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I would like to sincerely thank the following members of the Conference Editorial Board. In a period of just under three weeks more than 2500 papers were reviewed with on average three reviewers per paper. Theme editors also made initial “accept/reject” decisions and created a draft scientific program for each theme.

*Nigel Lovell*

Nigel Lovell

Editor in Chief, VP for Conferences, EMBS

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Kamath, Vidya	Laguna, Pablo	Liu, Tian	McDaniel, Wayne
Kamel, Nidal	Lähteenmäki, Jaakko	Liu, Xin	McGrath, Denise
Kameneva, Tatiana	Lai, Nicola	Liu, Yinan	McGrath, Michael James
Kaminski, Maciej	Lai, Tze Huei, Daniel	Llamedo, Mariano	McGregor, Carolyn
Kamiya, Atsunori	Laine, Andrew	Lobo, Arthur	McShane, Mike
Kamper, Derek	Lanata', Antonio	Loizou, Christos	Mehnert, Andrew James
Kanai, Yasushi	Lang, Andrew	Loncar-Turukalo, Tatjana	Heinrich
Kanoh, Shin'ichiro	Lang, Elmar W.	Lopes, Renaud	Mehra, Rahul
Kaplan, Alan D.	Langley, Jason	Lou, Bin	Meijering, Erik
Karampinos, Dimitrios	Larson-Prior, Linda	Louis-Dorr, Valerie	Mello, Carlos
Karanasiou, Irene	Lau, Phooi Yee	Low, Yin Fen	Melo, Marco
Karavatselou, Evy	Laugier, Pascal	Lowery, Madeleine	Menárguez-Tortosa, Marcos
Karel, Joël	Lay-Ekuakille, Aime'	Lu, Kongkuo	Mendes, Paulo M.
Karlen, Walter	Layton, Bradley E.	Lu, Shijian	Mendez, Martin Oswaldo
Karmakar, Chandan K.	Lazareck, Lisa Joanna	Lubecke, Victor	Meneu, Teresa
Karnowski, Thomas	le Feber, Joost	Lymberis, Andreas	Meng, Ellis
Karvelis, Petros	Lecornu, Laurent	Lymberopoulos, Dimitrios	Meraz, Erika
Kashif, Faisal	Leder, Ron	Lyu, SuPing	Meriaudeau, Fabrice
Katehakis, Dimitrios	Lee, Chang Won	Ma, Bing	Merilahti, Juho Markus
Kato, Kazuo	Lee, Jae Sung	Ma, Chao	Merzagora, Anna Caterina
Kato, Yasuhiro, X	Lee, Jiann-Der	Ma, Jingfei	Mesbah, Mostefa
Kawada, Toru	Lee, Jong-Ha	MacPherson, Emma	Mescam, Muriel
Kazanzides, Peter	Lee, Kendall	Magenes, Giovanni	Meste, Olivier
Kearney, Robert Edward	Lee, Khuan Y.	Maggi, Norbert	Meunier, Jean
Keller, Thierry	Lee, Sang Wook	Maglavera, Stavroula	Micera, Silvestro
Kelly, Shawn	Lee, SangJoon	Maglaveras, Nikolaos	Migeotte, Pierre-François
Kenney, Laurence	Lee, Shuenn-Yuh	Maglogiannis, Ilias	Mihaylova, Lyudmila
Kenyon, Robert V.	Lee, Shyh-Yuan	Magni, Paolo	Mijovic, Bogdan
Kerckhoffs, Roy	Lee, Young-Dong	Magosso, Elisa	Mikaili, Mohammad
Khandoker, Ahsan Habib	Lehtonen, Johannes	Maghoubin, Arash	Millán, José del R.
Kharche, Sanjay	Leitgeb, Rainer A.	Mahmoudi, Babak	Mincholé, Ana
Khmelinskii, Artem	LeMoyne, Robert	Mahmoudi, Said	Ming, Dong
Khodam Hazrati, Mehrnaz	Leroux, Paul	Mak, Peng Un	Miniati, Roberto
Khojasteh, Elham	Levy, Pierre	Maldonado, José Alberto	Mino, Hiroyuki
Kim, Desok	Lhotska, Lenka	Maleckar, Mary	Mirfakhrai, Tissaphern
Kim, Hyejung	Li, Bing Keong Joe	Malla, Amol	Mischi, Massimo
Kim, Jinman	Li, Guanglin	Mandellos, George	Mitobe, Kazutaka
Kim, Sanggyun	Li, Huiqi	Manzke, Robert	Mitsis, Georgios D.
Kim, Sohee	Li, Jintao	Marceglia, Sara	Mizrahi, Joseph
Kim, Tae-Seong	Li, John K.-J.	Marchal, Maud	Moffitt, Richard A.
King, Kevin	Li, Le	Marcos Martin, Jose Victor	Mohd Addi, Mitra
Klinder, Tobias	Li, Ling	Marias, Kostas	Mohseni, Pedram
Klingbeil, Lasse	Li, Shuo	Marin, Thibault	Mokwa, Wilfried
Knaflitz, Marco	Li, Wen-Tyng	Mark, Michael	Molavi, Behnam
Ko, Li-Wei	Li, Xu	Marmarelis, Vasilis	Molinari, Filippo
Kobayashi, Yo	Li, Zhi-Yong	Marnane, Liam	Molteni, Erika
Komandur, Sashidharan	Lian, Jie	Marozas, Vaidotas	Momose, Keiko



