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Technology-driven Breakthroughs in Treating Alzheimer's, Parkinson's, Epilepsy, Strokes and More Announced at the 31st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS)

Live Video Stream of Expert Roundtables Available on IEEE.tv

MINNEAPOLIS – 3 September 2009 – Leading experts from around the world will discuss the latest advancements in biomedical engineering in the treatment of serious neurological disorders at the IEEE Engineering in Medicine and Biology Society (EMBS) 31st Annual International Conference (EMBC'09) in Minneapolis, Minn.— the world's capital of the medical device industry. Comprised of IEEE members, the IEEE EMBS is dedicated to advancing the application of engineering sciences and technology to medicine and biology. IEEE is the world's largest technical professional association.

Conference highlights include two panel discussions featuring experts in neuro-engineering discussing medical breakthroughs in treating some of today's most devastating neurological conditions. The first panel, taking place at 11:30 a.m. CT, will discuss technology's role in understanding and treating conditions of the brain. The second panel, taking place at 3 p.m. CT, will cover advances in neuro-rehabilitation. The EMBC'09 technical program consists of plenary and keynote lectures, workshops, symposia and technical sessions, in which thought leaders in academia and industry will discuss the latest significant findings and developments in each major field of biomedical engineering, and in particular, neuro-engineering.

To register for the live video stream, please visit: <http://www.IEEE.tv>.

"For more than 50 years, IEEE and EMBS members from around the world have worked together to transform and revolutionize healthcare, ranging from designing cardiac and brain pacemakers for restoring health in numerous patients, to prosthetic limbs for war veterans," said 2009 IEEE EMBS President and EMBC'09 Conference Chair, Dr. Bin He. "By merging the medical and technology worlds, we can address and solve many of the world's most pressing biomedical issues, and today's announcement is the tip of the iceberg on what we can achieve when we work together to benefit humanity."

Featured panelists include:

- Dr. Paolo Bonato, senior member of IEEE, director of the Motion Analysis Laboratory at Spaulding Rehabilitation Hospital, Boston, Mass., and assistant professor in the Department of Physical Medicine and Rehabilitation, Harvard Medical School – Dr. Bonato's research includes wearable sensors and a web-based application to monitor patients with Parkinson's disease in the home environment, devices to monitor and prevent toe walking in children with Cerebral Palsy, pelvic obliquity rehabilitation in stroke patients using robotically-generated force fields and robotic gait training in children with Cerebral Palsy.
- Dr. Dominique Durand, senior member of IEEE, E.L. Linsedth Professor of Biomedical Engineering and Neurosciences and director of the Neural Engineering Center at Case Western Reserve University in Cleveland,

Ohio. – Dr. Durand focuses on Deep Brain Stimulation (DBS) and how it improves the lives of epilepsy patients as well as alleviates the symptoms of Parkinson’s disease. Additionally, he is developing prosthetic devices for patients who suffer from sleep apnea using neuro-interfacing.

- Dr. Gary H. Glover, IEEE and National Academy of Engineering member and professor and director of Radiological Sciences Laboratory, Stanford University School of Medicine – Dr. Glover’s research interests include the latest news and developments for molecular imaging as well as Hyper Polarized Carbon 13 Imaging, the use of MRI as biomarkers, advancements for the use of MRI in quantifying the affects of therapy and the ethics and regulation of fMRI usage for lie detection and other physiological processing.
- Dr. Bin He, IEEE Fellow, 2009 President of IEEE EMBS and McKnight Distinguished University Professor and Director of the Center for Neuroengineering at the University of Minnesota, Twin Cities – Dr. He’s research ranges from discovering the latest functional brain imaging technologies to better understand and aid the treatment of epilepsy, to developing noninvasive brain-computer interfaces for “thought” driven devices aimed at restoring functions in disabled patients.
- Dr. Richard Jones, senior member of IEEE and director of the Christchurch Neuro-technology Research Programme – Dr. Jones’ research includes various techniques for detecting, predicting, preventing and understanding micro-sleeps and attention lapses. Additionally, his research includes novel techniques based on virtual reality for enhanced rehabilitation of neurological disorders such as stroke and epilepsy.
- Dr. James Patton, member of IEEE and associate professor of bioengineering at the University of Illinois at Chicago and associate director of the Center for Rehabilitation Robotics at the Rehabilitation Institute of Chicago – Dr. Patton uses virtual reality to rehabilitate patients suffering from neurological disorders and the physical effects resulting from a stroke.
- Dr. Jose Carlos Principe, IEEE Fellow, BellSouth Professor and Distinguished Professor of Electrical Engineering and Biomedical Engineering at the University of Florida – Dr. Principe’s work with brain machine interface is geared toward discovering the location within the brain that creates the intent to move, specifically among paraplegics. By using the latest techniques in brain wave analysis and brain processing, Dr. Principe is designing innovative algorithms to better understand the interworking of the brain.
- Dr. Zev Rymer, member of IEEE and John G. Searle Professor of Rehabilitation Research at the Rehabilitation Institute of Chicago – Dr. Rymer’s research interests include the neural control and biomechanics of movement in human and animal models, and the disturbances of voluntary movement and their origins in neurologically disabled subjects, particularly those suffering from spinal cord injury and stroke. He focuses on the latest robotic rehabilitation techniques for patients with spinal cord injuries.
- Dr. Andrew Schwartz, IEEE member and professor of neurobiology at the University of Pittsburgh – Dr. Schwartz is currently examining the connection between the brain and physical activity. As part of his work, he focuses on discovering key locations within the brain where electrodes can be placed in order to control external devices such as robotic arms and prosthetic devices.
- Dr. Nitish V. Thakor, IEEE Fellow, professor of Biomedical Engineering and the director of the Laboratory for Neuro-engineering at Johns Hopkins University – Dr. Thakor’s research expertise includes neural diagnostic instrumentation, neural signal processing, optical imaging of the nervous system and neural prosthesis. He is also developing diagnostic monitors for brain injury detection in the operating room and neurological intensive care.

If you're looking to speak with any of the above mentioned technical experts who can provide insightful global commentary on neuro-engineering or other innovation topics related to the medical industry, please contact IEEE at ieee-PR@ruderfinn.com. For more information on the 31st Annual International Conference of IEEE Engineering in Medicine and Biology Society visit www.embc09.org.

About EMBS

IEEE Engineering in Medicine and Biology Society (EMBS) is the world's largest international society of Biomedical Engineers. With more than 46 percent of its 8,200 members residing in some 70 countries around the world, IEEE EMBS members support scientific, technological and educational activities as they apply to the concepts and methods of the physical and engineering sciences in biology and medicine. Key areas of interest include bioinformatics, biotechnology, clinical engineering, information technology, instrumentation and measurement, micro and nanotechnology, radiology and robotics. Learn more about IEEE Engineering in Medicine and Biology Society at www.EMBS.org.

About IEEE

IEEE (Institute of Electrical and Electronics Engineers, Inc.), the world's largest technical professional association, is commemorating its 125th anniversary in 2009 by "Celebrating 125 Years of Engineering the Future" around the globe. Through its more than 375,000 members in 160 countries, IEEE is a leading authority on a wide variety of areas ranging from aerospace systems, computers and telecommunications to biomedical engineering, electric power and consumer electronics. Dedicated to the advancement of technology, IEEE publishes 30 percent of the world's literature in the electrical and electronics engineering and computer science fields, and has developed nearly 900 active industry standards. The organization annually sponsors more than 850 conferences worldwide. Additional information about IEEE can be found at <http://www.ieee.org>.

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