



5th Annual
World Congress of IBMISPS
August 26-29, 2008

Held at
The University of California, Los Angeles

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Mission Statement and Educational Objectives

MISSION STATEMENT

IBMISPS is a non-profit organization designed to encourage all scientists who are interested or currently active in areas of Brain Mapping (BM) and Intraoperative Surgical Planning (ISP) to share their findings with other physicians and scientists across the disciplines.

The Society also promotes public welfare through the advancement of ISP and BM, its commitment to excellence in education, and by dedication to research and scientific discovery.

The mission of IBMISPS will be achieved through a multidisciplinary collaboration of government agencies, patient advocacy groups, educational institutions, and the private sector. Together, issues related to Brain Mapping and Intraoperative Planning can be addressed and new technologies implemented to benefit patient care.

EDUCATIONAL OBJECTIVES

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

- Identify new findings in brain mapping and Intraoperative surgical planning most relevant to their own field, such as molecular imaging or biophotonics.
- Describe the effect of newly developed methods in Brain Mapping and Intraoperative Surgical Planning.
- Discuss and design the possible future research and developments in Brain Mapping and Intraoperative Surgical Planning, and assess the possible impact of such research and development on their own clinical and scientific work.
- Describe and assess the latest technology in Brain Mapping and Intraoperative surgical planning.
- Explain ways to build a bridge between the fields of BM and ISP.
- Discuss and describe governmental agencies roles in research and development of BM & ISP.



Board of Directors

BEHNAM BADIE

Associate Professor, Vice Chair, Academic Affairs
Director, Comprehensive Brain Tumor Program
Department of Neurological Surgery
University of Wisconsin Hospital & Clinic
Madison, USA

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Associate Professor of Medical Science,
Brown University School of Medicine
Moore Distinguished Scholar
California Institute of Technology, USA

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Professor of Neurosurgery
University of North Carolina, Chapel Hill, USA

P. SARAT CHANDRA

Associate Professor of Neurosurgery
All India Institute of Medical Science
New Delhi, India

MICHAEL CHEN

Assistant Professor of Neurosurgery
Section Head, Malignant Brain Tumor Program
City of Hope National Cancer Center, USA

STEPHAN G. ERBERICH

Guest Editor of IBMISPS - NeuroImage
Assistant Professor of Radiology & Biomedical Engineering
Childrens Hospital, Los Angeles, USA

ALEXANDRA GOLBY

Associate Surgeon at Brigham and
Women's Hospital, Department of Neurosurgery
Director of Image-guided Neurosurgery
Assistant Professor of Surgery, Harvard Medical School, USA

JOHN PETER GRUEN

Associate Professor of Neurosurgery
LA County & University Southern California
Medical Center, USC
Keck School of Medicine, USA

WARREN GRUNDFEST

IBMISPS President 2006-2007
Professor of Bioengineering & Electrical Engineering
The Henry Samueli School of Engineering & Applied Science
Professor of Surgery, David Geffen School of Medicine,
UCLA, USA

SHOICHIRO ISHIHARA

Associate Professor, Department of Neurosurgery
Chief of Division of Endovascular Neurosurgery
Stroke Center at International Medical Center
Saitama Medical University, Saitama, Japan

FERENC A. JOLESZ

IBMISPS President 2005-2006
B. Leonard Holman Professor of Radiology
Vice Chairman for Research
Director of MRI and Image Guided Therapy
Brigham & Women's Hospital, Harvard Medical School
Member of Institute of Medicine of National Academy
of Science, USA

BABAK KATEB

Founding Executive Director, IBMISPS
Managing Editor of IBMISPS - NeuroImage
Visiting Scientist at California Institute of Technology, USA

MARY KRATZ

Information Services Consultant
University of Michigan Medical School, USA

JEAN-JACQUES LEMAIRE

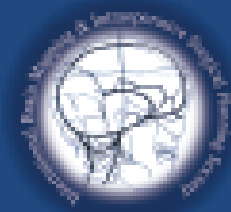
Director European Division - IBMISPS
University Hospital of Clermont-Ferrand
Professor of Neurosurgery
Auvergne University, France
IBMISPS President 2008-2009

LOUIS LEMIEUX

PhD, CSci, MInstP
The Institute of Neurology's Academic Board, UK

SHOULEH NIKZAD

Supervisor of Nanoscience and UV Array at NASA/JPL
Research Associate Professor of Neurosurgery
University of Southern California, USC
Keck School of Medicine, USA



Founder's Address



It is my great pleasure and honor to welcome members of our society, scientists, physicians, and members of industry, academia, and government officials to the 5th annual World Congress of IBMISPS. This year's theme is 'Breaking Boundaries to Shape the Future.' We conduct this meeting at UCLA-California Nano-System Institute (CNSI) to build a broad-based multidisciplinary collaborative society focused on image guided therapy and intervention.

IBMISPS brings together a diverse scientific, medical, and engineering community to tackle complex problems and diseases in the field of neuroscience and medicine. Therefore, the society facilitates unprecedented cross-disciplinary interactions among all scientific fields. In just 5 years, Japan, India, France, China, and the UK have joined the society and IBMISPS actively seeks the participation of other countries. IBMISPS will achieve its vision through establishing government relations and encouraging the interdisciplinary approach to scientific technological advancements and the formation of better healthcare and research policies for each country.

We also encourage the formation of student chapters in the universities around the world to cultivate and train future generations of scientists, physicians, surgeons, and policy makers who take a multidisciplinary approach in solving difficult issues. This could facilitate a true interaction and partnership can then take place among academia, government, and IBMISPS. This allows the exchange of ideas across the world, bridges cultural boundaries, and contributes to better global and regional healthcare, health policies, and scientific progress.

I would like to thank the IBMISPS board of directors and organizing committee members for their hard work and dedication in making this congress a success. I also thank Dr. Patrick Soon-Shiong, Chairman and CEO of Abraxis BioScience for his visionary and generous support of this program. This program may not have been possible without the generous contributions from US Army-TATRC, DVBIC, Abraxis BioScience, BrainLab, Codman, Carl Zeiss, Integra-Radionics, Optivus, NordicNeuroLab, and Siemens Japan.

I would like to thank Dr. Walter Koroshetz of NINDS, Dr. Keyvan Farahani of NCI, and Dr. Shouleh Nikzad of NASA/JPL for their scientific contributions to this program. I also want to thank Associate Dean of Research at UCLA David Geffen School of Medicine Dr. Lenny Rome and his staff for making this program possible at UCLA-CNSI.

I congratulate IBMISPS award recipients of this year:

- The Honorable Governor Arnold Schwarzenegger for receiving the Pioneer and Healthcare award for his support of the stem cell research initiative in California and his visionary approach to scientific advancement and discovery.
- Two-time Oscar winner Actor Dustin Hoffman for receiving the Beacon Award for his role of an Autistic Savant in the movie The Rain Man. He increased awareness of autism and neurological diseases and stem cell research.
- Mark L. Vachon (President and CEO of GE Healthcare) for receiving the Pioneer and Technology Crystal award.
- Dr. Ron Kikinis for receiving the Pioneer and Medicine Crystal award. He is a leader in his field.

We welcome His Majesty Reza Pahlavi and Senator Mark Ridley Thomas and thank them for sharing their interdisciplinary vision with the members of IBMISPS. Finally, I thank all members of IBMISPS for their participation in this meeting and hope to see you next year at Harvard Medical School.

