UBM2010 Final Program

Monday, September 13, 2010

15:00 Bus departs from Sendai station to Hotel Matsushima Taikanso

15:00- **REGISTRATION**

18:00- **WELCOME RECEPTION**

Welcome address by Professor Masaaki SATO, Dean, Graduate School of Biomedical Engineering, Tohoku University

Tuesday, September 14, 2010

Transducer and Instrumentation — Chair: Kirk SHUNG (University of Southern California)

8:30-	9:00	Marc	LETHIECQ	University François-Rabelais of Tours	New curved lead-free thick film transducers for UBM applications
9:00-	9:30	Jeff	KETTERLING	Riverside Research Institute	In vivo imaging with an annular-array at 40 and 20 MHz
9:30-	9:50	Mutsuo	ISHIKAWA	Tokyo Institute of Technology	Hydrothermally deposited PZT films and their electrical properties
9:50-	10:10	Ichiro	SUGANUMA	Acqiris Japan	Recent advances of high frequency digitizer cards

COFFEE BREAK

Small Animal Imaging — Chair: Stuart FOSTER (University of Toronto)

10:30-	11:00	Stuart	FOSTER	University of Toronto	State of the art in micro-ultrasound for mice
11:00-	11:30	Daniel	TURNBULL	New York University	Novel transgenic mice for multimodality imaging of angiogenesis
11:30-	11:50	John	HOSSACK	University of Virginia	A singular value filter for rejection of stationary artifact in mouse cardiac ultrasound

LUNCH

Cardiovascular Applications — Chair: Hiroshi KANAI (Tohoku University)

13:20-	13:40	Hideyuki	HASEGAWA	Tohoku University	Very high frame rate imaging of cardiovascular tissues
13:40-	14:00	Yasunori	HONJO	Tohoku University	Two-dimensional ultrasonic measurement of heart wall motion at high temporal and spatial resolutions
14:00-	14:20	Kazuki	IKESHITA	Tohoku University	Flow-mediated change in viscoelastic property of radial arterial wall by accurate detection of arterial wall boundaries

COFFEE BREAK

IVUS and Intravascular Imaging — Chair: Ton VAN DER STEEN (Erasmus Medical Centre)

14:40-	15:10	Ton	VAN DER STEEN	Erasmus Medical Centre	IVUS and combined IVUS/optical imaging
15:10-	15:30	Guy	CLOUTIER	University of Montreal Hospital Research Center	Intravascular ultrasound elastography and modulography of coronary atherosclerotic plaques before and after directional atherectomy
15:30-	15:50	Hiroyuki	YAGAMI	Terumo Co. Ltd.	Recent advances in intravascular ultrasound

17:00- 20:00 **DINNER CRUISE**

Wednesday, September 15, 2010

Clinical Applications — Chair: Ronald SILVERMAN (Columbia University)

8:30-	9:00	Ronald	SILVERMAN	Columbia University	Diagnostic imaging of the eye with optics and ultrasound biomicroscopy
9:00-	9:20	William	O'BRIEN	University of Illinois	Quantitative ultrasound imaging of breast tumors
9:20-	9:40	Tadashi	YAMAGUCHI	Chiba University	Liver fibrosis characterization based on quantification of heterogeneity of scatterer distribution
9:40-	10:00	Yoshihiro	HAGIWARA	Tohoku University	What determines the joint stiffness? Multimodality analysis by high frequency ultrasound, immunohistology and PCR

10:00- 10:20	Jonathan	MAMOU	Riverside Research Institute	Envelope and backscatter quantification of excised cancerous human lymph nodes

COFFEE BREAK

Contrast Agents and Phantoms			**Chair:**	**Shin-ichiro UMEMURA (Tohoku University)**
10:40- 11:00	Erwan	FILOUX	Riverside Research Institute	Comparison of spatial resolution and detection capability for high-frequency imaging systems using a novel anechoic-sphere phantom
11:00- 11:20	Carmel	MORAN	University of Edinburgh	Characterisation of high resolution ultrasound scanners using the Edinburgh pipe phantom
11:20- 11:40	Paul	HARRIS	Industrial Research Ltd.	Microstructured materials – propagation and use
11:40- 12:00	Yukiko	WATANABE	Tohoku University	Delivery of Na/I symporter gene into skeletal muscle by using nanobubbles and ultrasound

LUNCH

Cellular Imaging			**Chair:**	**William O'BRIEN (University of Illinois)**
13:30- 14:00	Kirk	SHUNG	University of Southern California	Development of very high frequency ultrasonic transducers from 100 MHz to 1 GHz
14:00- 14:20	Lauren	WIRTZFELD	University of Illinois	Evaluation of single cells in culture at 170 MHz
14:20- 14:40	Sara	JAFARI	Pierre and Marie Curie University	Nonlinear, detection of biodegradable, experimental nanoparticles using a high frequency ultrasound prototype

COFFEE BREAK

Backscatter			**Chair:**	**Guy Cloutier (University of Montreal)**
15:00- 15:30	Guy	CLOUTIER	Research Center, University of Montreal Hospital	Pathophysiological impact of erythrocyte aggregation demonstrated by a new cellular imaging method: The structure factor size and attenuation estimator
15:30- 15:50	Taku	FUKUSHIMA	Tohoku University	Estimation of scatterer's size by normalized power spectrum of high-frequency ultrasonic RF echo for assessment of red blood cell aggregation
15:50- 16:10	William	O'BRIEN	University of Illinois	Ultrasonic backscatter coefficient quantitative estimates from cells within cell pellet biophantoms

Special Session			**Chair:**	**Lori BRIDAL (Pierre and Marie Curie University)**
16:10- 17:00	Mickael	TANTER	Institut Langevin	Ultrafast ultrasound imaging in small animal models: Concepts and applications

19:00- 21:00 **CONFERENCE DINNER**

Thursday, September 16, 2010

Novel Instruments			**Chair:**	**Marc LETHICQ (University François-Rabelais of Tours)**
8:30- 9:00	Lori	BRIDAL	Pierre and Marie Curie University	Nonlinear detection of targeted microbubbles in a cell culture model for VEGFR2 expression using a high frequency prototype
9:00- 9:30	Robert	LEMOR	Fraunhofer Institute for Biomedical Engineering	A platform for combined high resolution acoustic and optoacoustic preclinical and clinical imaging
9:30- 9:50	Naohiro	HOZUMI	Aichi Institute of Technology	Development of acoustic impedance microscope and its medical and biological applications

COFFEE BREAK

Acoustic Microscopy			**Chair:**	**Naohiro HOZUMI (Aichi Institute of Technology)**
10:10- 10:30	Kazuto	KOBAYASHI	Honda Electronics Co. Ltd.	Development of ultrasound impedance microscope from industrial view
10:30- 10:50	Takashi	SHISHITANI	Tohoku University	Evaluation of HIFU effect on tissues by ultrasound impedance microscope
10:50- 11:10	Tsutomu	UEMURA	Aichi Institute of Technology	Precise observation for biological tissue and cultured cells by acoustic impedance microscope
11:10- 11:30	Kazutoshi	KUMAGAI	Tohoku University	Assessment of smart-aging of the skin - Comparison of high frequency ultrasound imaging and biomechanical techniques

Closing Remarks				
11:30- 11:50	Yoshifumi	SAIJO	Tohoku University	High resolution ultrasonic imaging in the next dacade: Where are we heading?

12:00 Bus departs from the hotel to Sendai station