



The Engineering in Medicine and Biology Society of the IEEE 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 EMBS field of interest is the development and application of engineering concepts and methods to biology, medicine and health sciences to provide effective solutions to biological, medical and healthcare problems. The field encompasses the development of mathematical theories, physical, biological and chemical principles, computational models and algorithms, devices and systems for clinical, industrial and educational applications.

## **Engineering in Medicine and Biology Society**

445 Hoes Lane  
Piscataway, New Jersey, USA 08854  
Telephone: +1 732 981 3433  
Facsimile: +1 732 465 6435  
E-mail: [emb-exec@ieee.org](mailto:emb-exec@ieee.org)

[www.embs.org](http://www.embs.org)

## **PUBLICATIONS**

IEEE PULSE  
Transactions on Biomedical Engineering  
Transactions on Biomedical Engineering Letters  
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  
IEEE Journal on Translational Engineering in Health & Medicine (To be launched in 2013)

## **ELECTRONIC PRODUCTS**

EMBS Electronic Resource

## **CONFERENCES**

Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)  
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)  
Healthcare Innovation Conference (HIC)  
EMBS Micro and Nanotechnology in Medicine (MNM)  
Grand Challenges Conference Series (GCBE)  
IEEE EMBS International Conference on Biomedical and Health Informatics (BHI)  
AMA-IEEE Medical Technology Conference Series (MedTech)  
IEEE EMBS Point-Of-Care Healthcare Technologies

## **SUMMER SCHOOLS Technically Co-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 Medical Devices and Biosensors  
International Summer School on Information Technology in Biomedicine



# ***Congratulations***

## **2012 EMBS ACHIEVEMENT AWARDS**

**Annually, EMBS recognizes outstanding contributions of its members to the Society and the field of biomedical engineering.**

**EMBS is proud to announce the 2012 EMBS Award Recipients!**

### **Academic Career Achievement Award**



**Peter Hunter, Ph.D.  
University of Auckland**

*“For pioneering contributions to multi-scale physical modeling of biological systems, especially the Physiome Project.”*

### **Professional Career Achievement Award**



**Reese S. Terry, Jr.  
Cyberonics, Inc.**

*“For the invention of therapeutic implantable devices and procedures for the treatment of epilepsy and drug-resistant chronic depression.”*

### **Technical Achievement Award**



**Rashid Bashir, Ph.D.  
University of Illinois at  
Urbana-Champaign**

*“For significant contributions to the development of micro and nanoscale biosensors.”*

### **Early Career Achievement Award**



**Utkan Demirci, Ph.D.  
Harvard Medical School,  
Brigham & Women’s Hospital**

*“For significant contributions to the invention of microfluidic droplets and its impact in low-cost, disposable, point of care diagnostics.”*

# ***Congratulations***

## **2012 EMBS CHAPTER AWARDS**

**EMBS sponsors local activities worldwide through its Chapters for both Students and Members. Annually we acknowledge and recognize those Chapters whose activities embody best practices for the Society and its Members.**

**Please join us in congratulating the following Chapters/Clubs for their excellence in providing outstanding services to their local Members.**

### **Best New Student Branch Chapter or Club**

***CICB - Concepcion  
Student Club***

### **Outstanding Chapter Award**

***IEEE Malaysia EMBS Chapter***

# 2012 EMBS Student Paper Competition Finalists

*Supported by partnership funds provided by National Science Foundation*

## Geographic Finalists

### *Asian & Pacific Finalist*

Amgad Habib  
University of New South Wales  
“Efficacy of the Hexpolar Configuration in Localizing the  
Activation of Retinal Ganglion Cells under Electrical Stimulation”

### *European Finalist*

Juan Sebastian Ordonez  
University of Freiburg  
“A 232-Channel Retinal Vision Prosthesis with a Miniaturized  
Hermetic Package”

### *Latin American Finalist*

Andres Marino Alvarez-Meza  
Universidad Nacional de Colombia  
“Biomedical Data Analysis by Supervised Manifold Learning”

### *North American Finalist*

Yunfeng Lu  
University of Minnesota  
“Dynamic Seizure Imaging in Patients with Extratemporal Lobe  
Epilepsy”

## Open Finalists

Abhishek Basak  
Case Western Reserve University  
“Implantable Ultrasonic Dual Functional Assembly for Detection  
and Treatment of Anomalous Growth”

