





14th Annual World Congress of Society for Brain Mapping and Therapeutics

HOLLYWOOD

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





For more information visit: www.WORLDBRAINMAPPING.ORG

Millenium Biltmore Hotel April 18-20, 2017

506 S Grand Ave., Los Angeles, CA 90071

Audience includes: neurosurgeons, radiologists, neurologists, psychiatrists, rehabilitation medicine physicians, cardiologists, pulmonologists, bioethicists, oncologists, radiation oncologists, neuroscientists, engineers, physicists, cognitive neuroscientists, allied healthcare professionals, healthcare executives, government officials, policy makers, students, post-docs, residents, and fellows



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April 14th, 2017

Dear Friends,On behalf of the Mayor's Office and the City of Los Angeles, I welcome you to the 14th Annual World Congress for the Brain Mapping & Therapeutics.

Since its inception, the Society for Brain Mapping & Therapeutics has been a pioneer in research, advocacy & service to humanity. Los Angeles is honored to host this gathering of scientists, physicians, researchers, policy makers & industry leaders for the technological and scientific advancement of Brain Mapping & Surgical Planning for Humanity and those suffering from neurological disorders. As the Capital of the Worlds Entertainment Business & Premier Hub to Medical Research, Los Angeles is the ideal setting to host and connect individuals to collectively build and advance the goals for the Society for Brain Mapping & Therapeutics. I hope all the attendees to this conference & gala take advantage of this gathering in Los Angeles for a single purpose of finding a Cure for the ailments of humanity.

I send my best wishes for a successful and memorable event. Welcome to Los Angeles & to the 14th Annual Congress for SBMT.

Sincerely,

E.C.

Eric Garcetti Mayor of Los Angeles



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Hollywood Meets Medicine, Science, Art, Technology, and Policy in LA LA Land

LOS ANGELES, April 17, 2017 /PRNewswire-USNewswire/ -- The Society for Brain Mapping and Therapeutics ("SBMT"), Brain Mapping Foundation ("BMF"), and the National Center for NanoBioElectonics ("NCNBE") will hold their 14th Annual World Brain Mapping and Therapeutics Conference at the Millennium Biltmore Hotel in downtown Los Angeles. SBMT was founded in 2004 to break boundaries in healthcare and to promote global interdisciplinary research to improve the diagnosis, treatment, and rehabilitation of patients with central nervous system diseases and disorders.

"This year, there are 320 speakers and 12 keynote speakers who will address state-of-the-art brain science and technology, and pioneering diagnostics therapeutics for Alzheimer's Disease, Parkinson's Disease, brain and spinal trauma, brain cancer, psychiatric disorders, the Autism spectrum, Post-Traumatic Stress Disorder ("PTSD"), as well as all other neurological disorders," said Dr. Wes Ashford, Clinical Professor of Stanford University (affiliated), Director of The War Related Illness & Injury Study Center at the VA Palo Alto HCS and the 14th President of SBMT (2016-17). "This year, several sessions of the conference will focus on translation, integration and development of advanced diagnostics and therapeutics for soldiers, veterans and civilians with neurological disorders."

Annually, the Society and the Brain Mapping Foundation recognize pioneers in the field of brain mapping and therapeutics with distinguished awards. The Brain Mapping Foundation is holding its "Gathering for the Cure" black tie gala on Thursday, April 20th at the Millennium Biltmore Hotel to celebrate pioneering work of some of the world's leading scientists, technologists, policymakers, and science advocates.

"We had a very competitive pool of applicants this year who are truly remarkable individuals as people and pioneers in their respective fields for which they were selected," said Dr. Vicky Yamamoto, USC-Keck School of Medicine Cancer Scientist, Executive Director of SBMT, Member of the Board of Brain Mapping Foundation and Co-chair of the Award Committee. "We are truly delighted to recognize the contributions of these colleagues to the field of clinical neuroscience."

The 2017 award recipients are as follows: Professors George Ojemann (Pioneer in epilepsy neurosurgery) and John Adler (inventor of Cyberknife) the recipients of the Pioneer in Medicine award; Congressman Jerry McNerney the recipient of Pioneer in Healthcare Policy Award, Professor Afsaneh Rabiei is recipient of the Pioneer in Technology Development; Travis Roy recipient of Beacon of Courage and Dedication; Golden Axon award for leadership is given to Drs. Wes Ashford (2016-17 President of SBMT), Michael Roy (2012-13 President of SBMT) and Drs. Nasser Kashou, Ajeet Kaushik, Alexander Stahn are the recipients of Young Investigator award.

Dr. Peter Diamandis, Chairman of XPrize, is the keynote speaker at the Brain Mapping Foundation "Gathering for Cure" gala who will be speaking about global innovation.

"SBMT and its science committee includes over 80 scientists that have built this program over the last 16 months", said the 2018 President Elect of SBMT, Dr. Warren Boling, chairman of the Department of



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Neurosurgery at Loma Linda University ("LLU"). He added "LLU, City of Hope, and Cedars Sinai Medical Center co-sponsored this world class scientific program for its Continuing Medical education ("CME") accreditation."

This remarkable scientific program is supported by industry leaders including: Fiagon, Fulgent Diagnostics, Space Bio-Laboratories Co., Ltd, Siemens Healthcare, Medtronic, Codman, Stryker, KLS Martin, Ad-Tech, Zeiss, Anatom-e, Nordic Neuro Lab ("NNL"), Synaptive Medical, Integra, PMT Corporation, HarleQuin Recruiting, Med Valley Home Healthcare Inc, Jupiter 9 Production, CariCord, Neurotrope BioScience, California Neurosurgical Institute, Nuvasive, the Law office of Nadia Davari, Planet Street Digital Marketing, Apex Photo Studios, Keri Ann Kimball of Kimball Entertainment, Joe Williamson of Williamson Management, SoVeryVida and Neuronavigation Dinamics.

The scientific program of 2017 SBMT annual meeting has 320 speakers and 12 keynote speakers including Congressman Jerry McNerney, Space Traveler and Engineer Anousheh Ansari, Drs. Gary Small (UCLA), Laligam Sekhar (UW), George Ojemann (UW), Mark Humayun (USC), Wes Ashford (Stanford/VA Palo Alto HCS), Warren Boling (LLU), Kyu Rhee (IBM Watson Health), Dean Yamaguchi (Department of Veterans Affair), and RADM Colin Chenn (Defense Health Agency).

"The Brain Mapping Foundation has been on the forefront of wounded warrior care for 14 years by bringing together world leading scientists" said Ret. Navy Commander Dr. Ken Green. "We have engaged NASA centers, NASA Human Health and Performance, National Labs, Departments of Energy, Commerce, State, Defense, Navy, Army, Air Force, and Defense Health Agency, in our G20 Global Brain Mapping Initiative (Neuroscience-20) aimed at rapidly introducing diagnostics and therapeutics in the field."

Many Hollywood celebrities including: (event host) Robert Picardo, Tim Kring, Jim Kwik, Matthew Rhodes, Charlie Corwin, N. James Hong, Kate Linder, Hank Garrett, Mel Novak, Aki Aleong, Navid Negahban, Ken Davitian, Eden Sassoon, Gary Graham, Jimmy Jean-Louis, James Kyson, Alison Arngrim, Dru Mouser, Miguel Forbes , Sophia Milos, Vida Ghaffari, Alison Armgrim, Jarrod Bunch, Max Amini, NFL player Alec Ogletree, Andrew Jang, Tony Denison, Rachel Sterling of Pussycat Dolls, Shanica Knowles, Sean Kanan, Apick Youssefian, Mary Apick, fashion designer Sue Wong, and entrepreneur and publisher Miguel R. Forbes will be in attendance at the "Gathering for Cure" gala.

For more information about the "Gathering for Cure" gala registration and donation to the foundation please visit: www.BrainMappingFoundation.Org and for more information about the Society and convention registration for the 14th Annual World Brain Mapping please 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...)

Neurology (e.g. movement disorders, neurodegenerative diseases, neurooncology, neuromodulation, epilepsy, autism, brain and spinal cord function...) Psychiatry (e.g. medical imaging for psychiatric conditions such as schizophrenia, depression, PTSD...)

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

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

Neuroengineering (e.g. 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 and imaging...)

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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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 12th 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.

Meet leaders and Pioneers in your field.

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

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.

Attract and influence attendees at every stage of their career, from students to entry level scientists to acknowledged leaders in their scientific fields. **Network** with our attendees during social events held during the conference.



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

Obtain Continuing Medical Education

(CME) is provided by Winthrop University, NY, USA.

Enhance your know-how and stay abreast of industry changes and state-of-the-art in the field. **Present** in a World Class Multidisciplinary Biomedical Association.

Commercialize your ideas.

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

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.

Visit the beautiful city of Los Angeles with its amazing sights. Meet Funding Agencies (Foundations, government and industry).

Publish in PlosOne NeuroMapping and Therapeutics.

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

Make The Difference and

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



CONTINUING MEDICAL EDUCATION NEEDS ASSESSMENT

ACCME Accreditation

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 Loma Linda University, City of Hope, Cedars-Sinai and Society for Brain Mapping & Therapeutics. Loma Linda University, City of Hope, Cedars-Sinai are accredited by the ACCME to provide continuing medical education for physicians.

AMA Credit Designation

13.5 Hours of AMA PRA category 1 credits will be offered in this convention in joint sponsorship with Cedars-Sinai Medical Center, City of Hope and Loma Linda University.





- April 19, 2017 - Radiation Oncology: New GBM Strategies (1.5 AMA PRA Category 1 Credits™)



City of Hope is jointly providing the following sessions for AMA Category 1 Credits™: - April 18, 2017 - Complex Spine Surgery/Biologics (0.75 AMA PRA Category 1 Credits™) - April 19, 2017 - MIS/New Technologies/Navigation (1.0 AMA PRA Category 1 Credits™) - April 20, 2017 - Imaging update; Spinal cord (1.25 AMA PRA Category 1 Credits™)

Cedars-Sinai is jointly providing the following sessions for AMA Category 1 Credits™: April 18, 2017 - Multimodality Imaging (1.5 AMA PRA Category 1 Credits™) April 19, 2017 - Brain Mapping & Pediatric Medicine (1.5 AMA PRA Category 1 Credits™) April 20, 2017 - Multimodality Imaging (1.5 AMA PRA Category 1 Credits™)

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 neurotrama. 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.

4th Annual World Congress of Society for Brain Mapping and Therapeutics

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Financial Disclosures

Society for Brain Mapping and Therapeutics controls the content and production of this educational activity and takes every step to ensure the presentation of balanced, objective information. 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:

- Apply new findings in brain mapping (BM) & therapeutics relevant to their own sub-specialty.
- Describe the effect of the newly developed methods in medical imaging, medical devices, nanotechnology, and stem cell/cellular therapy.
- [When relevant] Design possible future research and developments in BM, therapeutics and nano-bio-electronics.
- Assess possible impacts of new research and development on their own clinical and scientific work.
- · Explain ways to build a bridge amongst multiple disciplines.

- · Build bridges amongst multiple disciplines.
- Assess cutting-edge technological advancements 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).
- Recognize advancements in other disciplines and explain how such advancements could help them formulate new diagnostics and treatment modalities.
- Understand and discuss the roles of governmental agencies, foundations, and industry upon 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 who are interested in areas of Brain Mapping, engineering, stem cell, nanotechnology, imaging and medical device 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/therapies 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 industry as well as philanthropic organization.

ANNUAL SBMT WORLD CONGRESS

The annual SBMT World Congress is a multidisciplinary 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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loana Cozmuta Microgravity Lead, Space Portal, NASA Ames Research Center



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Alessandro Napoli Assistant Professor, Sapienza University of Rome



Pia Winberg Honorary Fellow University of Wollongong, Faculty of Science Medicine & Health, School of Medicine CEO & Founder, Venus Shell Systems Pty. Ltd.



Gabriel Zada Assistant Clinical Professor of Neurosurgery; Co-Director, Keck USC Pituitary Center; Director of the Keck USC Endoscopic Skull

Base Surgery Program



Michael Wolf President, NeuroCite LLC





LETTER FROM THE FOUNDER



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

Babak Kateb

Founding Chairman of the Board of Directors

CEO and Scientific Director

Society for Brain Mapping & Therapeutics (SBMT)

Director of National Centre for Nano-Bio-Electronics (NCNBE)

NASA Research Park

Research Scientist

Maxine Dunitz Neurosurgical Institute

Department of Neurosurgery

Cedars Sinai Medical Center

Founding Editor

SBMT-PLoSOne NeuroMapping & Therapeutics

Editor of The Textbook of Nanoneuroscience and Nanoneurosurgery

President and Scientific Director of Brain Mapping Foundation Let me congratulate Dr. Wes Ashford (the 14th President of SBMT) for his visionary leadership and for working closely with me and 12 different committees who helped us organize largest world congress for brain mapping so far! This year, we have more than 550 speakers in 110 scientific sessions and 10 keynote speakers, who highlight subspecialties and sectors within the field of brain mapping and therapeutics. We worked with 100 scientific session chairs and built the largest convention ever organized by any organization on the topic. I also thank our supporters, staff and volunteers for their amazing dedication and assistance with this convention.

SBMT and its members are now proud of over a decade of scientific accomplishments, which include more than 1000 publications, more than 3000 presentations, significant involvement in President Obama's BRAIN initiative, establishing G20 Brain Mapping and Therapeutics Initiative, establishment of African Brain initiative, establishment of Middle East and North Africa Brain Mapping Initiative, passing at least one congressional report language on the defense appropriation bill, establishment of a new Young Investigator award, establishing a new open access Journal with PLosOne called NeuroMapping and Therapeutics, publishing the inaugural textbook of NanoNeurosurgery, conducting countless game changing clinical trials on AD, PD, Brain Cancer and Neurotrauma, establishing our Atlas, establishing student chapters in universities, partnership with major associations, establishing new guideline committee for standardization, awarded near 70 scientists, engineers, physicians, advocated and policymakers establishing global partnerships in the field and facilitating commercialization of brain mapping and therapeutics technologies worldwide.

SBMT/IBMISPS had a very humble beginning, starting as a small summit of near 10+ scientists, physicians, and engineers at JPL and turn into a global phenomenon, which has impacted nations' healthcare policies. We went from an unknown organization with a cumbersome name (international Brain Mapping and Intraoperative Surgical Planning Society-IBMISPS) to the global multispecialty association in advance brain mapping and therapeutics: The Society for Brain Mapping and Therapeutics or SBMT. We have successfully brought together diverse scientific, medical, and engineering communities to tackle complex neurological disorders such as brain cancer, brain and spinal cord trauma, ALS,



Alzheimer's disease, and Parkinson's disease.

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.

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 13th annual World Brain Mapping Congress in Rome, Italy! (Feb. 24-26, 2016).

Respectfully yours,

Dr. Babak Kateb,

Founding Chairman of the Board of SBMT, President of Brain Mapping Foundation, Director of National Center for NanoBioElectronics (NASA/JPL), Research Scientist, Department of Neurosurgery, Cedars-Sinai Medical Center.



SBMT - PRESIDENT'S LETTER

As the current (2016-17) President of Society for Brain Mapping and Therapeutics (SBMT), I have had the honor and privilege to see through an amazing year of accomplishments and growth in the organization.

This year we are convening in Los Angeles, the birthplace of SBMT, for the largest SBMT Annual World Congress to date! While geographically we are back in the same place, we have come a long way from the very first meeting where neurosurgeons and neuroscientists began to talk to researchers from NASA-JPL and Caltech.

From an early age, an interest and passion for understanding the brain for the purpose of improving lives has been a defining force in my career. I have done extensive research and made leading advances in nearly every aspect of Neuroscience, including brain imaging, cognitive assessment, genetics, pharmacotherapy, dementia, traumatic brain injury, cell culture, neuroanatomy, neuropathology, and diagnostic neurophysiology.

Many of my current efforts are now directed at educating students, health-care professionals, patients, and the public on neuroscientific principles and how to live better lives in the future. Living in Silicon Valley, California, and being surrounded by cutting edge innovation provides me with a rich environment in which to facilitate the development of innovative technologies to better measure brain function and disease states. Entrepreneurs in brain health measurement and the brain illness and injury sectors need our support to develop commercial products which can be applied to novel approaches to improve the health and lives of all. Looking forward, there are realities which we all find uncomfortable such as the inevitability of the passage of time, the deterioration of aging, and the unalterable genetic fate to which each of us is endowed at conception. These realities compel us to feel the sense of urgency to move forward and look across disciplines and fields of work to find the common threads of vision, research, and care for others to which we are all dedicated.



Wes Ashford

President, SBMT 2016-17

Clinical Professor (affiliated), Department of Psychiatry and Behavioral Science, Stanford

Staff Psychiatrist, VA Palo Alto Health Care System

Senior Research Scientist, Stanford / VA Aging Clinical Research and Alzheimer Centers

Director, War Related Illness and Injury Study Center, VA Palo Alto Health Care System



LETTER FROM PRESIDENT ELECT



Dr. Warren Boling

Professor of Neurosurgery and Chairman, Department of Neurosurgery, Loma Linda University Medical Center

President Elect ,Society for Brain Mapping and Therapeutics(SBMT),USA Dear Friends and Colleagues,

It is a distinct pleasure and honor to be elected the 15th president of the Society of Brain Mapping and Therapeutics ("SMBT") and to announce that the Department of Neurosurgery at Loma Linda University along with Loma Linda University have jointly sponsored the 14th Annual Congress of SBMT. I applaud and support the international scope of the SBMT, which is embodied by the G20 Brain Mapping initiative.

SBMT is a unique organization that brings together scientists and thought leaders across different and traditionally disparate disciplines as breakthroughs in science arise from creative thinking. The worldwide collaboration between disciplines that occurs in SBMT promotes and facilitates the creative process in science that is required in the realization of game-changing diagnostics and therapeutics. Dr. Babak Kateb, the founder of SBMT, has described the G20 Brain Mapping initiative, as follows: "This initiative is designed to break boundaries of science, technology, medicine, art, and healthcare policy, which could truly help to facilitate rapid introduction of advanced diagnostics and therapeutics."

I look forward to working with the SBMT members and leadership to further the mission of the SBMT, to promote collaboration between clinical, biological, physical and engineering sciences, and to build the transdisciplinary and translational consortia required to break down traditional barriers impeding application of new technology to medical problems.

I share the passion of SBMT to promote emerging disciplines such as nanotechnology, image-guided therapy, stem cell therapy, multi-modality imaging, biophotonics, and biomaterial and tissue engineering for the diagnosis, treatment, and rehabilitation from neurological diseases.

I look forward to building bridges with other universities, industry leaders, government agencies, foundations and associations into the future.

Respectfully yours,

Dr. Warren Boling

15th President of SBMT Professor of Neurosurgery and Chairman, Department of Neurosurgery, Loma Linda University Medical Center



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	Governmental Regulation	Graduate and Post
guided therapy.	Government Education Patient	GraduateInterdisciplinary
Novel research and development in	Advocacy	FellowshipsStudent Travel awards
brain mapping and	Healthcare Policy	University Student chapters
intra-operative surgical planning.	Funding Opportunities	mentorship programs
Clinical trials.		Scholarships for
Bio-Ethics.		undergraduatestudents studying
		neurological disordors.

