating Post-Surgical Opioids with Peripheral Nerve Blocks

Mark Ereth, MD, Emeritus Professor of Anesthesiology. Mayo Clinic College of Medicine.

10:15-10:30: Upstream Prevention of Addiction: Sustained Release Local Anesthetics, Attachment Based Interventions

Daniel Sipple, DO, F.A.B.P.M.R., D.A.B.P.M., Board Certified in Physical Medicine & Rehabilitation– Midwest Spine and Brain Institute

10:30-10:45: Neurobiological Correlates of Rumi Therapy

Nevzah Tarhan, M.D, President of Üsküdar University, Uskudar University

10:45-11:00: Depression and Anxiety in Substance Abuse

Foojan Zeine, Psy.D., LMFT, Clinical Psychotherapist, Beverly Hills and San Clemente, California

11:00-11:15: TBD

11:15-11:30 Session Discussion



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Parkinson/Optomtry/Opioid/Psychiatry Conference 2021: Room 406A

Saturday, July 10th, 1:00-2:30 pm

B53: Opioid Addiction: Treatment

Chairs:



Brian Norling
Chief Executive Officer at MEMS
Precision Technology, Inc



Nicholas J. Dogris, PhD
CEO and co-founder of NeuroF-
ield, Inc, NeuroField, Inc.

1:00-1:15: Combating the Opioid Epidemic with Vaccines (Video Teleconference)

Candy S. Hwang, PhD, Assistant Professor Chemistry, Southern Connecticut State University

1:15-1:30: The Effect of tDCS/tACS/tRNS & pEMF Neuromodulation on Acute Opiate Detoxification

Nicholas J. Dogris, PhD & Tiffany Thompson, PhD, CEO and co-founder of NeuroField, Inc, NeuroField, Inc.

1:30-1:45: Spinal Cord Stimulation for Interventional Pain Management

Yuri Tsurulnikov, D.O, anesthesiologist and interventional pain medicine physician, Swedish Edmonds Specialty Clinic

1:45-2:00: NuHeart/Afterglow; Addiction Treatment Using Plant Medicine

Jeff McNairy, Psy.D., M.P.H, Chief Medical Officer at Rythmia Life Advancement Center, Rythmia Life Advancement Center

2:00-2:15: Mental Health and Substance Abuse - Effect on Families

Sharon S Dunas, LMFT, Co-President, National Alliance on Mental Illness

2:15-2:30 Session Discussion



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Parkinson/Optomtery/Opioid/Psychiatry Conference 2021: Room 406A

Saturday, July 10th, 3:00-4:30 pm

B65: (JHU CME) Updated Retinal Research

Chair:



Deborah Zelinsky, OD
Founder of the Mind-Eye Institute,

3:00-3:15: Macular Function as it Relates to Visual Processing

Heather Heitkotter, Ph.D. Candidate Research Scientist, Medical College of Wisconsin, Milwaukee, USA,

3:15-3:30: Seeing the Brain Through the Eye: 21st Century Neuroimaging Applications

Delia Cabrera Debuc, Ph.D., Research Scientist, Bascom Palmer, Miami, Florida, USA

3:30-3:45; Mechanisms of Hypersensitivity to Light in Traumatic Brain Injury

Christopher W. Tyler, Ph.D., D.Sc., Smith-Kettlewell Eye Research Institute, San Francisco, CA USA

3:45-4:00: Effects of Electromagnetic Fields on the Eye and Brain

Gianluca Lazzi, Ph.D., Provost Professor at USC of Ophthalmology, Biomedical, Electrical and Computer Engineering

4:00-4:15: Optometric Research at the Cellular Level

Suraj Upadhyaya, O.D., Ph.D., FAAO, Assistant Professor Midwestern College of Optometry, Downers Grove, Illinois, USA

4:15-4:30 Session Discussion



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Parkinson/Optomtry/Opioid/Psychiatry Conference 2021: Room 406A

Sunday, July 11th, 10:00-11:30 am

C77: (JHU CME) Advanced Therapeutics: Ketamine for the Treatment of Depression

Chair:



Jonathan Dang, MD
Research Fellow, Society for
Brain Mapping and Therapeutics

10:00-10:15: Depression and Quality of Life

Waguih IsHak, MD, FAPA, Vice Chairman for Education & Research & Consultant Psychiatrist, Cedars Sinai Medical Center.