Respectfully,

Babak Kateb

Chairman of the Board of Directors, IBMISPS-Foundation

Founding Executive Director, IBMISPS

Managing Editor IBMISPS-NeuroImage

Visiting Researcher California Institute of Technology



Address from Jean-Jacques Lemaire



Dear Fellows, Colleagues, Friends,

The Congress for Brain Mapping and Image Guided Therapy is organized for the 5th time. This year we go back to the source in Los Angeles where, in 2004, a group of passionate people from different horizons thought it was possible to speed the technological translational research in clinical neurosciences. To pursue this quest is more challenging than ever because the progresses in clinical neurotechnologies are major and exponential. They let foresee important spin-offs in health care, some of which being already available in the most advanced teams. The board of the IBMISPS is proud to encourage a cutting-edge research and meanwhile to spread smart technologies ready for clinical practice. The trans disciplinary approach is always in the core of the process, leading fascinating opportunities for those who want to follow this unconventional stream. The annual meeting is the best opportunity to meet colleagues and share stimulating data through highly scientific discussions, within a friendly organization. At last, the IBMISPS also gives the chance to publish works of excellence in a special issue of *NeuroImage*, and facilitates exchanges of researchers between clinic and laboratory.

On behalf of the board of the IBMISPS, welcome in Los Angeles, in August 26 -29, 2008, we are happy to meet you and share our passion, aiming to give the best for people suffering of neurological diseases and handicaps.

Sincerely,

Jean-Jacques Lemaire

*Director European Division - IBMISPS
University Hospital of Clermont-Ferrand
Professor of Neurosurgery
Auvergne University, France
IBMISPS President 2008-2009*



Address from Warren Grundfest



I am pleased to welcome members of our Society, scientists, physicians, engineers, and members of industry, academia, and government to the 5th Annual Meeting of IBMISPS. This year's meeting, held in collaboration with the UCLA Nanosystems Institute, highlights an important and rapidly growing area of research and scientific investigation. We hope that this meeting will promote collaboration between scientists and engineers developing nanotechnology, and neuroscientists, neuro-radiologists, clinicians, and industry working on brain mapping, intraoperative neurosurgical techniques, and related fields.

Our Society was founded to bring together diverse scientific and engineering communities to focus on topics related to brain imaging and brain mapping for improved diagnosis and treatment of neurologic diseases. The application of nanotechnologies to neuroscience requires interdisciplinary efforts and collaboration across the spectrum of scientific investigators. We hope that this meeting will be one of many that reports significant advances in the neurosciences as nanotechnologies are incorporated into neuroscience research.

As a Society we recognize that advances in the laboratory must be translated by industry, with the assistance of government, into practical clinical methods. The goal of this symposium is to enhance communication between subspecialty physicians, scientists, and clinicians and their collaborators in industry and government. While many applications of nanotechnology to neuroscience are in early stages, we hope that this symposium will increase awareness among the participants to the potential benefits these emerging technologies. At the same time we believe that this meeting will serve as a forum to update participants on recent advances in other equally important brain mapping technologies and intraoperative surgical techniques.

Our educational mission extends beyond the scientific community to policy makers and the public. We believe that education is the key to the understanding of healthcare needs for those with brain diseases. Public support for brain mapping and related research and improved surgical techniques is essential for continued progress in the treatment of brain-related diseases. Recent events have focused public attention on the need for improved diagnosis and therapy of traumatic brain injury and post-traumatic stress disorder. Application of brain mapping techniques and advanced brain imaging modalities may help to improve the diagnosis, characterization, and therapy of these devastating diseases.

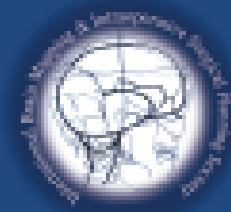
I am most appreciative of the Society's willingness to hold this meeting at my institution, UCLA, which has been in the forefront of nanotechnologies and neuroscience research. Once again, I welcome you all to UCLA, and I hope that you all find this a productive and enjoyable meeting.

Warren S. Grundfest, M.D. FACS

*Professor of Bioengineering & Electrical Engineering
The Henry Samueli School of Engineering & Applied Science*

*Professor of Surgery
David Geffen School of Medicine
UCLA*

*Portfolio Manager, Nanomedicine and Biomaterials
Senior Scientist
TATRC (The Telemedicine and Advanced Technology Research Center)
U.S.Army Research and Materiel Command*



Address from Patrick Soon-Shiong



Dear Colleagues,

Welcome to the fifth annual IBMISPS Congress, an opportunity to explore ground-breaking science with elite basic and clinical scientists. The discovery of innovative means to diagnose and deliver therapeutics to an ever-growing and diversifying population of CNS patients requires pioneering and cooperative science, the likes of which this congregation of technologists promises to deliver.

With our partners at the California NanoSystems Institute at UCLA, we at Abraxis BioScience are proud to participate in this important scientific event. Abraxis BioScience is a fully integrated biotechnology company dedicated to meeting clinical needs through paradigm-shifting innovations. The discovery, development, and clinical application of our proprietary receptor-mediated tumor-targeting technology has been a boon to treating cancer and established a new paradigm of targeted nanoparticle cytotoxic chemotherapeutic agents. This innovation has inspired us to further support interdisciplinary collaborative research that aims to discover clinically-applicable next-generation technologies.

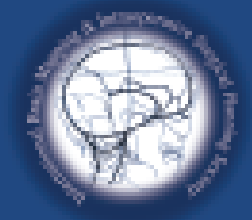
Improved neurosurgical techniques and tools for neuroimaging and brain mapping are required for treating medical impossibilities such as neurodegenerative diseases and inoperable brain cancer. The discovery process towards break-through therapies will be significantly accelerated through multidisciplinary research and innovation. Thus it is my sincere hope that the eclectic group of scientists gathered at this congress will expand the realm of possibilities for each researcher and promote cross-disciplinary collaboration.

California NanoSystems Institute at UCLA has been built entirely on the spirit of multidisciplinary cooperation amongst elite engineers, clinicians, and basic scientists. Charged with continuing UCLA's tradition for making life-improving discoveries, CNSI leverages its intellectual capital to make outside-the-box discoveries that are readily translated into commercial product by its industry partners: Abraxis BioScience, Hewlett-Packard, Intel, and BASF. For us at Abraxis BioScience, CNSI has thus become the hub for interdisciplinary exchange of information.

I hope you share in my excitement for exploring revolutionary medicine at the fifth annual IBMISPS congress.

Sincerely,

Patrick Soon-Shiong, M.D.
Chairman and Chief Executive Officer
Abraxis BioScience



Address from Leonard Rome



Dear Colleagues,

The California NanoSystems Institute is pleased to serve as the host venue of the 5th World Congress of the International Brain Mapping and Intraoperative Surgical Society (IBMISPS).

Over the next few days, selected scientists, educators and technology leaders who are at the vanguard of new treatments for brain and spinal cord injuries and diseases will converge to share innovations and advances. Their work underscores the benefits of multi-disciplinary collaboration which serve to bridge science and technology to accelerate medical breakthroughs.

This multi-disciplinary approach closely parallels the work conducted at CNSI. At the nanoscale, materials exhibit strikingly different properties. A multidisciplinary approach is required to fully understand and manipulate these qualities. CNSI members are drawn from faculty in engineering, medicine, and physical and life sciences. These scientists benefit from an integrated laboratory culture enabling them to conduct dynamic research at the nanoscale which will lead to breakthroughs in medicine, as well as information technology, environmental protection, and new sources of energy.

The CNSI is an integrated research center whose mission is to foster interdisciplinary collaborations for discoveries in nanosystems and nanotechnology; train the next generation of scientists, educators and technology leaders; and facilitate partnerships with industry, fueling economic development and promoting social well being. Working in a dynamic, collaborative environment, supported by the physical and human resources of UCLA, CNSI members are investigating nanoscale phenomena in new and innovative ways.

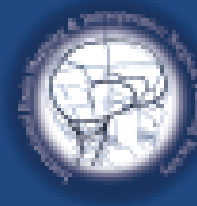
The IBMISPS meeting will provide an exciting opportunity to learn about the newest innovations from those leaders who are driving the discoveries of new medical therapies and diagnostic tools which will transform technologies aimed at treating brain trauma and spinal cord injuries and diseases.