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.



NANNUA World Congress of Society for Brain Mapping and Therapeutics

STERSOR SPENAL

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

5 – World Congresses

2017 - Germany 2016 - Hangzhou, China 2015 - Antalya, Turkey 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) maging modalities for detecting mild/ mod TBI, micro-TBI Socioeconomic, Ethical, and Healthcare issues related to the brain mapping and intra-operative surgical planning



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.

OST ERSOR SPENAL

Annual World Congress of Society for Brain Mapping and Therapeutics

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

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.

9 - Government Relationships

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 Annual Brain Mapping Days at the US Congress and Canadian Parliament. SBMT is planning to hold a Brain Mapping Day at the Australian Parliament in 2014.

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



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.

4th Annual World Congress of Society for Brain Mapping and Therapeutics

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

11 – Outreach Program

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.



7.00am - 8.00am	Delegate Registration							
8 15 - 8 30am	Was Ashford Past (2016-2017)							
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9.00 - 9.30am	Keyhote: Kyu knee, Chier	Wedical Officer, IBIN Watson H	eaith					
9.30 – 10.00am	Break (30 minutes)							
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10.00 - 11.50am	022	023	024	025	B 20	827	D 20	
Title:	Optometry & Brain Mapping 2	Materials for Prevention & Protection	Military Medicine: From imaging to Behavioral Analysis	Neurophotonics and Brain Mapping	Brain Mapping & Pediatric Medicine (CME Accredited by Cedars-Sinai Medical Center)	Brain Mapping & Therapeutics & Infection Disease (Zika)	MIS New Technologies and Navigation in Spine (City of Hope CME Session)	
Chairperson(s)	Chair: Deborah Zelinsky	Co-Chairs: Afsaneh Rabiei & Lisa Ferrara	Co-Chairs: Mike Roy & Ken Green	Co-Chair: Fartash Vasefi & Daniel Farkas	Co-Chairs: Jessica Rose & Wei Gao	Chair: Kamel Khalili	Co-Chairs: Mike Chen & Fardad Mobin	
11.30am	Lunch (90 minuts)							
11.45 - 12.15 PM	SBMT Board Member; UW Keynote: Laligam N. professor & vice-chair of the Future Trends in Sekhar Department of Neurological Neurosurgery Surgery							
12:15 -12:45 PM	Keynote: Gary Small Professor of Psychiatry & Detection & Prevention of Biobehavioral Sciences & Cognitive Decline Parlow-Solomon Professor on Aging at the David Geffen School of Medicine, UCLA Talk							
1.00 - 2.20pm	820	820	821	822	822	824	0.25	
Title:	Next Generation	Brain Health & Fitness	Neuromodulation & Brain	Headacah & Pain	Brain Ablation	of APOE in Alzheimer's Dis	Quantum Biology	
Chairperson(s)	NeuroImaing (NATIONAL	Co-Chair: Glenn Fox	Computer Interface: Co-chairs: Mark Liker & Dimity Dornan	Chair: Frica Andreozzi	Co-Chairs: Babak	Chairs: Wes Ashford & Ya	Chairs: Keith Allen & Uttam	
2.30 – 3.00pm	Break (30 minutes)							
3.00 - 4.30pm	B36	B37	B38	B39	B40	B41	B42	
Title:	NASA Technology & Innovation	Brain Mapping in Psychiatry & Psychology	2018 SBMT Committee meeting	Rehabilitation	Radiation Oncology: New GBM Strategies (LLU CME Accredited)	Brain Therapeutics in Neurodegenerative disorders	Recent Technological Advancements in Virtual Reality & Augmented Reality	
Chairperson(s)	Co-Chairs: Ajitkumar P Mulavara & Paul Sherman	Chair: Allyson Rosen		Chair: Linda Isaac	Co-Chairs: Reinhard Schulte & Jim Welsh	Chair: Wes Ashford	Chairs: Babak Kateb Kim Bullocks	
4:30-5:00 Break	RECEPTION	AT THE EXHIBIT HALL						



Johnson Displayed Registration Science Version Ver	Wednesday April 19	th 2017						
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Bit Product Statt Product VIT Pr	8.15 - 8.30am	Wes Ashford, Past (2016-	2017)					
20.0-20.0000000000000000000000000000000	8.30 - 9.00 am	Keynote: SBMT Presider	nt (2017-18) Warren Boling Pro	esident of SBMT: Professor	& Chairman, Department	of Neurosurgery, Lom	a Linda University, Futur	e of Brain Manning &
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Keynote: Gary Small Professor of Psychiatry & Biobehavioral Sciences & Parlow-Solomon Professor on Aging at the David Giffen School of Medicine, UCLA Taik Detectina & Professor on Aging at the David Giffen School of Medicine, UCLA Taik B32 B33 B34 B35 B36 B37 B30 B31 Commune Interface: Co-Chairs: Mark Liker & Dinnity Doman B32 B33 B33 B34 B35 Co-Chairs: Babak Ration B4PC in Alzheimer's Di APPC in Alzheimer's Di Co-Chairs: Keith Allen & Uttam 2.30 - 3.00pm Frain (Natrional Martinal Chair: John George B36 B37 B38 B39 B40 B41 B42 2.30 - 4.30pm Frain (Martinal Chair: School of Martinal Chair: School of Martinal Commune Interface: Co-Chairs: Mark Liker & Dinnity Doman B39 B40 B41 B42 3.00 - 4.30pm Frain (Martinal Chair: School of Martinal Chair: School of Martinal Chair: School of Martinal Chair: School of Martinal Chair: Mark School of Martinal Mark School of Martinal Chair: Mark School of Mark School of Martinal Chair: Mark School of Martinal Psychology B38 B39 B40 B41 B42 Advancements In Virtual Reality & Mark School of Mark School of M	11.45 - 12.15 PM	Keynote: Laligam N. Sekhar	SBMT Board Member; UW professor & vice-chair of the Department of Neurological Surgery	Future Trends in Neurosurgery				
1.00 - 2.30pm B29 Next Generation B30 Brain Health & Fitness B31 Neuromodulation & Brain B32 B33 Brain Ablation of APOE in Alzheimer's Di B33 Quantum Biology Chairperson(s) Chair: John George B37 B38 B38 B39 B40 B41 B42 2.30 - 3.00pm B36 B37 B38 B39 B40 B41 B42 3.00 - 4.30pm B36 B37 B38 B39 B40 B41 B42 1.10 - 2.30pm B36 B37 B38 B39 B40 B41 B42 1.10 - 1.30pm NASA Technology & Brain Mapping in Psychiatry & 2018 SBMT Committee meeting Rehabilitation Radiation Oncology: Brain Therapeutics in Neurodegenerative disorders Advancements in Virtual Reality & Augmented Reality Chairserson(s) Co-Chairs: Allyson Rosen Chair: Allyson Rosen Chair: Linda Isaac Co-Chairs: Reinhard Schulte & Jim Weish Chair: Wes Ashford Chairs: Babak Kateb Kim Builocks 430-5:00 Break RECEPTION AT THE EXHIBIT HALL EXHIPPSI EXHIPPSI EXHIPSI EXHIPSI	12:15 -12:45 PM	Keynote: Gary Small	Professor of Psychiatry & Biobehavioral Sciences & Parlow-Solomon Professor on Aging at the David Geffen School of Medicine, UCLA Talk	Detection & Prevention of Cognitive Decline				
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2.30 - 3.00 pm Break (30 minutes) 3.00 - 4.30 pm B36 B37 B38 B39 B40 B41 B42 Title: NASA Technology & Brain Mapping in Psychiatry & 2018 SBMT Committee meeting Psychology Brain Therapeutics in Neurodegenerative disorders (LLU CME Accredited) Neurodegenerative disorders (LLU CME Accredited) Chairs: Ajitkumar P Chair: Allyson Rosen Chair: Linda Isaac Co-Chairs: Reinhard Schulte & Jim Welsh Sherman Chair: MEECEPTION AT THE EXHIBIT HALL	Chairperson(s)	Chair: John George	Co-Chair: Glenn Fox	Co-chairs: Mark Liker & Dimity Dornan	Chair: Erica Andreozzi	Co-Chairs: Babak kateb & Clark Chen	Chairs: Wes Ashford & Ya	Chairs: Keith Allen & Uttam Sinha
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	4:30-5:00 Break	RECEPTION	AT THE EXHIBIT HALL					



Thursday April 201th 2017								
7.00am – 8.00am	Delegate Registration							
8.00 – 8.30am	Welcoming Message and	Scientific Program Review						
8.30 – 9.00am	Keynote: REAR ADMIRAL COLIN G. CHINN, Acting Deputy Director Defense Health Agency; Director, J9, Research & Development-overview of Defense Health Program Research on Psychological Health & Traumatic Brain Injury							
9.00 – 9.30am	Keynote: Dean Yamaguch	i, Associate Chief of Staff, Resea	arch & Development; Profes	sor of Medicine In-Residence	e (UCLA), WEST-LA VA:	VA Research and Develop	oment	
9.30 – 10.00am	Break (30 minutes)							
10.00 - 11.30am	C43	C44	C45	C46	C47	C48	C49	
Title:	Translational	Brain Mapping and	Digital Brain Mapping	Neurophotonic & Brain	Brain vascular, Blood	New Directions for	Imaging update in Spinal	
Chairperson(s)	Chair: John George	Chair: Martin Mortazavi	Co-Chair: Kim Bullock & Babak Kateb	Co-Chairs: Vassiliy Tsytsarev & Fartash Vasefi	Chair: Antonio Di ieva	Co-Chairs: Wes Ashford & Nik Tezapsidis	Co-Chairs: Mike Chen and Ehsan Saadat	
11.30am	Lunch (90 minutes)		-		••••			
11.45 - 12.15pm	Fiagon Keynote: George Ojemann	Protessor Emeritus, Department of Neurological Surgery, the University of Washington School of	What We Learned about Human Memory with Awake Surgery					
	Congressman Gerald Mark "Jerry" McNerney	The U.S. Representative for California's 9th Congressional District	Neuroscience Legislation					
12:15-12:45 PM								
1.00 - 2.30pm	C50	C51	C52	C53	C54	C55	C56	
Title:	NanoNeuroscience & nanoneurosurgery	Multimodality Imaging (CME Accredited by Cedars-Sinai Medical Center)	Autism	Neuroinflammation in Alzheimer's Disease	Cerebrovascular	Commercialization	Neuromodulation- Therapeutics	
Chairperson(s)	Co-Chairs: Ajeet Kaushik & Babak Kateb	Co-Chairs: Wei Gao & Aaron Filler	Chair: Margaret Fahnestock	Chairs: Maya Koronyo- Hamaoui	Co-Chairs: Laligam Sekar & Martin Mortazavi	Chair: Michael Samardzija	Co-Chairs: Mark Liker & Antonio DeSalles	
2 30 - 3 00pm	Break (30 minutes)							
3.00 - 4.30pm	C57	C58	C59	C60	C61	C62	C63	
Title:	Duel Use of NASA Technology in Space & Medicine	Brain Trauma, Mapping & Therpeutics	2018 SBMT Committee Meeting	Brain Mapping and Therapeutics	Brain Mapping and Therapeutics for Skull base and	Diagnostics & Therapeutics of Prion Diseases	Neuroplasticity in Medical Illnesses and Psychiatric Syndromes	
Chairperson(s)	Co-Chairs: Ajitkumar P. Mulavara & Eric Bershad	Chair: Martin Mortazavi		Chair: Michael Harrington	Co-Chairs: Bijorn Lobo & Nester Gonzales	Co-Chairs: Russ Lebovitz & Eduardo Caverzasi	Co-Chairs: Allyson Rosen & Hamlin Emory	
4.30 – 5:00 PM	Break (30 minutes)							
6:308:00 PM	Coctail event	Crystal Room Millinium						
8:00-11:00 PM	Black Tie Award Gala	Biltmore Hotel Crystal Room Millinium Biltmore Hotel						





DAY 1: Tuesday April 18th, 2017, 14th Annual Congress



KEYNOTE SPEAKER #1: Wes Ashford

DAY 1 - Keynote 1: Wes Ashford 8:30- 9:00 am Past and current impact of SBMT on Clinical Neuroscience



Dr. Ashford is a Clinical Professor of Psychiatry and Behavioral Sciences (affiliated) at Stanford University and the Director of the War Related Illness and Injury Study Center at the VA Palo Alto Health Care System. Dr. Ashford also serves as a Senior Research Scientist at the Stanford / VA Aging and Alzheimer's Disease Clinical Research Centers. He is Chair of the Memory Screening Advisory Board of the Alzheimer's Foundation of America and a Senior Editor of the Journal of Alzheimer's Disease.

He received his MD (1974) and PhD (1984) from UCLA, completing his dissertation under Dr. Joaquin Fuster. His dissertation was a finalist for the Lindsley Prize for the best in Behavioral Neuroscience (1984). He completed Psychiatry Residency at the UCLA Neuropsychiatric Institute (1979; board certified in Psychiatry, 1981). While serving as the first Chief Resident on the UCLA Geriatric Psychiatry, unit 1978 to 1979, he conducted the first double-blind study of an anti-cholinesterase drug (physostigmine) to treat Alzheimer

patients (Ashford et al., 1981); anti-cholinesterase drugs are now the first-line treatment for Alzheimer's dementia. From 1980 to 1985, Dr. Ashford directed the Geriatric Psychiatry Out-patient Clinic at UCLA and initiated the UCLA/Alzheimer PET scan study with Dr. David Kuhl. With Dr. Fuster, he made the first proposal and neurophysiologic demonstration of massive parallel information processing in connections between different regions of the cerebral cortex (Ashford & Fuster, 1985), a critical finding for understanding neuroplasticity and memory (Ashford, Coburn, and Fuster, 1998). His work in Alzheimer's disease and neurophysiology led to the water-shed proposal that neuro-plastic memory mechanisms of the brain are specifically affected by Alzheimer pathology (Ashford & Jarvik, 1985, Ashford, 2015).

Dr. Ashford has served in leadership positions in several academic institutions. He helped to establish NIAfunded Alzheimer's Disease Centers at Southern Illinois University School of Medicine and the University of California, Davis. While in Illinois he published the first study of Modern Test Theory in the field of Medicine, "Item-Response Theory" analysis of the Mini-Mental State Exam (Ashford et al., 1989). At the University of Kentucky, as tenured Associate Professor in Psychiatry, Neurology, and the Sanders-Brown Center on Aging, and Vice-Chair for Research, Department of Psychiatry, and a scientist in the NIA-funded Alzheimer's Disease Research Center, he proposed a "Time-Index" method to measure Alzheimer dementia severity (Ashford et al., 1995; Ashford & Schmitt, 2001), which was used in the UK Nun study (Butler, Ashford, Snowden, 1996), and a study of the loss of cerebral perfusion in Alzheimer patients (Ashford et al., 2000). With Dr. James Geddes he showed the crucial role of paired helical filament pathology in destroying neuronal processes (Ashford et al., 1998).

In addition to publishing extensively in nearly all areas of the Alzheimer field, Dr. Ashford has studied numerous other neuropsychiatric illnesses. He provides leadership, mentorship and expert consultation in a wide range of fields touching on and synergistic to brain health and disease. He is currently developing early detection and measurement methods for cognitive function and reformulating theories of Alzheimer pathology. He continues his life-long interest and passion for improving health and slowing aging.



KEYNOTE SPEAKER #2: Anousheh Ansari

DAY 1 - Keynote 2: Anousheh Ansari 9:00-9:30 am Innovation in Space and on Earth



On September 18, 2006, Anousheh Ansari captured headlines around the world as the first female private space explorer. She also earned a place in history as the fourth private explorer to visit space and the first astronaut of Iranian descent. She blasted off for an eight-day expedition aboard the International Space Station as part of the Expedition 14 crew of the Soyuz TMA-9, which included NASA astronaut Michael Lopez-Alegria and Russian cosmonaut Mikhail Tyurin. This was the accomplishment of a lifelong dream for her.

Back on Earth, as a successful serial entrepreneur, Anousheh returned to her job as co-founder and chairman of her latest technology company. Prodea Systems, a company that will dramatically alter the nature of the in-home technology experience. Prodea Systems will help customers unleash the power of the Internet and realize the full potential of their digital homes.

An active proponent of world-changing technologies and social entrepreneurship, Anousheh has dreamed of space exploration since childhood. Her family provided the title sponsorship for the Ansari X Prize, a \$10 million cash award for the first non-governmental organization to launch a reusable manned spacecraft into space twice within two weeks. This feat was accomplished in 2004 by legendary aerospace designer Burt Rutan in 2004. With the success of the X Prize competition, Anousheh had helped launch a new era in private spaceflight.

In 2001, Anousheh served as co-founder, chief executive officer and chairman of the board for Telecom Technologies, Inc. After earning three key U.S. patents and growing the company to 250 employees with 100% sequential growth year over year since inception, the company successfully merged with Sonus Networks (Nasdaq: SONS), a provider of IP-based voice infrastructure products, in a deal worth approximately \$750 million dollars. She served as the company's chief executive officer and chairman of the board. Telecom Technologies created a product called a "softswitch" that allowed voice communications over the Internet.

Anousheh is a member of the X Prize Foundation's Vision Circle, as well as its Board of Trustees. She is a life member in the Association of Space Explorers and on the advisory board of the Teacher's in Space project. She has received multiple honors, including the World Economic Forum Young Global Leader 2007, DFW International Community Alliance Hall of Fame award, the Working Woman's National Entrepreneurial Excellence Award, George Mason University's Entrepreneurial Excellence Award, George Washington University's Distinguished Alumni Achievement Award, and the Ernst & Young Entrepreneur of the Year Award for Southwest Region. While under her leadership, Telecom Technologies earned recognition as one of Inc. magazine's 500 fastest-growing companies and Deloitte & Touche's Fast 500 technology companies.



KEYNOTE SPEAKER #3: Mark Humayun

DAY 1 - Lunch Time Keynote 3: Mark Humayun 11:45a-12:15 pm Development of a Bioelectronic Retinal Implant



Mark S. Humayun, MD, PhD, received his Bachelors of Science degree from Georgetown University in 1984, his Masters Doctorate from Duke University in 1989, and his PhD from the University of North Carolina, Chapel Hill in 1994. He completed his ophthalmology residency at Duke Eye Center and fellowships in both vitreoretinal and retinovascular surgery at Johns Hopkins Hospital. He stayed on as faculty at Johns Hopkins where he rose to the rank of associate professor before moving to USC in 2001.

Dr. Humayun has devoted much of his career to clinical and scientific research in ophthalmology and bioengineering, becoming both a biomedical engineer and professor of ophthalmology. Dr. Humayun led a talented and diverse team of interdisciplinary researchers with the ultimate goal of creating the world's first artificial retina. He assembled a team of world experts with a wide range of

proficiency, including biomedical engineering, computer science, medicine, chemistry, biology and business. In clinical trials since 2007 and approved by the FDA in 2013, the Argus II retinal implant, represents the culmination of a visual restoration strategy that offers an unprecedented degree of sight to those with complete retinal blindness. He was elected to the prestigious National Academy of Medicine (NAM) and National Academy of Engineering (NAE) for his pioneering work to restore sight.

