VILNIUS GEDIMINAS TECHNICAL UNIVERSITY

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POLITECHNIKA BIALOSTOCKA

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OCTOBER 20–22, 2016, DRUSKININKAI, LITHUANIA

PROGRAMME OF 11TH INTERNATIONAL CONFERENCE BIOMDLORE 2016

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CONFERENCE TIMETABLE

Thursday, 20.10.2016		Friday, 21.10.2016		Saturday, 22.10.2016	
Time	Event	Time	Event	Time	Event
		8:00	Registration		
		8:45	Opening Ceremony		
		9:00	Keynote Presentation		
		9:30	Session 1		
		10:00	Coffee Break	10:00	
		10:15	Session 2		
		12:00	Lunch Break		Trip to a Grūtas Park
		13:00	Keynote Presentation		
		13:30	Session 3	14:30	
16:00	Registration	15:00	Coffee Break		
18:00		15:15	Session 4		
		17:00	Closing Ceremony		
19:00 22:00	Welcome Reception	19:00 22:00	Conference Dinner		

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http://biomdlore.vgtu.lt

A. **Registration, Sessions, Coffee Breaks**: Conference hall "Čiurlionis", on the 5th floor of the Hotel "Druskininkai", V. Kudirkos g. 45
Trip to a Grūtas Park: Bus to Grūtas Park will leave on Saturday, 22nd of October at 10:00 from the Hotel "Druskininkai". Grūtas Park is an open-air exhibition – please, wear warm and waterproof clothes in case of chilly and rainy weather. At the end of the exhibition, there will be lunch in the park coffee-bar and then departure to Druskininkai.
B. **Lunch**: Restaurant on the ground floor of the Hotel "Druskininkai"
C. **Welcome Reception**: Entertainment club "Sūkurys", M. K. Čiurlionio g. 51. It is a bowling and pool club.
D. **Conference Dinner**: Panoramic restaurant "Keturi vėjai", on the 8th floor of the Hotel "Grand SPA Lietuva", V. Kudirkos g. 45

CONFERENCE VENUE

The conference will be held in Hotel "Druskininkai", Conference Hall "Čiurlionis" (5th floor of the hotel), V. Kudirkos g. 45, Druskininkai 66120, Lithuania
http://grandspa.lt/accommodation/hotel-druskininkai

CONFERENCE HOSTING CITY - DRUSKININKAI

Druskininkai is a spa town on the Nemunas River in southern Lithuania, close to the borders of Belarus and Poland. The city of Druskininkai has a population of 14,172 (2013 Census) and dates back as a spa resort to the 19th century. According to some sources the site of present-day Druskininkai was inhabited by local Yotvingian tribes in the early Middle Ages. In the 13th century, the area became a part of the expanding Duchy of Lithuania. A small castle was built in the area as a part of the defense system against the Teutonic Order. In 1308, the castle was conquered by the Teutonic Knights and destroyed, causing a depopulation of the area. The first written mention of Druskininkai dates back to 1636. The name of the town suggests that the local population collected the precious mineral. In the late 18th century it was believed that minerals found in the waters of Druskininkai area produced health benefits and their usage in the medical treatment of asthma and other ailments began. In the early 19th century Ignacy Fonberger, a professor at the University of Vilnius, analyzed the chemical composition of Druskininkai's waters and showed that they contain large amounts of Calcium, Sodium, Potassium, Iodine, Bromine, Iron and Magnesium. He also promoted the town as a holiday resort for the population of Vilnius.

More information about the city Druskininkai can be found on
http://info.druskininkai.lt/new/en/.