Sincerely,

Leonard H. Rome

Director, California NanoSystems Institute

Senior Associate Dean for Research, David Geffen School of Medicine, UCLA



Keynote Speaker



Leonard Rome

BIOGRAPHY

Leonard H. Rome, Ph.D.
Interim Director, California NanoSystems Institute
Senior Associate Dean for Research
David Geffen School of Medicine at UCLA

Leonard H. Rome is a cell biologist and biochemist who has served on the UCLA School of Medicine faculty since he joined the Department of Biological Chemistry in 1979. He became a full professor in 1988 and has been Senior Associate Dean for Research in the School of Medicine since 1997. Dr. Rome earned his B.S. in Chemistry and M.S. and Ph.D. in Biological Chemistry at the University of Michigan, Ann Arbor. He was a postdoctoral fellow at the National Institutes of Health, where he worked on lysosome biogenesis. Dr. Rome has chaired the School of Medicine Faculty Executive Committee and is actively involved in graduate and medical education. He is a recipient of the School of Medicine Award for Excellence in Education. Since becoming Senior Associate Dean for Research, he has organized a strategic plan for research in the School and spearheaded campus-wide efforts in genomics, proteomics, and computational biology. His laboratory research centers on a novel cellular organelle called a "vault" which was discovered in his laboratory. Dr. Rome is presently organizing a Nanoscience Interdisciplinary Research Team, a collaboration of disciplines including cell biologists, engineers, chemists, and structural biologists who will engineer vaults so that they may one day be used in drug delivery and as components of nano-electrical machines.



8:00am - 5:00pm

**Sponsor Exhibitions in CNSI Lobby
Poster Sessions**

Welcome and Introduction

7:30 - 8:00am

OFFICIAL WELCOME AND INTRODUCTION

By Congress Chairmen:

Babak KATEB

Founding Executive Director & Chairman of the Board of Directors IBMISPS

Jean Jacques LEMAIRE

President of IBMISPS (2008-2009)

8:00 - 8:45am

KEYNOTE SPEAKER

Leonard ROME, PH.D. 

Interim Director, California NanoSystems Institute

Professor, Biological Chemistry

Senior Associate Dean of Research, David Geffen School of Medicine at UCLA

Nanoparticles for Therapeutic Drug Delivery: An Introduction to the CNSI

8:45 - 9:15am

TWO TIME ACADEMY AWARD WINNER ACTOR

Dustin HOFFMAN

RECIPIENT OF THE 2008 IBMISPS BEACON AWARD:

Dedication and Courage to increase awareness about Autism

Rain Man and Autism

9:15 - 9:35am

THE HONORABLE STATE SENATOR

Mark Ridley THOMAS

Chair of the Committee on Business, Professions and Economic Development

Chair of the Senate Select Committee on L.A. County Health Care Crisis

Chair of the California Legislative Black Caucus

Research and Healthcare in California

Scientific Session 1: Image Guided Therapy

9:35 - 9:50am

CHAIR:

Warren S. GRUNDFEST, M.D. FACS

Professor of Bioengineering & Electrical Engineering

The Henry Samueli School of Engineering & Applied Science

Professor of Surgery, UCLA - David Geffen School of Medicine

Nanotechnologies Applied to Brain Mapping: New Opportunities for Interdisciplinary Research



Scientific Session 1: Image Guided Therapy (Cont.)

9:50 - 10:05am

CO-CHAIR:

John D. HEISS, M.D.

Head of Clinical Unit
Surgical Neurology Branch,
National Institute of Neurological Disorder and Stroke,
National Institute of Health

Real-time Guidance of Brain Tumor Surgery using Intraoperative MRI and Bipolar Cortical Mapping

10:05 - 10:20am

Keyvan FARAHANI, Ph.D.

Acting Branch Chief
Cancer Imaging Program National Cancer Institute

Funding Opportunities in Image-Guided Oncological Interventions

9:50 - 10:05am

Sujit S. PRABHU, M.D., FRCS

Assistant Professor
Department of Neurosurgery
MD Anderson Cancer Center

Use of Intraoperative High-field MRI (iMRI) and Brain Mapping in the Resection of Subcortical (Deep) Brain Tumors

10:35 - 10:45am

Q & A

10:45 - 11:00am

COFFEE BREAK

Scientific Session 2: Imaging and Intraoperative Surgical Planning

11:00 - 11:15am

KEYNOTE SPEAKER

CO-CHAIR:

Ron KIKINIS, M.D. 

**2008 IBMISPS PIONEER IN MEDICINE AWARD:
Excellence in Research, Discovery and Education**

Founding Director of Surgical Planning Laboratory
Director of The National Center for Image Guided Therapy
Professor of Radiology Department of Radiology
Brigham & Women's Hospital,
Harvard Medical School, Boston, USA

The Role of Software in Image Guided Therapy



Scientific Session 2: Imaging and Intraoperative Surgical Planning *(Cont.)*

11:15 - 11:30am

CHAIR:

Jean Jacques LEMAIRE, M.D., Ph.D.

University Hospital of Clermont-Ferrand
Professor of Neurosurgery (ESPRI/INSERM),
Auvergne University, France

DTI and Tractography for DBS: Image-Guided Anatomic Approach

11:30 - 11:45am

Shoichiro ISHIHARA, M.D., Ph.D.

Associate Professor, Department of Neurosurgery
Chief of Division of Endovascular Neurosurgery, Stroke Center,
International Medical Center, Saitama Medical University, Japan

Combined Approach for Cerebrovascular Surgery in a Hybrid Operating Room

11:45 - 12:00pm

Col. Ken CURLEY, M.D.

Neuroscience Portfolio Manager, Telemedicine and Advanced Technology Research Center (TATRC),
U.S. Army Medical Research and Materiel Command (MRMC),
Special Consultant to the Director, Center for Disaster and Humanitarian Assistance Medicine (CDHAM),
Assistant Professor of Military and Emergency Medicine, Surgery and Biomedical Informatics,
Uniformed Services University of the Health Sciences (USUHS)

Neuroscience Research at the U.S. Army Telemedicine and Advanced Technology Research Center: Opportunities for Engaging the Brain Mapping and Intraoperative Surgical Planning Communities

12:00 - 12:15pm

Michael R. CHICOINE, M.D.

Associate Professor
Department of Neurosurgery
Washington University School of Medicine

Implementation and Preliminary Clinical Experience with the Use of Ceiling Mounted Mobile High Field Intraoperative Magnetic Resonance Imaging

12:15 - 2:00pm

LUNCH BREAK

Scientific Session 3: Vascular and Blood Flow Imaging and Stroke

2:00 - 2:15pm

CHAIR:

Elizabeth BULLITT, M.D.

Van Weatherspoon Jr. Professor of Surgery,
Director of CASILab, University of North Carolina,
Chapel Hill, NC

Glioma and Vessel Shape as Monitored by Magnetic Resonance Angiography (MRA)



Scientific Session 3: Vascular and Blood Flow Imaging and Stroke *(Cont.)*

2:15 - 2:30pm

CO-CHAIR:

S. Thomas CARMICHAEL, M.D., Ph.D.

Associate Professor
Department of Neurology
David Geffen School of Medicine at UCLA

Neural Connections After Stroke As One Of The Mechanisms of Brain Repair In This Disease

2:30 - 2:45pm

Don M. TUCKER, Ph.D.

Electrical Geodesics, Inc.
Department of Psychology and NeuroInformatics Center, University of Oregon

MR-Constrained Dense Array EEG for Estimating Neural Sources of Epileptic Seizures in Neurosurgical Planning

2:45 - 3:00pm

Wang ZHAN, Ph.D.