Aaron F. Cipriano  
University of California, Riverside  
“In Vitro Degradation and Cytocompatibility of Magnesium-Zinc-  
Strontium Alloys with Human Embryonic Stem Cells”

Elaine Corbett  
Northwestern University  
“Real-time Fusion of Gaze and EMG for a Reaching  
Neuroprosthesis”

Alex Hegyi  
University of California, Berkeley  
“Nanodiamond Imaging: A New Molecular Imaging Approach”

Kian Jalaeddini  
McGill University  
“Subspace Identification of Hammerstein Systems Using B-Splines”

Kamyar Keikhosravy  
University of British Columbia  
“On the Use of Smart Stents for Monitoring In-Stent Restenosis”

Won Hee Lee  
Duke University  
“Stimulation Strength and Focality of Electroconvulsive Therapy  
with Individualized Current Amplitude: A Preclinical Study”

Jaclyn Lock  
University of California, Riverside  
“Antimicrobial Properties of Biodegradable Magnesium for Next  
Generation Ureteral Stent Applications”

Gil Marom  
Tel-Aviv University  
“Effect of Asymmetry on Hemodynamics in Fluid-Structure  
Interaction Model of Congenital Bicuspid Aortic Valves”

Jlenia Toppi  
University of Rome “Sapienza”  
“Describing Relevant Indices from the Resting State  
Electrophysiological Networks”

Yin Zhang  
Carnegie Mellon University  
“Bayesian Learning in Assisted Brain-Computer Interface Tasks”

## Special Thanks to the Student Paper Competition Reviewers

Metin Akay  
Laura Astolfi  
Fabio Babiloni  
Paolo Bonato  
Guy Carrault  
Alisa Morss Clyne

Martha Zequera Diaz  
Dieter Haemmerich  
Bin He  
Mohamad Khalil  
Ilkka Korhonen  
Silvestro Micera

Matthias Reumann  
Kenji Sunagawa  
Toshiyo Tamura  
Lei (Leslie) Ying

# 2012 IEEE EMBS Fellow Members

**Gerard Coté**

Texas A&M University  
*for development of innovative optical sensors for in vitro and in vivo medical diagnosis and monitoring*

**Paul Dan Cristea**

University "Politehnica" of Bucharest (UPB)  
*for contributions to modernizing and internationalizing engineering education*

**Ruediger Dillman**

Karlsruhe Institute of Technology (KIT)  
*for contributions to robot programming and human-centered technologies*

**Gerard Dreyfus**

ESPCI-PARISTECH  
*for contributions to machine learning and its applications*

**Emad Ebbini**

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

**Gary Fogel**

Natural Selection, Inc.  
*for contributions to computational intelligence and its application to biology, chemistry, and medicine*

**Monique Frize**

Carleton University and University of Ottawa  
*for contributions to clinical engineering and engineering education*

**Masakatsu Fujie**

Waseda University  
*for contributions to medical robotics*

**Rafik Goubran**

Carleton University  
*for contributions to voice quality measurement and its applications to audio improvement*

**Robert Howe**

Harvard University  
*for contributions to haptic interfaces and robotic manipulation*

**Mark Humayun**

University of Southern California  
*for contributions to development of an artificial retina*

**Michael Insana**

University of Illinois at Urbana-Champaign  
*for contributions to ultrasound imaging methods, particularly elastography*

**Jorgen Jensen**

Technical University of Denmark  
*for contributions to medical ultrasound imaging systems*

**Nasser Kehtarnavaz**

University of Texas at Dallas  
*for contributions to real-time biomedical image processing*

**Michael Khoo**

University of Southern California  
*for contributions to cardiorespiratory control in sleep disorders*

**Mark Kroll**

Mark Kroll & Associates  
*for contributions to implantable and external defibrillator technology*

**Hugh McDermott**

University of Melbourne  
*for contributions to improved sound-processing techniques for cochlear implants and hearing aids*

**Jean-Christophe Olivio-Marin**

Institut Pasteur  
*for contributions to image analysis and its applications in biological imaging*

**Konstantinos Plataniotis**

University of Toronto  
*for contributions to the theory and application of statistical adaptive learning*

**Jagath Rajapakse**

Nanyang Technological University  
*for contributions to computational techniques for magnetic resonance imaging*

**Paul Sajda**

Columbia University  
*for development of brain-machine interfaces for image and media search*

**Jian Xin Xu**

National University of Singapore  
*for contributions to motion control systems*



# 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society

## First Announcement

<http://embc2013.embs.org>

The 35<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'13) is **coming earlier** and will take place **3-7 July 2013**, at the Osaka International Convention Center, in Osaka, Japan.