KEYNOTE SPEAKERS

Dr. James Shippen
Coventry University, UK

After taking an undergraduate degree in Mechanical Engineering at the University of Leeds, James Shippen was employed in the defence industry performing stress and performance calculations on torpedos. He then moved to work in the Design Analysis department for Rover Cars where he undertook dynamic analysis and mathematical simulation of passenger vehicles primarily using finite element methods. There arose a requirement for acoustic modelling which Rover did not have and so he wrote an acoustic capability into a commercially available finite element package for which he was awarded a PhD by the University of Birmingham and was offered a lectureship in Mechanical Engineering. At the University of Birmingham Dr. Shippen specialised in applying engineering theory to biological system where he was promoted to Director of Bioengineering and worked with many hospitals in the US and UK.

Dr. Patrick Mark Aubin
Center for Limb Loss Prevention and Prosthetic Engineering, VA Puget Sound Health Care System
Department of Veteran Affairs
University of Washington, Seattle, WA USA

Dr. Aubin's research spans robotics and biomechanics with applications in health and mobility. He motivates his research by engaging with patients and stakeholders to understand shortcomings in the areas of rehabilitation, prosthetics, orthotics, and physical therapy. Dr. Aubin strives to address these unmet patient and caregiver needs by establishing multidisciplinary research teams that leverage state of the art technologies in robotics, neuroscience, and computational intelligence. Dr. Aubin's research goal is to develop and utilize novel sensors, algorithms, assistive powered devices, and robotic tools that can augment human performance and/or improve mobility and function for those affected by disease, age or trauma.

Time	Presenter	Topic
Keynote Presentation. Chairs: Natalya Kizilova & Julius Griškevičius		
09:00	James Shippen (United Kingdom)	**Biomechanical modelling in MATLAB using BoB** BoB is a MATLAB S-function of the human musculo-skeletal model, which runs within the Simulink environment. The model calculates joint torques, muscle load distribution, joint contact forces and graphical output. The skeletal model is composed of 36 rigid segments representing the major bones of the body.
Session 1		
09:30	Piia Tint (Estonia)	Myotonometry as a Tool for Determination of Fatigue in the Upper Extremities of Garment Industry Workers *Pille, V.; Tint, P.*
09:45	Alexei Katashev (Latvia)	Smart Textile Gloves for Luge Athletes Paddling Monitoring *Dimitre, K.; Katashev, A.; Okss, A.*
10:00 10:15	**Coffee Break**	
Session 2 Chairs: Vladimir Tregubov & Mečislovas Mariūnas		
10:15	Julius Griškevičius (Lithuania)	Estimation of temporal gait parameters of multiple sclerosis patients in clinical setting using inertial sensors *Griškevičius, J., Apanskienė, V., Žižienė, J., Daunoravičienė, K., Ovčinikova, A., Kizlaitienė, R., Sereikė, I., Kaubrys, G., Pauk, J., Idzkowski, A.*
10:30	Agnieszka Wasilewska (Poland)	Relation between Time Duration and Temperature Factors in Rheumatoid Arthritis *Pauk, J.; Wasilewska, A.; Chwiećko, J.; Domyslawska, I.; Sierakowski, S.; Idzkowski, A.; Daunoravičienė, K.; Griškevičius, J.*
10:45	Adam Idźkowski (Poland)	Propagation of Uncertainty for Balance Platform Model Involving Complex Quantities *Idźkowski, A.; Walendziuk, W.; Sawicki, A.*
11:00	Marcin Milanowicz (Poland)	Numerical Modelling of the Forklift Tip over to Test Effectiveness of the Safety Components *Milanowicz, M.; Budziszewski, P.; Kędzior, K.*
11:15	Linas Jonušauskas (Lithuania)	3D Microfabrication of Complex Structures for Biomedical Applications via Combination of Subtractive/Additive Direct Laser Writing and 3D Printing *Jonušauskas, L.; Rekštytė, S.; Skliutas, E.; Butkus, S.; Malinauskas, M.*
11:30	Natalya Kizilova (Ukraine)	Posturographic Study of Human Body Sway before and after a Work Day *Karpinski, M.; Kizilova, N.*
11:45	Ilona Ogurcova (Lithuania)	Challenges in Adapting Technical Assistive Products Individually for People with Mobility Disabilities *Ogurcova, I.*
12:00 13:00	**Lunch Break** Restaurant on the ground floor of the conference venue	