Assistant Professor
Center for Imaging of Neurodegenerative Diseases
Department of Radiology
University of California, San Francisco (UCSF)
VA Medical Center

Capture White Matter Degeneration with Diffusion MRI and Multimodal Analysis

3:00 - 3:15pm

Aaron FILLER, M.D., Ph.D.

Medical Director of Neurography Institute

Image guided systems Impact of Image Cycle Time in Minimal Access Nerve Surgery and Interventional MRI

3:15 - 3:30pm

Q & A

3:30 - 4:00pm

TEA RECESS

Scientific Session 4: **NEW HORIZON**

4:00 - 4:15pm

CHAIR:

Farzad MASSOUDI, M.D.

Assistant Clinical Professor of Neurological Surgery,
UCLA School of Medicine

Future of Neurosurgery



Scientific Session 4: NEW HORIZON (Cont.)

4:15 - 4:30pm

CO-CHAIR:

Elaine L. BEARER, M.D., Ph.D.

Professor,
Department of Pathology and Laboratory Medicine
Warren Alpert Medical School of Brown University

Emerging Concepts in Neuroimaging: Animal Models, Plasticity and Circuitry

4:30 - 4:45pm

Jonathan NISSANOV, Ph.D.

Associate Professor,
Department of Neurobiology & Anatomy
Drexel University College of Medicine

Brain Spatial Normalization: Indexing the Mouse Brain Library

4:45 - 5:00pm

Margret Amy RYAN, Ph.D.

Principal Investigator
NASA/Jet propulsion Laboratory (JPL)

Electronic Nose

5:00 - 5:15pm

SPECIAL TOPIC: BIOETHICS

Andrea A. SCOTT, J.D.

President and CEO of Bioethics USA, Inc

Post Traumatic Stress Disorder in the 21st Century: Deconstructing the Historic Scarlet Letter

5:15pm

TEA RECESS



Keynote Speakers



His Majesty Reza Pahlavi

BIOGRAPHY

Since the establishment of the clerical regime in Iran and the passing of his father, the late Shah of Iran, Reza Pahlavi has been a leading and vocal advocate of the principles of freedom, democracy and human rights for his compatriots. He is an international speaker and the author of "Past and the Future" published in June 2000 in Persian, and "Winds of Change: The future of Democracy in Iran" published in 2002.

Reza Pahlavi has lectured in many respected academic institutions, including the Washington Institute of Foreign Affairs, Yale University, Harvard Business School, Cornell, George Town University, Hudson Institute, University of Nebraska, and Management Centre Innsbruck of Austria. His topics included, Iran and the future of the Middle East and Peace and Stability in the Middle East and Beyond.

His articles have been published in various reputable newspapers and magazines, including the Washington Post, Newsweek International, Le Figaro, The Wall Street Journal, and the New Republic.

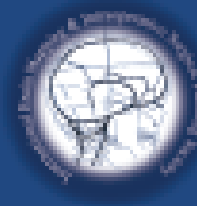
In 1978, Reza Pahlavi, then Crown Prince of Iran, left his homeland to complete his higher education in the United States. An accomplished jet fighter pilot, Reza Pahlavi completed the United States Air Force Training Program at the former Reese Air Force Base in Lubbock, Texas. He is a Political Science graduate of the University of Southern California.



Soon-Shiong, M.D.

BIOGRAPHY

Dr. Soon-Shiong became chairman and chief executive officer of Abraxis BioScience in April 2006. Dr. Soon-Shiong previously served APP as president since July 2001 and chief executive officer and chairman of the board of directors from its inception in March 1996. Since June 1994, Dr. Soon-Shiong also served as president, chief financial officer and a director of American BioScience, Inc. From June 1994 to June 1998, he served as chief executive officer and chairman of the board of directors of VivoRX, Inc., a biotechnology company. Dr. Soon-Shiong is named as a co-inventor on over 40 issued U.S. and foreign patents and is a fellow of the American College of Surgeons and the Royal College of Physicians and Surgeons of Canada. Dr. Soon-Shiong holds a degree in medicine from the University of the Witwatersrand and a M.Sc. in science from the University of British Columbia.



Wednesday August 27

Wednesday August 27

8:00am - 5:00pm

**Sponsor Exhibitions in CNSI Lobby
Poster Sessions**

9:00am - 12:30pm

Board of Director's Meeting

Introduction

12:40 - 1:00pm

Warren S. GRUNDFEST, M.D. FACS

Professor of Bioengineering & Electrical Engineering
The Henry Samueli School of Engineering & Applied Science
Professor of Surgery, UCLA- David Geffen School of Medicine

12:50 - 1:00pm

KEYNOTE SPEAKER:

His Majesty Reza PAHLAVI 

Interdisciplinary Medicine: The Way of the Future

1:00 - 1:40pm

KEYNOTE SPEAKER:

Patrick Soon-SHIONG, M.D. 

Chairman of the Board of Directors and
Chief Executive Officer of
ABRAXIS BIOSCIENCE

The Need for Interdisciplinary Science to Effect Meaningful Clinical Change

1:40 - 1:45pm

Q & A

1:45 - 2:00pm

COFFEE BREAK

Scientific Session 5: New Frontiers in Medicine (I) Technology and Nanomedicine

2:00 - 2:15pm

CHAIR:

Babak KATEB

Founding Executive Director
Chairman of the Board of Directors IBMISPS

*Internalization of MWCNTs by Microglia:
Possible Application in Immunotherapy of Brain Tumors*

2:15 - 2:30pm

CO-CHAIR:

Shouleh NIKZAD, Ph.D.

Head of Nanoscience and
Advanced Detector Arrays Group,
Jet Propulsion Laboratory (JPL)

UV Technology Imaging



Scientific Session 5: New Frontiers in Medicine (I) Technology and Nanomedicine (Cont.)

2:30 - 2:45pm

Behnam BADIE, M.D.

Director of Brain Tumor Program and
Director of Neurosurgery Department
City of Hope National Cancer Center

Nanotechnology and Immunotherapy of Brain Cancers

2:45 - 3:00pm

T. K. HSIAL, M.D., Ph.D.

Director of Cardiovascular Engineering Research Core
Associate Professor
Department of Biomedical Engineering &
Division of Cardiovascular Medicine
University of Southern California

Shear Stress and Vascular Oxidative Stress from Micro to Nanotechnologies

3:00 - 3:15pm

Michael E. HONEK, Ph.D.

Senior Member of Technical Staff
Nano and Micro Systems (NAMS)
In-Situ Instrument Systems Section
California Institute of Technology

From Brain Mapping to Space Exploration - What can NASA engineers learn from neurobiologists about building spacecraft?

3:15 - 3:30pm

Q & A

3:30 - 4:00pm

TEA RECESS

Scientific Session 6: New Frontiers in Medicine (II) Genetic Imaging and Drug Delivery

4:00 - 4:15pm

CHAIR:

Mike CHEN, M.D., Ph.D.

Assistant Professor,
Department of Neurosurgery
City of Hope National Cancer Center, CA

CO-CHAIR:

Pedro R. LOWENSTEIN, M.D., Ph.D.

Director
Board of Governors
Gene Therapeutics Research Institute
Bram and Elaine Goldsmith
Chair in Gene Therapeutics
Cedars-Sinai Medical Center
Professor of Medicine, and Pharmacology
Departments of Medicine, and Molecular and Medical Pharmacology
David Geffen School of Medicine UCLA

Immunological Synapses: the Anatomical Substrate Mediating Anti-Viral and Anti-Tumor Responses in the Brain



Wednesday August 27

Scientific Session 6: New Frontiers in Medicine (II) Genetic Imaging and Drug Delivery (Cont.)

4:15 - 4:30pm

Bong Seop LEE, Ph.D.