The conference will cover diverse topics such as biomedical engineering, healthcare technologies, and medical and clinical applications. The conference program will consist of invited plenary lectures, symposia, workshops, invited sessions and oral and poster sessions of unsolicited contributions. All papers will be peer reviewed; accepted papers of up to four pages will appear in the Conference Proceedings and be indexed by IEEE Xplore and Medline/PubMed.

### Proposals for organized sessions and submissions are invited in the following themes:

- Biomedical Signal Processing
- Biomedical Imaging & Image Processing
- Bioinstrumentation, Biosensors and Bio-Micro/Nano Technologies
- Bioinformatics, Computational Biology, Systems Biology, Modeling Methodologies
- Cardiovascular & Respiratory Systems Engineering
- Neural Engineering, Neuromuscular Systems & Rehabilitation Engineering
- Molecular and Cellular Biomechanics, Tissue Engineering, Biomaterials
- Biomechanics and Robotics
- Therapeutic & Diagnostic Systems, Devices and Technologies, Clinical Engineering
- Healthcare Information Systems, Telemedicine
- Biomedical Engineering Education and Society

**Special Theme:** Save Victims of Major Disasters Through Technology

#### **Key dates:**

Special Session Proposal Submission:  
15 August – 30 November 2012  
Paper Submission Open: 3 December 2012  
Paper Submission Deadline: 18 January 2013  
Author Notification: 24 March 2013  
Author Final Submission: 22 April 2013

**Conference Chair:** Kenji Sunagawa, Kyushu University, Japan; **Conference Co-Chair:** Christian Roux, Telecom Bretagne, France **Program Chairs** Toshiyo Tamura, Osaka Electro-Communication University, Japan;  
**Program Co-Chair:** Nigel Lovell, University of New South Wales, Australia



# IEEE Healthcare Innovation Conference Call for Papers

Houston, Texas

**Translational Engineering in Health & Medicine:**  
the intersection of the lab, the clinic and the  
community

**7-9 November 2012**

The IEEE Engineering in Medicine and Biology (EMB) Society is pleased to announce **the first IEEE Healthcare Technology Conference: Translational Engineering in Health & Medicine: the intersection of the lab, the clinic and the community** in Houston, TX, on **7th-9th November 2012** at the **Methodist Hospital Research Institute in the Texas Medical Center**.

This conference is devoted to the exploration of the intersection of engineering, medicine, and health. Emphasis will be placed on novel innovations that have a foreseeable impact on human health and disease. Specific areas of interest include Imaging; Nano Medicine; Data Mining and the Use of Large Datasets; Remote Sensing; Networks & Communication; Applied Metabolomics; Aerospace and Harsh Environments; and Global Health.

We invite participation by physicians, nurses and other healthcare professionals, engineers, innovators, entrepreneurs, industrial leaders, government agencies and policy makers. The conference will be inaugurated by a keynote lecture and evening reception on Wednesday, 7th November. The following two days will feature plenary, break-out sessions and poster presentations focusing on Translational Engineering in Health & Medicine. Authors interested in submitting manuscripts can either submit a 1 page abstract or a 4 page paper.

**Accepted papers may be considered for publication in IEEE PULSE or The IEEE Journal on Translational Engineering in Health & Medicine (to be launched in 2013).**

## IMPORTANT DATES

**20 June 2012**

Call for one-page abstracts and four-page papers  
(Paper Submission Open—Please see our website for details)

**20 August 2012**

Abstract and Paper deadline

**01 September 2012**

Notification of acceptance;  
Registration deadline for Authors

**20 September 2012**

Final Submissions

**1 September 2012**

Early Registration begins



IEEE Healthcare Innovation  Conference:  
Translational Engineering in  
Health & Medicine  
Houston, TX

## Leadership Team

### Conference Chair:

**Clifford Dacso, M.D., M.PH, M.B.A**  
John S. Dunn, Sr. Chair of General Internal  
Medicine, The Methodist Hospital &  
Executive Director, Abramson Center For  
The Future of Health