With over 200 publications and more than 100 patents and patent applications, Dr. Humayun has received several research awards which includes the 2005 Innovator of the Year award. He was also featured as one of the top 10 inventors in Time Magazine in 2013, voted as one of the Best Doctors in America for three years, and one of the top 1% of Doctors by U.S. News & World Report.

In 2016, Dr. Humayun received the National Medal of Technology and Innovation from President Barack Obama for his innovative work and development of the Argus II.

As director of the USC Institute for Biomedical Therapeutics, Dr. Humayun leads a team of researchers in the investigation and development of treatments for degenerative neurological diseases using biomedical engineering technology. Major research applications include developing the next generation of Argus II, the world's first FDA approved artificial retinal prosthesis for patients suffering from an inherited form of retinitis pigmentosa (RP). Dr. Humayun, in collaboration with David Hinton, MD, received a \$19 million grant from the California Institute for Regenerative Medicine (CIRM) to lead a stem cell initiative. The research team has developed a unique procedure by which a scaffold of stem-cell derived retinal pigment epithelium cells may be surgically implanted into the back of the eye, replacing diseased tissue to treat those suffering from Age-Related Macular Degeneration (AMD).



14th Annual Breaking Boundaries of Science, Technology, Medicine, Art, and Healthcare Policy

Tuesday April 18th, 2017, 14th Annual Congress

Presidential Keynote (8:30 – 9:00am): Wes Ashford-14th President of SBMT, Professor (Affiliated) Psychiatrey, Director of Wounded and ill at the VA Paolo Alto, CA, USA Past and current impact of SBMT on Clinical Neuroscience

Keynote (9:00 – 9:30am): Anousheh Ansari, First Space Traveler, Engineer Co-founder & Chairwoman of Prodea Systems: *Innovation in Space and on Earth*

Luncheon Keynote (11:45a-12:15p): Mark Humayun - Co-director of the Ophthalmology Dept of USC Roski Eye Institute, USC-Keck School of Medicine Development of a Bioelectronic Retinal Implant

<u>Session - A1</u> – Stroke 10:00-11:30 AM

Chair - David Liebeskind

10:00-10:15 **David S Liebeskind**, Professor and Director, Neurovascular Imaging Research Core, UCLA David Geffen School of Medicine *Innovations in Stroke Precision Medicine*

10:15-10:30 **Fabien Scalzo**, Assistant Professor, Neurovascular Imaging Research Core, UCLA David Geffen School of Medicine Mapping of MRI Patterns of Infarct Evolution to Tailor Therapy in Acute Stroke

10:30-10:45 **Danny JJ Wang**, Laboratory of Functional MRI Technology (LOFT), Stevens Neuroimaging and Informatics Institute, University of Southern California *ASL Perfusion MRI in Stroke and cerebrovascular disorders*

10:45-11:00 Jason Hinman, Associate Professor of Neurology, UCLA David Geffen School of Medicine, Precision stroke medicine through 3D modeling of the cerebrovasculature

11:00-11:15

Nerses Sanossian, Associate Professor (Clinical Scholar), Director, Neurocritical Care & Stroke, Department of Neurology, University of Southern California (USC)-Keck School of Medicine *Prehospital Stroke Care: Current State and Future Directions*

Q/A: 11:15-11:30

12:00-1:30 Lunch and Luncheon Keynote



Session – A2 - Neurophotonic and Brain Mapping 10:00-11:30 AM

Co-Chairs: Dan Farkas & Babak Kateb

10:00-10:15

Scott Fraser, Provost Professor of Biological Sciences and Biomedical Engineering, University of Southern California Multi-Modal Multiplex Imaging of Neuronal Form & Function

10:15-10:30

Julie R. Korenberg, Professor of Pediatrics, Director, Center for Integrated Neuroscience and Human Behavior, The University of Utah Brain Mapping from genomic to Behavior

10:30-10:45

Fartash Vasefi, Director of Engineering, Spectral Molecular Imaging Inc., Senior Fellow Society for Brain Mapping and Therapeutics (SBMT)

Multimode optical technologies for intraoperative glioblastoma classification

10:45-11:00

Sona Hosseini, Research and Instrument Scientist, NASA/ Jet Propulsion Laboratory Next generation of miniaturized high spectral resolution spectrometers – A journey from space exploration to medical diagnoses

11:00-11:15 **Taner Akkin**, Associate Professor, Department of Biomedical Engineering, University of Minnesota Brain imaging and mapping at microscopic resolution with serial optical coherence scanner

Q/A: 11:15-11:30

12:00-1:30 Lunch and Luncheon keynote

Session – A3 – Understanding Mechanisms & Developing Therapy 10:00-11:30 AM

Co-Chairs: Wes Ashford & Nick Tezapsidis

10:00-10:15

J. Wesson Ashford, Clinical Professor (affiliated); Director, War Related Illness & Injury Study Center Rethinking the pathophysiology of Alzheimer's disease" Affiliation: Stanford University; VA Palo Alto HCS,

10:15-10:30

NikalaosTezapsidis, CEO, Neurotez, Inc. The Role of Leptin and other Adipokines in Neuroplasticity and Alzheimer Pathobiology"

10:30-10:45


4th Annua Breaking Boundaries of Science, Technology, Medicine, Art, and Healthcare Policy

Daniel Alkon, Professor, Rockefeller Neuroscience Institute PKC epsilon - BDNF Therapeutics in AD induce synaptogenesis, anti-apoptosis, anti-amyloidogenesis, anti-tau phosphorylation, and cognitive enhancement

10:45-11:00

Margaret Fahnestock, Professor of McMaster University TAU modulation of neurotrophin expression: a mechanism of neurodegeneration in Alzheimer's disease

11:00-11:15 **Kurt Rassumussan**, Scientist, Eli Lilly, Neuropharmacology and drug development

Q/A: 11:15-11:30

12:00-1:30 Lunch and Luncheon keynote

Session – A4 - Multimodality Imaging (CME-Accredited by Cedars-Sinai) 10:00-11:30 AM

Co-Chairs: Aaron Filler & Wei Gao

10:00-10:15

Mikhail G. Shapiro, Assistant Professor of Chemical Engineering, Faculty of Bioengineering and Medical Engineering Heritage Principal Investigator, California Institute of Technology Biomolecular Engineering of Reporters and Sensors for Noninvasive Imaging of Cellular Function'

10:15-10:30

Wei Gao, Associate Professor and Director of Neuroimaging Research Biomedical Imaging Research Institute Department of Biomedical Sciences and Imaging, Cedars-Sinai Medical Center Functional Connectivity Study of Human Brain Functioning

10:30-10:45

Hosung Kim, Assistant Professor of Neurology, USC Stevens Neuroimaging and Informatics Institute Keck School of Medicine of USC, University of Southern California A novel approach to segment brain tissues and measure cortical folding in neonatal MRI with motion artifact and its clinical applications.

10:45-11:00

Lirong Yan, Non-invasive Assessment of Intracranial Vascular Compliance using Dynamic Arterial Spin Labeling Assistant Professor, Stevens Neuroimaging and Informatics, Department of Neurology, University of Southern California

11:00-11:15

Gerald Mearini, President & Founder Teraphysics Corporation TeraHrtz imaging,

Q/A: 11:15-11:30 12:00- 1:30 Lunch and Luncheon keynote





<u>Session – A5</u> – Brain Bionic 10:11:30 AM

Co-Chairs: Ted Berger & Jeff Ojemann

10:00-10:15

Jeffrey G Ojemann, Department of Neurological Surgery University of Washington, Seattle Children's Hospital Center for Sensorimotor Neural Engineering Cortical changes with bidirectional Brain-computer interface in humans

10:15-10:30

James Weiland, Professor of Department of Biomedical Engineering, University of Michigan Brain Imaging in Blindness and Sight Recovery

10:30-10:45

Samantha Santacruz, Department of Electrical Engineering & Computer Sciences, University of California, Berkeley Title: Closed-loop Neuromodulation of Mesocortical Networks for Treatment of Mood Disorders

10:45-11:00

Theodore W. Berger, David Packard Professor of Engineering, Professor of Biological Engineering and Neuroscience Director, Center for Neural Engineering, University of Southern California Engineering Memories: A Neural Prosthesis for Strengthening Human Memory

11:00-11:15

Yan Wong, Senior Lecturer, Department of Electrical and Computer Systems Engineering, Department of Physiology Monash University The Monash Vision Group cortical bionic vision implant: progress toward a first-in-human trial

Q/A: 11:15-11:30

12:00-1:30 Lunch and Luncheon keynote

Session – A6 – Brain Mapping & Therapeutics & Infection Disease

10:11:30 AM

Chair: Kamel Khalili

10:00-10:15

Maria Nagel, Associate Professor, Department of Neurology, University of Colorado at Denver, Stroke caused by varicella zoster virus

10:15-10:30

Pamela Roehm, Associate Professor, Department of Otolaryngology, Lewis Katz School of Medicine at Temple University Herpes Simplex Type 1 and Human Disease

10:30-10:45

Brian Wigdahl, Professor and Chair, Department of Microbiology and Immunology, Drexel University College of Medicine



HIV-1 infection of CNS and novel strategies for viral elimination

10:45-11:00

Ilker Sariyer, Assistant Professor, Department of Neuroscience, Lewis Katz School of Medicine at Temple University Neuroimmune regulation of JC virus gene expression by host and viral factors

11:00-11:15

Xuebin Qin, Associate Professor, Department of Neuroscience, Lewis Katz School of Medicine at Temple University Dissecting the roles of immune cells and their interactions in multiple sclerosis using a novel cell ablation tool

Q/A: 11:15-11:30

12:00-1:30 Lunch and Luncheon keynote

Session – A7 – Virtual Reality Clinical Neuroscience 10:00-11:30 AM

Co-Chairs: Kim Bullock & Babak Kateb

10:00-10:15

Walter Greenleaf, Distinguished Visiting Scholar, Communications Department, Human Virtual Interaction Lab, Stanford How Virtual Reality is Transforming Research and Clinical Care

10:15-10:30

Hadi Hosseini, Assistant Professor, Department of Psychiatry and Behavioral Sciences, Stanford University Integrating VR and neuro imaging: toward personalized interventions in psychiatry

10:30-10:45

Kim Bullock, Clinical Associate Professor, Director of Stanford Virtual Reality and Immersive Technology (VR-IT) Clinic and Laboratory, Department of Psychiatry & Behavioral Sciences, Stanford University, School of Medicine Mirror Therapy for Psychosomatic Illness

10:45-11:00

Chris Furmanski, Founder, Partner Virtual Ventures; former Stanford Health Care Director of Innovation Emerging Technology & Trends in Med VR

11:00-11:15

Rebecca Mandel Ben-Artzy, Founder, Alpha Presence, former Marketing VR at Samsung NEXT, Alpha Presence Transforming Patient Centered Care with VR

Q/A: 11:15-11:30

12:00-1:30 Lunch and Luncheon keynote

Session – A8 – Stem Cell 1:30-3:00 PM





Chair – Vicky Yamamoto

1:30-1:45

Marie Csete, President & Chief Scientist, Huntington Medical Research Institutes. What can stem cell therapies in the eye tell us about stem cell therapies for the brain?

1:45-2:00

Barry S. Baumel, Assistant Professor of Neurology, Director Memory Disorders Clinical Trials, University of Miami, Miller School of Medicine

The Clinical Development of Mesenchymal Stem Cells to Treat Alzheimer's Disease.

2:00-2:15

Stephen L. McKenna, Medical Director, Rehabilitation Trauma Center at SCVMC, Clinical Associate Professor (AFFILIATED) [SCVMC], Department of Neurosurgery; Stanford University, School of Medicine Regenerative Medicine for Acute Spinal Cord Injury: from bench-to-bedside to nationwide

2:15-2:30

Qi-Long Ying, Associate Professor, Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research; Department of Stem Cell Biology & Regenerative Medicine Department of Cell & Neurobiology ;Keck School of Medicine of USC Development of Cre/lox rat models for the study of neurological disorders.

2:30-2:45

Louis Yuge, Professor & Main director, Graduate School of Biomedical & Health Sciences ,Division of Bio-Environmental Adaptation Sciences Hiroshima University, Space Bio- Laboratories Co.Ltd; Center for SPACE Regenerative Medicine Microgravity Facilitates Stem Cell Proliferation and Neural Differentiation after Cell-based Therapy.

Q/A: 2:45-3:00

Break 3:00-3:30 PM

Session – A9 – Fractal Geometry, AI & Supercomputing & Predictive Modeling

1:30-3:00 PM

Co-Chairs: Alex Bui & Pezhman Mardanpour

1:30-1:45

Corey Arnold, Medical Imaging and Informatics (MII) Group, Assistant Professor, Department of Radiological Sciences David Geffen School of Medicine at UCLA

Talk title: Estimating Perfusion Parameters in Stroke using Deep Learning

1:45-2:00

Alex Bui, Professor, Departments of Radiological Sciences, Bioengineering & Bioinformatics, David Geffen School of Medicine at UCLA Medical Imaging Informatics Predictive Modeling Challenges in Glioblastoma Multiforme

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4th Annua Breaking Boundaries of Science, Technology, Medicine, Art, and Healthcare Policy

2:00-2:15

Pezhman Mardanpour, Assistant Professor, and Director of Fluid-Structure Interaction Laboratory , Florida International University

Brian and Nervous System: The Architectural Construct

2:15-2:30

Madhuri Suthra, Graduate Student Researcher (GSR), Photonics Lab, Department of Electrical Engineering, UCLA Optics Inspired Computing

2:30-2:45

Antonio Di leva, Neurosurgeon, Associate Professor of Neuroanatomy Macquarie University, Sydney, Australia Fractal-Based Predictive Modeling of Brain Arteriovenous Malformations

Q/A: 2:45-3:00

Break 3:00-3:30 PM

<u>Session – A10</u> – Innovative Methods for Detection & Treatment of Sensory & Cognitive Deficits in Brain Injury 1:30-3:00 PM

Co-Chairs: Ken Green & Maheen Adamson

1:30-1:45

Mark Ettenhofer, Assistant Professor/Principal Investigator, Director of Research Operations Uniformed Services University/Defense and Veterans Brain Injury Center, San Diego The Eyes Have It: Development and Validation of Neurocognitive Eye Tracking

1:45-2:00

Kimberly Cockerham, Adjunct clinical associate Professor, Opthomology, Plastics-Orbit-Neuro-Ophthalmology Innovative Neuroprotection; Battlefield to Rehabilitation therapeutics

2:00-2:15

Laurel Riek, Associate Professor, Computer and engineering, University of California, San Diego Personalized Robotics for Traumatic Brain Injury Recover

2:15-2:30

Maheen Adamson, Senior Scientific Research Director/Clinical Associate Professor Affiliated Neurosurgery & Psychiatry & Behavioral Sciences

Defense and Veterans Brain Injury Center (DVBIC), VA Palo Alto/Stanford School of Medicine. Chronic vs. Acute TBI: how can advanced neuroimaging help for long-term outcomes?

Q/A: 2:30-2:45

Break 3:00-3:30 PM



4th Annual World Congress of Society for Breaking Boundaries of Science, Technology, Medicine, Art, and Healthcare Policy

Session – A11 – Epilepsy & Intra operative Neuromonitoring

1:30-3:00 PM

Co-Chairs: Warren Boling & Hamlin Emory

1:30-1:45

Hamlin Emory, Director of Neuroscience for Clinical Medicine and Neuropsychiatry, Los Angeles, CA A Neurophysiologic Approach in the Treatment of Non-lesional Epilepsy

1:45-2:00

Evgeny I. Tsimerinov, Assistant Professor of Neurology and Associate Director, Neurophysiology Cedars Sinai Clinical Significance of IONM Modalities Used during CEA Surgery

2:00-2:15

Don Gross, Associate Professor Department of Medicine & Dentistry, Division of Neurology and Director of Epileptology, University of Alberta Can hippocampal subfield pathology predict surgical outcome in temporal lobe epilepsy

Can nippocampai subfield pathology predict surgical outcome in temporal lobe

2:15-2:30

Dan Dilorenzo, Department of Neurosurgery, Fellow in Complex Spinal, Cranial, and Translational Neurosurgery, Swedish Medical Center, Seattle WA

Neurosensing - The Next Frontier in Neural State Monitoring, Prediction, and Control -

2:30-2:45

Warren Boling, Professor and Chairman, Department of Neurosurgery, Loma Linda University SEEG defining the epileptic focus and informing the network

Q/A: 2:45-3:00

Break 3:00-3:30 PM

Session – A12 - Neuro Oncology & Brain Tumor Vaccine (LLU CME)

1:30-3:00 PM

Co-Chairs: John Yu & Ray Chu

1:30-1:45

Yanghong Shi, Director, Division of Stem Cell Biology Research, Director, Stem Cell Core Professor, Department of Developmental and Stem Cell Biology RNA Methylation regulates the self-renewal and tumorigenesis of glioblastoma stem cells

1:45-2:00

Ray Chu, Department Clinical Chief, Department of Neurosurgery, Cedars Sinai Development of a phase III trial for the brain tumor antigen vaccine

2:00-2:15

Brad Elder, Director, Neurosurgical Oncology



Associate Professor, Department of Neurological Surgery, Ohio State University Image guided biopsy and brain tumor therapy using iMRI.

2:15-2:30

Analiz Rodriguez, Neurosurgical Oncology fellow, City of Hope Laser Ablation for the Neurosurgical Oncologist.

2:30-2:45

Jethro Hu, NeuroOncologist, Department of Neurosurgery, Cedars-Sinai Medical Center Nutritional Ketosis as an Adjunct Therapy for Glioma

Q/A: 2:45-3:00

Break 3:00-3:30 PM

Session – A13 - rTMS for Neurological Disorders 1:30-3:00 PM

Chair: Wes Ashford

1:30-1:45 **Albert Leung**, Professor, Department of Neurology, UC San Diego, VASDHS Talk Title:"rTMS in managing MTBI related symptoms: Treatment Setting and Outcome Differences"

1:45-2:00

Allyson Rosen, Associate Professor, Department of Psychiatry & Behavioral Sciences; Associate Director for Education, MIRECC, Affiliations: Stanford University; VA Palo Alto HCS Guiding rTMS with brain imaging

2:00-2:15 Jin Yi, Scientist, Brain Treatment Center EEG guided rTMS

2:15-2:30

Joseph Cheng, Assistant Clinical Professor, Department of Psychiatry & Behavioral Sciences; Director of Neuroscience, WRIISC, Stanford University; VA Palo Alto HCS Using rTMS to treat cognitive impairment and dementia

2:30-2:45

Windy McNerney, Fellow, War Related Illness & Injury Study Center, Stanford University; VA Palo Alto HCS Exploring the biochemical mechanisms of rTMS through animal and cellular models

Q/A: 2:45-3:00

Break 3:00-3:30 PM



Session – A14 – Biomarkers in Bran Mapping & Therapeutics 1:30-3:00 PM

Chair: Clark Chen

1:30-1:45

Mark Mapstone, Professor of Neurology, University of California Irvin (UCI) Predictive Blood Biomarkers for Alzheimer's Disease

1:45-2:00

Valya Ramarishnan, Instructor, Moores Cancer Center, University of California, San Diego Methyl-Guanine Methyl Transferase (MGMT) regulating miRNA as a predictive biomarker platform

2:00-2:15

Johnny Akers, Assistant Project Scientist, Center for Theoretical and Applied Neuro-Oncology, UCSD Extracellular vesicles (EVs) of cerebrospinal fluid (CSF): a liquid biopsy platform for glioblastoma

2:15-2:30

Clark C. Chen, Associate Professor & Vice Chair of Research/Academic Affairs, Department of Neurosurgery University of California, San Diego Glioblastoma subtype as biomarker for therapeutic response

Q/A: 3:30-2:45

Break 3:00- 3:30

Session – A15 - Brain Mapping in Neuro-Psych-Bahvior

3:30-5:00 PM

Co-Chairs: Nevzat Tarhan & Baris Metin

3:30-3:45

Nevzat Tarhan, President of Uskudar University, Uskudar University Biomarkers that can be used for personalized treatment of psychiatric disorders

3:45-4:00

Baris Metin, Associate Professor, Uskudar University MRI biomarkers: Can functional neuroimaging improve diagnostic accuracy in psychiatry?