Research Scientist,
Maxine Dunitz Neurosurgical Institute,
Department of Neurosurgery,
Cedars-Sinai Medical Center

Nanoprodrugs: A New Paradigm in the Prodrug Strategy

4:30 - 4:45pm

Krystof BANKIEWICZ, M.D., Ph.D.

Professor of Neurosurgery and Neurology
UCSF School of Medicine

Presented by

Francisco VALLES, B.S. B.A., M.S. II

UCSF School of Medicine

Imaging of Gene Transfer in Parkinson's Disease

4:45 - 5:00pm

Mirjana MALETIC-SAVATIC, M.D., Ph.D.

Assistant Professor of Neurology
Baylor College of Medicine

*Metabolomics and Magnetic Resonance Spectroscopy:
A New Approach for Biomarker Discovery*

5:00pm

**Q & A
TEA RECESS**

Wednesday August 27



Keynote Speakers

Christian Macedonia, M.D.

BIOGRAPHY

LTC(P) Christian Macedonia M.D. is a US Army physician and surgeon, currently serving as the Chief of Research Operations at the Telemedicine and Advanced Technology Research Center (TATRC) at Fort Detrick, Maryland. Before assuming his current position, Dr. Macedonia served in a variety of roles throughout the military and civilian healthcare system. He led an ambulance platoon in Germany during the Cold War. He worked as an Army scientist and the medical primary investigator in the development of the 3D ultrasound for trauma care.

Dr. Macedonia provided medical and scientific support to two successful Everest climbing teams in 1998 and 1999 while doing a research fellowship at the National Institutes of Health. He dove 12,800 ft. in a Mir submersible to the RMS Titanic in 2000 and taught high altitude survival skills to special operating forces in 2001 and 2002.

Dr. Macedonia was the Medical Director for Women's and Children's Health at the National Naval Medical Center in Bethesda and served a year as the Chief of Clinical Staff of the 115th Combat Support Hospital in the Anbar Province of Iraq where he was awarded the Bronze Star.

In addition to his current duties, LTC Macedonia serves on the secretariat of the Defense Science Board. He assumes new duties at the Pentagon as the Medical Sciences Advisor to the Joint Chiefs of Staff in September. Dr Macedonia is the recipient of numerous military and civilian awards, including the Heroes of TRICARE award given to the Department of Defense's most outstanding health professionals and he was co-recipient of the Discover Magazine Award in Science and Technology.



8:00am - 5:00pm

**Sponsor Exhibitions in CNSI Lobby
Poster Sessions**

Welcome and Introduction

8:00 - 8:30am

OFFICIAL WELCOME AND INTRODUCTION

By Chairmen:

**Stephan ERBERICH &
Babak KATEB**

8:30 - 9:00am

KEYNOTE SPEAKER

Christian MACEDONIA, M.D. 

Lieutenant Colonel, Medical Corps, US Army
Chief of Research Operations
Telemedicine and Advanced Technology Research Center
U.S. Army Medical Research and Materiel Command (MRMC)
Associate Professor of Ob/GYN,
Military and Emergency Medicine Uniformed Services University

Brain Mapping and Systems Biology

Scientific Session 7: Multi-Modality Imaging

9:00 - 9:15am

CHAIR:

Alexandra GOLBY, M.D.

Assistant Professor of Neurosurgery,
Associate Surgeon, Brigham and Women's Hospital
Director of Image Guided Neurosurgery,
Brigham and Women's Hospital,
Harvard Medical School

*Improving Pre-operative Language Lateralization and Localization Using
Advanced fMRI Analysis*

9:15 - 9:30am

Manbir SINGH, Ph.D.

Professor of Radiology and Biomedical Engineering,
Founding Director of Biomedical Imaging & Telemedicine Program,
Director of ADRC Neuroimaging Core
University of Southern California

*Quantitative DTI with Applications to Traumatic Brain Injury and
Alzheimer Disease*

9:30 - 9:45am

CO-CHAIR:

Aaron COHEN, M.D. M.S.

Assistant professor of neurosurgery
Indiana University School of Medicine

*Use of Diffuse Tensor Imaging in Surgical Planning and Resection of
Insular Gliomas*



Scientific Session 7: Multi-Modality Imaging (Cont.)

9:45 - 10:00am

Ramon DIAZ-ARRASTIA, M.D., Ph.D.

Professor, Department of Neurology
University of Texas Southwestern Medical Center

Multimodality Magnetic Resonance Imaging Biomarkers of Traumatic Axonal Injury

10:00 - 10:15am

Guido GERIG, Ph.D.

Professor of Computer Science,
School of Computing
Member of the Scientific Computing and Imaging Institute (SCI)
Member of the Brain Institute
Director Center for Neuroimage Analysis
Adjunct Professor Utah Departments of Psychiatry and Biomedical
University of Utah

Analysis of Brain White Matter Properties and Fiber Tracts Via Diffusion-Weighted MRI: Challenges and Potential Benefits

10:15 - 10:30am

Q & A

10:30 - 11:00am

LUNCH BREAK

Scientific Session 8: Global Health Grid: Toward Electronic Medical Records and Advanced Telemedicine

CHAIRS:

**Dr. Stephan ERBERICH (ISI/USC),
Dr. Carl KESSELMAN (ISI/USC)**

11:00 - 11:20am

Johan MONTAGNAT, Ph.D.

French National Center for Scientific Research (CNRS)

Neuroscience Discovery with Grid Computing

11:20 - 11:40am

Michael WILDE, B.Sc.

Fellow, Computation Institute, University of Chicago Software Architect,
Argonne National Laboratory

*Swift Supercomputing Analysis in CNARI:
Computational Neuroscience and Aphasia Research Infrastructure*

11:40 - 12:00pm

James PHILBIN, Ph.D.

Senior Director Medical Informatics
Johns Hopkins University

The Design of a DICOM Compatible Storage Grid with ILM

12:00 - 12:15pm

Q & A

12:15 - 2:00pm

LUNCH BREAK



Scientific Session 9: Traumatic Brain and Spinal Cord Injury and PTSD

2:00 - 2:15pm

CHAIR:

David MOORE, M.D.

Deputy Director for Research,
Defense and Veterans Brain Injury Center,
Walter Reed Army Medical Center

Computational Biology, Primary Blast Injury and the Central Nervous System

2:15 - 2:30pm

CO-CHAIR:

Amir VOKSHOOR, M.D.

Co-founder of Neurosurgical & Spine Institute
Diagnostic and International Spine Center Institute
St. Johns Medical Center
West Hills medical Center

Neurosurgical Repair in Cervical Trauma

2:30 - 2:45pm

Elaine ALEXANDER, M.D., Ph.D.

Cenomed BioSciences, LLC
Vice President Clinical Development
Chief Medical Officer (CMO)

The Development of Multi-Function Therapeutics for PTSD and PTE in War Fighters Injuries (TBI)

2:45 - 3:00pm

Michael J. ROY, M.D., M.PH.

Colonel, Medical Corps, U.S. Army
Director, Division of Military Internal Medicine Professor of Medicine Uniformed Services
University of the Health Sciences

ViRTICo: Virtual Reality Therapy and Imaging in Combat Veterans with PTSD and Mild TBI

3:00 - 3:15pm

Akemi TOMODA, M.D., Ph.D.

Department of Psychiatry, Harvard Medical School,
Developmental Biopsychiatry Research Program,
McLean Hospital, Belmont,
Child Developmental Sociology,
Faculty of Medical and Pharmaceutical Sciences
Kumamoto University, Kumamoto, Japan

Prefrontal Cortex Involvement as Adverse Effects of Harsh Corporal Punishment in Childhood on Brain Gray Matter Volume

3:15 - 3:30pm

Q & A

3:30 - 4:00pm

TEA RECESS



Scientific Session 10:
Biophotonic and Image Guided Therapy

4:00 - 4:15pm

CHAIR:

E. Duco JANSEN, Ph.D.

Associate Professor of Biomedical Engineering
Department of Biomedical Engineering
Vanderbilt University School of Engineering

Optical Stimulation in the CNS

4:15 - 4:30pm

Jonathan NISSANOV, Ph.D.

