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# BULLETIN

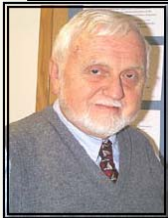
**UT SOUTHWESTERN**  
MEDICAL CENTER

The University of Texas  
Southwestern Medical Center  
at Dallas

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## JOINT BIOMEDICAL ENGINEERING PROGRAM

### THE LATEST FROM BME at UT SOUTHWESTERN



While our faculty continues winning awards and grants, we are particularly proud of our students and dedicate this column to their achievements. UT Southwestern Biomedical Engineering students are kept busy by their final exams but have succeeded in starting a Works In Progress (WIP) student discussions group, an effort spearheaded by Allison Carroll. The group meets on the first Thursday of the month at lunchtime for students' presentation of their ongoing research (after obtaining permission from their mentor and assurances about their meals). Students attending the meeting in April included all those whose mentor and research are at UTSW.

BME students are actively engaged in research. We recognize the following students (home campus highlighted) who either recently attended or are attending upcoming conferences and presented either a poster or oral presentation: As we all know, this is an important step towards receiving recognition in different fields.

Sina Aslan(UTSW) – Society for Neuroscience Conference.  
Elvin Blanco (UTSW) – 13<sup>th</sup> International Recent Advances in Drug Delivery Symposium.  
Pavitra Chakravarty (UTA) – Metroplex Days (hosted by UT Southwestern).

Zhuo Gan (UTSW) – 2007 Biophysical Society 51<sup>st</sup> Annual Meeting.

Anna Leal (UTSW) – Experimental Biology 2007, Anna was also selected as a recipient of an American Physiological Society/NIDDK Minority Travel Fellowship Award in relation to the travel associated with her presentation.

Peiyong Liu (UTSW) – 152<sup>ND</sup> Annual Meeting of the Acoustical Society of America, Peiyong was also selected as a recipient of a GSO Travel Scholarship in relation to the travel associated with her presentation.

Sripad Ram (UTA) – SPIE Photonics West Conference, IEEE International Symposium on Biomedical Imaging,

### OUTSTANDING ENGINEER-2007 (ASME)



Robert Eberhart, awarded as outstanding engineer for the year 2007 by American Society of Mechanical Engineers, is a professor of Bioengineering at the University of Texas, Southwestern Medical Center at Dallas. He has been in the department of surgery at the university for 30 years.

He was involved with numerous projects, including the development and evolution of first computer-based patient monitoring system and a membrane oxygenator that was successfully applied to support the human lung in acute respiratory failure. In 1984, he became the first Director of Joint UT Southwestern-UT Arlington Graduate Program in Biomedical Engineering, serving for 18 years.

Dr. Eberhart effort to evaluate the physiological and biological responses to artificial organs support of the heart and lungs improved methods for combined medical and pharmacological support of the failing heart and to improve biomaterials for artificial hearts, lungs and blood vessels. He invented a biodegradable stent for the delivery of drugs, isotopes and gene therapy for treatment of coronary arterial disease, cancer etc. He formed Texas Stent Technologies Inc. He has published over 150 technical papers, edited two books and has two patents. Dr. Eberhart is the President of American Society for Internal Organs and Vice-president of American Institute for Medical and Biological Engineering. He was elected to the Board of Directors of Quest Medical, Inc. which later shaped into Advanced Neuromodulation System.

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## RECENT FACULTY ACTIVITIES

### International Program Review

During the spring 2007 semester break, Dr. Behbehani was invited to visit the Multimedia University (MMU) in Melaka Malaysia to review the Bioinstrumentation degree program for the university. MMU is a well established university with a focus on preparing engineers for the Malaysian workforce. Dr. Behbehani met with the faculty, staff, and student of the 'Faculty of Engineering and Technology' in formal sessions where various aspects of the program like the course syllabus, exams, and projects were reviewed. The laboratories, libraries and computer facilities were visited. The adequacy of these resources for the Bioinstrumentation degree program was evaluated. As part of his visit, Dr. Behbehani delivered a talk on faculty members of the UTA Bioengineering Department. He also explored possibilities of establishing a program that would allow students from the MMU continue their education at UTA toward earning higher degrees in Bioengineering.



Dr. Behbehani (front row) with Dean Brevern (far left) and the Bioinstrumentation program faculty members of the Multimedia University in Melaka.

### Invited Talk's:

#### Dr.Karel Zuzak:

- NIST, National Institute of Standards and Technology, "The nature of Hyperspectral Imaging During Clinical and Surgical Venues", 22nd January, 2007.
- NIH, National Institutes of Health, NIDDK, National Institute of Diabetes and Digestive and Kidney Diseases, "A Novel Method Toward Phenotyping Neuropathic Complications: Hyperspectral Imaging Guiding the Level of Amputation of the Ischemic Lower Extremity", 4th, 5th April, 2007.

### Paper Presentation's

#### Dr.Hanli Liu:

Dr.Hanli Liu and her students presented the following papers :

Houston Society for Engineering in Medicine and Biology (HSEMB) on 8th of February, 2007.

- P. Kumar Gulaka, S. Kommera, B. Wang, E-Livingston, and **H. Liu**, "A Novel Spectroscopic Approach to Localize Biliary Tract Tissues During Laparoscopic Cholecystectomy," .
- D. Kashyap, D. L. Peswani, J. Cadeddu and **H. Liu**, "Heterogeneities in Concentrations of Hemoglobin Derivatives and Oxygen Saturations in Human Prostate Tumors Evaluated by NIRS," , *Proc. SPIE Int. Soc. Opt. Eng. 6434 (2007)*.
- F. Kashafi, D.E. Watenpaugh, and H. Liu, "Obstructive Sleep Apnea Screening by NIRS Imaging,"
- D. Kashyap, V. Sharma, and H. Liu, "Non-invasive monitoring of hemodynamic changes in orthotropic brain tumor".
- D. Kashyap, N. Chu, A. Apte, B.P. Wang, and H. Liu, "Development of broadband multi-channel NIRS (near-infrared spectroscopy) imaging system for quantification of spatial distribution of hemoglobin derivatives,"
- nti-neoplastic property of NSAID drugs in vivo.