Monaco, Vito	op den Buijs, Jorn	Poole-Warren, Laura A.	Sahin, Mesut
Montgomery, Erwin	Orglmeister, Reinhold	Poosapadi Arjunan, Sridhar	Saijo, Yoshifumi
Montoro, Alegria	Orosco, Lorena	Pop, Petre Gavril	Sajda, Paul
Monzon, Jorge E.	Orsborn, Amy	Popescu, Mihail	Sakai, Koji
morbiducci, umberto	Ortega-Quijano, Noé	Popovic, Mirjana	Sakkalis, Vangelis
Moreau, Richard	Otero, Abraham	Poppendieck, Wigand	Salazar Afanador, Addisnon
Morin, Evelyn	Otto, Kevin	Porée, Fabienne	Salgaonkar, Vasant
Morley, John William	Ouyang, Gaoxiang	Porta, Alberto	Salinari, Serenella
Morrison, Barclay	Ovreiu, Mirela	Positano, Vincenzo	Salvado, Olivier
Morss Clyne, Alisa	Padfield, Dirk	Potkay, Joseph	Sameshima, Koichi
Moslehpour, Mohsen	Padilha Lanari Bó, Antônio	Pouletaut, Philippe	Samur, Evren
Moslem, Bassam	Paglialonga, Alessia	Poza, Jesús	Sanches, J. Miguel
Motie Nasrabadi, Ali	Paiva, Antônio R. C.	Pradhan, Ranjan	Sánchez, Clara I.
Motoi, Kosuke	Palladino, Joseph	Prakash, Punit	Sanchez, Justin C.
Moturu, Sai Thejasvee	Pan, Xiaochuan	Prasad, Girijesh	Sander-Thömmes, Tilmann H.
Mougiakakou, Stavroula	Panagiotakopoulos, Theodor	Preissl, Hubert	Sanei, Saeid
Moxon, Karen	Panescu, Dorin	Prentice, Paul	Sanguineti, Vittorio
Muehlsteff, Jens	Panousopoulou, Athanasia	Puentes, John	Sankar, Viswanath
Mukkamala, Ramakrishna	Pantelopoulos, Alexandros	Pun, Sio Hang	Sankaranarayanan, Meena
Müller, Bertram	Panzica, Ferruccio	Qing, Wei	Santos, Andres
Müller-Putz, Gernot	Papageorgiou, Elpiniki	Qiu, Jiaoming	Sassi, Roberto
Mulqueeny, Qestra Camille	Paquit, Vincent	Qiu, Yihong	Sasso, magali
Muñoz-Barrutia, Arrate	Paradiso, Rita	Quitadamo, Lucia Rita	Saucerman, Jeffrey J.
Muñoz-Diosdado, Alejandro	Parent, David	Raghavan Nadar, Viswanath	Savage, Craig Owen
Muravchik, Carlos	Park, Hyung-Soon	Rahimi, Fariborz	Sawan, Mohamad
Mustaffa, Izadora	Park, Il	Rahman, Mohammed	Sazonov, Edward
Myers, Lance J	Park, Jungyul	Mostafizur	Scaglione, Alessandro
Myers, Matthew	Park, Kwang S.	Rahman, Tofizur	Schaefer, Gerald
Mynard, Jonathan	Park, Soo Jun	Ramaswamy, Palaniappan	Scheffer, Cornie
Nagaoka, Takashi	Pärkkä, Juha	Ramat, Stefano	Schiek, Michael
Nagaoka, Tomoaki	Parnandi, Avinash Rao	Ramos, Miguel	Schlotthauer, Gaston
Naguib, Raouf	Parry, R. Mitchell	Ranta, Radu	Schmid, Alexandre
Naidu, D Subbaram	Parthasarathy, Vijay	Ravazzani, Paolo	Schouten, Alfred
Naik, Ganesh R	Passariello, Gianfranco	Ravelli, Flavia	Schreier, Guenter
Nakao, Mitsuyuki	Patel, Shyamal	Reaston, Mary Rose	Schuetzler, Martin
Narasimhan, Seetharam	Patriciu, Alexandru	Reato, Davide	Schumann, Steffen
Narayanan, Michael Ravi	Patrick, Erin	Redarce, Tanneguy	Scilingo, Enzo Pasquale
Nasuto, Slawomir	Patterson, Matt	Redmond, Stephen James	Scotney, Bryan
Nau, William	Pattichis, Constantinos	Reni, Gianluigi	Seip, Ralf
Naveed, Hammad	Pattichis, Marios	Reumann, Matthias	Seker, Huseyin
Nawab, Syed Hamid	Pattini, Linda	Reuss, James	Seo, Chi Hyung
Nazeran, Homayoun	Payne, Stephen John	Rezatofighi, Seyed Hamid	Seppänen, Tapio
Negm, Mohamed	Pécreaux, Jacques	Rezzoug, Nasser	Sergi, Fabrizio
Nescolarde, Lexa	Peiris, Malik T. R.	Richter, Ulrike	Serrano, Luis
Neves, Eduardo Borba	Peltier, Scott James	Rieta, J. J.	Seydnejad, Saeid
Neves, Herc	Penders, Julien	Riviere, Cameron N	Sezdi, Mana
Ng, Hsiao Piau	Pendharkar, Gita	Roa, Laura M.	Shah, Ashok
Nguyen, Anthony	Peng, Yahui	Rocchia, Walter	Shahidi Zandi, Ali
Nguyen, Hung T.	Pennisi, Cristian Pablo	Rocha, Ana Paula	Shamsollahi, Mohammad
Nguyen, Quynh	Penzel, Thomas	Rodger, Damien C.	Bagher
Nguyen, Thanh	Perera, Alexandre	Rodriguez, Jose Felix	Sharp, Ian
Nguyen, Thanh Hai	Peroni, Marta	Rodriguez-Villegas, Esther	Shastri, Dvijesh
Nicolaou, Nicoletta	Perreault, Eric	Rogowska, Ika	Shewokis, Patricia A
Nicolier, Frédéric	Petákoski-Hult, Tuula	Rossi, Lorenzo	Shibata, Masahiro
Nikita, Konstantina	Peterchev, Angel V	Rossini, Luca	Shimizu, Shuji
Nitta, Naotaka	Peterka, Robert	Rousseau, François	Shin, Kunsoo
Noghanian, Sima	Peterlik, Igor	Rozario, Sylvester Vijay	Shiraishi, Yasuyuki
Nollo, Giandomenico	Petroff, Neil	RUAN, Su	Shishido, Toshiaki
Nomura, Taishin	Pham, Minh Tu	RUBEL, Paul	Shou, Guofa
Noury, Norbert	Pham, Tuan D.	RUFER, Libor	Shroff, Sanjeev
Novak, Daniel	Phlypo, Ronald	Ruggeri, Alfredo	Shukla, Ashish
Nugent, Chris	Pichler, Elgar	Ruggiero, Carmelina	Shvartsman, Misha
Nunes, Catarina S	Pinheiro, Eduardo	Ruiz Fernandez, Daniel	Sidky, Emil
Nygren, Anders	Pinna, Gian Domenico	Ruiz-Correa, Salvador	Signorini, Maria G.
Obeid, Iyad	Pirogova, Elena	Ruminski, Jacek	Sikdar, Siddhartha
Oehler, Martin	Platzer, Dieter	Ruther, Patrick	Silveira, Margarida
Oelze, Michael	Plourde, Eric	Ryan, Thomas	Simon, Antoine
Oguri, Koji	Podhajsky, Ronald	Rymer, William Zev	Simpson, David Martin
Oh, Hyuk	Pohl, Mauricio	S. F. R. Rodrigues, Suelia	Singh, V.R.
Ohno, Yuko	Pohlmeyer, Eric	Saavedra Mercado, Erwin John	Situ, Ning
Ohta, Jun	Poland, Michael	Sahin, Deniz	Skadsberg, Nick
Okumura, Hiroshi	Pollonini, Luca	Sahin, Ismet	Skounakis, Emmanouil

