The IEEE Engineering in Medicine and Biology Society advances the application of engineering sciences and technology to medicine and biology, promotes the profession, and provides global leadership for the benefit of its members and humanity by disseminating knowledge, setting standards, fostering professional development, and recognizing excellence.

The field of interest of the IEEE Engineering in Medicine and Biology Society is the application of the concepts and methods of the physical and engineering sciences in biology and medicine. This covers a very broad spectrum ranging from formalized mathematical theory through experimental science and technological development to practical clinical applications. It includes support of scientific, technological and educational activities.

PUBLICATIONS

IEEE PULSE Magazine
Transactions on Biomedical Engineering
Transactions on Information Technology in Biomedicine
Transactions on Neural Systems and Rehabilitation Engineering
Transactions on Medical Imaging
Transactions on NanoBioscience
Transactions on Computational Biology and Bioinformatics
Transactions on Biomedical Circuits and Systems
Reviews on Biomedical Engineering

ELECTRONIC PRODUCTS

EMBS Electronic Resource

CONFERENCES

Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)
AMA-IEEE Medical Technology Conference
IEEE EMBS International Conference on Biomedical & Health Informatics (BHI)
IEEE EMBS Special Topic Conference on Neural Engineering (NER)
International Symposium on Biomedical Imaging (ISBI)
International Conference on Biomedical Robotics and Biomechatronics (BIOROB)
International Conference on Rehabilitation Robotics (ICORR)

SUMMER SCHOOLS sponsored by EMBS

International Summer School on Biomedical Imaging
International Summer School on Biomedical Signal Processing
International Summer School on Biocomplexity
International Summer School on Information Technology in Biomedicine

Engineering in Medicine and Biology Society
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Telephone: +1 732 981 3433 Fax: +1 732 465 6435
Email: emb-exec@ieee.org www.embs.org

IEEE

EMB

2011 AWARDS

ENGINEERING IN MEDICINE & BIOLOGY SOCIETY

30 AUGUST 2011

BOSTON, MASSACHUSETTS
USA

2011 Student Paper Competition
Geographic Finalists

Asia Pacific

Jonathan Mynard
Murdoch Children's Research Institute, Australia

Robustness of the P-U and lnD-U Loop Wave Speed Estimation Methods: Effects of the Diastolic Pressure

Europe

Michaël Johannes Rooijakkers
Eindhoven University of Technology, The Netherlands

Low-Complexity R-Peak Detection in ECG Signals: a Preliminary Step

North America

Alexander Kent
Duke University, USA

Instrumentation to Record Evoked Potentials for Closed-Loop Control of Deep Brain Stimulation

2011 Student Paper Competition
Open Finalists

Faith A. Bazley, Johns Hopkins University, USA
Plasticity Associated Changes in Cortical Somatosensory Evoked Potentials following Thoracic Spinal Cord Injury

Virgílio Bento, University of Aveiro, Portugal
Towards a Movement Quantification System Capable of Automatic Evaluation of Upper Limb Motor

Anthony Christodoulou, University of Illinois at Urbana-Champaign, USA
Four-Dimensional MR Cardiovascular Imaging: Method and Application

Brian D'Alessandro, New Jersey Institute of Technology, USA
Voxel-Based, Parallel Simulation of Light in Skin Tissue for the Reconstruction of Subsurface Skin Lesion Volumes

Chengzong Han, University of Minnesota, USA
Noninvasive Reconstruction of the Three-dimensional Ventricular Activation Sequence during Pacing and Ventric

Christina Hassler, University of Freiburg, Germany
Chronic Intracortical Implantation of Saccharose-coated Flexible Shaft Electrodes into

Sissel Juul, Aarhus University, Denmark
Microfluidics-Mediated Isothermal Detection of Enzyme Activity at the Single Molecule Level

Muammar Muhammad Kabir, The University of Adelaide, Australia
Quantification of Cardio-respiratory Interactions in Healthy Children during Night-Time Sleep using Joi

Carlos Alejandro Robles-Rubio, McGill University, Canada
Automated Unsupervised Respiratory Event Analysis

Atsushi Takano, Tokyo Denki University, Japan
On-chip Incubation System for Long-term Microfluidic Cell Culture

Nhan Tran, The University of Melbourne, Australia
A Prototype 64-Electrode Stimulator in 65 nm CMOS Process towards a High Density Epi-Retinal Prosthesis

Ning Xue, University of Texas at Dallas, USA
A SU-8-Based Compact Implantable Wireless Pressure Sensor for Intraocular Pressure Sensing Application

STUDENT PAPER COMPETITION

2010 Award Winners

For outstanding student achievement on a level of international competition in the field of Biomedical Engineering. The three most outstanding student competitors at the Annual International Conference of the EMBS are recognized based on the quality and presentation of their research. The First, Second and Third Place winners receive $300, $200, and $100 respectively.

