ANALOG CIRCUIT CHALLENGES FOR BIOMED APPLICATIONS WORKSHOP

Sponsors: SRC Texas Analog Center of Excellence, University of Texas-Dallas &
IEEE Engineering in Medicine and Biology Society, Dallas Chapter

July 22 and 23, 2009,
University of Texas at Dallas in the Texas Instruments Auditorium

BACKGROUND

Analog and RF integrated circuit technology now has the potential for yielding low cost solutions in a wide variety of Bio-Medical applications. The objective of this workshop is to identify analog circuit research challenges that have potential to enable important health related applications. Perspectives derived from the workshop will be used to formulate the scope of a nationwide call for University research proposals to be issued by the Texas Analog Center of Excellence and the Semiconductor Research Corporation in August.

PRELIMINARY AGENDA

July 22, 2009 Wednesday
(Shuttle leaves at noon from Hyatt to TI Auditorium)

11:00 to 01:00 - Check In (Pick up badge, agenda and box lunch) – TI Auditorium Foyer
01:00 - Welcome and Announcements – Edgar Sanchez- Sinencio
01:10 - Circuit Challenges in Biomedical Microsystems, Ken Wise, U of Michigan
01:50 - Designing Implantable Intelligence: It is not the just the silicon circuit, it is the system, Tim Denison, Medtronic
02:30 - Application-Specific ICs for Biotechnology: Challenges and Opportunities, Arjang Hassibi, UT-Austin
03:10 - Passive In-Body Micro Systems: Design Challenges and Opportunities, Rizwan Bashirullah, U of Florida
03:50 - Break for 10 minutes
04:00 - Microelectronics: The Disruptive Technology, Charles Sodini , MIT
04:40 - Circuits and Systems in Medical Applications, Edgar Sanchez-Sinencio, TAMU
05:20 - Wireless Interfaces to the Central and Peripheral Nervous System, Reid Harrison, U of Utah
06:00 – Enabling Medical Breakthroughs with Silicon Innovations, Seema Deshpande, Texas Instruments
06:30 - Leave for cocktails – Natural Sciences & Engineering Research Lab Building (walk over)
07:30 - Dinner
(Shuttle leaves at 9 pm from UTD to Hyatt)

July 23, 2009 Thursday
(Shuttle leaves at 7:15 am from Hyatt to TI Auditorium)

07:30 - Continental Breakfast – Texas Instruments Auditorium Foyer
08:00 - Welcome and Announcements – Edgar Sanchez- Sinencio
08:05 - Texas Analog Center of Excellence, Kenneth K. O, TxACE Director, UT Dallas
08:15 - Medical Imaging Technology and the Hospital of the Future (HOF), Anthony Pacifico, TATRC
08:55 - Circuit Challenges for Ultrasound and Implantable Applications, Mark Cronjaeger, Texas Instruments
09:35 - Medical Ultrasonic Imaging, Robert C. Waag, U of Rochester
10:15 - High Performance Analog Signal Chain for Biomedical Applications: from Assay to Bits, Bertan Bakkaloglu, Arizona State U
10:55 - Break for 10 minutes

11:05 - Key challenges on the road to a continuous monitor of internal pressure for glaucoma and cardiac health: ultra low-power sensing, and RF power and data transmission, Pedro Irazoqui, Purdue

11:45 – Breakout Session Instructions & Organization, Eric M. Vogel, UT-Dallas

12:15 – Groups Assemble in assigned work rooms

(Box lunches to be provided)

02:00 - Reassemble in Auditorium for Group Reports & Discussion

02:50 - Concluding Remarks – Edgar Sanchez- Sinencio

03:00 – Adjourn – Shuttle leaves for Hyatt

LOGISTICS

REGISTRATION: Please register on-line at: http://biomed.utdallas.edu . There will be no on-site registration. Seating is limited. Interested persons from the SRC member companies may attend the workshop via teleconference service/WebEx. Teleconference/WebEx slots are limited.

HOTEL: Rooms for attendees have been reserved at the nearby **Hyatt North Dallas** for $85 per night. Hotel registration can be accomplished at: http://northdallas.hyatt.com/groupbooking/dfwndutda2009 To receive the special rate identify the meeting as "Analog circuit challenges for bio-med applications" organized by UTD.

SHUTTLE SERVICE – HOTEL TO/FROM UTD:
 7/22   leaves Hyatt for UTD at noon,   leaves UTD for Hyatt at 9:00 pm
7/23   leaves Hyatt for UTD at 7:15 am,   leaves UTD for Hyatt at 3:00 pm

LOGISTICS CONTACT: Donna Kuchinski, (972) 977-9682 (TxACE Admin Assistant)

WORKSHOP ORGANIZATION

Workshop Chair: Edgar Sanchez Sinencio, (979) 845-7498, sanchez@mail.ece.tamu.edu

Local Arrangements Chair: Eric M. Vogel, (972) 883-4731, eric.vogel@utdallas.edu

Treasurer: Dinesh Bhatia, dinesh@utdallas.edu

Technical Program Committee: Dinesh Bhatia, UTD; Joe E. Brewer, U Florida; Mark Cronjaeger, TI; Kenneth K. O, UTD; Shekar Rao, TI; E. Sanchez-Sinencio, TAMU; and Eric Vogel, UTD.