Skubic, Marjorie	Tavanapong, Wallapak	Viik, Jari	Yanez-Suarez, Oscar
Slavens, Brooke	Teixeira, Ana Rita	Villalba, Elena	Yang, Jin
Soares, Fabiano	Teixeira, César	Vinjamuri, Ramana	Yang, Xiaofeng
Sola, Josep	Telló, Marcos	Vinnakota, Kalyan	Yang, Xifei
Sonenblum, Sharon	Tenore, Francesco	Viscor, Ivo	Yang, Zhi
Song, Dong	Tereshchenko, Larisa	Voss, Andreas	Yano, Kenichi
Song, Sa-kwang	Thakor, Nitish	Vullings, Rik	Yao, Jianchu
Song, Yoon-Kyu	Thong, Tran	Wada, Yasuhiro	Yao, Jianhua
Sornmo, Leif	Thongvigitmanee, Saowapak	Waldert, Stephan	Ye, Hongwei
Soulier, Fabien	Tian, Jie	Wall, Conrad	Yeh, Chih-Kuang
Spampinato, Concetto	Tkacz, Ewaryst	Waluyo, Agustinus Borgy	Yetik, Imam Samil
Spincemaille, Pascal	tognetti, alessandro	Wan Harun, Wan Abdul	Yin, Bin
Spyropoulos, Basile	Tokuda, Takashi	Rahman	Ying, Leslie
Squeri, Valentina	Tolkacheva, Elena	Wan, Justin	Yokoyama, Kiyoko
Stadnik, Paul	Tome, Ana Maria	Wang, Bo	Yoshida, Ken
Stalidis, George	Tong, Kai Yu, Raymond	Wang, Dafang	Yoshida, Masaki
Stepp, Cara	Tong, Shanbao	Wang, Furui	Yoshizawa, Nobuyuki
Sterzi, Silvia	Torkaman, Giti	Wang, Kun	You, Fusheng
Stewart, R. Malcolm	Torres, Maria E.	Wang, Peng	Yu, Alfred
Stieglitz, Thomas	Toschi, Nicola	Wang, Shouyan	Yu, Wenwei
Stoyanov, Danail	Touyama, Hideaki	Wang, Yijun	Yuan, Han
Strauss, Daniel J.	Toyoda, Shuichi	WANG, ZHANHUI	Yuan, Xiaojing
Struzik, Zbigniew R.	Tracey, Brian	Warrick, Philip A.	Yuan, Yading
Su, Eileen Lee Ming	Tran, Yvonne	Weber dos Santos, Rodrigo	Zanos, Theodoros
Su, Hao	Traver, Vicente	Weber, Ewald	Zariffa, Jose
Su, Steven Weidong	Trenado, Carlos	Webster, John	Zarifi, Mohammad Hossein
Suaning, Gregg	Tripoliti, Evanthia	Wei, Shih-Chung	Zderic, Vesna
Suarez-Antola, Roberto	Tsukamoto, Sosuke	Weight, Ryan	Zecca, Massimiliano
Sugimachi, Masaru	Tutak, Wojtek	Weiland, James	Zequera Diaz, Martha Lucia
Sugita, Norihiro	Tyrer, Harry	Weinstein, Randy	Zervakis, Michalis
Sulzer, James	Uchiyama, Takanori	Weir, Victor	Zhang, Dingguo
Summers, Ronald	Uematsu, Miyuki	Westwick, David	Zhang, Jian
Sun, Lei	Uemura, Kazunori	Wijesuriya, Nirupama	Zhang, Mi
Sun, Yajie	Ungureanu, Mihaela	Wilson, Stephen	Zhang, Rong
Sunagawa, Kenji	Valavanis, Ioannis	Wolf, Didier	Zhang, Songmao
Sund, Torbjørn	Valdes-cristerna, Raquel	Wolf, Werner	Zhang, Ying
Suresh, Nina	Valdez-Jasso, Daniela	Wolpert, Seth	Zhang, Yingchun
Sutton, Bradley P.	Valencia Murillo, Jose	Won, Chang-Hee	Zhang, Yong
Suzuki, Kenji	Fernando	Woo, Eung Je	Zhao, Bo
Swamy, Gokul	Valentinuzzi, Max E.	Woo, Jonghye	Zhao, Jianhua
Swingen, Cory	Valenza, Gaetano	Woodfield, Tim	Zhao, Jichao
Tadipatri, Vijay Aditya	Vallverdu, Montserrat	Wright, Steven M.	Zhou, David
Tafreshi, Reza	Van Hoof, Chris	Wu, Changfu	Zhou, Huiyu
Tahayori, Bahman	Vanderborgh, Bram	Wu, Ed X.	Zhou, Jinghao
Tahmasebi, Amir M.	Vanrumste, Bart	Wu, Hsien-Tsai	Zhou, Ping
Takada, Hiroki	Varghese, Rency	Wu, Jian	Zhou, Xiang
Takahashi, Kazutaka	Varghese, Tomy	Wu, Yicong	Zhu, Hongjie, Matt
Takayama, Shuichi	Värri, Alpo	Wu, Yin	Zhu, Min
Takeda, Sunao	Vecchiato, Giovanni	Wu, Yunfeng	Zhu, Shan'an
Taki, Hirofumi	Vega-Alvarado, Leticia	Xanthopoulos, Petros	Zhu, Xin
Takizawa, Kenichi	Velazquez, Ramiro	Xie, Xiang	Zhu, Yuemin
Talavage, Thomas	Veltink, Peter	Xiong, Wei	Zoltowski, Mariusz, Leslaw
Tamura, Toshiyo	Ventouras, Errikos	Xu, Da	Zong, Wei
Tana, Maria Gabriella	Venture, Gentiane	Xu, Jianwu	Zou, Xiaoqin
Tanaka, Shinobu	Verdú, Gumersindo	Xu, Juan	Zouridakis, George
Tanaka, Yoshiyuki	Verghese, George	Xu, Lisheng	Zrimec, Tatjana
Tang, Meng-Xing	Verma, Nishant	Yadav, Rajeev	Zur, Richard
Tanskanen, Jarno Mika Antero	Veronesi, Federico	Yadollahi, Azadeh	Zwiggelaar, Reyer
Tarvainen, Mika	Vialatte, Francois	Yamamoto, Yoshiharu	
Tavakoli, Vahid	Vides, Silvia	Yan, Gwo-Lang	
Tavakolian, Kouhyar	Vigmond, Edward	Yan, Pingkun	