FIRST PLACE

JUSTIN HALDAR
University of Illinois at Urbana-Champaign, USA

Label-Free High Resolution Imaging of Live Cells with Deconvolved Spatial Light Interference Microscopyconsect

SECOND PLACE

OLGAC ERGENEMAN
ETH Zurich

Oxygen Sensing Using Microrobots

THIRD PLACE

ABHISHEK REGE
Johns Hopkins University

Imaging Microvascular Flow Characteristics Using Laser Speckle Contrast Imaging

Best New Student Branch Chapter or Club

XIAMEN UNIVERSITY Student Club

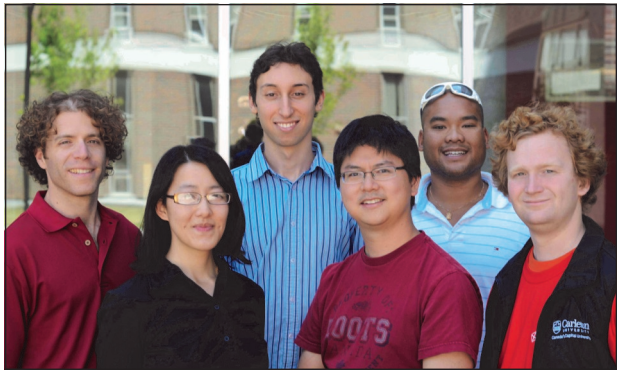
The IEEE EMBS Xiamen Student Club was established in 2010, in response to the sustained growth of biomedical engineering research and development demand in Xiamen and south of Fujian province. The Student Club is sponsored by the IEEE Engineering in Medicine and Biology Society, and co-sponsored by Xiamen University. The academic guidance and technical support are provided by the Medical Informatics and Rehabilitation Engineering Laboratory, Xiamen University.

http://www.cloudswu.org/embs

Outstanding Performance Award

Student Branch Chapter or Club

CARLETON UNIVERSITY Student Club



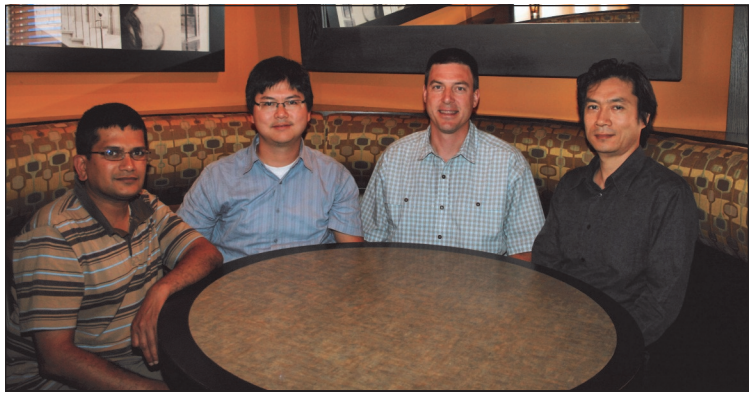
The CU@EMBS is Carleton University's IEEE EMBS Student Club, located in Ottawa, Ontario, Canada. CU@EMBS was established in the summer of 2003 by graduate students in the Department of Systems and Computer Engineering, at Carleton University. Membership in the club has steadily increased to over 180 members. Although initially intended as a club for biomedical engineering graduate students, CU@EMBS has expanded to include students, faculty, and industry professionals from diverse disciplines. This reflects the interdisciplinary nature of biomedical engineering research.

CU@EMBS provides its members with opportunities for professional and academic development, involvement in educational outreach, and social activities. The "CU@EMBS Biomedical Engineering Networking and Career Information Event" is a major annual event featuring guest speakers from local biomedical engineering-related companies and research organizations, which provides networking opportunities between students and industry professionals. The "CU@EMBS Student Mini-Conference" is another major annual event which provides graduate students with an opportunity to obtain constructive feedback about their technical writing and presentation skills. The "CU@EMBS Presents" monthly guest speaker series is a new initiative featuring a professional from a biomedical-related discipline, who can provide students with insight into the transition from graduate studies to industry, entrepreneurship, or further research. Another new initiative for CU@EMBS is a week-long enrichment mini-course for high school students, which provides high school students with a chance to learn about biomedical engineering topics and applications in a university setting. CU@EMBS also launched a new website (http://embs.engsoc.org) and email newsletter this past year, which improved communications with club members and other local biomedical engineering groups.