4:00-4:15 **Cumhur Tas**, Associate Professor Uskudar University Beyond theta/beta ratio: The future of EEG in psychiatry

4:15-4:30

Rustu Murat Demirer, Assistant Professor Uskudar University Advanced signal processing methods for EEG analysis





4:30-4:45 **Merve Cebi**, Research Assistant, Uskudar University Use of tractography to differentiate neuropsyciatric disorders

Q/A 4:45-5:00

Session – A16 – Biomaterials

3:30-5:00 PM

Chair: Afsaneh Rabiei

3:30-3:45 **Afsaneh Rabiei,** Professor Mechanical and Aerospace Engineering and Biomedical Engineering, North Carolina State University. Improving the Stabilization of Spinal Implants

3:45-4:00

Wolff Kirsch, Professor & Director Neurosurgery Center for Research Training and Education Basic Sciences Division of Biochemistry School of Medicine Loma Linda. Chitosan Depyro genation with Non-thermal Nitrogen Gas Plasma

4:00-4:15 **Afsaneh Rabiei,** Affiliations: Professor Mechanical and Aerospace Engineering and Biomedical Engineering, North Carolina State University. Functionally graded HA coatings/ smart coatings

4:15-4:30 **Eun Ji Chung**, Gabilan Assistant Professor of Biomedical Engineering University of Southern California (USC) Peptide Amphiphile Micelles for targeting glioblastoma

Q/A 4:30-4:45

Session – A17 – Military Medicine: Distinguishing between TBI & PTSD 3:30-5:00 PM

Chair: Maheen Adamson

3:30-3:45

Sidney Hinds, DoD Brain Health Research Program Coordinator/Medical Advisor to the Principal Assistant, Blast Injury Research Program Coordinating Office/Research and Technology United States Army Medical Research and Materiel Command

TBI Biomarkers; Object tests in a heterogeneous population

3:45-4:00

Carl Castro, Director and Associate Professor, USC Suzanne Dworak-Peck School of Social Work, USC



Differentiating TBI and PTSD

4:00-4:15

Kevin Bickart, Neurology Resident, Stanford School of Medicine Neurogenomic architecture of limbic circuitry in traumatic brain injury

4:15-4:30

Glenn C. Cockerham, National Program Director, VHA Ophthalmology Quality of life and visual dysfunctions in blast-induced traumatic brain injury

4:30-4:45

Dallas Hack, Adjunct Professor of Neurologic Surgery, University of Pittsburgh Traumatic Brain Injury: Military History & Research

Q/A 4:45-5:00

Session – A18 - Nanoneurosurgery and Nanoneuroscience 3:30-5:00 PM

Co-Chairs: John Yu & Madhavan Nair

3:30-3:45

John Yu, Vice Chairman and Professor of Neurosurgery, Cedars-Sinai Department of Neurosurgery Nanoprodrug for Treatment of Globalstoma

3:45-4:00

J. Manuel Perez, Professor of Neurosurgery and Imaging and Biomedical Sciences, Department of Neurosurgery, Cedars Sinai Medical Center

New direction on the imaging and delivery of drugs to brain tumors using polymeric nanoparticles

4:00-4:15

Mark Davies, Warren and Katharine Schlinger Professor of Chemical Engineering Member, City of Hope Comprehensive Cancer Center, Experimental Therapeutics Program Design of Nanoparticles for Safely Crossing the Blood-Brain Barrier

4:15-4:30

Tuan Vodinh -Director, Fitzpatrick Institute for Photonics, R. Eugene and Susie E. Goodson Professor of Biomedical Engineering

Professor of Chemistry, Duke University.

Modality Bioimaging, Diagnostics and Nanotherapy for the Brain

4:30-4:45

Madhavan Nair, Distinguished Professor and Chair, Departent of Immunology, Director, Institute of NeuroImmune Pharmacology

College of Medicine, Associate Dean of Bio- Medical Research, Associate Vice President for NanoMedicine, Florida International University

Getting in to the Brain: Potential of Nanotechnology to Manage Neuro-AIDS and Drug Addictions.





Q/A 4:45-5:00

Session – A19 - ALS (LLU CME Session)

3:30-5:00 PM

Co-Chairs: Evgeny Tsimerinov & Jeff Rosenfeld

3:30-3:45

Jeffrey Rosenfeld PhD, Professor of Neurology Associate Chairman, Department of Neurology, Director of ALS/ Neuromuscular Program, Department of Neurology, Loma Linda University ALS/MND 2017: Greatest Opportunities and Challenges

3:45-4:00

Justin Ichida, New York Stem Cell Foundation - Robertson Investigator, Assistant Professor of Stem Cell Biology and Regenerative Medicine USC Keck School of Medicine Using patient-specific stem cells to identify new therapeutic targets for ALS

4:00-4:15

Milan Fiala, Research Professor Department of Molecular, Cell, & Developmental Biology, UCLA School of Life Sciences Immune approaches to ALS and current trial of tocilizumab

4:15-4:30

Francy Shu, Assistant Clinical Professor Department of Neurology Neuromuscular Medicine Attending Physician Pattern Recognition for Amyotrophic Lateral Sclerosis (ALS) – Power and Pitfall

4:30-4:45

Ashraf Elsayegh, Cedars-Sinai Medical Center, Division of Pulmonary/Critical Care Pulmonary, Sleep, Critical Care Current Controversies in Diaphragm Pacing of ALS Patients

Q/A 4:45-5:00

<u>Session – A20</u> - Brain Mapping & Precise Diagnosis & Therapeutics 3:30-5:00 PM

Co-Chairs: Wes Ashford & Erica Andreozzi

3:30-3:45 Lea Grinberg, Professor, University of California San Francisco High Resolution Autopsy Methods to Study Mechanisms of Neurodegenerative Disease

3:45-4:00 Adam Schwarz, Scientist, Eli Lily, Imaging Brain Health and Disease in Alzheimer's Disease

4:00-4:15



Duygu Tosun-Turgut, Scientist, University of California San Francisco and San Francisco Veterans Affair Hospital ADNI: Imaging Methods to Investigate Alzheimer's Disease and Depression

4:15-4:30

Dale Bredesen, Director and Scientist, Buck Institute Talk Title: Closing the complexity gap in Alzheimer evaluations"

4:30-4:45

Xianghong Arakaki, Research Scientist, Huntington Medical Research Institutes, Functional EEG testing to unmask mTBI

Q/A 4:45-5:00

Session – A21 - Complex Spine Biologics (City of Hope CME Session) 3:30-5:00 PM

Co-Chairs: Jeff Wang & Mike Chen

3:30-3:45

Jeffrey C. Wang, Chief, Orthopaedic Spine Service, Co-Director USC Spine Center; Professor of Orthopaedic Surgery and Neurosurgery; USC Spine Center Complex Cervical Spine Surgery and Deformity

3:45-4:00

Farhad Parhami, Founder, President & CEO, MAX BioPharma Inc.; Professor Emeritus, David Geffen School of Medicine at UCLA; Lecturer & Faculty Advisor, UCLA Anderson School of Management Use of Biologics in Spinal Fusion: Oxysterols

4:00-4:15

Fernando Silva, Private Practice, Fort Worth Texas, Complex spine surgery from Basic science to Clinical Practice

4:15-4:30

Larry Khoo, Director, Spine Clinic of Los Angeles; USC Neuroscience Center; Good Samaritan Hospital Minimally invasive resection of spinal tumors: Challenges and future directions

4:30-4:45

Alireza Sheikhi, Fellow, City of Hope Cancer Center, CA The use of vertebral augmentation/kyphoplasty in patients with posterior vertebral wall compromise

Q/A 4:45-5:00



DAY 2: Wednesday April 19th, 2017, 14th Annual Congress





KEYNOTE SPEAKER #4: Warren Boling

DAY 2 - Keynote 4: Warren Boling 8:30-9:00 am Future of Brain Mapping & Therapeutics and SBMT



Dr. Warren Boling is a neurosurgeon in Loma Linda, California. He received his medical degree from Texas Tech University Health Sciences Center School of Medicine and has been in practice for more than 20 years.



KEYNOTE SPEAKER #5: Kyu Rhee

DAY 2 - Keynote 5: Kyu Rhee 9:00-9:30 am



Dr. Rhee serves as Chief Health Officer of IBM, where he has global responsibilities for Watson Health and assuring a Culture of Health at IBM. Prior to joining IBM, Dr. Rhee was Chief Public Health Officer at the Health Resources and Services Administration (HRSA), which is the primary federal agency for improving access to health care services for people who are uninsured, isolated, or medically vulnerable. While at HRSA, he served on and led numerous national initiatives related to prevention, quality, and public health. Dr. Rhee also served as the Director of the Office of Innovation and Program Coordination at the National Institutes of Health (NIH), which is the primary federal agency for research. While at NIH, he served on and led numerous initiatives related to eliminating health disparities and promoting health equity. Prior to his federal government service, he worked in community health settings as the Chief Medical Officer of Baltimore Medical System Inc., the largest network of Federally Qualified Health Centers in Maryland. In addition, Dr. Rhee served five years as a National Health Service Corps Scholar and Medical Director at Upper Cardozo

Health Center, the largest community health center in Washington, DC. During that time, he taught at the George Washington University School of Public Health, where he received a "Best Teacher" award for his class in Community Health Leadership.

Dr. Rhee was a Chief Resident and performed his medical residency training in both internal medicine and pediatrics at Cedars-Sinai Medical Center in Los Angeles. He obtained his medical degree from the University of Southern California. Dr. Rhee also holds a master's degree in public policy from the John F. Kennedy School of Government, Harvard University with a concentration in Health Care Policy. He acquired his Bachelor in Science degree from Yale University in Molecular Biophysics and Biochemistry, where he also served as President of the study body.

In addition to his service on various public and private sector committees and boards, including those sponsored by the Institute of Medicine, Agency for Healthcare Research and Quality, the Robert Wood Johnson Foundation, the Clinton Foundation, the National Quality Forum, and the National Business Group on Health, Dr. Rhee speaks frequently and has published in numerous peer-reviewed journals, including American Family Physician, Pediatric Annals, Journal of Health Care for the Poor and Underserved, and the American Journal of Public Health.



KEYNOTE SPEAKER #6: Laligam N. Sekhar

DAY 2 - Lunch Time Keynote 6: Laligam N. Sekhar 11:45am-12:15 pm *Future Trends in Neurosurgery*



Laligam N. Sekhar was born on November 7, 1951 in Madras, India. Dr. Sekhar received his pre-university certificates from Loyola College and Vivekananda College of Madras University, Madras, India and his M.D. from Madras Medical College. He completed his neurosurgical residency at the University of Pittsburgh under Dr. Peter Jannette and did fellowships with Professor Madjid Samii in Hannover, Germany and with Professor Ghazi Yasargil in Zurich, Switzerland. He also received further training at the Hospital Foch in Paris, France and at the National Hospital in London, England.

Dr. Sekhar joined the faculty of the University of Pittsburgh in 1983 and served there till 1993, eventually being appointed Professor. He established the first Center for Cranial Base Surgery in the United States and a noninvasive cerebrovascular laboratory at the Presbyterian-University Hospital, Pittsburgh. He

was appointed as Professor and Chairman of the Department of Neurological Surgery at George Washington University Medical Center in 1993, and subsequently as the Co-Director of the GWU Neurological Insitutute. He resigned fromUniversity practice in 1999 and co-founded the Mid-Atlantic Brain and Spine Institutes, an organization devoted to high quality neurosurgical care, education and research in the private sector.

Dr. Sekhar is internationally recognized as one of the pioneers and leaders in the field of Cranial Base Surgery. He has also made major contributions to the field of cerebrovascular surgery and endoscope assisted surgery. He holds a U.S. patent and has published 175 referenced articles in journals, 84 book chapters and edited four books. He has been a visiting professor in several North American Institutions and more than 25 countries worldwide. He has educated many neurosurgical residents and fellows, and taught regularly in national meetings. He was the President of the North American Skull Base Society in 1991 and is currently the Treasurer of the International Skull Base Society. He has also held office in the Congress of Neurological Surgeons.

His current research intersts include clinical outcomes in cranial base and cerebrovascular surgery, development of endoscopic neurosurgery and clinical research in neural regeneration. He is active in several community programs including neuroscience education in schools, Shiva-Sakthi village development project in India and the development of primary health care in Latin America. Dr. Sekhar has one son, Raja Sekhar.



14th Annual Breaking Boundaries of Science, Technology, Medicine, Art, and Healthcare Policy

KEYNOTE SPEAKER #7: Gary Small

DAY 2 - Lunch Time Keynote 7: Gary Small 12:15-12:45 pm Detection & Prevention of Cognitive Decline



Dr. Gary Small is a professor of psychiatry and director of the *UCLA Longevity Center at the Semel Institute for Neuroscience & Human Behavior. His research, supported by the National Institute of Health, has made headlines in the Wall Street Journal and the New York Times. Scientific American magazine named him one of the world's leading innovators in science and technology. Dr. Small lectures throughout the world and frequently appears on The Today Show, Good Morning American, PBS, and CNN. He has written six books, including The New York Times best seller, The Memory Bible.

Dr. Gary Small's collection of books presents a refreshing perspective on understanding human brain activity and effective ways to enhance brain performance. The Alzheimer's Prevention Program is a whole body, whole mind, easy-to-follow regimen based on the latest research on Alzheimer's

disease and especially the connection between lifestyle and susceptibility.



14th Annual Breaking Boundaries of Science, Technology, Medicine, Art, and Healthcare Policy

Wednesday April 19th, 2017, 14th Annual Congress

- 8:30 am- 9:00 am - Keynote 4: Warren Boling Future of Brain Mapping & Therapeutics and SBMT - 9:00 am- 9:30 am - Keynote 5: Kyu Rhee Chief Medical Officer, IBM Watson Health

- 11:45 am- 12:15 pm - Lunch Time Keynote 6: Laligam N. Sekhar

Future Trends in Neurosurgery

- 12:15 pm- 12:45 pm - Lunch Time Keynote 7: Gary Small

Detection & Prevention of Cognitive Decline

Session – B22 - Optometry & Brain Mapping

10:00-11:30 AM

Chair - Deborah Zelinsky

10:00-10:15 **Catherine Growkowski**, President CEO of Smart Technologies A patient perspective on the importance of collaboration in TBI care

10:15-10:30 **Barbara Barclay**, President CEO of Right Eye, LLC Using objective eye tracking as marker in TBI recuperation

10:30-10:45 **Clark Elliott,** DePaul University, Chicago, IL USA Talk Title: Neuroplasticity is neuro-optometry: Eyeglasses to rewire brain function

10:45-11:00 Alauddin Bhuiyan, New York University, Brooklyn, NY USA Prediction of stroke through retinal vessel assessment

11:00-11:15 **Selwyn Super,** University of Southern California The importance of stereopsis in overall neurological function

11:15-11:30 Leanne Venier, Artist How color, light, art & flow states enhance brain function, reverse brain dysfunction & improve mental & physical health

Q/A: 11:30-11:45 Lunch and Luncheon Keynote 12:00 noon-1:30 PM



Session – B23 - Materials for Prevention & Protection 10:00-11:30 AM

Chair – Afsaneh Rabiei

10:00-10:15

Afsaneh Rabiei, ProfessorMechanicalandAerospaceEngineeringandBiomedicalEngineering, North Carolina State Introduction of high strength composite metal foams for protection against impact

10:15-10:30

Lisa Ferrara, Owner and President of Ortho Kinetic Technologies, LLC [OKT] and Owner of Ortho Kinetic Testing Technologies, LLC Understanding the Biomechanics of Brain Injury for Improved Protective Product Design

10:30-10:45

Gabrielle Sampietro, Vice President, Product Design THE SAFARI LAND GROUP Premier Protection and Prevention Materials for the Public Safety Market

10:45-11:00

Joel Stitzel, Wake Forest School of Medicine Atlas-based computational model of the human brain for protective equipment to protect from head impact exposure

Q/A: 11:00-11:15 Lunch and Luncheon Keynote 12:00 noon-1:30 PM

<u>Session – B24</u> - Military Medicine: From imaging to Behavioral Analysis 10:00-11:30 AM

Chair - Mike Roy

10:00-10:15 **Michael J. Roy,** Professor of Medicine and Director of the Division of Military Internal Medicine; Uniformed Services University The impact of TBI and PTSD on Cognition.

10:15-10:30

Sung Lee, Director of Research, Brain State Tech, Phoenix, AZ Sleep quality and risk for subsequent PTSD: implications for a realistic primary prevention strategy

10:30-10:45

Jerzy Bodurka, Chief Technology Officer, Associate Professor, Laureate Institute, University of Oklahoma. Real-time fMRI neurofeedback modulation of amygdala hemodynamic activity

10:45-11:00

Stephanie A. Kolakowsky-Hayner, Chief Operating Officer, Brain Trauma Foundation Talk Title: Gender Differences in Concussion





Q/A: 11:00-11:15 Lunch and Luncheon Keynote 12:00 noon-1:30 PM

Session – B25 - Neurophotonics and Brain Mapping 10:00-11:30 AM

Co-Chairs: Dr Fartash Vasefi & Dr Daniel Farkas

10:00-10:15

Warren S. Grundfest, Professor of Surgery and Biomedical Engineering, UCLA David Geffen School of Medicine, and UCLA School of Biomedical Engineering. Brain Mapping and Neurophotonics

10:15-10:30

Yasaman Soudagar, Founder and CEO, Neurescence Inc Fluorescence Imaging of Neurons in Behaving Animals for Understanding the Brain,

10:30-10:45

Igor Meglinski, Professor of University of Oulu, Finland Multimodal Imaging of Brain with the combined use of optical magnetoencephalography and magnetic resonance encephalography neuroimaging techniques

10:45-11:00

Vassiliy Tsytsarev, Scientist, University of Maryland In vivo 3D imaging of epileptic activity using fluorescent laminar optical tomography in combination with voltage-sensitive dye in animal model (FLOT/VSDi)

11:00-11:15 **Hasan Sharifi**, Department Manager and a Senior Research Staff Scientist for millimeter wave subsystems group at HRL Laboratories High Resolution Thermal Imaging

Q/A: 11:00-11:15 Lunch and Luncheon Keynote 12:00 noon -1:30 PM

Session – B26 - Brain Mapping & Pediatric Medicine (CME Accredited by Cedars-Sinai Medical Center) 10:00-11:30 AM

Co-Chairs: Jessica Rose & Wei Gao

10:00-10:15 **Mark A. Liker**, Assistant Professor of Neurological Surgery, Keck School of Medicine; Chairman CEO, California Neurosurgical Institute, Deep brain stimulation in childhood dystonia. 10:15-10:30 **Wei Gao**, Associate Professor and Director of Neuroimaging Research, Biomedical Imaging Research Institute,



Department of Biomedical Sciences and Imaging, Cedars-Sinai Medical Center Functional brain imaging of human infants and the effects of prenatal drug exposure.