# Program Themes and Tracks

## Theme 1. Biomedical Signal Processing

### Theme Chairs

Sergio Cerutti	Politecnico di Milano
Christopher James	University of Warwick
Yoshi Yamamoto	University of Tokyo
Vasilias Marmarelis	University of Southern California

### Tracks and Track Chairs

#### Track 1.1 Time-Frequency and Time-Scale Analysis

Co-Chair	Anna M Bianchi	Politecnico di Milano, Italy
Co-Chair	Leif Sornmo	University of Lund, Sweden

#### Track 1.2 Signal Processing and Physiological System Modeling

Co-Chair	Taishin Nomura	Osaka University, Japan
Co-Chair	Georgios Mitsis	Univeristy of Cyprus, Cyprus

#### Track 1.3 Nonlinear Dynamic Analysis of Biomedical Signals

Co-Chair	Ken Kiyono	Osaka University, Japan
Co-Chair	Maria G. Signorini	Politecnico di Milano, Italy

#### Track 1.4 Signal Pattern Classification

Co-Chair	Dimitris Fotiadis	University of Ioannina, Greece
Co-Chair	Shanbao Tong	Shanghai Jiao Tong University, China

#### Track 1.5 Connectivity, Directionality and Causality

Co-Chair	Fabio Babiloni	University of Rome "La Sapienza", Italy
Co-Chair	Ramakrishnan Mukkamala	Michigan State University, USA

#### Track 1.6 Adaptive and Parametric Filtering

Co-Chair	Kazuo Yana	Hosei University, Tokyo, Japan
Co-Chair	Mika Tarvainen	University of Eastern Finland, Finland

#### Track 1.7 Neural Networks and Support Vector Machine Applied to Biomedical Signal Processing and Classification

Co-Chair	Rezaul K. Begg	Victoria University, Melbourne, Australia
Co-Chair	Mitsuyuki Nakao	Tohoku University, Sendai, Japan

#### Track 1.8 Coupling and Synchronizations

Co-Chair	Ki H Chon	Worcester Polytechnic Institute, USA
Co-Chair	Andreas Voss	University of Applied Sciences Jena, Germany

#### Track 1.9 Algorithms for Data Mining and Data Processing

Co-Chair	Olivier Meste	UNSA-CNRS, France
Co-Chair	Konstantina Nikita	National Technical University of Athens, Greece

#### Track 1.10 Principal Component Analysis and Independent Component Analysis

Co-Chair	Sabine van Huffel	University of Leuven, Belgium
Co-Chair	Vicente Zarzoso	Laboratoire d'Informatique, Signaux et Systemes de Sophia Antipolis, Nice, France

## Theme 2. Biomedical Image and Image Processing

### Theme Chairs

Christian Roux

Kirk Shung

Amir Amini

Yuichi Kimura

Telecom Bretagne

University of Southern California

University of Louisville

National Institute of Radiological Sciences

### Tracks and Track Chairs

#### Track 2.1 Magnetic Resonance Imaging

Co-Chair Rhaim Rizi

University of Pennsylvania, USA

Co-Chair Doug Rothman

Yale University, USA

Co-Chair Lei (Leslie) Ying

University of Wisconsin, USA

#### Track 2.2 Ultrasound Imaging

Chair Jesse Yen

University of Southern California, USA

#### Track 2.3 Optical Imaging and Microscopy

Co-Chair Zhongping Chen

University of California, USA

Co-Chair Shuliang Jiao

University of Southern California, USA

#### Track 2.4 X-ray, CT, PET, and SPECT

Co-Chair Tetsuya Yuasa

Yamagata University, Japan

Co-Chair Yuichi Kimura

Molecular Imaging Center, National Inst of Radiological Science, Japan

#### Track 2.5 Electrical Source and Impedance Imaging

Chair Eung Je Woo

Kyung Hee University, Korea

#### Track 2.6 Image Reconstruction and Enhancement

Chair Christian Roux

Telecom Bretagne, France

#### Track 2.7 Image Registration, Segmentation, Compression and Visualization

Chair Jean-Louis Dillenseger

Universite de Rennes1, Rennes, France

#### Track 2.8 Image Analysis and Classification

Chair Chafiaa Hamitouche-Djabou

TELECOM Bretagne, France

#### Track 2.9 Molecular, MEG, Infrared and Other Novel Imaging Modalities

Co-Chair Kyeong Min Kim

Molecular Imaging Research Center, South Korea

Co-Chair Hiroshi Watabe

PET Molecular Imaging Center, Japan

### Theme 3. Bioinstrumentation: Biosensors and Bio-Micro/Nano Technologies

#### Theme Chairs

Ellis Meng	University of Southern California
Sung-June Kim	Seoul National University
Babak Parviz	University of Washington
Mehmet Dokmeci	Northeastern University

#### Track 3.1 Physical Sensors and Sensor Systems

Co-Chair	Qiao Lin	Columbia University, USA
Co-Chair	Jun Zou	Texas A&M University, USA