### Conference Co-chairs:

**Edward Knightly, Ph.D.**  
Professor of Electrical and Computer  
Engineering at Rice University in Houston,  
Texas.



**Scott E. Parazynski, M.D.**  
Chief Medical Officer and Chief  
Technology Officer at The Methodist  
Hospital Research Institute



### Program Chair:

**Ming Jack Po**  
MD / PhD Student at Columbia University



### Imaging:

**Srini Tridandapani, PhD, MD**  
Assistant Professor at the Department of  
Radiology and Imaging Sciences, Emory  
University



### Nano Applications:

**Mauro Ferrari, PhD**  
President and CEO and Ernest Cockrell Jr.  
Distinguished Endowed Chair at The  
Methodist Hospital Research Institute



### Aerospace and harsh environments:

**Jonathan Clark, M.D**  
Associate Professor of Neurology and Space  
Medicine at Baylor College of Medicine & Space  
Medical Advisor at National Space Biomedical  
Research Institute



**Joseph P. Kerwin, M.D.**  
Associate Professor of Neurology and Space  
Medicine at Baylor College of Medicine & Space  
Medical Advisor at National Space Biomedical  
Research Institute



### Global Health:

**Tomasz S. Tkaczyk, Ph.D.**  
Assistant Professor of Bioengineering and  
Electrical and Computer Engineering at Rice  
University



### Matt Dacso, M.D.

Director, Center for Global Health Education and  
Assistant Professor in the Division of General  
Internal Medicine at University of Texas Medical  
Branch



### Soumyadipta Acharya, MD, MSE, PhD

Graduate Program Director, Center for  
Bioengineering Innovation and Design, Johns  
Hopkins University



### Melissa Driver Beard M.P.A.

Executive Director and CEO, Engineering World  
Health



### Ideation and Commercialization:

**Kevin Bennett M.B.A.**  
Chairman of the Division of Engineering at Mayo



### Patrick Chiang, PhD

Assistant Professor of Electrical & Computer  
Engineering at Oregon State University



### Jim Graham, M.B.A.

Principal at Santé Ventures

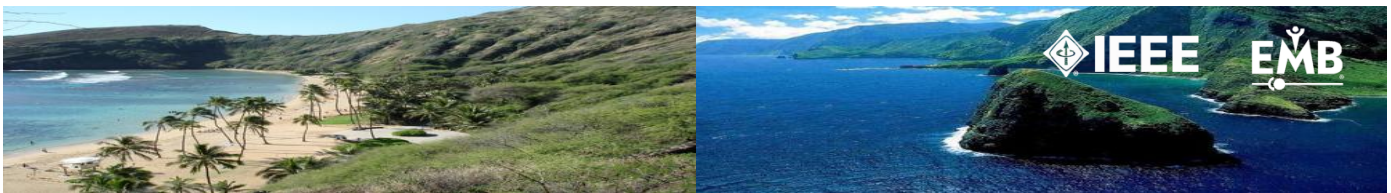


### Student Coordinator:

**Miguel Craig**  
M.D. Student at Baylor College of Medicine







# IEEE-EMBS Micro- and Nanoengineering in Medicine Conference (MNM 2012)

*Translating Technology from the Bench to the Bedside*

## Call for Papers

The Westin Maui Resort and Spa, Ka'anapali, Hawaii

<http://www.westinmaui.com/>

3<sup>rd</sup> – 7<sup>th</sup> December 2012

Various biomedical grand challenges facing our society and the world can be addressed by interfacing biology and medicine with micro- and nanoscale technologies. These technologies hold great potential to impact early diagnosis, therapeutics, and management of disease. IEEE EMBS is sponsoring the first Conference on Micro- and Nanoengineering in Medicine to foster interaction between scientists, engineers and medical researchers in the context of real-world medical needs and issues. The Conference will promote vigorous and open dialogue towards the development of cutting edge technologies for faster, more quantitative, and less expensive biomedical solutions using advances in micro and nanotechnology. **For more details, please visit: [www.mnm.embs.org](http://www.mnm.embs.org)**