Keynote Presentation **Chairs: Jolanta Pauk & James Shippen**		
13:00	Patrick Mark Aubin (USA)	**Bionic Humans: How Do We Design and Build Mechatronic Systems that Enhance Mobility** Humans have evolved over millennia to be extremely efficient walkers but disease or trauma often limits our mobility as we age. In this talk, I will review the past, present and future promise of exoskeletons and robotic prostheses that have enabled us to overcome impairment and even attain super human capabilities.
Session 3		
13:30	Vladimir Tregubov (Russia)	Computer Simulation of the Pulsating Blood Flow in Arteries with Stenosis, Aneurysms and Plaques *Tregubov, V.*
13:45	Natalya Kizilova (Ukraine)	Geometry and Mechanical Function of Multijoint Extremities from Mammals to Insects: Towards Biomimetic Design of Robotic Arm *Denisov, O.; Kizilova, N.*
14:00	Gediminas Gaidulis (Lithuania)	Formulation of Heart Mitral Valve Chordae Tendineae Model *Gaidulis, G.; Kačianauskas, R.; Aidietis, A.*
14:15	Artūras Serackis (Lithuania)	The Study of Extraneous Conditions That Affect Tilt-Based Pointer Movements *Serackis, A., Miniotas D., Katkevičius, A., Krukonis, A., Plonis, D.*
14:30	Artūras Linkel (Lithuania)	Characteristic upper extremity kinematical parameters of healthy people during defined motions *Linkel, A.; Griškevičius, J.; Shippen, J.; May, B.; Daunoravičienė, K.*
14:45	Wojciech Walendziuk (Poland)	The Use of DTW Method as an Effective Way of Uroflowmetry Data Screening Analysis *Walendziuk, W.; Sawicki, A.; Idźkowski, A.*
15:00	Donatas Lukšys (Lithuania)	Influence of Dance Therapy on the Parkinson's Disease Affected Upper Limb Biomechanics *Lukšys, D.; Jatužis, D.; Kaladytė-Lokominienė, R.; Bunevičiūtė, R.; Mickutė, G.; Juocevičius, A.; Griškevičius, J.*
15:15	**Coffee Break**	

Session 4 Chairs: Patrick Mark Aubin & Kristina Daunoravičienė		
15:30	Oleg Ardatov (Lithuania)	Stress Analysis of Osteoporotic Femur *Ardatov, O.; Barsukov, V.; Karev, D.*
15:45	Deividas Mizeras (Lithuania)	Comparison of Different Microstructure Scaffolds for Tissue Regeneration *Šešok, A.; Mizeras, D.; Valiulis, A. V.; Griškevičius, J.; Malinauskas, M.*
16:00	Aleksander Sawicki (Poland)	The Supporting Method for Automatic Diagnosis of Prostatic Hypertrophy *Walendziuk, W.; Sawicki, A.; Idźkowski, A.*
16:15	Mečislovas Mariūnas (Lithuania)	The influence of barbell's weight, lifting technique and skills on weightlifter's blood pressure and heart rate, and optimal parameters of barbell lifting law of motion *Mariūnas M., Griškevičius J., Jonaitis G.*
16:30	Zita Gierasimovič (Lithuania)	Assessment of the Effectiveness of Pressure Ulcer Care *Gierasimovič, Z.; Kuzborska, Z.*
16:45	Zyta Kuzborska (Lithuania)	Peculiarities of the Supervision of Vascular Catheters *Kuzborska, Z.; Gierasimovič, Z.*
17:00 17:30	**Closing ceremony** Awards of participation certificates	
19:00	**Conference Dinner** Restaurant "Keturi vėjai" on the 8th floor of Hotel "Grand SPA Lietuva"	

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