#### Track 3.2 Bioelectric Sensors

Co-Chair	Sameer Sonkusale	Tufts University, USA
Co-Chair	Hojae Bae	Harvard Medical School, USA

#### Track 3.3 Biological and Chemical Sensors and Systems

Co-Chair	Yoonkey "Johnny" Nam	KAIST, Korea
Co-Chair	Jinwoo Choi	Louisiana State University, USA

#### Track 3.4 Physiological Monitoring: Instrumentation, Technology and Integrated Systems

Co-Chair	Jongmo John Seo	Seoul National University
Co-Chair	Greg Suaning	The University of New South Wales

#### Track 3.5 Implantable Technologies and Systems

Co-Chair	Andreas Lmberis	EU, Belgium
Co-Chair	Amar Basu	Wayne State University, USA

#### Track 3.6 Wearable Sensors Technology and Instrumentation

Co-Chair	Darrin Young	University of Utah, USA
Co-Chair	Pedram Mohseni	Case Western Reserve University

#### Track 3.7 Integrated Wearable and Portable Systems

Co-Chair	Marco Di Rienzo	Polo Tecnologico - IRCCS Fondazione Don Carlo Gnocchi
Co-Chair	Sameer Sonkusale	Tufts University

#### Track 3.8 Microfluidics

Co-Chair	Michelle Khine	University of California, USA
Co-Chair	Rafael Davalos	Virginia Tech, USA

#### Track 3.9 Nano-Bio Technology

Co-Chair	Mehmet R. Dokmeci	Harvard Medical School, USA
Co-Chair	Erkin Seker	University of California, USA

## Theme 4. Bioinformatics and Computational Biology; Systems Biology, Modeling Methodologies

### Theme Chairs

Metin Akay	University of Houston
Elebeoba May	Sandia National Laboratories
May Wang	Georgia Institute of Technology and Emory University
Jie Liang	University of Illinois at Chicago

### Tracks and Track Chairs

#### Track 4.1 Systems Biology and Systems Medicine

Chair	Elebeoba E. May	Sandia National Laboratories
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#### Track 4.2 Computational Modeling of Tissue Pattern Formation and Regenerative Medicine

Co-Chair	Qing Nie	University of Illinois at Chicago, USA
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Co-Chair	Jie Liang	University of Illinois at Chicago, USA
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#### Track 4.3 Synthetic Control Systems in Biomedical Applications

Chair	May D. Wang	Georgia Institute of Technology and Emory University, USA
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#### Track 4.4 Systems Modeling for Therapeutics and Medical Decision Making

Co-Chair	Jinfeng Zhang	Florida State University, USA
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Co-Chair	Rajesh Chowdhary	Marshfield Clinic
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#### Track 4.5 Model Building for Molecular, Cellular and Organ Pathways and Networks

Chair	Jiayu Liao	University of California, USA
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#### Track 4.6 Bioinformatics and Computational Modeling of Complex 'Omic Data

Chair	Ming Zhan	The Methodist Hospital Research Institute, USA
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#### Track 4.7 Translational Biomedical Informatics for Clinical Applications

Chair	Mia Markey	University of Texas at Austin, USA
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#### Track 4.8 High Throughput Data and Information Visualization

Chair	Kun Huang	Ohio State University, USA
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## Theme 5. Cardiovascular and Respiratory Systems Engineering

### Theme Chairs

Kenji Sungawa	Kyushu University
Thomas Penzel	Charite University Hospital
Andrew McCulloch	University of California

### Tracks and Track Chairs

#### Track 5.1 Cardiac Mechanics, Function, and Modeling

Chair	Roy Kerckhoffs	University of California, USA
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#### Track 5.2 Vascular Disease, Mechanics, and Hemodynamics

Chair	Masaru Sugimachi	National Cardiovascular Research Center, Japan
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#### Track 5.3 Pulmonary and Critical Care

Chair	Jason Yuan	University of Illinois at Chicago, USA
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#### Track 5.4 Coronary Blood Flow Dynamics and Measurement

Chair	Kenji Sunagawa	Kyushu University, Japan
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#### Track 5.5 Cardiovascular and Pulmonary Modeling

Co-Chair	Dan Beard	University of Pittsburgh, USA
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Co-Chair	Sanjeev Shroff	University of Pittsburgh, USA
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#### Track 5.6 Respiratory Mechanics and Control

Co-Chair	Merryn Tawhai	University of Auckland, New Zealand
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Co-Chair	Alona Ben-Tal	University of Auckland, New Zealand
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#### Track 5.7 Cardiovascular and Pulmonary Signal Processing

Co-Chair	Rama Mukkamara	Michigan State University, USA
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Co-Chair	Mohan Karunanithi	The Australian E-Health Research Centre
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#### Track 5.8 Cardiac Electrophysiology

Chair	Rob MacLeod	Scientific Computing and Imaging Institute, University of Utah, USA
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#### Track 5.9 Cardiovascular Regulation

Co-Chair	Jeff Saucerman	University of Virginia, USA
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Co-Chair	Toru Kawada	National Cardiovascular Research Center, Japan
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#### Track 5.10 Sleep Disorders and Respiratory Engineering

Chair	Raimon Jane	Universitat Politècnica de Catalunya
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#### Track 5.11 Cellular & Molecular Cardiorespiratory Engineering

Co-Chair	John Shyy	University of California, USA
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Co-Chair	Seiryō Sugiura	University of Tokyo
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## Theme 6. Neural and Rehabilitation Engineering

### Theme Chairs

Nitish Thakor	Johns Hopkins University
Rob Shepherd	University of Melbourne
Jose del R Millan	Ecole Polytechnique Federale de Lausanne
Maysam Ghovanloo	Georgia Institute of Technology

### Tracks and Track Chairs

#### Track 6.1 Neural Interfaces

Co-Chair	Dominique Durand	Case Western University, USA
Co-Chair	Silvestro Micera	University of Pisa, Italy
Co-Chair	Thomas Stieglitz	University of Freiburg, Germany
Co-Chair	Bruce Wheeler	University of Florida, USA
Co-Chair	Steve Potter	Georgia Institute of Technology, USA
Co-Chair	Patrick Wolf	Duke University, USA