10:15-10:30: Ketamine Infusion in Clinic

Steven Mandel, MD, Founder/President- Ketamine Clinics. Founder/President American Society of Ketamine Physicians (ASKP), Ketamine Clinics Los Angeles.

10:30-10:45: Mechanism of action of ketamine

Jonathan Dang, MD, Research Fellow - SBMT, Society for Brain Mapping and Therapeutics

10:45-11:00: Implementing IV Ketamine in Acute Care Setting

Charles Louy, MD, PhD, MBA, Medical Director, Cedars Sinai Medical Center

11:00-11:15: Finding Yourself and Others Through the Arts: Living with Depression

Dave Leon, CEO/Founder- Painted Brain, CEO- Painted Brain

11:15-11:30 Session Discussion



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Parkinson/Optomtry/Opioid/Psychiatry Conference 2021: Room 406A

Sunday, July 11th, 1:00-2:30 pm

C89: (JHU CME) Brain Mapping in Neuro-Psych Behavior

Chairs:



Nevzat Tarhan, MD
Professor, Uskudar University



Barish Metin, MD
Assistant Professor,
Uskudar University

1:00-1:15: Introduction and Facilitating

Nevzat Tarhan, MD, Professor, Uskudar University

1:15-1:30: Human Exposure to Electromagnetic Pollution in the living areas

Osman Cerezci, PhD, Assistant Professor, Uskudar University

1:30-1:45: Neuropsychiatric damage caused by wi-fi signals: Are we overlooking a serious threat

Baris Metin, MD, Assistant Professor, Uskudar University

1:45-2:00: Predicting Health Effects of Electromagnetic Pollution Using Fuzzy Logic

Turker Tekin, PhD, Assistant Professor, Uskudar University

2:00-2:15: Estimating Biological Changes in Human Brain

Dr. Selim Seker, PhD, Professor, Uskudar University

2:15-2:30 Session Discussion



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Parkinson/Optomtery/Opioid/Psychiatry Conference 2021: Room 406A

Sunday, July 11th, 3:30-5:00 pm

C101: (JHU CME) Impact of Stable Visual Skills on Quality of Life

Chair:



Deborah Zelinsky, OD
Founder of the Mind-Eye Institute,

3:30-3:45: Bioelectronic Vision

Mark S. Humayun, M.D., Ph.D., USC Director at Ginsburg Institute for Biomedical Therapeutics, California, USA

3:45-4:00: The Importance of Movement during Recovery from Brain Injury

Gabriel Altman, D.C, Chiropractor, Kinetix 365, Beverly Hills, CA USA.

4:00-4:15: Patient Mood and Confidence Affected by Disrupted Visual Skills

Nancy Major, M.S., Central Coast Vision, Central Coast Vision and Learning Paso Robles, CA USA

4:15-4:30: The Pivotal Effect of Eyeglasses on Heart Rate Stability

Shannon Mandel, R.N, P.A.-C, Nurse and Physician's Assistant, Washington, USA

4:30-4:45: Stable Visual Skills affect Blood Pressure Regulation in POTS patient

Haroon Anwar, M.D., Medical director of Franciscan Center, Fmg-Franciscan Weight Loss Surgery Associates, Federal Way, Washington, USA

5:15-5:30 Session Discussion



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Spine Conference 2021: John McDonald III Memorial Spine Program - Room 150B

Organized By: Dr Tobias Mattei, Dr Namath Hussain, Dr Ann Choe and Dr James Cormier

Friday, July 9th, 10:00-11:30 am

A9: Complex Spine Surgery, Imaging and Reconstruction Techniques



Dr. Tobias Mattei (Assistant
Professor, Neurosurgery Division
Saint Louis University)



Dr. Tariq Sohail (Orthopedics &
Spine Surgeon, Doctors Hospital
& Medical Centre)

10:00-10:15 am: Lateral approaches for the treatment of adult degenerative scoliosis.

Dr. Dzung Dinh, Neurosurgeon, University of Illinois at Peoria

10:15-10:30 am: Outpatient spine surgery.

Dr. Ehsan Saadat, Orthopaedic Spine Surgeon, Los Angeles Orthopaedic Institute

10:30-10:45 am: Prognosticators of Successful Lumbar Endoscopic Decompression: Incidence, Cost, and Management of Complications of Transforaminal Endoscopic Decompression for Herniated Disc and Spinal Stenosis.