Associate Professor,
Department of Neurobiology & Anatomy
Drexel University College of Medicine

Cryoplane Fluorescence Microscopy

4:30 - 4:45pm

CO-CHAIR:

Nathalie Y.R. AGAR, Ph.D.

Instructor in Surgery, Department of Neurosurgery
Brigham and Women's Hospital, Harvard Medical School

Mass Spectrometry Approaches to Intraoperative Surgical Planning

4:45 - 5:00pm

Mark BENDETT, Ph.D.

Director of Medical Products
Aculight Corporation

and

Jonathon WELLS, Ph.D.

Aculight Corp
Senior Scientist

Infrared Nerve Stimulation: A Selective Stimulus for Neural Mapping, Surgical Guidance, and Therapy

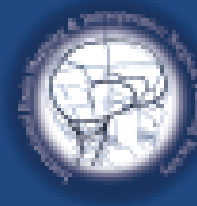
5:00pm

Q & A

TEA RECESS

6:00-9:00pm

COCKTAIL AWARD EVENT



Cocktail Award Event

6:00 - 9:00 pm

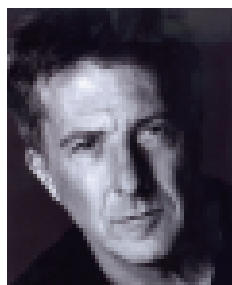
UCLA California Nanosystem Institute
(UCLA-CNSI)

Keynote Speaker: **HERB SCHULTZ**

Special Assistant to Governor Schwarzenegger

2008 AWARD RECIPIENTS

BEACON AWARD FOR COURAGE AND DEDICATION



Dustin Hoffman

PIONEER IN MEDICINE AWARD



Dr. Ron Kikinis

PIONEER IN HEALTHCARE POLICY



Governor Schwarzenegger

PIONEER IN TECHNOLOGY



Mark L. Vachon



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ABOUT CNSI

The California NanoSystems Institute (CNSI) is an integrated research center — operating jointly at UCLA and UC Santa Barbara — whose mission is to foster interdisciplinary collaborations for discoveries in nanosystems and nanotechnology, to train the next generation of scientists, educators and technology leaders, and to facilitate partnerships with industry that will fuel economic development and the social well-being of California, the United States and the world.

The CNSI was established in 2000 with \$100 million in funding from the state of California and an additional \$250 million in federal research grants and industry funding. Scientists in the areas of biology, chemistry, biochemistry, physics, mathematics, computational science, and engineering are measuring, modifying and manipulating the building blocks of our world — atoms and molecules. These scientists benefit from an integrated laboratory culture enabling them to conduct dynamic research at the nanoscale, leading to significant breakthroughs in the areas of health, energy, environment and information technology. For additional information, visit www.cnsi.ucla.edu.



Cocktail Award Schedule of Events:

6:00 - 6:10pm INTRODUCTION:

Babak KATEB

Chairman of the Board of Directors, IBMISPS-Foundation
Founding Executive Director, IBMISPS
Managing Editor IBMISPS-NeuroImage
Visiting Researcher California Institute of Technology

6:10 - 6:30pm KEYNOTE SPEECH:

Herb SCHULTZ 

Herb Schultz, of West Hollywood, has been appointed Senior Health Policy Advisor for the Office of the Governor in the state of California. Most recently, he has served as Vice President of Government Programs for McKesson Health Solutions, where he oversaw disease management and nurse advice government Medicaid and Medicare programs. Schultz previously was Acting Director of the California Employment Development Department and Acting Secretary and Undersecretary for the Labor and Workforce Development Agency. Prior to that, he was Deputy Director of External Affairs for the Department of Managed Health Care and served as Director of the Advisory Committee on Managed Health Care.

6:30 - 7:00pm Award Presentation

7:30 - 8:00pm Break

8:30 - 9:00pm VIP Tour of UCLA's CNSI

9:00pm Closing Remarks

Beacon Award for Courage and Dedication:

The Beacon 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.

Pioneer in Medicine:

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 multi-disciplinary approach. Their groundbreaking contribution has made development of state-of-the-art technology and scientific discovery a reality.

Pioneer in Healthcare Policy:

The Pioneer in Healthcare Policy Award is presented to lawmakers who have demonstrated visionary and cross-disciplinary 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.

Pioneer in Technology:

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.

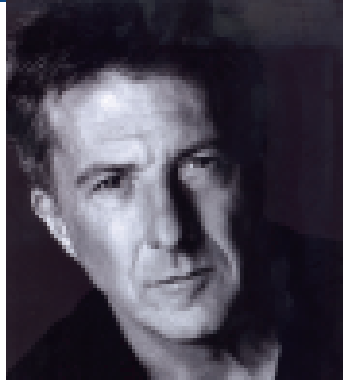
Past Award Recipients:

2006: Warren Grundfest, Alim Louis Benabid

2007: Beacon Award, Benham Badie; Medicine, Richard Frakowiack, Arthur W. Toga, John Mazziotta; Technology, Steve Rusckowski; Healthcare Policy, Speaker Nancy Pelosi, Senator Edward Kennedy



AWARD Recipient Courage and Dedication



Two Time Oscar Winner Actor **Dustin Hoffman** Recipient of Beacon Award for Courage and Dedication

Dustin Lee Hoffman, born August 8, 1937, is a two-time Academy Award, six-time Golden Globe, three-time BAFTA and Emmy Award actor. Born in Los Angeles of a jazz pianist mother and prop supervisor/set decorator father, he graduated from Los Angeles High School. He began acting at the Pasadena Playhouse with fellow actor, Gene Hackman after a brief college term at Santa Monica City college. Hoffman followed Hackman to New York and the two worked odd jobs as they continued to improve their craft. During these years, Hoffman shared a small apartment with actor Robert Duval.

He studied at the famous Actors Studio and became a method actor. Through the early sixties he made numerous appearances on television and appeared in commercials, and in theatrical performances. Between acting jobs he taught acting at community colleges and directed off-Broadway productions.

In 1966, director Mike Nichols was casting for 'The Graduate' and eventually auditioned and hired Mr. Hoffman, who received an Academy Award nomination for his role in the film. His next films brought critical success and another Academy nomination including Midnight Cowboy and Little Big Man. He continued his string of successes in the next decade with such films as Papillon, Straw Dogs and Lenny. Less than two years after the Watergate scandal, Hoffman appeared in 'All the Presidents Men' with Robert Redford.

His movie successes continued as he explored comedy in 'Tootsie', reprising his early real life in New York as a struggling actor/director, and drama with an evocative role of a caring, divorced father in Kramer vs. Kramer. He has been considered for a number of roles including Michael Corleone in the Godfather and Richard Decker in Blade Runner. In Rain Man, he appeared as an autistic savant opposite Tom Cruise. The film was a huge success and brought him his second Oscar.

When a family friend was diagnosed with Type I diabetes, Mr. Hoffman and his wife, Lisa Gottsegen, became involved with the Juvenile Diabetes Research Foundation, hosting its first fund raising event. The foundation's research efforts became embroiled in a larger controversy over the use of stem cells which Mr. Hoffman defended. "What this research has more to do with is not when life begins but when life ends," Mr. Hoffman is quoted as saying. "This research may one day eliminate these diseases from ending people's lives prematurely."

He is the father of six children and has two grandchildren. He is politically active and has long supported the Democratic Party.