#### Track 6.2 Brain Machine Interface

Co-Chair	Bin He	University of Minnesota, USA
Co-Chair	Jose Millan	Ecole Polytechnique Federale de Lausanne, Switzerland

#### Track 6.3 Motor NeuroProstheses

Co-Chair	Jose Carmena	University of California - Berkeley, USA
Co-Chair	Justin Sanchez	University of Miami, USA

#### Track 6.4 Sensory Neuroprostheses

Co-Chair	Lee Miller	Northwestern University, USA
Co-Chair	Doug Weber	University of Pittsburgh, USA

#### Track 6.5 Neuro Therapeutics: FES and Deep Brain Stimulation

Co-Chair	Warren Grill	Duke University, USA
Co-Chair	Dustin Tyler	Case Western Reserve University, USA
Co-Chair	Cameron McIntyre	Cleveland Clinic, USA
Co-Chair	Angel Peterchev	Duke University, USA

#### Track 6.6 Neural Microsystems & Interface

Co-Chair	Pedram Mohseni	Case Western Reserve University, USA
Co-Chair	Mohammad Sawan	McGill University, Canada
Co-Chair	Benoit Gosselin	Laval University, Canada
Co-Chair	Wentai Liu	University of California -Los Angeles, USA

#### Track 6.7 Neuromuscular Systems and Rehabilitation

Co-Chair	Eric Perrault	Northwestern University, USA
Co-Chair	Igo Krebs	Massachusetts Institute of Technology, USA
Co-Chair	Paolo Bonato	Harvard Medical School, USA

#### Track 6.8 Assistive Technologies for Rehabilitation and Telerehabilitation

Co-Chair	Robert Kenyon	University of Illinois - Chicago, USA
Co-Chair	G. Burdea	Rutgers University, USA
Co-Chair	Rory Cooper	University of Pittsburgh



<b>Track 6.9</b>	<b>Brain Physiology and Modeling</b>	
Chair	Ted Berger	University of Southern California
<b>Track 6.10</b>	<b>Neuro Diagnostics: Analysis of Neural Signals</b>	
Co-Chair	Shabao Tong	Shanghai Jiao Tong University, China
Co-Chair	Hasan Al-Nashash	American University of Sharjah, United Arab Emirates
<b>Track 6.11</b>	<b>Neural Disorders and Clinical Neurophysiology</b>	
Co-Chair	Richard Jones	University of Canterbury, New Zealand
Co-Chair	Tim Dennison	Medtronic Inc., USA
<b>Track 6.12</b>	<b>Functional Brain Imaging</b>	
Co-Chair	Fabio Babiloni	University La Sapienza, Rome
Co-Chair	George Zouridakis	University of Houston, USA

## Theme 7. Cellular and Tissue Engineering and Biomaterials

### Theme Chairs

Ali Khademhosseini	Massachusetts Institute of Technology
Gabriel Silva	University of California
Mohammad Mofrad	University of California
Esmail Jabbari	University of South Carolina

### Tracks and Track Chairs

#### Track 7.1 Biomaterials Cell Interactions

Chair Masoud Agha Virginia Tech, USA

#### Track 7.2 Scaffolds in Tissue Engineering

Chair Sameer Shah University of California, USA

#### Track 7.3 Biomimetic, Bioinspired, and Patterned Biomaterials

Chair Michael Davis Emory University, USA

#### Track 7.4 Cellular Force Transduction

Co-Chair Wonmuk Hwang Texas A&M University, USA

Co-Chair Jeffrey Jacot Rice University, USA

#### Track 7.5 Stem Cells in Regenerative Medicine

Co-Chair Song Li University of California, USA

Co-Chair Bill Murphy University of Wisconsin, USA

#### Track 7.6 Gene and Drug Delivery

Chair Seungpyo Hong University of Illinois at Chicago, USA

#### Track 7.7 Electrical Fields at the Cell and Protein Scale

Chair Ebrahim Ghafar-Zadeh University of California, USA

#### Track 7.8 Biomaterials for Sensing and Actuation

Co-Chair Utkan Demirci Harvard University, USA

Co-Chair Gargi Ghosh University of Michigan-Dearborn, USA

#### Track 7.9 BioMEMS/NEMS in Tissue Engineering and Biomaterials

Co-Chair Jeff Borenstein Draper Lab, USA

Co-Chair Luke Lee University of California, USA

#### Track 7.10 Translational Issues in Tissue Engineering

Chair Yunzhi Peter Yang Stanford University, USA

## Theme 8. Biomechanics and Robotics

### Theme Chairs

James Patton	University of Illinois at Chicago
Cameron Riviere	Carnegie Mellon University
Silvestro Micera	University of Pisa

### Tracks and Track Chairs

#### Track 8.1 Orthotic Biomechanics and Robotics

Chair Yasin Dhadher Rehabilitation Institute of Chicago, USA

#### Track 8.2 Prosthetic Biomechanics and Robotics: Artificial Organs/Limbs

Co-Chair Levi Hargrove Rehabilitation Institute of Chicago, USA

Co-Chair Silvestro Micera Scuola Superiore Sant'Anna, Pisa, and Ecole Polytechnique Federale de Lausanne (EPFL)

#### Track 8.3 Rehabilitation Robotics and Biomechanics: Therapy, Assistance and Clinical Evaluation

Chair Jim Patton Rehabilitation Institute of Chicago and University of Illinois at Chicago, USA

#### Track 8.4 Human-Robot Interaction

Co-Chair David Reinkesmeier University of California, USA

#### Track 8.5 Robot-aided Surgery

Co-Chair Ferdinando Rodriguez y Baena Imperial College London

Co-Chair Sarthak Misra University of Twente, the Netherlands

Co-Chair Cameron N. Riviere Carnegie Mellon University, USA

#### Track 8.6 Biologically Inspired Robotics and Micro-(bio)robotics

Chair Massimiliano Zecca Waseda University, Tokyo

#### Track 8.7 New Technologies and Methodologies in Medical Robotics and Biomechanics

Chair Justin Sanchez University of Miami, USA

#### Track 8.8 Neural Control of Movement and Robotics Applications

Chair Justin Sanchez University of Miami, USA

#### Track 8.9 Applied Musculoskeletal Models and Human Movement Analysis

Chair Erwin de Vlugt University Delft, the Netherlands

## Theme 9. Therapeutics and Diagnostic Systems, Devices and Technologies, Clinical Engineering

### Theme Chairs

Nick Chbat	Philips Healthcare, Inc.
Michael McShane	Texas A&M University
Dorin Panescu	Newcardio