Dr. Kai-Uwe Lewandrowski, Founder & President of Center For Advanced Spine Care of Southern Arizona and Surgical Institute of Tucson

10:45-11:00 am: Surgical approaches for treatment of cervical myelopathy.

Dr. Ehsan Saadat, Orthopaedic Spine Surgeon, Los Angeles Orthopaedic Institute

11:00-11:15 am: The role and future of endoscopic imaging for the treatment of spine and brain conditions.

Dr. Anthony Yeung, Orthopaedic Spine Surgeon, Desert Institute for Spine Care

11:15-11:30 am: Session Discussion



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Spine Conference 2021: John McDonald III Memorial Spine Program - Room 150B

Friday, July 9th, 1:30-3:00 pm

A21: Rehabilitation and Biologics in Spine Surgery

Chair:



Dr. Namath Hussain
(Neurosurgeon, Loma Linda University, Department of Neurosurgery)

1:30-1:42pm: Spinal Cord Injury Rehabilitation – State of the Science.

Dr. Cristina Sadowsky, Clinical Director - International Center for Spinal Cord Injury, Kennedy Krieger Institute, Johns Hopkins School of Medicine

1:42-1:54 pm: Clearing Athletes to Play after Spinal Injury.

Dr. Robert Watkins, Orthopaedic Spine Surgeon, Marina Spine Center

1:54-2:06 pm: Use of a Virtual Reality Physical Ride-On Sailing Simulator as a Rehabilitation Tool for Recreational Sports and Community Reintegration.

Dr. Albert Recio, Assistant Professor, Kennedy Krieger Institute, Johns Hopkins School of Medicine

2:06-2:18 pm: Motorsports Safety Group Safety Initiative. Racing is a Contact Sport.

Dr. Jason Cormier, Neurosurgeon, Acadiana Neurosurgery

2:18-2:30 pm: Osteobiologics in spine - recent advancements.

Dr. Aidin Abedi, Department of Orthopaedic Surgery, Keck School of Medicine, University of Southern California

2:30-2:42 pm: Spinal Cord Stimulation Treatment for Chronic Pain: Current Field and Future Prospects.

Dr. Krishnan Chakravarthy, Assistant Clinical Professor, University of California San Diego

2:45-3:00 pm: Session Discussion



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Spine Conference 2021: John McDonald III Memorial Spine Program - Room 150B

Friday, July 9th, 3:30-5:00 pm

A33: Management of Spinal Cord Trauma

Chairs:



Dr. Namath Hussain
(Neurosurgeon,
Loma Linda University,
Department
of Neurosurgery)



Dr. Jason Cormier
(Neurosurgeon, Aca-
diana Neurosurgery)



Dr. Ann Choe
(Assistant Professor
of Radiology and
Radiological Sci-
ence, Johns Hopkins
School of Medicine)

3:30-3:42 pm: Surgical Anatomy of the Lumbosacral Plexus and Lateral Approaches to the Lumbar Spine.
Dr. Namath Hussain, Neurosurgeon, Loma Linda University

3:42-3:54 pm: Surgical Treatment of Spinal Fracture-dislocations: Technical Nuances and Biomechanical Considerations.
Dr. Tobias Mattei, Assistant Professor, Department of Neurological Surgery - Saint Louis University

3:54-4:06 pm: Late onset paraplegia in spinal tuberculosis.
Dr. Tariq Sohail, Orthopedics & Spine Surgeon, Doctors Hospital & Medical Centre

4:06-4:18 pm: Advanced MR Imaging in Individuals with Spinal Cord Injury.
Dr. Ann Choe, Assistant Professor of Radiology and Radiological Science, Johns Hopkins School of Medicine

4:18-4:30 pm: Comparing the motion of a single piece disc arthroplasty design and a ball and socket multiple piece design using dynamic radiography.
Dr. Keyne Johnson, Pediatric Neurosurgeon, Brain and Spine Institute for Children, American Association of Neurological Surgeons, Cognitive Neuroscience Society

4:30-4:42 pm: Endoscopic Spine Surgery: beyond Disc Herniation.
Dr. Raúl Rincon-Navarro, Neurospine Surgeon, Director of Neuro Spine & Pain Clinic Los Cabos, México

4:45-5:00 pm: Session Discussion



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Spine Conference 2021: John McDonald III Memorial Spine Program - Room 150B

Saturday, July 10th, 10:00-11:30 am

B45: Management of Spine Disorders

Chairs:

New Chair Needed
Cristina Sadowsky cannot make
the new dates



Dr. Mike Chen (Associate Professor,
City of Hope)

10:00-10:12 am: Management strategies for the Kyphotic deformity in Tb spine.