#### Drs. Chuong and Eberhart:

- C Chapman, J Wright, RC Eberhart, CJ Chuong, et al., "A nanoscale membrane oxygenator: rationale, design and preliminary findings", to be presented at the Society for Biomaterials 2007 Annual Meeting, April 18-21, 2007 Chicago, IL.
- Tre Welch, RC Eberhart, CJ Chuong, "Thermal Treatment effects on a PLLA Bio resorbable stent" to be presented at the ASME 2007 Summer Bioengineering Conference, June 20-24, 2007 Keystone CO.

#### Grant's:

#### Dr. George Alexandakis:

Dr. Alexandakis was one of the recipients of the UTA/UTSW grants for collaborative research, made available this spring. The \$100K award will support collaborative work with Professor David Chen of the Radiation Oncology Department at UTSW. The aim of their study is to understand the interaction of key DNA-repair proteins with DNA fragments at the single-molecule level. DNA fragments are created after exposure of tissues to ionizing radiation during cancer therapy. The clinical goal of this research is to attain an improved understanding of the factors af-

fecting incomplete damage repair in cancer cells, which could lead to their death, or to their continued viability, leading to tumor recurrence.

**Dr. Chuong :**

- Nanoporous Membrane Blood Oxygenator, \$140,000, sponsor Ortech Bioengineering, Implantable wireless oxygen and pressure sensors, \$60,000, Sponsor MRCEDM matching.

**Dr. Jian Yang**

- He was awarded a joint venture grant by UTSW-UTA Collaborative Research Program. This work is in collaboration with Drs Shiakolas (UTA Mechanical Engineering), Brilakis (UTSW Internal Medicine-Cardiology) and Banerjee (UTSW Internal Medicine-Cardiology ) to develop a novel biodegradable coronary artery stent.

**Dr. Liping Tang:**

Dr. Tang has been carrying out following research work:

- Molecular mobility of polymeric implants and acute inflammatory responses: An experimental study in mice. M. Andersson, J Hedlund, M Berglin, H. Elwing. L. Tang, Journal of Materials Science: Materials in Medicine, 18(2): 283-286, 2007.
- *Alcon Research Inc.*, Research Contract, \$35,520, 2/1/2007 - 1/31/2008, Principal Investigator, Assessment of anti-neoplastic property of NSAID drugs in vivo.

**The Zuludan Prize for Year- 2007:**

Dr. Meital Zilberman, biomedical engineering faculty at Tel Aviv University, has been selected for the prestigious Zuludan Prize for the year 2007.

The JULUDAN Prize was established in 1984 by Daniel Falkner, Ludwig Kleiner and the late Julius Tigner and is awarded every year to a researcher in recognition for outstanding scientific research achievements that show promise of having valuable scientific-technological applications and are channeled to enhance man's welfare and prolong the human life span".

**BMESS STUDENT ACTIVITIES:**



**BME faculty and students at barbeque party**

**The Barbeque Tradition:**

Maintaining the jolly good tradition of the barbeque party, BMESS (Biomedical Engineering Student Society), organized a get-together event for students and faculty. This party welcomes the new Bioengineers and provides a stage for informal interaction between faculty and the students.

**BMESS Elections:**

In the elections held for Spring-2007, the following students were elected for various positions: Saijal Naik as the President, Jagannath Dey as Vice - President, Aleksey Kolasnikov as Treasurer, and Dipen Rana as Secretary.

**Outstanding Student Society:**



BMESS won the award for "Outstanding Student Organization" for 2006-2007.

**Mohammad Al-Abed and Priya Nattama receiving the 'Outstanding Student Society Award'.**

**UTA/UTSW Alumni Information**  
**Dr. Jae Gwan Kim**



Jae Gwan Kim completed his doctoral degree in Biomedical Engineering through the UTA/UTSW joint program in December 2005. Jae had completed his B.S. and M.S. degrees in Metallurgical Engineering at Hanyang University in Seoul, South Korea in 1996 and 1998, respectively. After graduation he worked at LG-Caltex Oil Corp for a year, and then enrolled in the joint BME program at UTA. For his Ph.D. studies here, he chose the Medical Imaging track and investigated the possibility of near infrared spectroscopy to be used as a monitoring tool of breast cancer treatment efficacy. The research was a joint effort between the Bioengineering at UTA and Radiology Departments at UTSW.

Upon graduation, Jae joined the Beckman Laser Institute and Medical Clinic at University of California Irvine, USA. There, he continues to work on a breast cancer project and also critical care projects, where he collaborates with US Army Institute of Surgical Research at San Antonio to monitor the ischemia-reperfusion injuries using a rat model.

Sripad is the recipient of the American Association for the advancement of Science, 'Science Excellence in Research' Award.

Priya Ravikumar (UTSW) – Experimental Biology 2007, (FASEB J; In press, 2007).

Chiang 'Niclas' Tan (UTSW) – Featured in *Allen Image* article, by Heather Darrow, which can be found at [www.allenimage.com/Allen%20Image/archive/may07/Issue/education.html](http://www.allenimage.com/Allen%20Image/archive/may07/Issue/education.html).

Jeffrey Thatcher(UTSW) – 2007 Keystone Symposia, "Che Xu (UTA) – Voice Foundation's 36<sup>th</sup> Annual Symposium: Care of the Professional Voice.



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