10:30-10:45

Talin Babikian, Assistant Clinical Professor in Psychiatry and Biobehavioral Sciences UCLA Geffen School of Medicine Whole brain MR spectroscopy and DTI correlates of long-term functional trajectories of pediatric TBI

10:45-11:00

Kornél Schadl, Semmelweis University School of Medicine, Budapest, Neonatal Neuroimaging Research Lab, Division of Pediatric Orthopedics, Stanford University School of Medicine Deep learning applications in pediatric neuroradiology: analysis of MRI and DTI

11:00-11:15

Rachel Vassar, Boston University School of Medicine, Neonatal Neuroimaging Research Lab, Division of Pediatric Orthopedics, Stanford University School of Medicine Neonatal neural and physiological correlates of neurodevelopment in preterm children

Q/A: 11:00-11:15 Lunch and Luncheon Keynote 12:00 noon -1:30 PM

Session – B27 - Brain Mapping & Therapeutics & Infection Disease (Zika)

10:00-11:30 AM

Co-Chairs: Kamel Khalili & J. David Beckham

10:00-10:15

J. David Beckham, Associate Professor, Division of Infectious Diseases University of Colorado at Denver The emergence of Zika virus as a global pathogen

10:15-10:30

Pamela Roehm, Associate Professor, Department of Otolaryngology, Lewis Katz School of Medicine at Temple University Complications of Zika Infection

10:30-10:45

Harris Gelbard, Professor, of Department of Neurology, University of Rochester Medical Center A Small Molecule, Brain-Penetrant Mixed Lineage Kinase Inhibitor for the Treatment of Zika Virus Infection in Microglia

10:45-11:00

Ilker Sariyer, Assistant Professor of Department of Neuroscience , Lewis Katz School of Medicine at Temple University Molecular interaction of ZIKV with host; Implication for novel treatment strategies

Q/A: 11:00-11:15

Lunch and Luncheon Keynote 12:00 noon -1:30 PM



Session – B28 - MIS New Technologies and Navigation in Spine (CME Accredited by City of Hope) 10:00-11:30 AM

Co-Chairs: Mike Chen & Fardad Mobin

10:00-10:15 **Fardad Mobin**, Neurological Surgeon of Beverly Hills, Minimally invasive spinal surgery: in search of perfection for outpatient spinal surgery

10:15-10:30 **Neel Anand**, Clinical Professor of Surgery; Director, Spine Trauma Image Guided Minimally Invasive Surgery for Adult Scoliosis

10:30-10:45 **Robert Watkins, IV,** Co-Director, Marina Spine Center Computer Navigation in Spine Surgery

10:45-11:00 **Shokei Yamada**, Professor Emeritus of Neurosurgery, Loma Linda University Tethered spinal cord syndrome: scientific approach to diagnosis and treatment

11:00-11:15 **Namath S. Hussain**, Assistant Professor of Neurosurgery, Loma Linda University Minimally Invasive Spine Surgery

Q/A: 11:00-11:15 Lunch and Luncheon Keynote 12:00 noon -1:30 PM

<u>Session – B29</u> - Next Generation Neurolmaing (NATIONAL LABS) 1:00-2:30 PM

Chair - John George

1:00-1:15 **Matthew Rosen**, Director, Low Field MRI and Hyperpolarized Media Laboratory, Harvard Medical School, Harvard/MIT/ MGH Martinos Center for Biomedical imaging TiAdvances in millitesla MRI: Hardware, Pulse Sequences and Neural Networks

1:15-1:30 John George, Research & Development Senior Scientist and Deputy Group Leader, Los Alamos National Laboratory: Applied Modern Physics,

Toward Dynamic Neural Electromagnetic Tomography

1:30-1:45

Igor Savukov, Research & Development Scientist, Los Alamos National Laboratory Applied Modern Physics, P-21 MEG and MicroMagnetic Imaging with Atomic Magnetometers 1:45-2:00





Matt Turner, Candidate, Harvard University, Department of Physics Imaging Neuronal Magnetic Responses with NV Diamond

2:00-2:15

Rosalind Sadleir, Assistant Professor, Arizona State University, Biological and Health Systems Engineering Direct fMRI using Neural Conductivity Contrast

Q/A: 2:15-2:30 Break: 2:30-3:00 PM

<u>Session – B30</u> - Brain Health & Fitness 1:00-2:30 PM

Chair - Glenn Fox

1:00-1:15

Glenn R. Fox, Head of Program Design, Strategy and Outreach, USC Peak Performance Institute, Lloyd Greif Center for Entrepreneurial Studies, USC Marshall School of Business Brain Circuits Underlying the Health Benefits of Positive Emotion.

1:15-1:30

Yi-Yuan Tang, Professor and Presidential Endowed Chair in Neuroscience, Texas Tech University, Long-term meditation practice induces the potential reversibility effects of brain aging.

1:30-1:45

Joaquin Anguera, Director of Clinical Program – Neuroscape, Assistant Professor - Neurology and Psychiatry, University of California, San Francisco Leveraging Mobile Technology to Enhance Cognitive Health

1:45-2:00

Judy Pa, Assistant Professor of Neurology, University of Southern California Talk Title: Enhancing the aging brain through modifiable lifestyle factors

2:00-2:15

Aaron Seitz, Professor of Department of Psychology, University of California, Riverside Talk Title: How to Promote Transfer of Learning in Brain Training

Q/A: 2:15-2:30 Break: 2:30-3:00 PM

Session – B31 - Neuromodulation & Brain Computer Interface: Future Directions 1:00-2:30 PM

Co-Chairs: Mark Liker & Dimity Dornan 1:00-1:15 **C Dimity Dornan**, Hear and Say; University of Queensland; Queensland University of Technology; Griffith University; Macquarie University



Human Bionics Interface: Global collaboration for accelerating device development.

1:15-1:30

James Fallon, Bionics Institute Melbourne Australia, Melbourne University Dept of Otolaryngology Neuromodulation and Brain Computer Interfaces: Plasticity – Friend or Foe?

1:30-1:45

Robert Gaunt, Assistant Professor, University of Pittsburgh, Department of Physical Medicine and Rehabilitation Microstimulation in human somatosensory cortex.

1:45-2:00

Gregory Clark, Associate Professor, University of Utah, Department of Bioengineering Providing high-resolution motor and somatosensory function in humans after long-term amputation of the hand

2:00-2:15

Darko Chudy, Head of Department of Neurosurgery at Clinical Hospital Dubrava, Zagreb, Croatia Deep brain stimulation for the early treatment of the minimally conscious state and vegetative state. Experience in 14 patients.

Q/A: 2:15-2:30 Break: 2:30-3:00 PM

Session – B32 – Headache & Pain

1:00-2:30 PM

Chair - Erica Andreozzi

1:00-1:15

Albert Leung, Professor of Anesthesiology and Pain Medicine, UC San Diego, School of Medicine, VASDHS Neuropathic pain state as a hallmark symptom after traumatic brain injury"

1:15-1:30

David C. Yeomans, Director of Pain Research, Faculty of Anesthesia, Stanford University School of Medicine Intranasal Oxytocin for Treating Headache

1:30-1:45

Krishnan Charavarthy, Clinical Pain Fellow, Massachusetts General Hospital, Harvard Medical School, Boston, MA Recent advances in high frequency spinal cord stimulation for the control of chronic pain

1:45-2:00

Robert Cowan, Professor of Neurology, Chief, Division of Headache Medicine, Dept. of Neurology, Stanford University The role of volumetric and resting state fMRI is mapping the behavioral elements in chronification of headache

2:00-2:15

Andrew Charles, Professor of Neurology, Director, UCLA Goldberg Migraine Program, Meyer and Renee Luskin Chair in Migraine and Headache Studies, David Geffen School of Medicine at UCLA The most recent scientific understanding of headache and pain



Q/A: 2:15-2:30 Break: 2:30-3:00 PM

Session – B33 – Brain Ablation 1:00-2:30 PM

Co-Chair – Babak Kateb

1:00-1:15

Gene Barnett, Professor and Director of the Rose Ella Burkhardt Brain Tumor Center, Cleveland Clinic Talk Title: Introduction to laser thermal ablation

1:15-1:30

Veronica Chang, Associate Professor of Neurosurgery and Therapeutic Radiology, Yale School of Medicine Laser thermal ablation as treatment for medically intractable epilepsy

1:30-1:45

Clark C. Chen, Associate Professor and Vice Chair of Research and Academic Affairs, University of California, San Diego Clinical applications of laser thermal ablation in the treatment of brain metastasis

1:45-2:00

Alireza Mohammadi, Assistant Professor of Neurosurgery, Cleveland Clinic Laser thermal ablation in the treatment of primary brain cancer

2:00-2:15

Babak Kateb, Scientific Director and Chief Strategist, California Neurosurgical Institute (CNI), President of Brain Mapping Foundation, Founding Chairman of the Board of SBMT and Director of National Center for NanoBioElectronics (NCNBE). Microwave Ablation of Brain and soft Tissue Neoplasms

Q/A: 2:15-2:30 Break: 2:30-3:00 PM

<u>Session – B34</u> - Role of APOE in Alzheimer's Disease 1:00-2:30 PM

Co-Chair - Wes Ashford & Yadong Huang

1:00-1:15 **Yadong Huang,** Professor, University of California San Francisco (UCSF) Role of APOE structure in Alzheimer's disease

1:15-1:30 **Rammohan Rao,** Scientist, The Buck Institute Novel Transcriptional Role of ApoE4

1:30-1:45



Hussein Yassine, Department of Medicine Keck School of Medicine of University of Southern California ApoE4 hypolipidation in Alzheimer's disease

1:45-2:00 **Susanne Wilke**, CEO of Neurotrope APOE4 and Abeta Oligomer

2:00-2:15 **Roberta Brinton**, Director of Alzhimer's Program at University of Arizona Triad of Alzheimer's Risk: Age, Sex and ApoE4

Q/A: 2:15-2:30 Break: 2:30-3:00 PM

Session – B35 - Quantum Biology 1:00-2:30PM

Co-Chair: Keith Allen & Uttam Sinha

1:00-1:15 Uttam Sinha, Medical Director of Head and Neck Surgery at Keck Medical Center at USC: The Pathophysiology of Head and Neck Cancer and Quantum Links

1:15-1:30 Yung Ya Lin, Professor of Biophysics and Structural Biology at UCLA: Lecture on Early Brain Tumor Imaging by Fixed Point Quantum Dynamics in MRI

1:30-1:45 Li Zhao, Assistant Professor of Chemistry and Biochemistry at UCLA Early Pancreatic Cancer Detection by Sensitive Imaging of Magnetic Nanoparticles by "Nonlinear" Quantum Mechanics

1:45-2:00 **Keith Allen**, Professor with the American Nuclear Society and the American Registry of MRI Technology: Quantum Mechanics and the Application of the Theory to Gamma Knife Neurosurgery

2:00-2:15

Glen Rein, Former Professor, Mt. Sinai School of Medicine; Researcher, Quantum Biology lab in Santa Rosa CA The Physiological Significance of Exogenous and Endogenous Quantum Fields in Excitable Cells

Q/A: 2:15-2:30 Break: 2:30-3:00 PM

Session – B36 - NASA Technology & Innovation 3:00-4:30 PM

Co-Chairs: Ajitkumar P Mulavara & Paul Sherman



3:00-3:15

Roy Riascos, Associate Professor of Radiology ,Chief of Neuroradiology , Dept. of Diagnostic and Interventional Imaging ,The University of Texas Health Science Center at Houston.

7 year experience of scanning astronaut brains and orbits in the evaluation of VIIP.

3:15-3:30

Vipan K. Parihar, Assistant Professor, Dept. of Radiation Oncology; Medical Sciences I; University of California at Irvine Neurocognitive complications associated with exposure to cosmic radiation

3:30-3:45

Eric Bershad, Assistant Professor of Neurology and Space Medicine, Associate Director, Biomedical Innovation Laboratory, Center for Space Medicine, Section of Neurocritical Care and Vascular Neurology, Department of Neurology, Baylor College of Medicine

Results from SPACE-COT (Studying the Physiological and Anatomical Cerebral Effects of CO2 and Head Down Tilt): A ground based analog of Space Flight (Confirmed)

3:45-4:00

Stephen Mcguire, United States Armed Forces-US Air Force White matter hyperintensities (WMH) in U-2 pilots, astronauts, and chamber personnel - risk factors. Diffuse decrement in axonal function seen in U-2 pilots with repetitive exposure.

4:00-4:15

Alexander Stahn, Assistant Professor of Medical Science in Psychiatry, Unit for Experimental Psychiatry, Division of Sleep & Chronobiology, Department of Psychiatry

Brains on ICE – Effects of Isolation, Confinement and Extreme Environments (ICE) on Hippocampal Plasticity and Cognitive Performance.

4:00-4:30

Ajitkumar Mulavara, Affiliations: Senior Scientist, KBRwyle - Human Health and Performance Effects of space flight on functional performance

Q/A: 4:30-4:45

4:45-6PM Wine and Cheese at the Exhibition Hall

Session – B37 - Brain Mapping in Psychiatry & Psychology

3:00-4:30 PM

Chair - Allyson Rosen

3:00-3:15

Shantanu Joshi, Assistant Professor of Psychology at UCLA Structural and Metabolomic Profiles of ECT treatment response in Major Depression

3:15-3:30

Amber Leaver, Assistant Professional Researcher, Department of Neurology, UCLA David Geffen School of Medicine Neuro-functionalmechanisms and predictors of antidepressant response to ECT





3:30-3:45

Allyson Rosen, Associate Professor, Psychiatry and Behavioral Science, Stanford University School of Medicine Neuroimaging of Endovascular Procedures

3:45-4:00

Robert Bilder, Professor-in-Residence, City College, City University of New York, Clinical Psychology Psychiatry and Biobehavioral Sciences

4:00-4:15

Michael Sugrue, Assistant Professor of Oklahoma University Why the default mode matters: A Neurosurgeon's Perspective.

Q/A: 4:15-4:30 4:45-6PM Wine and Cheese at the Exhibition Hall

Session-B38 - 3:00-4:30 PM 2018 SBMT Committee meeting

<u>Session – B39</u> - Rehabilitation 3:00-4:30 PM

Chair - Linda Isaac

3:00-3:15 Salil Soman, Instructor of Neuroradiology Department for Neuroradiology at Beth Israel Deaconess Medical Center, Harvard Medical School

Advanced neuroimaging techniques in Traumatic Brain Injury

3:15-3:30

Adam R. Ferguson, Associate Professor and Principal Investigator & Biostatistician, Weill Institute for Neurosciences , Brain and Spinal Injury Center (BASIC) ,Department of Neurological Surgery ,University of California, San Francisco (UCSF), Principal Investigator, San Francisco VA Medical Center

Uncovering precision phenotype-biomarker associations in traumatic brain injury through multidimensional analytics

3:30-3:45

Reza Ehsanian, Clinical Research Manager, Rehabilitation Research Center, Santa Clara Valley Medical Center San Jose, CA, & Stanford University, Department of Neurosurgery Regenerative medicine for cervical spinal cord injury

3:45-4:00

Benjamin Dirlikov, Clinical Research Program Manager, Rehabilitation Research Center, Santa Clara Valley Medical Center San Jose, CA.

Title Talk: Multimodal imaging techniques for Traumatic Brain Injury

4:00-4:15

Sarah Lavoie, Staff Researcher, Santa Clara Valley Medical Center (SCVMC)



Prevalence and Management of Depression in Persons with TBI: longitudinal perspectives

Q/A: 4:15-4:30 4:45-6PM Wine and Cheese at the Exhibition Hall

Session – B40 - Radiation Oncology: New GBM Strategies (LLU CME Accredited) 3:00-4:30 PM

Co-Chairs: Reinhard Schulte & Jim Welsh

3:00-3:15

Karen Aboody, Professor, Department of Developmental & Stem Cell Biology and Division of Neurosurgery Developmental Cancer Therapeutics Program, City Of Hope, Beckman Research Institute Neural Stem Cell-Mediated Clinical Trials for High Grade Glioma

3:15-3:30

Mike Y Chen, Associate Professor, Neurosurgeon and Researcher, City Of Hope Division of Neurosurgery, Department of Surgery

4th Annual World Congress of Society for Brain Mapping and Therapeutics

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

Targeting Stem Cell Migration Pathways

3:30-3:45

Stephen Shiao, Assistant Professor, Department of Radiation Oncology. Health Sciences Assistant Professor, Department of Medicine Radiation Therapy and Immunotherapy, Cedars Sinai Medical Center, UCLA

3:45-4;00

Munjal Acharya, Assistant Professor, Neuroscience Researcher (Limoli Lab), Department of Radiation Oncology, University of California Irvine (UCI) Neural Stem Cell Rescue after Cancer Therapy"

4:00-4:15

Reinhard W. Schulte, Professor, Division of Biomedical Engineering Sciences, Department of Basic Sciences. Visiting Professor, Investigator Particle Therapy Research Program, Department of Radiation of Oncology, Loma Linda University, Ion beam radiation therapy for targeting glioblastoma stem cells

Q/A: 4:15-4:30

4:45-6PM Wine and Cheese at the Exhibition Hall

Session – B41 - Brain Therapeutics in Neurodegenerative disorders 3:00-4:30 PM

Chair - Wes Ashford

3:00-3:15 **Dan Alkon**, Rockefeller Neuroscience Institute Bryostatin for treatment of Alzheimer's disease



3:15-3:30 Nik Tezapsidis, CEO, Neurotez, Inc. Use of Leptin for Alzheimer treatment Leptin as a Novel Therapeutic Agent to Prevent and Treat Alzheimer's disease

3:30-3:45

Jayakumar Rajadas, Researcher, Stanford University TAU therapeutics – methylene blue

3:45-4:00

Dale Bredesen, Director, The Buck Institute Reversal of cognitive decline in Alzheimer s disease"

4:00-4:15

Joseph Cheng, Assistant Clinical Professor, Department of Psychiatry & Behavioral Sciences; Director of Neuroscience, WRIISC. Stanford University; VA Palo Alto HCS rTMS for treating Alzheimer's disease

Q/A: 4:15-4:30 4:45-6PM Wine and Cheese at the Exhibition Hall

<u>Session – B42</u> - Recent Technological Advancements in Virtual Reality & Augmented Reality 3:00-4:30 PM

Co-Chairs: Babak Kateb & Kim Bullocks

3:00-3:15 **Sonya Kim,** CEO & Founder, One Caring Team Talk Title: Transforming management of dementia and other chronic complex care problems with virtual reality

3:15-3:30

Stefano Baldassi, Director, Analytics and Neuroscience, Meta Company Talk Title: AR, Spatial Computing and the Interacting Brain

3:30-3:45

Henry Yu, CEO, Kalloc Studios Talk Title: VR/AR Collaboration Platform

3:45-4:00

Dan Mapes, CEO, Cyberlab 9 Inc Talk Title: VR plus AI - The Next Revolution in Science Research

4:00-4:15

Harry Kloor, CEO Jupiter 9 and PhoenixEyre, CEO Gendey; Member of the Board of Brain Mapping Foundation; Xprize, Jupiter 9 productions, Gendev Talk Title: Title: Title: the next generation of tools for building VR and AR worlds to advance humanity.