Dr. Tariq Sohail, Orthopedics & Spine Surgeon, Doctors Hospital & Medical Centre

10:12-10:24 am: A Clinical Review of Surgical treatment Options for Cervical Degenerative Disc Disease.

Dr. Jason Cormier, Neurosurgeon, Acadiana Neurosurgery

10:24-10:36 am: Cervical artificial disc replacement, it's indications, surgical pearls, tips and tricks.

Dr. Hooman Melamed, Orthopaedic Spine Surgeon, Marina del Ray Hospital

10:36-10:48 am: Lateral extracavitary approach for spine tumors: long term follow up results.

Dr. Mike Chen, Associate Professor, City of Hope

10:48-11:00 am: Umbilical Cord Blood Stem Cell Therapy for Spinal Cord Injury.

Dr. Brian Mehling, Orthopedic trauma surgeon, Chief Medical Officer, BHI Therapeutic Sciences

11:00-11:12 am: Spinal Cord Injury: a patient prospective.

Christie Demirelli

11:15-11:30 am: Session Discussion



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Legally Mind Conference 2021: - Room 150B

Organized By: Art McComber

Saturday, July 10th, 1:00-2:30 pm

B57: Legally Mine USA: A Common Sense Approach to: Lawsuit Prevention, Tax Reduction & License Protection

Chair:



Art McComber, Presenter, Legally Mind

Art spent his first career as a special agent for the FBI. Now, he devotes his time to teaching and helping thousands of people protect themselves from becoming victims of crime and lawsuits.

1:00-02:30 pm: Legally Mine USA: A Common Sense Approach to: Lawsuit Prevention, Tax Reduction & License Protection.

Art McComber, Presenter, Legally Mind



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Neurovascular Conference 2021: - Room 150B

Organized By: Dr. Martin Mortazavi, Dr. Justin Dye, Dr. Saleem Abdulrauf & Dr. Robert Hariri

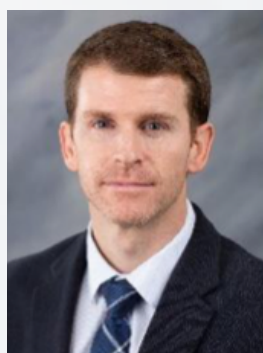
Saturday, July 10th, 3:00-4:30 pm

B69: Neurovascular / Skull Base Disorders

Chairs:



Dr. Saleem Abdulrauf, MD,
MSCR, FAANS, FAHA,
Professor of Neurosurgery, Saint
Louis University



Dr. Justin Dye
(Assistant Professor of Neurosur-
gery, Loma Linda University)

3:00-3:15 pm: Anatomical considerations for open and endovascular treatment of cerebral aneurysms.

Dr. Eric A. Marvin, Director of skull base and vascular neurosurgery, Virginia Tech Carilion School of Medicine

3:15-3:30 pm: Endovascular Therapy of Acute Atherosclerotic vs Embolic Sources of Stroke .

Dr. Hekmat Zarzour, Assistant Professor of Neurological Surgery, Vickie and Jack Farber Institute for Neuroscience
Thomas Jefferson University Hospital

3:30-3:45 pm: Surgery for Recurrent Brain Aneurysms after Endovascular Treatment.

Dr. Babak Jahromi, Professor of Neurosurgery, Northwestern Memorial Hospital

3:45-4:00 pm Awake AVMs.

Dr. Rebeca Pérez-Alfayate, MD, PhD, Hospital Clínico San Carlos

4:00-4:15 pm: How to expand surgical corridors in skull base surgery.