### Tracks and Track Chairs

Track 9.1	<b>Clinical Engineering and Health Technology Management</b>
Chair	Elliot Sloane Drexel University/Villanova University, USA
Track 9.2	<b>Diagnostic and Therapeutic Devices, Ambulatory, Home/Personal/Independent Living</b>
Chair	Sophia Zhou Philips Research, USA
Track 9.3	<b>Diagnostic Devices and Instrumentation, General</b>
Chair	Javier Jo Texas A&M University, USA
Track 9.4	<b>External Therapeutic Devices, General</b>
Chair	Dan Dragomir-Daescu Mayo Clinic., USA
Track 9.5	<b>Health Technology Policy, Economics, Ethics, and Health Technology Assessment</b>
Chair	John Zaleski Nuvon, USA
Track 9.6	<b>Image-Guided Devices and Therapies</b>
Chair	Dieter Haemmerich The Medical University of South Carolina, USA
Track 9.7	<b>Medical Device and System Design and Manufacturing</b>
Chair	Mike Duich Respironics (HRC)
Track 9.8	<b>Safety and Human Factors Engineering for Medical Devices and Systems</b>
Chair	Mike McShane Texas A&M University, USA
Track 9.9	<b>Technology Development, Commercialization, Assessment and Management</b>
Chair	Ratko Magjarevic University of Zagreb
Track 9.10	<b>Therapeutic Devices, Internal/Implanted</b>
Chair	William Durfee University of Minnesota, USA

## Theme 10. Healthcare Information Systems and Telemedicine

### Theme Chairs

Yuan-Ting Zhang	The Chinese University of Hong Kong
William Kaiser	University of California
Toshiyo Tamura	Chiba University
Julien Penders	IMEC

### Tracks and Track Chairs

#### Track 10.1 Personal, Pervasive, Preventive, and Participatory Health Systems

Chair	Nicos Maglaveras	Aristotle University, Greece
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#### Track 10.2 Wireless Health Technologies and Body Sensor Networks

Co-Chair	Lei Wang	Chinese Academy of Sciences, China
Co-Chair	William Kaiser	University of California, USA

#### Track 10.3 mHealth

Chair	Vicente Traver	ITACA Universidad Politecnica de Valencia, Spain
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#### Track 10.4 eHealth, Telehealth

Chair	Costas Pattichis	University of Cyprus, Cyprus
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#### Track 10.5 Ambient Assisted Living, Smart Homes

Co-Chair	Kwang Suk Park	Seoul National University, South Korea
Co-Chair	Aravind Kailas	University of North Carolina, USA

#### Track 10.6 Health Information Management, Electronic Health Record

Co-Chair	Tomohiro Kuroda	Kyoto University Hospital, Japan
Co-Chair	Gouenou Coatrieux	TELECOM Bretagne, France

#### Track 10.7 Data Mining, Information Processing, and Decision Support Systems

Co-Chair	Dimitris Fotiadis	University of Ioannina, Greece
Co-Chair	Mark van Gils	VTT Technical Research Centre, Finland

#### Track 10.8 Emerging Topics: Low Cost Delivery, Public and Environmental Health Surveillance

Chair	Carmen Poon	Chinese University of Hong Kong, China
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## Theme II. Biomedical Engineering Education and Society

### Theme Chairs

Martha Zequera Diaz	Pontificia Universidad Javeriana
Matthias Ruemann	IBM Research Collaboratory for Life Sciences
Christopher Druzgalski	California State University

### Tracks and Track Chairs

#### Track II.1 Biomedical Engineering Education and Curriculum

Co-Chair	Martha Zequera Diaz	Pontificia Universidad Javeriana, Colombia
Co-Chair	Christopher Druzgalski	California State University, USA

#### Track II.2 Career Development in Biomedical Engineering

Co-Chair	Matthias Reumann	IBM Research Collaboratory for Life Sciences, Melbourne, Australia
Co-Chair	Lisa Lazareck	Wellcome Trust, London, UK

#### Track II.3 Biomedical Technology in Global Health

Chair	Martha Zequera Diaz	Pontificia Universidad Javeriana, Colombia
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#### Track II.4 Biomedical Undergraduate Research Projects

Co-Chair	Christopher Druzgalski	California State University, USA
Co-Chair	Matthias Reumann	IBM Research Collaboratory for Life Sciences, Melbourne, Australia

# Invited Session and Minisymposium Organizers

## Invited Sessions

Title	Organizer(s)
Advanced Ultrasound Imaging and Evaluation	Jesse Yen- Univ. of Southern California
Advancement of Cyber-medicine: Intelligent ICT Care	Makoto Yoshizawa-Tohoku Univ.
Advances in Mobile Health (m-health) Technologies	Robert Istepanian-Kingston Univ. London
Cardiovascular Modeling for Critical Care Monitoring	Federico Aletti-Pol. di Milano, Manuela Ferrario- Pol. di Milano
Computational Modeling and Clinical Applications in Abdominal Imaging I	Hiro Yoshida- Massachusetts General Hospital / Harvard Medical School
Computational Modeling and Clinical Applications in Abdominal Imaging II	Hiro Yoshida- Massachusetts General Hospital / Harvard Medical School
Electrical Bioimpedance	Ørjan G Martinsen- Univ. of Oslo
Electrical Biointerfaces	Ebrahim Ghafar-Zadeh- Ec. Pol.
Electroporation	Ebrahim Ghafar-Zadeh- Ec. Pol.
Innovative Technologies for Inexpensive and Non-Invasive Cardiovascular Monitoring in the Home Using Ballistocardiography and Seismocardiography: Part 1 - Measurement Challenges and Standardization	Omar Inan- Stanford Univ.
Innovative Technologies for Inexpensive and Non-Invasive Cardiovascular Monitoring in the Home Using Ballistocardiography and Seismocardiography: Part 2 - Clinically-Relevant Findings	Omar Inan- Stanford Univ.
Model-free and Non-linear Interdependence Measures for Neurophysiological and Cardiovascular Time Series Analysis	Luca Faes- Univ. of Trento, Alberto Porta- Univ. degli Studi di Milano
Modern Assistive Technologies for Rehabilitation and Daily Living	Maysam Ghovanloo- Georgia Inst. of Tech.
Neural Decoding: New Paradigms and Open Challenges	Zhe Chen- Harvard Medical School/MIT
Physiological Sensing	Robert Splinter- Valencell, Inc
Quantitative Ultrasound Imaging for Diagnostics and Therapy Monitoring	Michael Oelze- Univ. of Illinois at Urbana-Champaign
Rehabilitation Engineering for Speech and Hearing Applications	Cara Stepp- Boston Univ.
Sensory Substitution and Other Aids for Balance or Gait Dysfunction	Kathleen H. Sienko- Univ. of Michigan, Patrick Loughlin- Univ. of Pittsburgh
Signal Pattern Classification	Dimitrios I. Fotiadis- Univ. of Ioannina, Shanbao Tong- Shanghai Jiao Tong Univ.
Sustainable Healthcare Delivery: Telehealth Systems from Neonatal to Applications for Elderly Citizens	Fedor Lehocki- Sovak Univ. of Tech. Fac. of Electrical Eng.
Vision Processing for Implantable Prosthetic Vision	Nick Barnes- NICTA Canberra Res. Lab.