Q/A: 4:15-4:30; 4:45-6PM Wine and Cheese at the Exhibition Hall





DAY 3: Thursday April 20th, 2017, 14th Annual Congress



KEYNOTE SPEAKER #8: Rear Adm. Colin G. Chinn

DAY 3 - Keynote 8: Colin G. Chinn 8:30-9:00 am Acting Deputy Director Defense Health Agency; Director, J9, Research & Development



A native of San Francisco, Rear Adm. Colin Chinn graduated from Johns Hopkins University in 1979 with a bachelor's degree in public health and received a master's degree in epidemiology from Johns Hopkins University School of Public Health in 1982. After his commissioning as an ensign in 1981, he attended the Medical College of Virginia through the Armed Forces Health Professions Scholarship Program and earned a Doctor of Medicine in 1985. He completed an internal medicine internship and residency at Naval Hospital Oakland, serving as chief medical resident in 1990. Chinn completed gastroenterology fellowship training at Naval Medical Center San Diego in 1993.

Chinn has several tours with the Marine Corps. He was battalion surgeon with 3rd Reconnaissance Battalion, 3rd Marine Division from 1986–1987; group surgeon, 3rd

Force Service Support Group, III Marine Expeditionary Force from 1998–2000; and force surgeon, U.S. Marine Corps Forces Pacific from 2008–2010. He was selected as the Navy surgeon general specialty leader for Fleet Marine Forces during this tour.

Chinn has staff physician tours at Naval Hospital Corpus Christi from 1990–1991 where he served as head, internal medicine and laboratory medical director; and staff gastroenterologist and Independent Duty Corpsman Program director at Naval Medical Center San Diego from 1993–1998.

From 2000–2003 he was the director of Medical Services, Naval Hospital Okinawa. He served as the executive officer, Naval Hospital Lemoore from 2003–2006 and completed a two year tour as the 15th commanding officer of Naval Hospital, Oak Harbor from June 2006–June 2008.

From July 2010–February 2012, Chinn served as the director, TRICARE Region West/Pacific, overseeing managed care support contracts and an integrated health care delivery system in 31 countries and 21 states covering more the 3.1 million TRICARE eligible beneficiaries. He then served as director, Medical Resources, Plans and Policy division (N0931), Office of the Chief of Naval Operations from March 2012–June 2013 and as the 10th chief of the Navy Medical Corps from November 2011–February 2014.

His most recent assignment was command surgeon, U.S. Pacific Command (USPACOM) from July 2013–April 2016, responsible for USPACOM global health engagement activities in the Indo-Asia-Pacific region.

Chinn is currently assigned as director, Research, Development and Acquisition, Defense Health Agency.

Chinn is a Fleet Marine Force qualified officer. His personal decorations include the Defense Superior Service Medal, Legion of Merit with Gold Star, Meritorious Service Medal with two Gold Stars, Navy and Marine Corps Commendation Medal with two Gold Stars, Navy and Marine Corps Achievement Medal and various unit and service awards.

He is a fellow of the American College of Physicians, a member of Delta Omega (the National Public Health Honor Society) and an assistant professor in Medicine at the Uniformed Services University of Health Sciences (USUHS). He achieved board certification in internal medicine and gastroenterology by the American Board of Internal Medicine.





KEYNOTE SPEAKER #9: Dean Yamaguchi

DAY 3 - Keynote 9: Dean Yamaguchi 9:00 am- 9:30 am Associate Chief of Staff, Research & Development; Professor of Medicine In-Residence (UCLA), WEST-LA VA



Dr. Yamaguchi is the Associate Chief of Staff, Research & Development and Professor of Medicine In-Residence, VA Greater Los Angeles Healthcare System.



4th Annua Breaking Boundaries of Science, Technology, Medicine, Art, and Healthcare Policy

KEYNOTE SPEAKER #10: George Ojemann

DAY 3 - Lunch Time Keynote 10: George Ojemann 11:45 am-12:15 pm Professor Emeritus, Department of Neurological Surgery, the University of Washington School of Medicine



George Ojemann is a professor emeritus of neurologic surgery in the Department of Neurological Surgery at the University of Washington School of Medicine. His research focuses on the neurobiology of human cognition, particularly cortical organization for language and memory, which he investigates in the context of awake neurosurgery under local anesthesia. In order to study these aspects of cognition, Ojemann utilizes techniques ranging from electrical stimulation mapping to recording of activity of single neurons, which have resulted in methods for reducing the risk of cortical resections for epilepsy and tumors.

Ojemann received a B.A. in 1956 from the University of Iowa, having served in the Air Force wing of the ROTC and being elected to Phi Beta Kappa. He was awarded the University's Brigg's award on graduation for having the highest cumulative GPA for the four undergraduate years.

To begin Dr. Ojemann received a M.D. in 1959, from the University of Iowa. During that time, he had developed an interest in neurology, under the guidance of Dr. Adolph Sahs, best known for his work in the natural history of subarachnoid hemorrhage from aneurysms. During his medical school years, he had completed a rotation in neurosurgery as Massachusetts General Hospital. He received the MacEwen prize for top academic performance throughout medical school and was elected AOA president his junior year. He then completed training in the field of neurosurgery at King County Hospital (now Harborview Medical Center) in Seattle and the University of Washington, followed by further specialty training in surgical neurology at the National Institutes of Health.

Dr. Ojemann's career has combined clinical practices specializing in the surgical treatment of medically refractory epilepsy and brain tumors in functionally eloquent areas of the brain, with research into the neurobiology of human cognition particularly language and memory. These studies have been done in the context of awake operations under local anesthesia, utilizing techniques including electrical stimulation mapping and recording of single neuron activity. From them methods for reducing the risk of cortical resections were developed. For this work the Society of Neurological surgeons awarded him a prize for "Outstanding Continuous Commitment to Research in the Neurosciences by a Neurological Surgeon" (1984), the National Institute of Neurological Diseases and Stroke a Javits Neuroscience Award (1984), the Medical College of Ohio an honorary Doctor of Science degree (1998), the K.J. Zulch Prize of the Maz-Planck Society for Basic Neurological Research (2000), the Cloward Medal of the Western Neurosurgical Society (2003), and he received Distinguished Alumni Awards from the University of Iowa (1991) and the University of Washington Medical School (2014). He is a past Director of the American Board of Neurological Surgery (1987-1993, chairman 1992-3), a member of the Residency Review Committee for Neurosurgery (1993-97), and President of the American Academy of Neurological Surgery in 1999-2000. He was a member of the Advisory Committee of the National Institute of Neurological Diseases and Stroke (1997-2000) and that institute's Board of Scientific Counselors (1985-89). He Also, served as a military surgeon for the United States Public Health Service from 1964-66 where he then returned to Seattle in 1966, he has been affiliated with the neurosurgical faculty at UW since that time. He was board certified in 1967 by the American Board of Neurological Surgery. He is now married to Dr. Linda Moretti, a neurologist with shared interests in the treatment of epilepsy. They have three children, all physicians: two neurological surgeons.



KEYNOTE SPEAKER #11: Cong. Jerry McNerney

DAY 3 - Lunch Time Keynote 11: Jerry McNerney 12:15-12:45 pm U.S. Representative for California's 9th Congressional District



Congressman Jerry McNerney was sworn into office on January 4, 2007. He is proud to represent California's 9th District, which includes a large portion of San Joaquin County in the Central Valley as well as parts of Contra Costa and Sacramento Counties.

McNerney was inspired to run for Congress by his son Michael, who in response to the attacks of September 11, sought and received a commission in the Air Force. Michael suggested that his Dad serve his country by running for Congress. With a deep sense of duty and his family's support, McNerney began his journey to Congress.

Congressman McNerney is honored to serve on the Committee on Energy and Commerce, the oldest standing legislative committee in the U.S. House of Representatives. The committee is vested with broad jurisdiction on a number

of issues including telecommunications, consumer protection, food and drug safety, public health research, environmental quality, energy policy, and interstate and foreign commerce. The Congressman is also proud to be a member of the House Committee on Veterans' Affairs, where he continues to work to make sure our nation's veterans get the care and benefits they've earned.

McNerney, who has his Ph.D. in mathematics, served several years as an engineering contractor to Sandia National Laboratories in New Mexico. In 1990 McNerney moved with his family to California, accepting a senior engineering position with U.S. Windpower, Kenetech. McNerney later began working as an energy consultant for PG&E, FloWind, the Electric Power Research Institute, and other utility companies. Prior to his election to Congress, he formed a start-up company to manufacture wind turbines. During his career in wind energy, McNerney's work contributed to saving the equivalent of approximately 30 million barrels of oil, or 8.3 million tons of carbon dioxide.

McNerney and Mary, his wife of 32 years, have three grown children. Their oldest son, Michael, is a reserve officer in the U.S. Air Force and a graduate of American University with a degree in law. Daughter Windy received a Ph.D. from Notre Dame in neuroscience and is working as a Post Doctorate researcher in Neurotoxicology at Lawrence Livermore National Labs. Their youngest son, Greg, received his Ph.D. in biophysics and is working as an engineer at Intel Corporation.



4th Annua Breaking Boundaries of Science, Technology, Medicine, Art, and Healthcare Policy

Thursday April 20th, 2017, 14th Annual Congress

8:30 am-9:00 am- Keynote 8: Rear Admiral Colin G. Chinn

Acting Deputy Director Defense Health Agency; Director, J9, Research & Development Overview of Defense Health Program Research on Psychological Health & Traumatic Brain Injury

9:00 am- 9:30 am- Keynote 9: Dean Yamaguchi

Associate Chief of Staff, Research & Development; Professor of Medicine In-Residence (UCLA), WEST-LA VA VA Research and Development

11:45 am- 12:15 pm- Luncheon Keynote 10: George Ojemann

Professor Emeritus, Department of Neurological Surgery, the University of Washington School of Medicine What We Learned about Human Memory with Awake Surgery

12:15 pm- 12:45 pm- Luncheon Keynote 11: Congressman Jerry McNerney

U.S. Representative for California's 9th Congressional District *Neuroscience Legislation*

Session - C43 - Translational Technologies

10:00-11:30 AM

Chair – John George

10:00-1:15 **William Tyler,** Associate Professor, Acoustic Neuromodulation Affiliations: Arizona State University, Biological and Health Systems Engineering Acoustic Neuro modulation

1:15-10:30

John George, R&D Scientist and Deputy Group Leader, Los Alamos National Laboratory: Applied Modern Physics, P-21 Technologies for Focusing Ultrasound Inside the Skull

10:30-10:45

Vince Clark, Director, Psychology Clinical Neuroscience Center, Professor of Psychology and Neuroscience, Professor of Translational Neuroscience, The University of New Mexico. The MIND Research Network. Noninvasive Neuromodulation by Direct Electrical Stimulation

10:45-11:00

Pulak Nath., Research and Development Scientist, Los Alamos National Laboratory: Applied Modern Physics, P-21 Strategies for a Biohybrid Neural Interface

11:00-11:15

Giorgio Bonmassar, Assistant Professor, Driving Neurons with Microscopic Magnetic Stimulation Harvard Medical School, Harvard/MIT/MGH Martinos Center for Biomedical Imaging.

Q/A 11:15-11:30; Lunch and Luncheon Keynotes 11:30 AM-1:00 PM


Session - C44 - Brain Mapping and Therapeutics in Skull Base and Tumors 10:00-11:30 AM

Co-Chairs: Martin Mortazavi & Laligam Sekhar

10:00-10:15

Tiffany Powell Avila, Attending Neurosurgeon, Providence Holy Cross Controversies on Modern Glioma Management.

10:1<mark>5</mark>-10:30

Bjorn Lobo, Attending Neurosurgeon, Northridge Hospital/California Neurosurgical Institute Controversies in Endoscopic Skull Base Surgery

10:30-10:45

Laligam Sekhar, Professor and Vice Chairman, Department of Neurological Surgery, Harborview Medical Center, UW Medicine, Harborview Medical Center, University of Washington Management of TuberculumSella and Olfactory Groove Meningioma and New Classification

10:45-11:00

Martin M. Mortazavi, Attending Neurosurgeon. Director, Cerebrovascular and Skull Base program California Institute of Neuroscience, Los Robles Hospital. Medical Staff at Cedars Sinai Medical Center The role of safe entry zone for resection of brain stem lesions

11:00-11:15

Laligam Sekhar, Professor and Vice Chairman, Department of Neurological Surgery, Harborview Medical Center, UW Medicine, Harborview Medical Center, University of Washington Approaches and controversies in management of Brainstem lesions

Q/A 11:15-11:30 Lunch and Luncheon Keynotes 11:30 AM-1:00 PM

Session - C45 - Digital Brain Mapping (Virtual Reality, Augmented Reality & Gamming) 10:00-11:30 AM

Co-Chairs: Kim Bullock & Babak Kateb

10:00-10:15

P. Elizabeth Amini, Adjunct Professor, USC Marshall School of Business, CEO & Co-Founder, Anti-Aging Games, LLC, President & Co-Founder, Trojan CEO Network The Future of Scientific Games in Neuroscience

10:15-10:30

Angelika Domschke, President, AD Consulting, LLC, (Innovation in Biomedical Science), Atlanta, GA, USA The effects of various stimuli on the brain that promote health: A new paradigm in health education.

10:30-10:45

Wes Ashford, Clinical Professor (affiliated), Affiliations: Department of Psychiatry and Behavioral Sciences, Stanford; VA



Palo Alto HCS) MemTrax: an internet tool for assessing memory function used in the Brain Health Registry

10:45-11:00

Carr J. Smith, Teaching Faculty, Florida State University Nurse Anesthesia Program Non-Invasive MemTrax Evaluation of Episodic Memory Pre- and Post-General Anesthesia for Cardiac Surgery

11:00-11:15

W. Edward Johansen, Regulatory consultant Navigating FDA regulations to clear tools for brain function assessment. Example: computerized cognitive testing

Q/A 11:15-11:30 Lunch and Luncheon Keynotes 11:30 AM-1:00 PM

Session - C46 - Neurophotonic and Brain Mapping 10:00-11:30 AM

Co-chairs: Vassiliy Tsytsarev & Fartash Vasefi

10:00-10:15 **Mohamadreza Avanaki,** Assistant Professor of Wayne University Photoacoustic Imaging: A Novel Neuroimaging Modality to Explore The Brain

10:15-10:30 Nasser H. Kashou, Associate Professor, Wright State University Potential of fNIRS to monitor and assess touch therapy

10:30-10:45 **Sebastian (Nino) Karpf**, Postdoctoral Fellow, University of California Los Angeles Spectro-temporal Multiphoton Microscopy

10:45-11:00 **Ning Zhong,** Head of Knowledge Information Systems Laboratory, Department of Life Science and Informatics, Maebashi Institute of Technology, Japan Brain Big Data Based Wisdom Service A Brain Informatics Based Systematic Approach

11:15-11:30 **Deborah Zelinsky,** The Mind-Eye Connection, Northbrook, IL USA The pivotal role of the retina photonics in CNS changes

Q/A 11:30-11:45 Lunch and Luncheon Keynotes 11:45 AM-1:00 PM

Session - C47 - Brain vascular, Blood flow, Fractal Geometry & Computational Clinical Neuroscience 10:00-11:30 AM



Chair - Antonio Di Ieva

Ruogu Fang, Assistant Professor School of Computing and Information Sciences, Florida International University Big Medical Data for Brain Informatics

Antonio Di leva, Attending Neurosurgeon, Associate Professor of Neuroanatomy Macquarie University, Sydney, Australia The Fractal Fingerprinting of the Brain

Misha Pesenson, Sr. Res. Scientist, JCAP, California Institute of Technology Neuronal Networks and Adaptive Multiscale Information Processing

Renaud Lopes, Research Scientist, Clinical imaging core facility, Univ. Lille, Inserm, CHU Lille, U1171 – Degenerative & vascular cognitive disorders, F-59000 Lille, France Study of self-similarity of brain networks in Parkinson disease

Sakhrat Khizroev, Fellow of National Academy of Inventors, Professor, Department of Electrical and Computer Engineering, CEC. Professor, Department of Cellular Biology and Pharmacology, FIU, Miami, FL Technobiology approach to treating neurodegenerative diseases with magnetoelectric nanoparticles.

Q/A 11:15-11:30 Lunch and Luncheon Keynotes 11:30 AM-1:00 PM

Session - C48 - New Directions for Alzheimer and TBI Therapy 10:00-11:30 AM

Co-Chairs: Wes Ashford & Michael Harrington

J. Wesson Ashford, Clinical Professor (affiliated); Director, War Related Illness & Injury Study Center, Stanford University; VA Palo Alto HCS, New concepts to attack Alzheimer's disease

Julie Zissimopoulos, Professor, Price School of Public Policy, Schaeffer Center for Health Policy and Economics, University of Southern California Sex and Race Differences in the Association between Statin Use and Incidence of Alzheimer Disease

Seong S. Shim, Associate Professor of Psychiatry and Behavioral Sciences, Emory University School of Medicine; Atlanta VA Medical Center Neuroprotective actions of lithium in treatment of Alzheimer's disease and traumatic brain injury

Alfred N. Fonteh, Senior Biochemist, Huntington Medical Research Institutes, Information in the particulate fraction of CSF for understanding Alzheimer's disease.

Michael Harrington, Director of Neurosciences, Huntington Medical Research Institutes, Magnetoencephalography; resting state MEG detects changes in acute mTBI, and source connectivity analysis can assess patient recovery.