Dr. Antonio Bernardo, Professor of Neurosurgery/Director, Microneurosurgery Skull Base Laboratory, Weill Cornell
Medical College

4:15-4:30 pm: Session Discussion



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Neurovascular Conference 2021: - Room 150B

Organized By: Dr. Martin Mortazavi, Dr. Justin Dye, Dr. Saleem Abdulrauf & Dr. Robert Hariri

Sunday, July 11th, 10:00-11:30 am

C81: Neurovascular Disorders

Chair:



Dr. Saleem Abdulrauf
(MD, MSCR, FAANS, FAHA,
Professor of Neurosurgery, Saint
Louis University)

10:00-10:15 am: Modern Technical Concepts for Clip-Reconstruction of Fusiform Aneurysms.

Dr. Martin M. Mortazavi, MD, FICS, Chairman and Director, Cerebrovascular, Skull Base & Tumor Program California Institute of Neuroscience

10:15-10:30 am: Approach on unruptured brain aneurysms.

Dr. Ashkan Mowla, MD, FAHA, FAAN, Assistant Professor, Keck School of Medicine, University of Southern California

10:30-10:45 am: Cerebral Blister Aneurysms: challenges and management.

Dr. Justin Dye, Assistant Professor of Neurosurgery, Loma Linda University

10:45-11:00 am: Cavernous malformation: what is it and when to treat?.

Dr. Aziz Alali, Assistant professor of neurosurgery, Saint Louis University

11:00-11:15 am: Preservation of normal draining veins in resection of brain AVM's. Two illustrative cases.

Dr. Raghuram Sampath, Cerebrovascular and Skull Base Neurosurgery, Affiliate Clinical Assistant Professor, Charles E Schmidt School of Medicine, Florida Atlantic University / Advanced Neuroscience Network, Palmetto General Hospital, Hialeah, Florida

11:15-11:30 Session Discussion



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Neurovascular Conference 2021: - Room 150B

Organized By: Dr. Martin Mortazavi, Dr. Justin Dye, Dr. Saleem Abdulrauf & Dr. Robert Hariri

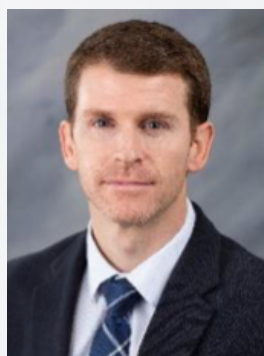
Sunday, July 11th, 1:00-2:30 pm

C93: Neurovascular / Skull Base Disorders

Chairs:



Dr. Saleem Abdulrauf
(MD, MSCR, FAANS, FAHA,
Professor of Neurosurgery, Saint
Louis University)



Dr. Justin Dye
(Assistant Professor of Neurosur-
gery, Loma Linda University)

1:00-1:15 pm: Tuberculum Sellae and Olfactory Groove Meningiomas: Proposal of a new classification system to predict surgery and outcome.

Dr. Martin M. Mortazavi, MD, FICS, Chairman and Director, Cerebro-vascular, Skull Base & Tumor Program California Institute of Neuroscience

1:15-1:30 pm: Intracranial atherosclerosis, a challenging form of stroke requiring strategies outside the box for treatment.

Dr. Nestor Gonzalez, Professor of Neurosurgery, Director Neurovascular Laboratory, Cedars-Sinai Medical Center

1:30-1:45 pm: Artificial Intelligence in neuro-oncology and vascular neurosurgery.

Dr. Antonio Di Ieva, Professor of Neurosurgery & Neuroanatomy, Macquarie University & Macquarie Neurosurgery, Sydney, Australia, Head of the Computational NeuroSurgery Lab, Macquarie University

1:45-2:00 pm: Update on acute stroke management.

Dr. Ashkan Mowla, MD, FAHA, FAAN, Assistant Professor, Keck School of Medicine, University of Southern California

2:00-2:15pm: Artificial intelligence in Cardiovascular Imaging.

Dr. Damini Dey, Scientist and Associate Professor, Biomedical Imaging Research Institute, Cedars-Sinai Medical Center

2:15-2:30 pm: Session Discussion



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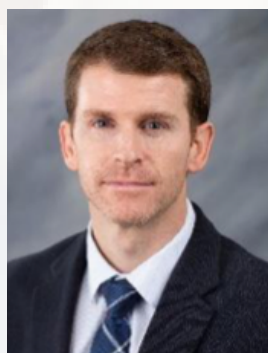
Neurovascular Conference 2021: - Room 150B

Organized By: Dr. Martin Mortazavi, Dr. Justin Dye, Dr. Saleem Abdulrauf & Dr. Robert Hariri

Sunday, July 11th, 4:00-5:30 pm

C105: Neurovascular / Skull Base Disorders

Chairs:



Dr. Justin Dye
(Assistant Professor of Neurosurgery, Loma Linda University)

3:30-3:45 pm: Intracranial Vessel Wall Imaging: Technical Development and Clinical Applications.