## Minisymposia

Title	Organizer(s)
Applying the IEEE 11073 Personal Health Device Standards	Malcolm Clarke- Brunel Univ.
Biological Sensors and Systems for Point-of-Care Diagnostics I	Jin-Woo Choi-Louisiana State Univ., Yoonkey Nam-Korea Advanced Inst. of Science
Biological Sensors and Systems for Point-of-Care Diagnostics II	Jin-Woo Choi-Louisiana State Univ., Yoonkey Nam-Korea Advanced Inst. of Science
Biologically Inspired Medical Robotics	Ferdinando Rodriguez y Baena- Imperial Coll. London
Biomaterial-Cell Interactions	Esmail Jabbari- Univ. of South Carolina
Biomaterials for Sensing and Actuation	Gargi Ghosh- Univ. of Michigan, Dearborn
Biomimetic, Bioinspired, and Patterned Biomaterials	Michael Davis- Emory Univ.

Computational Fluid Dynamics for Treatment Planning in Human Airway Pathology	Richard Superfine- Univ. of North Carolina at Chapel Hill
Computational Modeling of Regenerative Medicine and Cellular Pattern Formation	Qing Nie- Univ. of California at Irvine, Jie Liang- Univ. of Illinois at Chicago
Dealing with Lots of Data: Databases, Performance Metrics and Competitions as Tools for Research	Alexander James Casson- Imperial Coll. London
Dynamic Simulation in Biomechanics and Rehabilitation	Jennifer Hicks- Stanford Univ.
Electrical Fields at the Cell Protein Scale	Ebrahim Ghafar-Zadeh- Ec Pol
Futures in Reliable Neural Interfaces	Justin C. Sanchez- Univ. of Miami
Gene and Drug Delivery	Seungpyo Hong- Univ. of Illinois at Chicago
Genome Sequencing and Cancer Therapeutic Target Discovery	Jiayu Liao- Univ. of California at Riverside
Haemodynamics and Ventricular Function	Mohanraj Karunanithi- CSIRO ICT Centre
ICT for Corporate Wellness and Occupational Health: The Opportunities Ahead	Vicente Traver- Inst. ITACA
Imaging of the Pediatric Upper Airway	Krishna Nayak- Univ. of Southern California
Information Derived From Arterial Pressure Waveform and its Clinical Significance	Masaru Sugimachi- Natl Cardio Center Res. Inst
Large-Scale Neuromorphic Systems	Vasilis Marmarelis- Univ. of Southern California
Mechano-biology in The Cardiovascular System	John Shyy- UC Riverside
Mechano-Imaging of the Brain	Dieter Klatt- The Univ. of Illinois at Chicago
Metagenomics Tools and Approaches	Kelly Williams- Sandia National Lab.
Mobile Health (mHealth) and Mobile Devices: Improving Global Health by Lightening the Load for Healthcare Professionals and Providing Expert Care Anywhere (deployed in local cultural context)	Ron Leder- Univ. Nacional Autonoma de Mexico
Modeling Foci and Dynamics of Neuroelectromagnetic Activity in Epilepsy	Zeynep Akalin Acar- Univ. of California San Diego
Monitoring of Living Cells	Joachim Wiest- Cellasys GmbH
Multi-scale Mechanisms of Cardiovascular Regulation	Jeffrey J. Saucerman- Univ. of Virginia
Multiscale Systems and Systems Chemical Biology in Infection, Pathogenesis, and Antimicrobial Design	Elebeoba May- Sandia National Lab.
Nonlinear Modeling of Neural Systems	Vasilis Marmarelis- Univ. of Southern California
Nonlinear Modeling of the Cardiovascular System	Vasilis Marmarelis- Univ. of Southern California
Patient-Specific Modeling of the Cardiovascular System	Roy Kerckhoffs- Univ. of California San Diego
Probing Mechanisms of Complex Cardiovascular Disease Using Computational Modeling	Daniel A. Beard- Medical Coll. of Wisconsin
Quantitative Systems Pharmacology: An Intergrating Framework for Drug Discovery, Development and Therapy	David D'Argenio- Univ. of Southern California
Radical Strategies in Brain-machine Interface Algorithm Design	Lakshminarayan Srinivasan- Univ. of California Los Angeles
Robotic Single-Port Surgery and NOTES	Ebrahim Ghafar-Zadeh- Ec. Pol.
Scaffolds in Tissue Engineering	Sameer Shah-UCSD
Stem Cells in Regenerative Medicine	Song Li- Univ. of California, Berkeley
System Modeling and Integrative Approaches for Therapeutics and Medical Decision Making	Jinfeng Zhang- Florida State U
Translational Issues in Tissue Engineering and Biomaterials	Yunzhi Yang- Stanford Univ.
Ultrasound Transducers for Biomedical Applications	Jesse Yen- Univ. of Southern California
Wearable and Non-contact Physiological Monitoring	Yu Chi- Cognionics, Inc.