### Confirmed Invited Speakers

- Helene Andersson Svahn
- Justin Cooper-White
- Utkan Demirci
- Dino Di Carlo
- Teruo Fujii
- Dean Ho
- Elliot Hui
- Abraham Lee
- SangHoon Lee
- Michel Maharbiz
- John T. McDevitt
- Samir Mitragotri
- Shuichi Takayama
- Aaron Wheeler
- Justin Williams
- John X.J. Zhang
- Mark Bachman
- Brian T Cunningham
- Tejal Desai
- Jenny Emnéus
- Amy E. Herr
- Sara Hook
- Noo Li Jeon
- Luke Lee
- Liu, Gang Logan
- Kara McCloskey
- Mike McShane
- William Rodriguez
- Peng Yin
- John Wikswo
- Albert van den Berg

### EMBS Contact

**Jessica Lotito, CMP**  
Conference Planner, EMBS  
[emb-conferences@ieee.org](mailto:emb-conferences@ieee.org)  
[www.embs.org](http://www.embs.org)

### Conference Chairs

**Ali Khademhosseini**  
(Conference Chair)  
Harvard University  
[alikh@rics.bwh.harvard.edu](mailto:alikh@rics.bwh.harvard.edu)

**Michelle Khine** (Co-Chair)  
University of California  
Irvine  
[mkhine@uci.edu](mailto:mkhine@uci.edu)

**Rashid Bashir** (Program Chair)  
University of Illinois at  
Urbana-Champaign  
[rbashir@illinois.edu](mailto:rbashir@illinois.edu)

**Logan Liu** (Publicity Chair)  
University of Illinois at  
Urbana-Champaign  
[loganliu@illinois.edu](mailto:loganliu@illinois.edu)

### Key Dates in 2012

#### July 1

Paper submission opened

#### August 10

Paper submission closed

#### September 1

Notification of acceptance

#### October 1

- Registration deadline for authors
- Final papers loaded on the website
- Online PPT presentations due

### Plenary Speakers



**Donald E. Ingber, Ph.D**  
Harvard University



**John A. Rogers, Ph.D**  
University of Illinois at  
Urbana-Champaign



**Stephen Quake, Ph.D**  
Stanford University



**Mehmet Toner, Ph.D**  
Harvard University,  
MGH



**Belinda Seto, Ph.D**  
National Institute of  
Biomedical Imaging and  
Bioengineering, National  
Institute of Health



IEEE EMBS Special Topic Conference on  
**Point-of-Care Healthcare Technologies**  
 January 16-18, 2013, Sheraton Bangalore at Brigade Gateway  
 Bangalore, India  
<http://pocht.embs.org/2013/>

**Synergy Towards Better Global Healthcare**

## Announcement

IEEE Engineering in Medicine and Biology Society is pleased to announce the IEEE-EMBS Special Topic Conference on Point-Of-Care (POC) Healthcare Technologies that will focus on innovation, research, technology development and best practices in deployment of health monitoring technologies in developing and developed economies for better global healthcare. The conference will feature research presentations and technology panel discussions and forums on recent technological advances and global issues on implementation of POC technologies. Though the challenges of providing high-quality healthcare in developing countries are different than those in developed countries, there is a common goal to provide access to health monitoring and assessment technologies to people with limited or no healthcare facilities. While the developed countries may find POC technologies as effective means for reducing healthcare costs and improving efficiency, POC technologies are critical in responding to essential healthcare needs in countries with large populations or rural areas. The developing countries in the eastern part of the globe accounting for more than 2/3<sup>rd</sup> of the population of the world face the basic challenge of providing minimal healthcare to all people living in adverse geographical or economic constraints, and also monitoring critical diseases and infections such as HIV/AIDS, TB, malaria, etc. The challenge becomes even more critical in the situation of potential outbreak of an epidemic. The proposed conference will provide an international forum to explore POC health monitoring technologies that could play significantly important role mode in "well-being" of a healthy society with increasing proportion of elderly people.

The conference will provide a unique global networking opportunity with leading researchers, students medical and industry professionals, and policy makers in innovative healthcare technologies.