Dr. Zhaoyang Fan, Assistant Professor, Biomedical Imaging Research Institute, Cedars-Sinai Medical Center

3:45-4:00 pm: The application of Stem cell therapy in stroke.

Dr. Brian Mehling (Orthopedic trauma surgeon, Chief Medical Officer, BHI Therapeutic Sciences)

4:00-4:15 pm: Advanced visualization and characterization of cerebral aneurysms including time-resolved CTA and PC- MR flow hemodynamics.

Dr. J. Pablo Villablanca, Cerebrovascular and Skull Base Neurosurgery, Affiliate Clinical Assistant Professor, Director, Interventional Spine Service, Medical Director of MRI

4:15-4:30 pm: Combined Anterior & Posterior Petrosectomy for resection of Meckels Cave and Petroclival Meningioma, along with Microvascular Decompression for Trigeminal Neuralgia.

Dr. Raghuram Sampath, Charles E Schmidt School of Medicine, Florida Atlantic University / Advanced Neuroscience Network, Palmetto General Hospital, Hialeah, Florida

4:30-4:45 pm: Flow Reversal in the setting of Carotid Revascularization.

Dr. Jeffrey Farkas, Neurosurgeon, NYU School of Medicine / Chair, Interventional Neuro Associates, New York

4:45-5:00 pm: ML-based Exploration of Renal Dysfunction in a patients undergoing Mechanical Thrombectomy for Stroke.

Dr. Ambooj Tiwari, NYU School of Medicine

5:00-5:15 pm: Session Discussion



17/18th Annual

World Congress of Society for
Brain Mapping and Therapeutics

Breaking Boundaries of Science, Technology, Medicine, Art, and Healthcare Policy

**Celularity Course on Neurosurgical Innovation Conference 2021: - Room 150C
(Brain and Spine Observatory)**

Organized By: Dr. Martin Mortazavi, Dr. Justin Dye, Dr. Robert Hariri and Dr Kateb

Saturday, July 10th, 8:00-12:00 pm

**B37: Celularity Neurovascular, Skullbase and endovascular
Bioskills labs (Cadaver labs)**

Faculty:

- Saleem Abdulrauf, MD (Walter Dandy Society)
- Andrew Grande, MD (UMN)
- Martin Mortazavi, MD (CIN)
- Namath Hussain, MD (LLU)
- Justin Dye, MD (LLU)
- Jason Cormier, MD (SBMT)
- Babak Kateb, MD (SBMT/BMF)
- Mike Chen, MD, PhD (COH)

Course Description:

This course is designed for neurosurgeons with knowledge and experience in endoscopic surgery, neurotrauma, and/or neurovascular surgery. Short lectures and hands on practical training will be provided to the attendees in the following areas:

- Neurotrauma
- Third ventricular tumors
- Third ventriculostomy
- Skull base tumor
- Aneurysm management/EC-IC bypass

Course Objectives:

At the conclusion of this course, the participant should be able to:

1. Discuss the latest advances and techniques in neurotrauma.
2. Perform relevant psychomotor skills in the practical application of intracranial endoscopy.
3. Describe treatment strategies for neurovascular disorders.

See next page for course modules



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Courses

Neurotrauma Modules

Faculty: Robert Hariri, MD, PhD, Martin Mortazavi, MD and Namath Hussain, MD

Brain Trauma:

- Craniotomy/decompressive craniectomy
- Surgical management of Depressed skull fractures
- Cranialization of frontal sinus
- Reconstruction of Venous sinus injury
- ventriculostomy

Spine Trauma Module:

- Cervical lateral mass screw fixation
- C2 pars screw fixation
- Thoracic and lumbar pedicle screw fixation
- Corpectomy

Skull base/Neuroendoscopy Modules

Faculty: Martin Mortazavi, MD, Robert Hariri, MD, PhD, Saleem Abdulrauf, MD

- Endonasal Pituitary Tumor resection
- Surgical approaches to cerebral aneurysms and skull base tumors
- Third Ventriculostomy
- Third Ventricular Tumors