Q/A 11:15-11:30 Lunch and Luncheon Keynotes 11:30 AM-1:00 PM

Session - C49 - Imaging update in Spinal cord (City of Hope CME Session) 10:00-11:30 AM

Co-Chairs: Mike Chen & Ehsan Saadat

Sharmila Majumdar, Professor and Vice Chair; Director Musculoskeletal Quantitative Imaging research Group Quantitative Imaging of Intervertebral Disc, and Tissues Implicated in Lower Back Pain

Pablo Villablanca, Professor, Diagnostic Neuro radiology; Director, Interventional Spine Service; Medical Director of MRI Latest breakthroughs in MR imaging of the spine

J Patrick Johnson, Professor of Neurosurgery and Director of Spine, Cedars-Sinai Department of Neurosurgery, Advances in Spine Neurosurgery

Hassan Monfared, Assistant Professor; Residency Program Director; Rehabilitation Medicine Dept. Spinal cord stimulator use in back pain and spinal cord injury

Analiz Rodriguez, Neurosurgical Oncology Fellow CAR T cell therapy for malignant glioma

Q/A 11:15-11:30 Lunch and Luncheon Keynotes 11:30 AM-1:00 PM

Session - C50 - NanoNeuroscience & Nanoneurosurgery 1:00-2:30 PM

Co-Chairs: Ajeet Kaushik & Babak Kateb

1:00-1:15

James K. Gimzewski, Distinguished Professor, UCLA Chemistry & Biochemistry Department, Faculty Director, UCLA CNSI Nano & Pico Characterization Core Facility, Scientific Director, UCLA Art|Sci Center, Principal Investigator & Satellites Co-Director, WPI Center for Materials NanoArchitectonics, (MANA), NIMS, Japan

1:15-1:30

Sylvain Martel, Professor, Department of Engineering, ÉcolePolytechnique de Montréal, Montreal, QC, Canada Delivering therapeutics with natural nanorobots.

1:30-1:45

Ioan Opris, Associate Scientist, University of Miami, University of Miami, Miller School of Medicine, Miami, FL, USA From magnetic nanowires to brain memory

1:45-2:00

Roozbeh Moshaie, Research Scientist, Center of Personalized Nanomedicine, Florida International University High nano-electro-poration of drug-nano-carrier inside the brain cells



2:00-2:15

Ajeet Kaushik, Assistant Professor, Center of Personalized Nanomedicine, Florida International University Magnetically guided brain delivery of drug-nano-carrier to the brain

Q/A: 2:15-2:30 PM Coffee Break 2:30-3:00 PM

Session - C51 - Multimodality Imaging (CME Accredited by Cedars-Sinai Medical Center) 1:00-2:30PM

Co-Chairs: Wei Gao & Aaron Filler

1:00-1:15

Mitch Albert, Lake head University, Thunder Bay Regional Research Institute, Thunder Bay, ON, Canada Hyperpolarized xenon functional MRI of the brain

1:00-1:15

Aaron G. Filler, Medical Director, Institute for Nerve Medicine, Cedars Sinai Medical Center – Los Angeles, CA; Institute for Nerve Medicine – Santa Monica, CA Methodology for Analysis of DTI Images in the Setting of Brain Injury with Memory Loss

1:15-1:30

Kevin King, Director of Imaging, Huntington Medical Research Institutes Using MRI to dissect vascular contributions to brain disorders

1:30-1:45

Ben Dirlikov, Center for Neurodevelopmental and Imaging Research, Kennedy Krieger Institute Impact of Comorbid ADHD on Cortical Morphology in Children with Autism Spectrum Disorder

1:45-2:00

Alexander Ring, Chief Scientist, Newport Brain Research Laboratory, EEG-Guided Neuromodulation in Post-Traumatic Stress Disorder

Q/A: 2:15-2:30 PM Coffee Break 2:30-3:00 PM

Session – C52 - Autsim

1:00-2:30 PM

Co-Chairs: Margaret Fahnestock & Linda Isaac

1:00-1:15 PM

Charlotte DiStefano, Postdoctoral Fellow, Psychiatry & Bio-behavioral Sciences, University of California, Los Angeles UCLA), Semel Institute for Neuroscience Neurophysiological Markers of Minimally Verbal Children with Autism



4th Annua Breaking Boundaries of Science, Technology, Medicine, Art, and Healthcare Policy

1:15-1:30

Anca M. Pasca, Clinical Fellow, Neonatal and Developmental Medicine, Stanford University Modeling human cerebral cortex development using pluripotent stem cells.

1:30-1:45

Michael J Gandal, Psychiatry resident, PGY4, UCLA Semel Institute for Neuroscience and Human Behavior Using Genomics to Inform the Molecular Pathology of Autism and Major Neuropsychiatric Disorders

1:45-2:00

Mollie Meffert, Associate Professor of Biological Chemistry and Neuroscience, Johns Hopkins University School of Medicine

Dysregulated Posttransciptional Control of Gene Expression associated with Autism Spectrum Disorder

2:00-2:15

Margaret Fahnestock, Professor, Department of Psychiatry & Behavioural Neurosciences, McMaster University Activation of TrkB-Akt Signaling Rescues Autistic-Like Behavior in a Mouse Model of Autism

Q/A: 2:15-2:30 PM Coffee Break 2:30-3:00 PM

Session - C53 - Neuroinflammation in Alzheimer's Disease

1:00-2:30

Chair: Maya Koronyo-Hamaoui

1:00-1:15

Maya Koronyo-Hamaoui, Associate Professor, Neurosurgery & Biomedical Sciences, Departments of Neurosurgery & Biomedical Sciences, Maxine Dunitz Neurosurgical Institute, Cedars-Sinai Medical Center, Los Angeles, California Macrophage-mediated synaptic rescue in Alzheimer's disease models

1:15-1:30

Christopher J. Wheeler, Associate Professor, Neurosurgery, Department of Neurosurgery, Cedars-Sinai Medical Center Aberrant, age-related T cells induce Alzheimer's-like hallmarks in mice

1:30-1:45

Sally Frautschy, Professor, Neurology, Department of Neurology, University of California, and Geriatric Research Education and Clinical Center, Veterans Administration, Los Angeles, California Divergent effects of complement associated neuroinflammation on tau and abeta pathogenesis in a genomic model of neurofibrillary tangles

1:45-2:00

Konrad Talbot, Associate Research Professor, Neurology, Department of Neurology, UCLA Neuroinflammation-Induced Brain Insulin Resistance and Its Treatment with Antidiabetic Incretin Receptor Agonists

2:00-2:15

Gregory M. Cole, Professor, Neurology; Director (Interim) of Mary S. Easton Alzheimer Center, UCLA/ Assoc Director GRECC Research, Greater Los Angeles Veterans Affairs, Departments of Neurology and Medicine, University of



California, and Geriatric Research Education and Clinical Center, Veterans Administration, Los Angeles, California Therapeutic Control of Innate Immune Gene Expression and Alzheimer's

Q/A: 2:15-2:30 PM Coffee Break 2:30-3:00 PM

Session – C54 – Cerebrovascular

1:00-2:30 PM

Co-Chairs: Laligam Sekar & Martin Mortazavi

1:00-1:15

Andrei Alexandrov, Professor & Chairman, Dep. Of Neurology, University of Tennessee, Memphis Evolving role of Ultrasound in Stroke Management.

1:15-1:30

Asif Taqi, Director of Neuro-intervention at California Institute of Neuroscience, Los Robles Hospital Evolving Role of Endovascular Intervention in Complex Aneurysm.

1:30-1:45

Nestor Gonzalez, Professor, Dep. Of Neurosurgery, Cedars Sinai Medical Center, Cedars Sinai Medical Center Current Concepts in Treatment of MoyaMoya Disease.

1:45-2:00

Laligam Sekhar, Professor and Vice Chairman, Department of Neurological Surgery, Harborview Medical Center, UW Medicine, Harborview Medical Center, University of Washington Technical Advance in Treatment of Basilar tip aneurysms

2:00-2:15

Martin M. Mortazavi, Neurosurgeon. Director, Cerebrovascular and Skull Base program, California Institute of Neuroscience (CIN), Los Robles Hospital. Cedar Sinai Medical Center Falxuplication: A new Technique for wrap-clipping of Fursiform ACA-Aneurysms

Q/A: 2:15-2:30 PM Coffee Break 2:30-3:00 PM

Session – C55 - Commercialization (Roundtable Discussion) 1:00-2:30 PM

1.00-2.30 PW

Chair: Michael Samardzija

Michael Samardzija, Associate Vice President of Research Development, Loma Linda University Health Michael Sawitz, Chief Strategy Officer, MedDevCo,

Anthony DiTonno, President & CEO, Avantis Medical Systems,

Kara Bortone, Director of Venture Sourcing & Development, J&J Labs San Diego,

William Brammer, Attorney at Law, VP of Legal Affairs, Member of the Advisory Board, Brain Mapping Foundation Aaron Filler, Past President of SBMT, VP of Legal Affairs, SBMT, Director of Nerve Medical Institute



Q/A: 2:15-2:30 PM Coffee Break 2:30-3:00 PM

Session – C56 - Neuromodulation-Therapeutics 1:00-2:30 PM

Co-Chairs: Mark Liker & Antonio DeSalles

1:00-1:15

Antonio De Salles, Professor Emeritus, Neurosurgery, UCLA; Head HCor Neuroscience, HCor Neurosciences, Brazil Deep Brain Stimulation for Morbid Obesity

1:15-1:30

Mark Liker, Assistant Professor of Neurosurgery, USC Keck-School of Medicine, Affiliations: Chairman CEO of California Neurosurgical Institute

Deep Brain Recordings as a Paradigm for Brain Computer Interface

1:30-1:45

Jeffrey M. Chung, Neuromodulation for Medically Refractory Epilepsy: When the Pen is Mightier Than the Knife Director, Epilepsy and Clinical Neurophysiology Programs, Cedars-Sinai Medical Center, Health Sciences Associate Clinical Professor of Neurology, David Geffen School of Medicine at UCLA

1:45-2:00

Terence D. Sanger, University of Southern California, Lee/Ramo Chair in Health Science and Technology; Dept. Biomedical Engineering, Child Neurology and Movement Disorders, Children's Hospital Los Angeles, Div. Neurology DBS Targeting based on recording and stimulation from 160 intracranial test electrodes

2:00-2:15

Chris DeGiorgio, Professor and Vice Chairman, UCLA Department of Neurology Block Chair, Medical Neurosciences Chief of Neurology, Olive View-UCLA Medical Center Neuromodulation

Q/A: 2:15-2:30 PM Coffee Break 2:30-3:00 PM

Session – C57 - Duel Use of NASA Technology in Space & Medicine

3:00-4:30 PM

Co-Chairs: Ajitkumar P. Mulavara & Eric Bershad 3:00-3:15 Paul Sherman, Col, United States Air Force, MC, SFS Single Hypobaric Exposure Changes: Upregulation of Cerebral Blood Flow and Depression of Metabolic Activity

3:15-3:30

Alex Stahn, Assistant Professor of Medical Science in Psychiatry, Unit for Experimental Psychiatry, Division of Sleep & Chronobiology, Department of Psychiatry, Perelman School of Medicine, University of Pennsylvania, Neurobehavioral Changes associated with 60 Days of Bed Rest With and Without Exercise As a Countermeasure.



3:30-3:45

Eric Bershad, Assistant Professor of Neurology and Space Medicine, Associate Director, Biomedical Innovation Laboratory, Center for Space Medicine, Section of Neurocritical Care and Vascular Neurology, Department of Neurology, Baylor College of Medicine

Non-invasive Technologies for Monitoring Brain Health in Space/Training Astronauts to Perform Lumbar Puncture in Space

3:45-4:00

Jessica Kohene, Physical Scientist, Center for Nanotechnology, NASA Ames Research Center Carbon Nanofiber Electrode for Neurochemical Monitoring.

4:00-4:15

Ajitkumar P. Mulavara, KBRwyle - Human Health and Performance Contract/NASA-JSC. Stimulation of vestibular system to aid as countermeasure to facilitate recovery after space flight.

Greg Nelson, Professor Basic Sciences, Division of Radiation Research, School of Medicine , Loma Linda University Radiation effects on long duration space flight

Q/A 4:15-4:30

Session - C58 - Brain Trauma, Mapping & Therapeutics in Skull Base and Tumors

3:00-4:30 PM

Chair – Martin Mortazavi

3:00-3:15

Casey G. Batten, Director Of Primary Care Sports Medicine, Kerlan-Jobe Orthopaedic Clinic. Team Physician LA Rams Molecular Pathophysiology of Concussion

3:15-3:30

Jason Cormier, Neurosurgeon, Lafayette Surgical Specialty Hospital. NASCAR. Motorsports Safety Group Safety Initiative, Racing is a Contact Sport

3:30-3:45

Ian Armstrong, Director of Spine Program. California Institute for Neuroscience, Los Robles Hospital and Medical Center Neurosurgical Applications of VR -Virtual Reality; Current and Future

3:45-4:00

Casey G. Batten, Director Of Primary Care Sports Medicine, Kerlan-JobeOrthopaedic Clinic. Team Physician LA Rams Game Day Identification and Management of Concussion

4:00-4:15

Amer Khalil, Neurosurgeon. California Institute of Neuroscience, Los Robles Hospital; University of California, Irvine Neuro-Spinal Scaffolds in the Treatment of Traumatic Spinal Cord Injuries.

Q/A 4:15-4:30



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

<u>Session – C59</u>-3:00-4:30 PM 2018 SBMT Committee Meeting

Session – C60</mark>-3:00-4:30 PM SBMT CME Committee meeting

Session – C61 - Neuro Endoscopy & Brain Mapping in Skull Base neurosurgery 3:00-4:30 PM

Co-Chairs: Bijorn Lobo & Nester Gonzales

3:00-3:15 Bjorn Lobo, Attending Neurosurgeon, California Neurosurgical Institute Application of photonics in neuroendscopy

3:15-3:30 Nestor Gonzalez, Professor of Neurosurgery, Cedar-Sinai Medical Center Angiogenesis in Intracranial Arterial Stenosis

3:30-3:45 Geoff Colby, Assistant Professor of Neurosurgery, Johns Hopkins University dvances in minimally invasive treatment of brain aneurysms.

3:45-4:00

Sumeet Vadera, Assistant Professor of Neurosurgery, University of California - Irvine, Advances in Epilepsy Surgery and Brain Mapping

4:00-4:15

Fawaz Al-Mufti, Fellow in Endovascular Neurosurgery, Rutgers University - New Jersey Medical School Trials and Tribulations of Subarachnoid Hemorrhage-Induced Vasospasm and Delayed Cerebral Ischemia: Future Perspectives

Q/A 4:15-4:30

Session – C62 - Diagnostics & Therapeutics of Prion Diseases 3:00-4:30 PM

Co-Chairs: Russ Lebovitz & Eduardo Caverzasi

3:00-3:15

Michael Geschwind, Professor & Michael J. Homer Chair in Neurology, Memory and Aging Center, Department of Neurology, University of California, San Francisco Clinical aspects of and research in human prion disease

3:15-3:30

Claudio Soto, Professor of Neurology & Director, George and Cynthia W Mitchell Center for Alzheimer's Disease and



Other Related Brain Illnesses, University of Texas at Houston, High sensitive detection of prions and prion-like misfolded oligomers in neurodegenerative diseases

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3:30-3:45

Byron Caughey, Senior Investigator & Chief TSE/Prion Biochemistry Section, Rocky Mountain Labs, NIAID, NIH, Detection and diagnosis of prion diseases and tauopathies with RT-QuIC assays

3:45-4:00

Eduardo Caverzasi, Radiologist, Dept. of Neurology, University of California, San Francisco & Biomedical Sciences Phd, Department of Brain and Behavioral Sciences, University of Pavia, Pavia, Italy, State of the art of MRI in CJD

4:00-4:15

Christina Sigurdson, Professor, Department of Pathology, UC San Diego & the Department of Pathology, Microbiology, and Immunology, UC Davis, University of California, San Diego Chronic Wasting Disease

Q/A 4:15-4:30

Session – C63 - Neuroplasticity in Medical Illnesses and Psychiatric Syndromes

3:00-4:30 PM

Co-Chairs: Hamlin Emory & Allyson Rosen

3:00-3:15

Ian Cook, Associate Professor of Psychiatry and Biobehavioral Sciences, University of California Los Angeles Challenges of TMS for Depression

3:15-3:30

Nasser Kashou, Assistant Professor, School of Engineering, Wright State University The Potential of fNIRS to monitor and assess touch therapy

3:30-3:45

Neptune Mizrahi, Chief Scientific Officer, iNseron inc, iNseron inc, Emory Institute Neuroplasticity in Depression and Type 1 Diabetes.

3:45-4:00

Hamlin Emory, Director, Emory Institute A Neurotherapeutic Approach to Cardiovascular Diseases and Psychiatric Syndromes

4:00-4:15

Wes Ashford, Professor/Director War Related Illness & Injury Study Center, Stanford School of Medicine/Palo Alto VAMC Plasticity in Alzheimer's Disease

Q/A 4:15-4:30



AWARDS

Beacon of Courage and Dedication Award

The Beacon of Courage and Dedication Award is presented to individuals who have demonstrated extraordinary courage and dedication for increasing awareness about neurological diseases, and for patients and their families who have exceeded expectations in fighting a neurological disorder with unprecedented courage. The Beacon Award identifies remarkable individuals who set the highest standards for increasing awareness of, and fighting, neurological diseases.

2017 Award Recipient: Travis Roy

Past Award Recipients:	
2016 - William Kyle Carpenter	2010 - The Honorable Tammy Duckworth
2015 - Professor Stephen Hawking	2009 - SGM Colin R. Rich and ABC News
2014 - Sharn McNeill	Anchor Bob Woodruff
2013 - Beth Nielsen Chapman, Brain Tumor Survivor,	2008 - Dustin Hoffman (Two time Oscar Winner)
Singer/Songwriter	2007 - Dr. Behnam Badie
2011 - Drs. Minoru Freund, Gabrielle Giffords	2005 - Dr. Soraya Khalilian
2010 - The Honorable Tammy Duckworth	2004 - Dr. Jennifer Neale

Pioneer in Medicine Award

The Pioneer in Medicine Award is presented to individuals who have significantly contributed to the scientific advancement in the fields of medicine and image guided therapy through a multidisciplinary approach. Their groundbreaking contributions have made development of state-of-the-art technology and scientific discovery a reality.

2017 Nominees: John Adler and George Ojemann

Past Award Recipients:

2016 - Drs. Aaron G. Filler, Ted Berger, Bennet Omalu

2015 - Drs. Albert "Skip" Rizzo, Babak Kateb , Pantaleo Romanelli

2014 - Professor Kuldip Sidhu

2013 - Drs. Maya Koronyo-Hamaoui, Yosef Koronyo, Robert H. Kraus Jr, Margie L. Homer, Shouleh Nikzad, Rafat Ansari, Wieslaw L. Nowinski

2012 - Drs. Andres Lozano, Antonio DeSalles, George Paxinos

2011 - Patrick Soon Shiong

2010 - Dr. Andrew Schwartz, Dr. Jonathan Wolpaw, Dr. John Donoghue

2009 - Drs. Peter Black and Keith L. Black

2008 - Dr. Ron Kikinis

2007 - Drs. Richard Frakowiack, Arthur W. Toga and John Mazziotta

- 2006 Drs. Alim Louis Benabid and Warren Grundfest
- 2005 Drs. Ferenc Jolesz and Ken Curley
- 2004 Dr. Peter Gruen



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Golden Axon Award

The Golden Axon Award is presented to individuals outside of the medical community who inspire with good will and an enthusiastic interest in science, technology and medicine. Named for the neuron cell fiber that carries outgoing messages to other target cells, the founding principle of the Axon Award is to recognize a highly regarded individual in the public sector who helps raise awareness and funding of SBMT and its mission in the community via fundraising event (s) and activities.