## Organizing Committees:

### Conference Chairs:

Chair: Atam P. Dhawan, Ph.D.  
 Distinguished Professor and Interim Dean  
 NJIT, USA  
 Co-Chair: Manju Mahadevappa, Ph.D.  
 Asst. Professor, SMST, IIT Kharagpur, India

### Program Chairs:

Chair: P K Dutta, Ph.D., Professor and  
 Head SMST, IIT Kharagpur, India  
 Co-Chair: Metin Akay, Ph.D., Chair,  
 Biomedical Engineering, University of  
 Houston, USA

### International Program Chairs:

Chair: Nitish Thakor Ph.D., Professor  
 Biomedical Engineering, Johns Hopkins  
 University, USA  
 Co-Chair: Gudrun Zahlmann, Manager,  
 Imaging Infrastructure, ROCHE,  
 Switzerland

### Local Organizing Committee Chair:

Jayanta Mukherjee Ph.D., Professor and  
 Head, Computer Science & Engineering,  
 IIT Kharagpur, India

## Plenary and Keynote Speakers

Roderic Pettigrew, M.D., Ph.D., Director, National Institute of Biomedical Imaging and Bioengineering, NIH, USA  
 Nigel Lovell, Ph.D., Professor, University of New South Wales, Sydney, Australia  
 Balram Bhargava, M.D., Professor AIIMS, Stanford-India Biodesign Program, India  
 Anurag Mairal, Ph.D., Director Global Exchange Stanford-India Biodesign Program, USA and Executive VP, Orbees Medical, India  
 Y.T. Zhang, Ph.D., Professor at CUHK, & Director, Key Lab for Health Informatics of Chinese Academy of Sciences (HICAS), China  
 Shuming Nie, Ph.D., Distinguished Faculty Chair Professor & Director, Emory-Georgia Tech Cancer Nanotechnology Center, USA  
 May D. Wang, Ph.D., Associate Professor, Georgia Institute of Technology and Emory University School of Medicine, USA  
 Kenji Sunagawa, M.D., Ph.D., Professor and Chief, Cardiovascular Medicine at the Kyushu University Hospital, Japan.  
 Soumyadipta Acharya, M.D., MSE, Ph.D., Director, Bioengineering Innovation and Design, John Hopkins University, USA  
 Semahat Demir, Ph.D., Program Director, Biomedical Engineering Program, National Science Foundation, USA  
 Paolo Bonato, Ph.D., Director Motion Analysis Laboratory, Physical Medicine & Rehab Department, Harvard Medical School, USA

## Important Dates:

Website opens for submissions of manuscripts for 4-page papers and poster presentations: July 15, 2012  
 Website closes for regular (4-page) manuscript submissions: September 15, 2012;  
 1-page late-breaking papers on POCHT clinical studies and trials for poster presentations: September 25, 2012  
 Notification of acceptance: November 1, 2012 (authors of accepted papers must register for the conference by Nov 15)  
 Final submissions due on: November 15, 2012  
 Industry exhibits proposals: November 1, 2012

## Conference Themes and Topics of Interest

The conference will cover a broad spectrum of POC healthcare technologies including sensor technologies, biomarkers, system integration, mHealth, eHealth, health monitoring and informatics, POC decision support system and compliance issues related to affordable global healthcare with the following themes and topics, but not limited to:

### Theme 1: Point of Care Sensor Technologies

- Smart sensors for health monitoring
- Wearable sensors
- Biomarkers
- Sensor reliability, long-term stability and biocompatibility
- Body Sensor Networks

### Theme 2: Wireless Computing for POC Healthcare

- Wireless computing, communication and networking in POC healthcare
- Wearable and wireless devices in pervasive healthcare
- Wireless sensor and medical device control
- Multi-network and device management
- Safe, effective, secure and reliable use of wireless technology in healthcare

### Theme 3: POC Health Informatics and Monitoring Technologies

- mHealth
- Sensor-device integration and data collection
- Multi-sensor data fusion and analysis
- POC health informatics and decision support systems
- Personalized medicine

### Theme 4: Global Issues in POC Healthcare

- Patient monitoring and care in diverse environment
- Mass screening of critical diseases-specific diagnostic/prognostic variables
- Critical challenges in remote diagnosis and patient management
- Affordable global healthcare

## Tentative Program:

January 16, 2013: Plenary Presentations; Invited Keynote Talks, and Panel Discussion; Opening Ceremony and Banquet

January 17, 2013: Selected Oral Platform Presentations; Poster Sessions and Industry Networking Forums.

January 18, 2013: Selected Oral Platform Presentations; Poster Session; Interactive Breakout Sessions; and Plenary Panel Discussion  
Closing Ceremony and Banquet

## Venue: City of Bangalore, India

Bangalore (Bengaluru), the capital of the state of Karnataka is India's fifth largest and fastest growing cosmopolitan city in Asia. It is also called India's Silicon Valley as it houses the major high tech industries in India and is one of the largest biotechnology hubs in the country. Bangalore's Rs 63,800 crore (US\$12.12 billion) economy (2008–09 Net District Income) makes it one of the major economic centers in India, with the value of city's exports more than (US\$10 billion) in 2009. With an economic growth of 10.3%, Bangalore is the fastest growing major metropolis in India, and is also the country's fourth largest fast moving consumer goods (FMCG) market.