The current CU@EMBS club officers are: Sankua Chao (Chair), Adam Freed (Vice-Chair), Luke Russell (Treasurer), Catalin Patulea (Web Developer), Dave Luong (Graphics Designer/Event Promoter), and Adrian Chan (Faculty Advisor).

Outstanding Chapter Award

OTTAWA CHAPTER



Chapter Officers

Dr. Sreeraman Rajan, Ottawa EMBS Chapter Chair and IEEE Ottawa Section Chair
Dr. Adrian Chan, Ottawa EMBS Chapter Webmaster
Dr. James Green, Ottawa EMBS Chapter Secretary
Dr. Yuu Ono, Ottawa EMBS Chapter Vice Chair
Not pictured: Mr. Mohamad Elbadri, Treasurer

The IEEE Ottawa EMBS chapter is active in the advancement and promotion of biomedical engineering, serving as a central hub for students, researchers, and industry. There are regular technical meetings, which include speakers from both inside and outside the Ottawa region (including speakers from the Distinguished Lecturer Program). The Ottawa EMBS Chapter in partnership with the Ottawa IMS Chapter has been conducting annual workshops on non-invasive measurement techniques and adverse response monitoring. We have also collaborated on hosting the MeMEA symposium every alternate year in Ottawa. By closely working with and supporting the student chapter CU@EMBS, we have enabled an annual student biomedical mini-conference and associated paper competition. Recognized by the IEEE Ottawa Section as Best Ottawa Chapter in 2008 and 2010, we are honoured to receive the 2011 IEEE EMBS Outstanding Chapter Award and energized to continue to advance the exciting field of biomedical engineering!

IEEE Transactions on Biomedical Engineering

Outstanding Paper Award

A Comparison of Monodomain and Biodomain Reaction-Diffusion Models for Action Potential Propagation in the Human Heart

TBME, vol. 53, no. 12, pages 2425-2435, December 2006

Mark Potse, Bruno Dube, Jacques Richer, Alain Vinet, Ramesh M. Gulrajani

This paper addresses an important biomedical engineering modeling problem: how useful is more complex bidomain modeling, rather than monodomain modeling, for use in estimating the propagation of electrical potentials across the heart? This is the most comprehensive comparison of the techniques, providing considerable insight for researchers in this important field. This paper has the largest number of citations over the last five years as reported by the Institute of Scientific Information.

The authors' affiliations at time of publication:
M. Potse, Department of Physiology, Institute of Biomedical Engineering, Université de Montréal and the Research Center, Sacré-Coeur Hospital, Montréal, Canada

B. Dubé and A. Vinet, Department of Physiology, Institute of Biomedical Engineering, Université de Montréal and the Research Center, Sacré-Coeur Hospital, Montréal, Canada

J. Richer, Réseau Québécois de Calcul de Haute Performance, Montréal, Canada

R. M. Gulrajani, Department of Physiology, Institute of Biomedical Engineering, Université de Montréal and the Research Center, Sacré-Coeur Hospital, Montréal, Canada

A monetary award of $500 USD will be given each author group and individual certificates of merit will be given to each author.

IEEE Transactions on Information Technology in Biomedicine

Outstanding Paper Award

Detection of Daily Activities and Sports with Wearable Sensors in Controlled and Uncontrolled Conditions

TITB, vol. 12, no. 1, pages 20-26, January 2008

Miikka Ermes, Juha Pärkkä, Jani Mäntyjärvi, Ilkka Korhonen

The authors' affiliation at time of publication:
VTT Technical Research Center of Finland, Tampere, Finland

A monetary award of $500 USD will be given each author group and individual certificates of merit will be given to each author.