AWARD Recipient Pioneer in Medicine



Professor Ron Kikinis, M.D. Recipient of Pioneer in Medicine Crystal Award

Dr. Kikinis is the founding Director of the Surgical Planning Laboratory, Department of Radiology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, and a Professor of Radiology at Harvard Medical School. This laboratory was founded in 1990.

Dr. Kikinis is the Principal Investigator of the National Alliance for Medical Image Computing (NA-MIC, a National Center for Biomedical Computing, an effort which is part of the NIH Roadmap Initiative), and of the Neuroimage Analysis Center (NAC a National Resource Center funded by NCRR). He is also the Research Director of the National Center for Image Guided Therapy (NCIGT), which is jointly sponsored by NCRR, NCI, and NIBIB.

During the mid-80's, Dr. Kikinis developed a scientific interest in image processing algorithms and their use for extracting relevant information from medical imaging data. Since then, this topic has matured from a fairly exotic topic to a field of science. This is due to the explosive increase of both the quantity and complexity of imaging data. Dr. Kikinis has led and has participated in research in different areas of science. His activities include technological research (segmentation, registration, visualization, high performance computing), software system development (most recently the 3D Slicer software package), and biomedical research in a variety of biomedical specialties. The majority of his research is interdisciplinary in nature and is conducted by multidisciplinary teams. The results of this research have been reported in a variety of peer-reviewed journal articles. He is the author and co-author of more than 260 peer-reviewed articles.

Before joining Brigham & Women's Hospital in 1988, he trained as a resident in radiology at the University Hospital in Zurich, and as a researcher in computer vision at the ETH in Zurich, Switzerland. He received his M.D. degree from the University of Zurich, Switzerland, in 1982.



AWARD Recipient Pioneer in Healthcare Policy



The Honorable Governor **Arnold Schwarzenegger** Recipient of Pioneer in Healthcare Policy Crystal Award

Arnold Schwarzenegger is currently the 38th Governor of California. He was born on July 30, 1947 in Thal, Austria just outside the Styrian capital of Graz. Son of a local police chief he was raised in a strict environment of rules and according to him “the rod was not spared” when he disobeyed his parents. Early childhood friends remember him as ‘cheerful, good-natured and exuberant’. He attend a Roman Catholic church every Sunday.

At age 14 he chose barbells over soccer and thus a career in body building began. He studied psychology at age 15 to develop his mind and its control over his body. While his father wanted a career for him in law enforcement and his mother favored a trade school, he spent much of teen years in Graz at the gymnasium or movie theatres. There he saw films with Johnny Weissmuller, Tarzan, and Steve Reeves, Hercules, and had an inclination of a career path from body building to acting. He remembers that the first film he saw with his father in a movie theatre starred John Wayne.

After a mandatory year’s service in the Austrian Army, he pursued titles and awards in the body building world. Successive wins of Mr. Olympia and Mr. Universe titles lead him to Hollywood where he sought to use his physique in films much like Weismuller and Reeves. In ‘Pumping Iron’, his breakout film, Mr. Schwarzenegger displays a winning smile and tremendous mental and physical strength . With ‘Conan the Destroyer’ he found a role in which he could develop a character where his strong European accent wouldn’t hinder him. The film’s success opened the doors for a series of films. In 1984 he starred in the Terminator, a science fiction thriller and the name and role have stuck with him since. He followed up with a rapid succession of box offices successes including in each of the following years with Commando, Predator, the Running Man and Red Heat

Mr. Schwarzenegger began to alternate between comedies and action films starring in Twins and Total Recall, Kindergarten Cop and Terminator 2: Judgement day. He continued this formula through the next decade with a string of box office successes.

Mr. Schwarzenegger is a supporter of the Republican Party and successfully ran for the office of Governor of California in a recall election in 2003. Mr. Schwarzenegger has been an advocate of exercise for children and was chairman of the President’s Council on Physical Fitness and Sports from 1990 to 1993. As governor he signed a bill creating the nation’s first cap on greenhouse gas emissions. The law set new regulations on the amount of emissions utilities, refineries and manufacturing plants are allowed to release into the atmosphere. Schwarzenegger also signed a second global warming bill that prohibits large utilities and corporations in California from making long-term contracts with suppliers who do not meet the state’s greenhouse gas emission standards.

He is married to TV journalist Maria Shriver and is the son-in-law to Eunice Kennedy Shriver. Together they have four children.



AWARD Recipient Pioneer in Technology



President and CEO of GE Health Care **Mr. Mark L. Vachon** Recipient of Pioneer in Technology Crystal Award

Mark L. Vachon is president and CEO of Global Diagnostic Imaging, a position he has held since January 2006.

Mr. Vachon began his GE career in 1982 as a member of the Financial Management Program in Schenectady, New York. After assignments at Corporate Research and Development, Large Motor and Generator, International Apparatus and Engineering Services, Mark joined the Corporate Audit Staff in 1985. Mr. Vachon served on the audit staff for five years, eventually becoming executive audit manager.

In 1990 he accepted the position of manager of International Finance at GE Appliances. Over the next several years, Mr. Vachon had assignments at Appliances as manager of the Process Improvement Group, general manager of Retail Sales and Market Development, and general manager of Consumer Satisfaction. In December 1995 he assumed the role of director of finance at GE Plastics Europe, based in Bergen op Zoom in the Netherlands. After a brief time as GE Plastic's Global Quality Leader, Mr. Vachon was promoted to vice president of Investor Relations with GE Corporate in April 1998. In July 1999 he was appointed a GE company officer, and in January 2002 he was appointed executive vice president and chief financial officer of NBC. The following year he was appointed to executive vice president and chief financial officer at GE Healthcare.

Mr. Vachon graduated from Northeastern University in Boston with a bachelor's degree in finance. He resides in the Waukesha, Wisconsin, area with his wife Karen and their two children.



Keynote Speaker



Ron von Jako, M.D.

BIOGRAPHY

Before joining GE Healthcare - Surgery in 2002, Dr. von Jako had been Senior Product and Clinical Development Director with Visualization Technology, Inc. While at VTI and in collaboration with GEHC, Dr. von Jako was responsible for creating the product development and evidence-based strategies for orthopedic and neurosurgical applications.

He launched the first commercial electromagnetic navigation platform integrated with GE C-arm fluoroscopy targeting spinal degenerative disc disease, trauma, and deformity procedures. Prior to VTI, Dr. von Jako was co-founder of Atls, Inc where he co-invented a patented electrosurgical device used for the excision and removal of various lesions through mini-open and laparoscopic procedures. Previous to this, Dr. von Jako served as VP of Clinical Affairs for Atlantis Surgical where he created novel fiberoptic and integrated endoscopic-retractor technologies. Here he directed clinical research teams supporting multinational surgical projects that resulted in new trends and standards that enabled some of the first least invasive concepts and access approaches for cardio-vascular, orthopedic and spinal fusions. Dr. von Jako has consulted for a number of different companies including SpineTech, Boston Scientific, US Surgical, Kaiser Aerospace, Medtronic and Smith and Nephew for minimally invasive approaches to surgery. His experience has included designing products and running trials for numerous surgical indications.

Currently he serves as Medical Director for GEHC Surgery/OEC providing medical perspectives on risk assessments to further strengthen the focus on patient safety, drive benefits of surgical products through evidence generation, and interact between external experts and internal GE cross-functional areas to expand upon innovative technologies. Dr. Von Jako received his medical degree at 24 from the University of Pecs, School of Medicine and Health Sciences, Pecs Hungary and trained in surgery. He was awarded a Fellowship in Minimally Invasive Surgical Research from Dartmouth - Lahey Clinic Medical Center in Massachusetts.

He is currently a PhD Candidate in Experimental Surgery. Some professional affiliations and awards include the Mass Medical Society, Spine Arthroplasty Society, American Academy of Otorhinolaryngology- Head and Neck Surgery and American College of Surgeons Scientific Exhibition awards.