Bangalore, known as the garden city of India, is a gateway to southern India. The city's major tourist attractions include The Fort, Tipu Sultan's Palace, Cubbon Park, Ulsoor Lake, Bangalore Palace, Lal Bagh Garden, Jawahar Lal Nehru Planetarium and various other attractions. Shoppers can stop on MG Road and do their shopping and after can find a number of pubs nearby. The city of palaces, temples, and gardens-Mysore is located at a distance of 135-km from Bangalore and is a 2-hour drive on the four lane Bangalore-Mysore highway. Bangalore experiences a tropical savanna climate with distinct wet and dry seasons. Due to its high elevation, Bangalore usually enjoys a more moderate climate throughout the year. The coolest month is January with an average low temperature of 15.1 °C (59.2 °F) and average high temperature of 27.0 °C (80.6 °F).

## Government/Industry Sponsorship and Participation (Invited):

NIBIB, National Institutes of Health, USA  
Department of Biotechnology, India  
IBM  
Siemens, India  
Phillips, India  
GE Medical Systems, India

Medtronic  
TATA TCS  
i2i Solutions  
FORUS Health  
IIT Khargpur, India  
IEEE EMBS KP Student Chapter

## Organized and Sponsored By:

IEEE-EMBS  
445 Hoes Lane  
Piscataway, NJ, USA  
Email Contact: [d.bernstein@ieee.org](mailto:d.bernstein@ieee.org)  
IIT Contact: [mmaha2@gmail.com](mailto:mmaha2@gmail.com)



# 2013 IEEE International Symposium on Biomedical Imaging: From Nano to Macro

April 7-11, 2013 • San Francisco, California

ISBI'13

## IMPORTANT DATES

Deadline for submission of 4-page paper:

October 28, 2012

Notification of Acceptance/Rejection:

January 4, 2013

Submission of final accepted papers:

January 28, 2013

Deadline for author registration:

January 31, 2013

## Call for Papers

### INVITED SPEAKERS

#### SIMON CHERRY

University of California, Davis

#### DAVID DONOHO

Stanford University

#### JOE GRAY

Oregon Health Sciences Institute

#### JOHN SEDAT

University of California, San Francisco

#### STEPHEN WONG

Methodist Hospital Research Institute

Biomedicine has continued to evolve across a wide spectrum of applications from diagnostics to personalized therapy to mechanistic understanding of biological processes. The field continues to be challenged with ever increasing demand on more robust methods and integration with clinical and molecular data.

The 2013 IEEE International Symposium on Biomedical Imaging will be held April 7-11, at the Westin Hotel in San Francisco, Ca. ISBI is a joint initiative of the IEEE Signal Processing Society (SPS) and IEEE Engineering in Medicine and Biology Society (EMBS).

ISBI has a strong tradition of fostering integration between different imaging communities and of contributing to an integrative imaging approach accessing all scales of observation. We are soliciting all aspects of biological and medical imaging, from mathematical image reconstruction for medical applications to integration of image-based modeling with genomic data for hypothesis generation and network inference.

The meeting will feature preconference tutorials, followed by a strong scientific program of plenary talks and special sessions as well as oral and poster presentation of peer-reviewed contributed papers.

For more information: [www.biomedicalimaging.org](http://www.biomedicalimaging.org) or [isbi2013-info@ieee.org](mailto:isbi2013-info@ieee.org)

**General Chair:** *Bahram Parvin, Lawrence Berkeley National Laboratory* • **Program Chairs:** *Michael Liebling, University of California, Santa Barbara; Lawrence Staib, Yale University* • **Special Sessions:** *Robert F. Murphy, Carnegie Mellon University* • **Tutorials:** *Jelena Kovacevic, Carnegie Mellon University* • **Publicity:** *Scott Acton, University of Virginia, Finance Chair: Ju Han, LBNL, Local Arrangements: Hang Chang, LBNL*



IEEE reserves the right to exclude a paper from distribution after the conference (e.g., removal from IEEE Xplore) if the paper is not presented at the conference.