2011 IEEE Fellows

Congratulations to the 2011 Elected EMBS Members

Stephen Boppart **University of Illinois at Urbana-Champaign**
for contributions to optical biomedical imaging

Gert Cauwenberghs **University of California San Diego**
for contributions to integrated biomedical instrumentation

Emad Ebbini **University of Minnesota**
for contributions to ultrasound temperature imaging and dual-mode ultrasound

John Fitzpatrick **Vanderbilt University**
for contributions to medical image registration and surgical navigation

Voicu Groza **University of Ottawa**
for contributions to floating-point analog-to-digital conversion

Craig Hartley **Baylor College of Medicine**
for contributions to high frequency ultrasonic medical instrumentation

Paul Kinahan **University of Washington Medical Center**
for contributions to positron emission tomography

Niels Kuster **IT'IS Foundation**
for contributions to the area of near-field exposures and dosimetry for radiofrequency fields in biomedical research

Patrick Loughlin **University of Pittsburgh**
for contributions to time-frequency analysis and nonstationary signal processing

Nigel Lovell **University of New South Wales**
for contributions to medical device technologies including telehealth systems and visual prostheses

John Moreland **National Institute of Standards and Tech Electromagnetic Division**
for contributions to magnetic applications of scanning probe microscopy and microsystem technologies

Larry Nagahara **National Cancer Institute Office of Physical Sciences - Oncology**
for leadership in nanotechnology devices and measurement applications

Yoshihiko Nakamura **The University of Tokyo**
for contributions to robotics

Allison Okamura **Johns Hopkins University**
for contributions to the design and control of haptic systems and medical robotics

Dorin Panescu **NewCardio, Inc.**
for contributions to medical devices for cardiac applications

Robert Puers **Katholieke Universiteit Leuven**
for contributions to implantable microelectromechanical systems

Thomas Ryan **Freefall Consulting**
for applications of electromagnetic and acoustic systems and techniques for thermal therapy

Guang-Zhong Yang **Imperial College London**
for contributions to medical imaging and robotic surgery

Fan-Gang Zeng **University of California Irvine**
for contributions to auditory prostheses

Gengsheng Zeng **University of Utah**
for contributions to instrumentation and image reconstruction algorithms in single photon emission computed tomography

Technical Achievement Award

Michael Unser

For outstanding contributions to signal and image processing with applications in biomedical imaging

Michael Unser is Professor and Director of EPFL's Biomedical Imaging Group. His main research area is biomedical image processing. He has a strong interest in sampling theories, multiresolution algorithms, wavelets, and the use of splines for image processing. He is the author of over 150 published journal papers in these areas, and is one of ISI's Highly Cited authors in Engineering.

He received the M.S. (summa cum laude) and Ph.D. degrees in Electrical Engineering in 1981 and 1984, respectively, from the Swiss Federal Institute of Technology (EPFL) in Lausanne, Switzerland. From 1985 to 1997, he was with the Biomedical Engineering and Instrumentation Program, National Institutes of Health, Bethesda USA, conducting research on bioimaging and heading the Image Processing Group.

Prof. Unser is a Fellow of the IEEE (1999), an elected member of the Swiss Academy of Engineering Sciences (2007), and an EURASIP Fellow (2009). He is the recipient of the 2008 Technical Achievement Award of the IEEE Signal Processing Society "for the contributions to the theory and practice of splines and their applications in signal and image processing."

Technical Achievement Award

Lihong Wang

For seminal contributions to ultrasonically enabled biophotonic imaging and modeling of photon transport in biological tissue

Lihong Wang earned his Ph.D. degree at Rice University, Houston, Texas under the tutelage of Robert Curl, Richard Smalley, and Frank Tittel and currently holds the Gene K. Beare Distinguished Professorship of Biomedical Engineering at Washington University in St. Louis.

His book entitled "Biomedical Optics: Principles and Imaging," one of the first textbooks in the field, won the 2010 Joseph W. Goodman Book Writing Award. He also coauthored a book on polarization and edited the first book on photoacoustic tomography. Professor Wang has published 255+ peer-reviewed journal articles with an h-index of 52 and delivered 280+ keynote, plenary, or invited talks.

His laboratory invented or discovered functional photoacoustic tomography, dark-field confocal photoacoustic microscopy (PAM), optical-resolution PAM, photoacoustic Doppler effect, photoacoustic reporter gene imaging, focused scanning microwave-induced thermoacoustic tomography, the universal photoacoustic or thermoacoustic reconstruction algorithm, frequency-swept ultrasound-modulated optical tomography, time-reversed ultrasonically encoded (TRUE) optical focusing, sonoluminescence tomography, Mueller-matrix optical coherence tomography, optical coherence computed tomography, and oblique-incidence reflectometry.