EC-IC Bypass Module

Faculty: Andrew Grande, MD, Saleem Abdulrauf, MD, and Justin Dye, MD

- Principles of Microanastomosis
- Hands-On Lab Session 1: Microanastomosis
- Hands-On Lab Session 2: Bypass on Cadavers

Endovascular Module

Faculty: Andrew Grande, MD and Justin Dye, MD

- Cerebral angiography
- Cerebral aneurysm coiling
- Stent deployment
- Mechanical thrombectomy



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Spine Cadaver Course 2021: - Room 150C (Brain and Spine Observatory)

Organized By: Dr. Mike Chen, Dr. Namath Hussain, Dr. Jason Cormier, Dr. Tobias Mattei and
Dr. Babak Kateb

Saturday, July 10th, 2:00-4:00 pm

B61: Spine Bioskills labs (Cadaver labs)

Advanced Spinal Reconstruction

1. Minimally Invasive Lumbar OLIF (Oblique Lateral Interbody Fusion)
2. Total CDA (Cervical Disc Arthroplasty) for motion preservation

Course Description

This is a hands-on practical course on cadaver to perform Lumbar OLIFs and Cervical Total Disc Replacements, while teaching spine surgeons the approach and discussing indications, complications, and necessary tools. Performing the approach on a cadaver to show each step of the operation with guidance from experienced spine surgeons in a portable cadaver lab.

Learning Objectives:

1. Learn how to perform this surgical technique with the newest, state-of-the-art instrumentation currently available.
2. Discussing the indications of this approach.
3. Discussing the complications of this approach.
4. Compare and contrast newer techniques and instrumentation with this approach compared with older instrumentation.
5. Have the opportunity to reviews clinical and technical pearls with experienced spine surgeons



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Dry EEG Headsets





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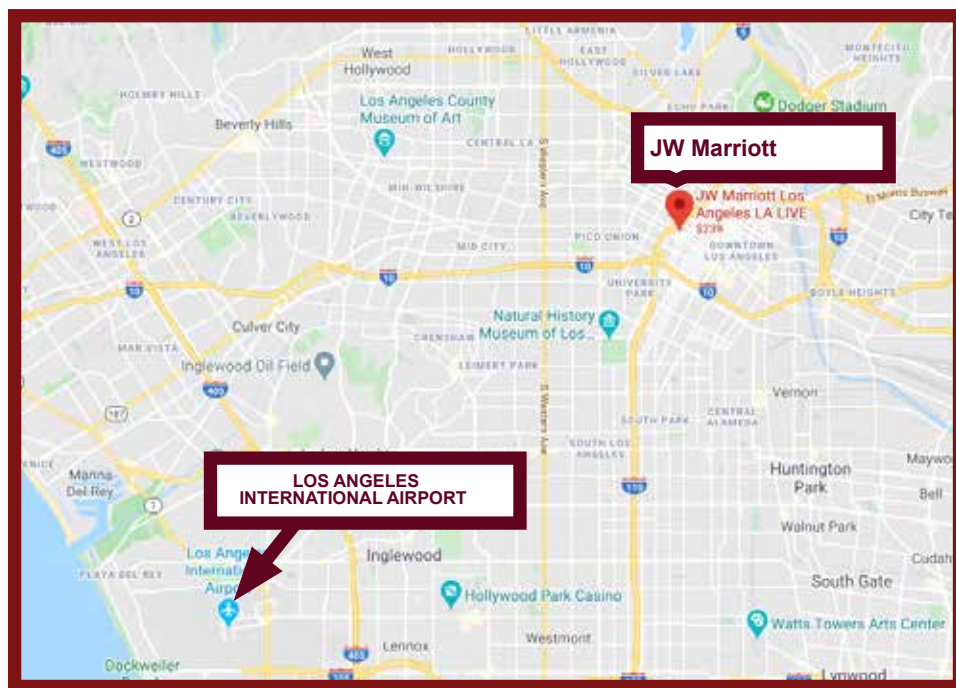
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The provision of delegate contact details is not considered part of this booking. Confirmation of your booking will be provided along with full details of shipping coordinates and relevant shipping deadlines.

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**EXHIBITS & POSTERS ARE LOCATED
IN 152, 153A & 153B
IN THE CONCOURSE
HALL**