2017 Award Recipient: Michael Roy and Wes Ashford Past Award Recipients:
2016 - Ken Green, Vicky Yamamoto
2015 - Tim Kring

- 2012 Drs. Michael Chen , Michael Fehlings, Cheryl Rogers
- 2010 Joel Ross, Peter Gailey

Humanitarian Award

Humanitarian Award is given to physicians and scientists who have contributed significantly to survival and quality of life of patients across the Globe.

2017 Award Recipient: N/A

Past Award Recipients:

- 2015 William S. Wood and Lenore Stein-Wood
- 2014 Professor Charlie Teo
- 2013 Ming Hsieh, Founder of Cogent Inc.
- 2012 Geoffrey Ling
- 2011 Drs. Henry Marsh and Rocco Armonda



Pioneer in Healthcare Policy Award

The Pioneer in Healthcare Policy Award is presented to lawmakers who have demonstrated visionary and crossdisciplinary approaches to introducing laws that have contributed to the advancement of science, technology, education, and medicine. They have paved the way to better integration of such advancements in other fields, like medicine and neuroscience. These lawmakers champion better healthcare for all.

2017 Award Recipient: Congressman Jerry McNerney

Past Award Recipients:

- 2016 Congressman Andy Harris
- 2015 Congresswoman Maxine Waters
- 2014 Tony Abbott, Congressman Chaka Fattah
- 2013 US President Barak Obama, Representatives Cathy McMorris Rodgers, Earl Blumenauer, James Moran
- 2012 Member of Parliament Kirsty Duncan
- 2010 US President Barak Obama, Senator Harry Reid
- 2009 Senator John Kerry
- 2008 Governor Arnold Schwarzenegger
- 2007 Madam Speaker Nancy Pelosi and Senator Edward Kennedy
- 2005 Senator Barbara Boxer

Pioneer in Technology Award

The Pioneer in Technology Award is presented to the trail blazing companies and their CEOs/presidents who have facilitated the development of pioneering technologies through interdisciplinary approaches that have impacted diagnostics, treatment, and healthcare delivery in unprecedented ways.

2017 Award Recipient: Afsaneh Rabiei, Prof. Mechanical & Aerospace Engineering, North Carolina State University

Past Award Recipients:

2016 - Chenzhong Li, Director of the Nanobioengineering / Bioelectronics Lab, Professor Biomedical Engineering, Florida International University

- 2015 Brian M. Krzanich, CEO of Intel
- 2013 Eric M. Bailey, President, CEO, Founder, Neurologica, Reese S. Terry Jr., Co-founder of Cyberonics
- 2012 Kevin Lobo, Group President, Orthopaedics Stryker Corporation
- 2009 William A Hawkins, Chairman and CEO of Medtronic
- 2008 Mark L. Vachon, GE Healthcare
- 2007 Steve Rusckowski, Philips Healthcare
- 2006 Carl O'Connell, CEO of Carl Zeiss Inc.



Travis Roy



Travis Roy first put on ice skates when he was just 20 months old. As years passed, his love for the game of hockey quickly became a passion. In the fall of 1995 Roy accomplished one of his dream goals by earning a hockey scholarship to Boston University. At twenty-years of age he entered into his first collegiate hockey game. Eleven seconds into his first shift, his life changed forever as he crashed into the boards and cracked his fourth and fifth cervical vertebra, paralyzing him from the neck down.

Despite this ill twist of fate, Roy has continued to persevere and defy the odds. With an intense rehabilitation regime, he has regained some movement in his right arm. While coming to grips with his life as a quadriplegic, he returned to Boston University less than a year after his accident. Four years later, he graduated with a degree in public relations from Boston University's prestigious College of Communication. In the storied history of BU Terriers hockey, Roy's #24 is the only jersey to have been retired.

In 1997 Roy wrote his autobiography with Sports Illustrated's E.M. Swift titled Eleven Seconds which chronicles his accident, rehabilitation, and perseverance through personal tragedy. Eleven Seconds was updated in 2005 with an 'Afterword' chapter and is currently in its sixth printing. An articulate advocate for individuals living with spinal cord injuries, Roy is a frequent speaker on the hope research carries and the need for increased funding. He has testified before a US Senate Committee hearing for The National Institute of Health in Washington, DC, addressed the Massachusetts state legislature and provided testimony to the Maine state legislature. In 1997, he founded the Travis Roy Foundation, a 501 (c)(3) nonprofit that focuses on finding a cure for spinal cord injuries and provides grants to spinal cord injury survivors in financial need to help them purchase the costly adaptive equipment necessary to live more active and independent lives.

Actively involved in the activities of the Foundation that bears his name, Roy is a popular motivational speaker. A Boston, MA resident, he spends his summers with his family on Lake Champlain in Vermont. Roy can also be found supporting his Terriers at Boston University hockey games, or with a paint brush in his mouth working on his latest work of art.



George Ojemann



George Ojemann is a professor emeritus of neurologic surgery in the Department of Neurological Surgery at the University of Washington School of Medicine. His research focuses on the neurobiology of human cognition, particularly cortical organization for language and memory, which he investigates in the context of awake neurosurgery under local anesthesia. In order to study these aspects of cognition, Ojemann utilizes techniques ranging from electrical stimulation mapping to recording of activity of single neurons, which have resulted in methods for reducing the risk of cortical resections for epilepsy and tumors.

Ojemann received a B.A. in 1956 from the University of Iowa, having served in the Air Force wing of the ROTC and being elected to Phi Beta Kappa. He was awarded the University's Brigg's award on graduation for having the highest cumulative GPA for the four undergraduate years.

To begin Dr. Ojemann received a M.D. in 1959, from the University of lowa. During that time, he had developed an interest in neurology, under the guidance of Dr. Adolph Sahs, best known for his work in the natural history of subarachnoid hemorrhage from aneurysms. During his medical school years, he had completed a rotation in neurosurgery as Massachusetts General Hospital. He received the MacEwen prize for top academic performance throughout medical school and was elected AOA president his junior year. He then completed training in the field of neurosurgery at King County Hospital (now Harborview Medical Center) in Seattle and the University of Washington, followed by further specialty training in surgical neurology at the National Institutes of Health.

Dr. Ojemann's career has combined clinical practices specializing in the surgical treatment of medically refractory epilepsy and brain tumors in functionally eloquent areas of the brain, with research into the neurobiology of human cognition particularly language and memory. These studies have been done in the context of awake operations under local anesthesia, utilizing techniques including electrical stimulation mapping and recording of single neuron activity. From them methods for reducing the risk of cortical resections were developed. For this work the Society of Neurological surgeons awarded him a prize for "Outstanding Continuous Commitment to Research in the Neurosciences by a Neurological Surgeon" (1984), the National Institute of Neurological Diseases and Stroke a Javits Neuroscience Award (1984), the Medical College of Ohio an honorary Doctor of Science degree (1998), the K.J. Zulch Prize of the Maz-Planck Society for Basic Neurological Research (2000), the Cloward Medal of the Western Neurosurgical Society (2003), and he received Distinguished Alumni Awards from the University of Iowa (1991) and the University of Washington Medical School (2014). He is a past Director of the American Board of Neurological Surgery (1987-1993, chairman 1992-3), a member of the Residency Review Committee for Neurosurgery (1993-97), and President of the American Academy of Neurological Surgery in 1999-2000. He was a member of the Advisory Committee of the National Institute of Neurological Diseases and Stroke (1997-2000) and that institute's Board of Scientific Counselors (1985-89). He Also, served as a military surgeon for the United States Public Health Service from 1964-66 where he then returned to Seattle in 1966, he has been affiliated with the neurosurgical faculty at UW since that time. He was board certified in 1967 by the American Board of Neurological Surgery.



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John Adler



John R. Adler (born 1954) is an American neurosurgeon. He is the inventor of the CyberKnife radiosurgical instrument. In 2007 he was named the Dorothy and Thye King Chan Professor of Neurosurgery at Stanford University School of Medicine. He was also the school's vice chair for innovation and technology. He is currently an emeritus professor of neurosurgery. In April 2010, Adler was appointed vice president and chief of New Clinical Applications at Varian Medical Systems.

Adler holds 9 United States patents and has authored over 180 peerreviewed articles and book chapters. He is best known as the inventor of the CyberKnife Radiosurgical System, an image-guided radiosurgical robotic instrument that noninvasively ablates tumors and lesions throughout the body. In 1991 Adler founded the company Accuray to develop and manufacture the CyberKnife. He was chief executive officer from 1999 to 2002 and chief medical officer from 1991 until 2007. He

also was a member of the Accuray board of directors from 1991 until July 2009. In 2002, Adler founded the CyberKnife Society of which he was president from 2002 until 2009.

In 2009, Adler founded Curēus.com (originally known as peerEmed.com), a web-based peer-reviewed medical journal that combines attributes of traditional expert review and social networks with the objective of fairly compensating reviewers and authors.

Adler was born in Yonkers, New York in 1954. He graduated at Harvard College in 1976 and at Harvard Medical School in 1980. From 1980 to 1987 he did a neurosurgical residency at Massachusetts General Hospital and Brigham and Women's Hospital and a radiosurgery fellowship at the Karolinska Institute in Sweden, where he worked with Lars Leksell.



Michael Roy



Michael Roy, MD, Col. (Ret.) is professor of Medicine and director of the Division of Military Internal Medicine at Uniformed Services University and director of Recruitment for USU's Center for Neuroscience and Regenerative Medicine.

He is a graduate of Brown University and Brown University School of Medicine. Dr. Roy completed an internal medicine residency and a general medicine fellowship at Walter Reed Army Medical Center, and retired as a Colonel after 24 years' active duty in the Army. He is president of the Society for Brain Mapping and Therapeutics and a fellow of the American College of Physicians. He has authored more than 100 publications including the books Physician's Guide to Terrorist Attack and Novel Approaches to the Diagnosis and Treatment of Posttraumatic Stress Disorder.

Dr. Roy is currently the principal investigator on multiple active studies seeking to improve the early identification and treatment of posttraumatic stress and traumatic brain injury. Many of the studies incorporate cutting-edge technologies, including functional MRI to both detect PTSD and document a response to treatment, the use of virtual reality to enhance the treatment of PTSD, and the use of smart phones and tablet devices to reach out to patients and help them with their symptoms at a distance.



Wes Ashford



Dr. Ashford is a Clinical Professor of Psychiatry and Behavioral Sciences (affiliated) at Stanford University and the Director of the War Related Illness and Injury Study Center at the VA Palo Alto Health Care System. Dr. Ashford also serves as a Senior Research Scientist at the Stanford / VA Aging and Alzheimer's Disease Clinical Research Centers. He is Chair of the Memory Screening Advisory Board of the Alzheimer's Foundation of America and a Senior Editor of the Journal of Alzheimer's Disease.

He received his MD (1974) and PhD (1984) from UCLA, completing his dissertation under Dr. Joaquin Fuster. His dissertation was a finalist for the Lindsley Prize for the best in Behavioral Neuroscience (1984). He completed Psychiatry Residency at the UCLA Neuropsychiatric Institute (1979; board certified in Psychiatry, 1981). While serving as the first Chief Resident on the UCLA Geriatric Psychiatry, unit 1978 to 1979, he conducted the first double-blind study of an anti-cholinesterase drug (physostigmine) to treat Alzheimer patients (Ashford et al., 1981); anti-cholinesterase drugs are now the first-line treatment for Alzheimer's

dementia. From 1980 to 1985, Dr. Ashford directed the Geriatric Psychiatry Out-patient Clinic at UCLA and initiated the UCLA/Alzheimer PET scan study with Dr. David Kuhl. With Dr. Fuster, he made the first proposal and neurophysiologic demonstration of massive parallel information processing in connections between different regions of the cerebral cortex (Ashford & Fuster, 1985), a critical finding for understanding neuroplasticity and memory (Ashford, Coburn, and Fuster, 1998). His work in Alzheimer's disease and neurophysiology led to the water-shed proposal that neuro-plastic memory mechanisms of the brain are specifically affected by Alzheimer pathology (Ashford & Jarvik, 1985, Ashford, 2015).

Dr. Ashford has served in leadership positions in several academic institutions. He helped to establish NIAfunded Alzheimer's Disease Centers at Southern Illinois University School of Medicine and the University of California, Davis. While in Illinois he published the first study of Modern Test Theory in the field of Medicine, "Item-Response Theory" analysis of the Mini-Mental State Exam (Ashford et al., 1989). At the University of Kentucky, as tenured Associate Professor in Psychiatry, Neurology, and the Sanders-Brown Center on Aging, and Vice-Chair for Research, Department of Psychiatry, and a scientist in the NIA-funded Alzheimer's Disease Research Center, he proposed a "Time-Index" method to measure Alzheimer dementia severity (Ashford et al., 1995; Ashford & Schmitt, 2001), which was used in the UK Nun study (Butler, Ashford, Snowden, 1996), and a study of the loss of cerebral perfusion in Alzheimer patients (Ashford et al., 2000). With Dr. James Geddes he showed the crucial role of paired helical filament pathology in destroying neuronal processes (Ashford et al., 1998).

In addition to publishing extensively in nearly all areas of the Alzheimer field, Dr. Ashford has studied numerous other neuropsychiatric illnesses. He provides leadership, mentorship and expert consultation in a wide range of fields touching on and synergistic to brain health and disease. He is currently developing early detection and measurement methods for cognitive function and reformulating theories of Alzheimer pathology. He continues his life-long interest and passion for improving health and slowing aging.



Congressman Jerry McNerney



Congressman Jerry McNerney was sworn into office on January 4, 2007. He is proud to represent California's 9th District, which includes a large portion of San Joaquin County in the Central Valley as well as parts of Contra Costa and Sacramento Counties.

McNerney was inspired to run for Congress by his son Michael, who in response to the attacks of September 11, sought and received a commission in the Air Force. Michael suggested that his Dad serve his country by running for Congress. With a deep sense of duty and his family's support, McNerney began his journey to Congress.

Congressman McNerney is honored to serve on the Committee on Energy and Commerce, the oldest standing legislative committee in the U.S. House of Representatives. The committee is vested with broad jurisdiction on a number of issues including telecommunications, consumer protection, food and drug safety, public health research, environmental quality, energy policy, and interstate and foreign commerce. The Congressman is also

proud to be a member of the House Committee on Veterans' Affairs, where he continues to work to make sure our nation's veterans get the care and benefits they've earned.

McNerney, who has his Ph.D. in mathematics, served several years as an engineering contractor to Sandia National Laboratories in New Mexico. In 1990 McNerney moved with his family to California, accepting a senior engineering position with U.S. Windpower, Kenetech. McNerney later began working as an energy consultant for PG&E, FloWind, the Electric Power Research Institute, and other utility companies. Prior to his election to Congress, he formed a start-up company to manufacture wind turbines. During his career in wind energy, McNerney's work contributed to saving the equivalent of approximately 30 million barrels of oil, or 8.3 million tons of carbon dioxide.

McNerney and Mary, his wife of 32 years, have three grown children. Their oldest son, Michael, is a reserve officer in the U.S. Air Force and a graduate of American University with a degree in law. Daughter Windy received a Ph.D. from Notre Dame in neuroscience and is working as a Post Doctorate researcher in Neurotoxicology at Lawrence Livermore National Labs. Their youngest son, Greg, received his Ph.D. in biophysics and is working as an engineer at Intel Corporation.



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Afsaneh Rabiei



Dr. Afsaneh Rabiei is interested in processing and characterization of advanced materials, metal foams, coatings and composites. She enjoys solving advanced materials problems aimed at improving our health, safety and environment. Her goal is to create new materials along with improving the properties and performance of existing materials by altering their manufacturing techniques and by studying their micro-structural and mechanical characterization and their failure analysis.

Dr. Rabiei teaches Advanced Materials (MAE-539). In this course, Dr. Rabiei exposes students to newer classes of materials like metal foams, coatings, composites and thin films. She also surveys the current state-of-the-art in advanced materials and presents a comparison of our inhouse capabilities with the state-of-the-art. At the undergraduate level, she teaches Statics (MAE-206), Solid Mechanics (MAE 314) and Strength of Mechanical Components (MAE-316). These are classical courses but she likes enriching these courses with discussions on environmental and physical properties exhibited by a wide variety of materials and real life

applications. She also presents Undergraduate Research through MAE496 and MAE586. In this course an undergraduate student will be teamed up with a graduate student and will be assigned to work on a research project.

Dr. Rabiei is a unique faculty advisor. Her students often work with professionals outside of MAE, on and off campus and quite often with international groups. Her students tend to be motivated, have good reading and writing skills, and enjoy scientific exploration. Much of her work leads to new inventions. She is fond of pointing out that her students work in an environment of creation.

Outside of work, Dr. Rabiei enjoys her time with family and students.



SBMT-NSBRI YOUNG INVESTIGATOR AWARD

4th Annua World Congress of Society for Brain Mapping and Therapeutics

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

Society for Brain Mapping and Therapeutics (SBMT) and National Space Biomedical Research Institute (NSBRI) are proud to announce the Inaugural Call for The Young Investigator Award in Brain Mapping & Therapeutics.

Purpose:

The SBMT Young Investigator's Initiative is designed to recognize promising young scientists performing work in the brain sciences relevant to the Society for Brain Mapping and Therapeutics (SBMT). While this year's awardees will not be receiving any financial incentives, this recognition will be a stepping stone for future recognition within and beyond the SBMT's wide ranging collaborative partners.

Overview:

Protection of the brain and other vulnerable organ systems during long-duration space missions is critical to the success of human space exploration. Microgravity, radiation and other hazards of the space are known to affect the nervous system. A better understanding of the mechanisms, and the development of countermeasures to combat neurobehavioral and associated space adaptation and disorders, are required. Moreover, advances from human and robotic space technologies, knowledge and spin-offs can contribute to life on Earth, including benefits to brain health and the treatment of brain disorders.



Alexander Stahn

Assistant Professor, Medical Science in Psychiatry, University of Pennsylvania School of Medicine, Division of Sleep and Chronobiology, Department of Psychiatry



Ajeet Kaushik

Assistant Professor, Centre of Personalized Nanomedicine, Department of Immunology, Florida International University (FIU)



Nasser Kashou

Assistant Professor, Biomedical, Industrial & Human Factors Engineering, Wright State University

Past Recipients:

2016 - Rahul Dev Jayant

Assistant Professor, Center for Personalized Nanomedicine, Institute of NeuroImmune Pharmacology, Department of Immunology, Herbert Wertheim College of Medicine (HWCOM), Florida International University

2016 - Debraj Mukherjee

Robert Wood Johnson Health & Society Scholar, Department of Population Health Sciences, University of Wisconsin-Madison School of Medicine and Public Health

2015 - Michael E Wolf President, NeuroCite LLC

2015 - Benjamin Aribisala Professor of Computer Science, Faculty of Science, Lagos State University, Lagos, Nigeria; Honorary Fellow Centre for Clinical Brain Sciences (CCBS), Neuroimaging Sciences, The University of Edinburgh

2015 - Reza Tadayon-Nejad

Psychiatry Resident (Neuroscience Research Track), Department of Psychiatry, University of Illinois at Chicago

2009 - Vicky Yamamoto

Stem cell Research - USC Broad Stem Cell Center



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