Professor Wang is a Fellow of the AIMBE (American Institute for Medical and Biological Engineering), OSA (Optical Society of America), IEEE (Institute of Electrical and Electronics Engineers), and SPIE (Society of Photo-Optical Instrumentation Engineers). He is the Editor-in-Chief of the Journal of Biomedical Optics. He chairs the annual conference on Photons plus Ultrasound, and chaired the 2010 Gordon Conference on Lasers in Medicine and Biology and the 2010 OSA Topical Meeting on Biomedical Optics. He is a chartered member on an NIH Study Section. Wang serves as the founding chairs of the scientific advisory boards for two companies commercializing his inventions. He received NIH's FIRST and NSF's CAREER awards. He was awarded the C. E. K. Mees Medal for "seminal contributions to photoacoustic tomography and Monte Carlo modeling of photon transport in biological tissues and for leadership in the international biophotonics community."

William J. Morlock Award

Yongmin Kim

For outstanding contributions to the development and application of electronic technologies for biomedical imaging and healthcare information systems

Dr. Yongmin Kim, after receiving his Ph.D. degree from the University of Wisconsin, joined the University of Washington as a faculty member in 1982. From 1999 to 2007, he was Professor and Chair of Bioengineering. Currently, he is Professor of Bioengineering, Professor of Electrical Engineering, and Adjunct Professor of Radiology and Computer Science and Engineering. From 2004 to 2007, he was Hunter and Dorothy Simpson Endowed Chair in Bioengineering.

His research interests include medical imaging and computing, ultrasound systems, distributed diagnosis and home healthcare, and computer architecture. Dr. Kim and his research group have made 85 inventions that have led to more than 60 patents, transferred the invented technologies to industry with 27 licenses, and helped commercialization of these technologies. He has more than 450 research publications.

He has served on Steering Committee of *IEEE Transactions on Medical Imaging* for 10+ years. He has been member of the Editorial Board of Proceedings of the IEEE, IEEE TBME, IEEE TITB, IEEE Press series, and Annual Reviews of Biomedical Engineering. He was awarded the 1988 Early Career Achievement Award of IEEE/EMBS (Engineering in Medicine and Biology Society) and 2003 Ho-Am Prize in Engineering. In 2005, he received Distinguished Achievement Award from University of Wisconsin.

He was Program Chairman of 1989 IEEE EMBS Conference and Chair of SPIE Medical Imaging Image Display Conference from 1990 to 1999. He was Symposium Chair of SPIE Medical Imaging from 1998 to 2001. He was Conference Co-Chair of 2009 IEEE EMBS Conference in Minneapolis. He has been consultant to Texas Instruments, Intel, MITRE, Siemens, Hitachi, Fujitsu, Canon, Samsung, and many other organizations. He has been member of the External Advisory Board for Cleveland Clinic Foundation, University of Wisconsin, University of Utah, University of Florida, POSTECH and KAIST. He has been IEEE/EMBS distinguished lecturer and Chair of Distinguished Lecturer Committee in 1997~1998 and Awards Committee in 2001~2002. From 1992 to 2006, he was ABET program evaluator for computer engineering and bioengineering. He served on IEEE Fellow Committee from 1998 to 2001. He was Chair of IEEE/EMBS Fellows Committee. He served on IEEE Awards Board and IEEE TAB Periodicals Committee. He served on IEEE/EMBS Administrative Committee for many years. He was President of IEEE/EMBS in 2005 and 2006.

Dr. Kim is Fellow of IEEE, American Institute for Medical and Biological Engineering, and International Academy for Medical and Biological Engineering.

PRIOR AWARDEES

2009: *Luke Lee*
1979: *Robert Plonsey*
1974: *Dean L. Franklin*
1973: *Donald F. Childers*
1968: *Wilson Greatbatch*
1967: *Herman Schwan*
1963: *Otto Schmitt*
1961: *Britton Chance*
1956: *Edward F. MacNichol*

Early Career Achievement Award

Jose M. Carmena

For significant contributions to the development of cortical brain-machine interfaces for the restoration of sensory-motor function in neurologically impaired patients

Jose M. Carmena is an Assistant Professor of Electrical Engineering, Cognitive Science, and Neuroscience at the University of California-Berkeley, and Co-Director of the Center for Neural Engineering and Prostheses at UC Berkeley and UCSF. His research program in neural engineering and systems neuroscience is aimed at understanding the neural basis of sensorimotor learning and control, and at building the science and engineering base that will allow the creation of reliable neuroprosthetic systems for the severely disabled.