8:00am - 5:55pm

Sponsor Exhibitions in CNSI Lobby
Poster Sessions

Welcome and Introduction

8:00 - 8:20am

OFFICIAL WELCOME AND INTRODUCTION

By Chairmen:

Jean Jacques LEMAIRE and
Babak KATEB

8:20 - 8:55am

KEYNOTE SPEAKER

Ron VON JAKO, M.D. 

Chief Medical Officer
Surgical Development Leader
GE Healthcare Surgery

Application of Electromagnetic Image Guidance in Spine Surgery

Scientific Session 11: Deep Brain Stimulation and Human Brain Machine Interface - Session 1

9:00 - 9:15am

CHAIR:

Michael S. OKUN, M.D.

Adelaide Lackner Associate Professor of Neurology
Co-Director Movement Disorders Center
Department of Neurology, McKnight Brain Institute
Medical Director National Parkinson Foundation

Sorting out Verbal Fluency/Cognitive Issues in Deep Brain Stimulation

9:15 - 9:30am

Cameron MCINTYRE, Ph.D.

Assistant Staff, Cleveland Clinic Foundation,
Department of Biomedical Engineering,
Assistant Professor,
Department of Molecular Medicine
Cleveland Clinic Lerner College of Medicine - CWRU

Deep Brain Stimulation Surgical Navigation Using Neurostimulation Models

9:30 - 9:45am

William SHAIN, Ph.D.

Research Scientist,
Wadsworth Center, Nervous System Disorders
Associate Professor,
School of Public Health,
Biomedical Sciences and Environmental Health Sciences

What Can We Learn from Pathology and Imaging Post-Mortem DBS Tissue



Scientific Session 11: Deep Brain Stimulation and Human Brain Machine Interface - Session 1 (Cont.)

9:45 - 10:00am

CO-CHAIR:

Michele TAGLIATI, M.D.

Associate Professor of Neurology
Division Chief, Movement Disorders
Mount Sinai School of Medicine

The Safety of MRI in Deep Brain Stimulation: A Review of National Parkinson Foundation Centers of Excellence

10:00 - 10:15am

Felice SUN, Ph.D.

Clinical Scientist
NeuroPace

Responsive Neurostimulation for Epilepsy

10:15 - 10:30am

Q & A

10:30 - 11:00am

COFFEE BREAK

Scientific Session 12: Robotics, Brain Implants and Human Brain Machine Interface - Session 2

11:00 - 11:15am

CHAIR:

Geoffrey S. YOUNG M.D.

Director of MR Neuroimaging,
Brigham and Women's Hospital
Department of Radiology
Instructor in Radiology,
Harvard Medical School

Susceptibility Weighted Imaging Enhancement of Standard 3 Tesla T1-weighted SPGR Surgical Navigation Images for Improved Midbrain Nuclei Imaging and Guidance During Deep Brain Stimulation Implantation

11:15 - 11:30am

CO-CHAIR:

Mesut SAHIN, Ph.D.

Assistant Professor of Biomedical Engineering,
New Jersey Institute of Technology

Brain-Computer Interfacing: Too Many Choices of Brain Sites for Recording Volitional Activity

11:30 - 11:45am

Herc NEVES, Ph.D.

Principal Scientist, Biomedical Microsystems
Program Manager, Smart Implants
IMEC vzw

Cerebral Implants: A Microsystem Perspective



Scientific Session 12: Robotics, Brain Implants and Human Brain Machine Interface - Session 2 (Cont.)

11:45 - 12:00pm

Aria A. TZIKA, Ph.D.

Director of NMR Surgical Laboratory,
Massachusetts General Hospital and Shriners Burns Institute,
Athinoula A. Martinos Center for Biomedical Imaging
Harvard Medical School

Connectivity Alterations Assessed by Combining fMRI and MR Compatible Rehabilitation Robots in Chronic Stroke

12:00 - 12:15pm

Wentai Liu, Ph.D.

Professor of Electrical Engineering
Campus Director of NSF-ERC on Biomimetic MicroElectronic Systems (BMES)
University of California at Santa Cruz

High Density Brain Signal Recording and Processing Miniaturized System

12:15 - 2:00pm

LUNCH BREAK

Scientific Session 13: Mapping for Energy Delivery in the Brain

2:00 - 2:15pm

CHAIR:

Antonio A.F. DE SALLES, M.D., Ph.D.

Professor of Neurosurgery,
Head of Stereotactic Radiosurgery
David Geffen-UCLA School of Medicine

Importance of Fibertracking Maps for Functional Neurosurgery

2:15 - 2:30pm

CO-CHAIR:

Alessandra GORGULHO, M.D.

Stereotactic Section
Department of Neurosurgery
David Geffen-UCLA School of Medicine

DTI and Imaging Fusion for AVM Radiosurgery Planning and Follow-up

2:30 - 2:45pm

Tom S. LEE, M.S.

Computer Scientist, Permedics Inc.
Research Assistant, Loma Linda University

Software-Based MRI Distortion Correction for Precise Radiation Treatment Planning

2:45 - 3:00pm

Nzhde AGAZARYAN, Ph.D., DABR

Associate Professor of Radiation Oncology
Stereotactic Section
Department of Neurosurgery
David Geffen-UCLA School of Medicine

Frameless Localization for Radiosurgery Delivery



Scientific Session 13: Mapping for Energy Delivery in the Brain (Cont.)

3:00 - 3:15pm

Justin Zivin, M.D., Ph.D.

Professor of Neurosciences and
Vice Chairman of the Department of Neurosciences,
University of California San Diego School of Medicine

Use of Laser Irradiation of the Brain for Improving Recovery from Stroke

3:15 - 3:30pm

Q & A

3:30 - 4:00pm

TEA RECESS

Scientific Session 14: New Horizon

4:00 - 4:15pm

CHAIR:

Tzyy-PING JUNG, Ph.D.

Associate Director
Swartz Center for Computational Neuroscience
University of California San Diego

Complex Brain Dynamics during Sustained Attention Tasks

4:15 - 4:30pm

CO-CHAIR:

Kenneth I. LIPOW, M.D.

Chief of Neurosurgery,
Bridgeport Hospital
(a Yale Network Affiliate)
President of Connecticut Neurosurgical Specialists, P.C.

The Challenge of Neurosurgical Physiologic Augmentation

4:30 - 4:45pm

Arminas RAGAUSKAS, D.Sc.

Professor
Head of Telematics Sc. Lab.,
Kaunas University of Technology, Lithuania

Innovative Technologies for Noninvasive Assessment of Intracraniospinal Physiological Characteristics

4:45 - 5:00pm

Jeng-Ren DUANN, Ph.D.

Project Scientist
Swartz Center for Computational Neuroscience,
Institute for Neural Computation
University of California San Diego

Exploring BOLD Based-Causality between Independent Brain Networks

5:00 - 5:15pm

Srini MUKUNDAN, PhD, MD

Director of Neuroradiology
Brigham and Women's Hospital

CT Based Surgical Planning in the Cases of Craniosynostosis

5:15pm

TEA RECESS



Special Thanks

This program made possible by generous contributions of:



Abraxis BioScience is a fully integrated biotechnology company dedicated to delivering progressive therapeutics, such as ABRAXANE, and core technologies that offer patients and medical professionals safer and more effective treatments for cancer and other critical illnesses.



United States Army Telemedicine and Advanced Technology Research Center (TATRC). This program is held in collaborative Partnership with TATRC and is made possible by a contract administered through the US Army Medical Research and Materiel Command (USAMRMC) at Fort Detrick.



We make it visible.





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Alexandra Golby, Harvard
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Behnam Badie, COH
Chris Macedonia, TATRC, US ARMY
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