Dr. Carmena received the B.S. and M.S. degrees in electrical engineering from the Polytechnic University of Valencia (Spain) in 1995 and the University of Valencia (Spain) in 1997. Following those he received the M.S. degree in artificial intelligence and the Ph.D. degree in robotics both from the University of Edinburgh (Scotland, UK) in 1998 and 2002 respectively. From 2002 to 2005 he was a Postdoctoral Fellow at the Department of Neurobiology and the Center for Neuroengineering at Duke University (Durham, NC). In the summer of 2005 he was appointed Assistant Professor in the Department of Electrical Engineering and Computer Sciences, the Program in Cognitive Science, and the Helen Wills Neuroscience Institute at the University of California, Berkeley.

He is senior member of the IEEE (RA, SMC and EMB societies), Society for Neuroscience, and the Neural Control of Movement Society. Dr. Carmena has been the recipient of the IEEE Engineering in Medicine and Biology Society Early Career Achievement Award (2011), the Aspen Brain Forum Prize in Neurotechnology (2010), the National Science Foundation CAREER Award (2010), the Alfred P. Sloan Research Fellowship (2009), the Okawa Foundation Research Grant Award (2007), the UC Berkeley Hellman Faculty Award (2007), and the Christopher Reeve Paralysis Foundation Postdoctoral Fellowship (2003).

PRIOR AWARDEES

2010: *Dario Farina*
2009: *Silvestro Micera*
2008: *Ali Khademhosseini*
2007: *Tejal Desai*
2006: *Alejandro Frangi*
2005: *Stephen Boppart*
2004: *Susan Hagness*
2003: *Paolo Vicini*
2002: *Dorin Panescu*
2001: *David Beebe*
2000: *James Collins*
1999: *Zhi-Pei Liang*
1997: *Metin Akay*
1996: *Joan E. Sanders*
1995: *Atam P. Dhawan*
1993: *Rory A. Cooper*
1992: *Yitzhak Mendelson*
1991: *Blake Hannaford*
1990: Janie *M. Fouke*
1988: *Yongmin Kim*
1986: *George V. Kondraske*
1985: *K. Kirk Shung*

Distinguished Service Award

Maximus A. Viergever

For outstanding service and leadership contributions to the EMBS community through editorial activities and publications

Max A. Viergever received the MSc degree in applied mathematics in 1972 and the DSc degree with a thesis on cochlear mechanics in 1980, both from Delft University of Technology. From 1972 to 1988 he was Assistant/Associate Professor of Applied Mathematics at this university.

Since 1988 he has been Professor and Head of the Department of Medical Imaging at Utrecht University, since 1989 Professor of Physics and since 1996 Professor of Computer Science at the same university, and since 2002 Manager Education and Research of the Imaging Division of the University Medical Center Utrecht. He is founder and director of the Image Sciences Institute, of the PhD programme Medical Imaging (ImagO), and of the MSc programme Biomedical Image Sciences (BIS).

He is (co)author of more than 480 refereed scientific articles (abstracts excluded) on biophysics and medical image processing, guest editor of nine journal issues, (co)author/editor of 18 books, and has served as supervisor of 99 PhD theses and >130 MSc theses. His research interests comprise all aspects of medical imaging.

Max Viergever is an Honorary Senator of the University of Ljubljana, an Honorary Member of the Dutch Society for Pattern Recognition and Image Processing, and a recipient of the Catharijne Award and of the IEEE EMBS Distinguished Service Award. He is an Elected Fellow of the Institute of Physics (IOP), of the International Association of Pattern Recognition (IAPR), of the Institute of Electrical and Electronics Engineers (IEEE), and of the Medical Image Computing and Computer Assisted Intervention (MICCAI) Society.

He is (co)author of three awarded journal articles (Comput. & Graphics 1996, J. Comput. Assist. Tomogr. 1997, Diabetes 2007) and of nine best conference presentations, and has received three citation awards (IEEE Trans. Med. Imaging 1988, 1995; Med. Image Anal. 1998). He has been a board member of IAPR, IPMI and MICCAI, editor of the Springer book series Computational Imaging and Vision, editor-in-chief of the IEEE Transactions on Medical Imaging, editor of the Journal of Mathematical Imaging and Vision, and has acted as associate editor, guest editor or editorial board member of thirteen more international journals.

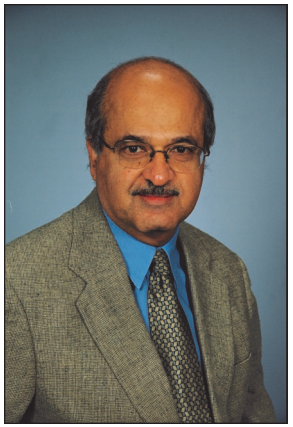
PRIOR AWARDEES

2010: *Yongmin Kim*
2009: *John W. Clark Jr.*
2008: *Henrietta Galiana*
2007: *Nathalie Gosset*
2006: *Yuan-Ting Zhang*
2005: *Jose Principe*
2004: *John Enderle*
2003: *Christian Roux*
2002: *Swamy Laxminarayan*
2001: *Metin Akay*
2000: *Jack Iverson*
1999: *Jean–Louis Coatrieux*
1998: *Susan M. Blanchard*
1996: *Michael R. Neuman*
1995: *Charles Robinson*
1994: *Barry Feinberg*
1993: *Eli Fromme*
1992: *Swamy Laxminarayan*
1990: *Alvin Wald*
1983: *Eli Fromme*

Professional Career Achievement Award

Rahul Mehra

For outstanding contributions to the understanding and treatment of malignant heart rhythms with implantable devices for patients at risk of sudden cardiac death



Rahul Mehra, PhD, received his bachelor's degree in Electrical Engineering from Indian Institute of Technology (IIT) in India and his PhD in Bio-Medical Engineering from New York in 1975.

He was Director of Computerized Electrophysiology at the Brooklyn VA Medical Center and Assistant Professor of Medicine at the Downstate Medical Center till 1983. He joined Medtronic Inc in 1983 and headed research programs leading to the development of implantable defibrillators and devices for treatment of atrial fibrillation. He was granted over 60 patents and has authored over 90 manuscripts and 24 book chapters. He is a Senior Technical Fellow of Medtronic as well as a Bakken Fellow.

He retired from Medtronic in 2009. He is on the board of Heartbeat International, which donates free implantable devices to indigent patients in developing countries. He is the chair of Indian Heart Alliance, a non-profit organization dedicated to prevention of Cardiovascular Diseases in India by educating the public and healthcare professionals.

He recently developed an educational DVD on anti-tobacco which will be used with WHO funding in over 500 schools in India. He is initiating projects with the Indian government to promote "wellness" and prevention of heart disease in industrial workers covered by the government health insurance schemes.

PRIOR AWARDEES

2010: *Mark Kroll*
2009: *Dorin Panescu*

Academic Career Achievement Award

K. Kirk Shung

For outstanding contributions to biomedical ultrasonic technology and applications

K. Kirk Shung obtained a B.S. in electrical engineering from Cheng-Kung University in Taiwan in 1968, a M.S. in electrical engineering from University of Missouri, Columbia, MO in 1970 and a Ph.D. in electrical engineering from University of Washington, Seattle, WA, in 1975. He taught at Pennsylvania State University, University Park, PA for 23 years before moving to the Department of Biomedical Engineering, University of Southern California, Los Angeles, CA, as a professor. He has been the director of NIH Resource on Medical Ultrasonic Transducer Technology since 1997.

Dr. Shung is a life fellow of IEEE, and a fellow of the Acoustical Society of America and American Institute of Ultrasound in Medicine. He is a founding fellow of American Institute of Medical and Biological Engineering. He received the IEEE Engineering in Medicine and Biology Society Early Career Award in 1985 and was the coauthor of a paper that received the best paper award for IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control (UFFC) in 2000. He was selected as the distinguished lecturer for the IEEE UFFC society for 2002-2003. He was elected an outstanding alumnus of Cheng-Kung University in Taiwan in 2001. In 2010 he received the Holmes Pioneer Award in Basic Science from American Institute of Ultrasound in Medicine.

Dr. Shung has published more than 300 papers and book chapters. He is the author of a textbook "Principles of Medical Imaging" published by Academic Press in 1992 and a textbook "Diagnostic Ultrasound: Imaging and Blood Flow Measurements" published by CRC press in 2005. He co-edited a book "Ultrasonic Scattering by Biological Tissues" published by CRC Press in 1993. Dr. Shung's research interest is in ultrasonic transducers, high frequency ultrasonic imaging, ultrasound microbeam, and ultrasonic scattering in tissues.

PRIOR AWARDEES

2010: Robert S. Langer
2009: *Sergio Cerutti*
2008: *Roger Barr*
2007: *Jose Principe*
2006: *Jean-Louis Coatrieux*
2005: *Ewart Carson*
2004: *Michael R. Neuman*
2003: *Ante Šantic*
2002: *Willis J. Tompkins*
2001: *John G. Webster*
2000: *Max Schaldach*
1999: *Fernand A. Roberge*
1997: *J. Lawrence Katz*
1996: *Max E. Valentinuzzi*
1995: *Floyd Dunn*
1994: *Wilson Greatbatch*
1993: *John M. Reid*
1992: *Edwin L. Carstensen*
1991: *Walter Welkowitz*
1990: *Richard J. Johns*
1988: *R. Stuart Mackay*
1987: *Otto Schmitt*
1986: *Leslie A. Geddes*
1985: *David B. Geselowitz*

CHAPTER AWARD DESCRIPTIONS

Outstanding Chapter Award

Presented annually to an EMBS Chapter who demonstrates achievement in member development and delivering services to members of an EMBS chapter during the previous calendar year. Achievement is based on activities, community outreach and promotion of EMB (website and newsletters). The award recipient receives an Honorarium of $1,000 USD and travel reimbursement of up to $1,000 USD for a Chapter representative to attend the EMBC awards dinner.

Best New Chapter Award

Presented annually to a new EMBS Chapter (within the first 12 months of Chapter formation) who demonstrates outstanding activities, community outreach and promotion of EMB (website and newsletters). The award recipient receives an Honorarium of $500 USD and travel reimbursement of up to $1,000 USD for a Chapter representative to attend the EMBC awards dinner.

Outstanding Performance Award for Student Branch Chapter or Club

Presented annually to an EMBS Student Branch Chapter or Club who demonstrates achievement in promoting student interest and involvement in biomedical engineering during the previous calendar year. Achievement is based on activities demonstrating initiative; innovation and creativity; areas of progress and improvement; significant impact in biomedical engineering education; and contributions to the profession. The award recipient receives an Honorarium of $500 USD and travel reimbursement of up to $1,000 USD for a Chapter/Club representative to attend the EMBC awards dinner.

Best New Student Branch Chapter or Club Award

Presented annually to an presented annually to a new EMBS Student Branch Chapter or Club (within the first 12 months of formation) who demonstrates activities demonstrating initiative, innovation, and creativity; areas of progress and improvement; significant impact in biomedical engineering education; and contributions to the profession. The award recipient receives an Honorarium of $300 USD and travel reimbursement of up to $1,000 USD for a Chapter/Club representative to attend the EMBC awards dinner.

ACHIEVEMENT AWARD DESCRIPTIONS

Technical Achievement Award

Recognizes outstanding achievements, contributions, or innovations in any area of bioengineering by an individual or group of individuals. Up to five awards will be selected each year. The awards will be presented at the Awards Ceremony held during the Annual Conference of IEEE EMBS. Each winner will receive a plaque, an honorarium of $1,500 and up to $1,500 in travel expenses to attend the EMBC awards dinner.

William J. Morlock Award

Established in 1960 by the family of William J. Morlock to give recognition to a qualified person with an original contribution involving important application of electronics techniques and concepts to the solution of biomedical problems. The award presentation was interrupted between 1980 and 2008, with 2009 marking the first year of new award recipients. The award recipient receives and Honorarium of $3,000 USD and travel reimbursement of up to $2,000 USD to attend the EMBC awards dinner.

Early Career Achievement Award

Presented annually to an individual who has made significant contributions, technologically or theoretically, to the field of Biomedical Engineering within ten years of completion of his or her highest degree. These contributions must represent meritorious achievement, exemplary technical contribution, or educational contribution to the field as evidenced by innovative research, design, product development, patents or publications. The award recipient receives an Honorarium of $1,000 USD and travel reimbursement of up to $1,500 USD to attend the EMBC awards dinner.

Distinguished Service Award

Presented annually to individuals who have made significant service contributions to the EMB Society. These contributions must represent uncommon dedication, and a record of exemplary service to the EMB society. The work cited could have appeared in the form of service as an EMBS Officer, AdCom member, editor, associate editor or society member. The award recipient receives an Honorarium of $1,000 USD and travel reimbursement of up to $1,500 USD to attend the EMBC awards dinner.

Academic and Professional Career Achievement Awards

Each presented annually to an individual who has made significant contributions through a distinguished career of twenty years or more in the field of Biomedical Engineering, as an educator, researcher, developer or administrator. These contributions must represent meritorious achievement and exemplary technical, educational, or administrative accomplishments in the field. Any past or present member of the IEEE and EMBS who has not been a voting member of AdCom in the past two years is eligible. The award recipients each receive an Honorarium of $2,500 USD and travel reimbursement of up to $1,500 USD to attend the EMBC awards dinner.