

Biomechanics. Experiments and mathematical models

**MAY 26
09.30-10.50 (EKB)**

Hall 1 - Popova st., 30

Chairs: Bershitsky S.Y., Lookin O.

09.30-09.45	Nabiev S.R. Bershitsky S.Y. Tsaturyan A.K. <i>Ekaterinburg</i>	The lifetime of the actomyosin complex under load, measured with an optical trap
09.45-10.00	Lipovka A.I. Parshin D.V. <i>Novosibirsk</i>	Experimental study of the mechanical properties of human aorta with various pathologies
10.00-10.15	Slabodchikova D. Sokolova K.V. Khokhlova A. <i>Ekaterinburg</i>	The effect of diabetes mellitus on the characteristics of myocardial collagen fibers
10.15-10.25	Borisova V.A. Myachina T.A. Butova X.A. Gette I.F. Khokhlova A. <i>Ekaterinburg</i>	Effects of plasma glucose concentration on the single cardiomyocyte geometry and contractility in type 1 diabetes.
10.25-10.40	Berg V. Butova X.A. Kochurova A.M. Myachina T.A. Shchepkin D. Khokhlova A. Kopylova G. <i>Ekaterinburg</i>	The effect of omecamtiv mecarbil on the contraction of cardiomyocytes from different heart chambers.
10.40-10.50	Lisin R. Kuznetsov D.A. <i>Ekaterinburg</i>	The effect of the cardiac myosin activator, omecamtiv mecarbil, CK-1827452, on contractility of papillary muscles of the right ventricle of hearts in both healthy and heart failure rats

Conference time: UTC+5:00 (Moscow Time Zone +2 hours)

**Experimental and computational models
in cardiovascular physiology and cardiology**

**MAY 26
11.00-12.30 (EKB)**

Hall 1 - Popova st., 30

Chairs: Tsyvian P.B., Teregulov Y.E.

11.00-11.20	Tsyvian P.B. Kraeva O.A. Markova T.V. Chumarnaya T. <i>Ekaterinburg</i>	Remodeling of the heart of premature child
11.20-11.40	Teregulov Y.E. <i>Kazan</i>	Spatial vector analysis of left bundle branch block
11.40-11.55	Golovko V. <i>Syktyvkar</i>	Decrease in the intracellular concentration of calcium ions triggers a compensatory mechanism in response to the inhibitory effect of nifedipine in the right atrial cells of the chick embryo
11.55-12.10	Ryvkina A.M. Markov N.S. Gonotkov M.A. Lebedeva E. <i>Ekaterinburg, Syktyvkar</i>	Studying of the ontogenetic changes in electrophysiological properties of mouse cardiac pacemaker cells
12.10-12.20	Abrasheva V.O. Romanova S.G. Syunyaev R.A. Frolova S. <i>Dolgoprudny</i>	Human ventricular fast sodium current model at physiological temperature
12.20-12.30	Kochurova A.M. Myachina T.A. Berg V. Butova X.A. Kopylova G. Khokhlova A. Shchepkin D. <i>Ekaterinburg</i>	The effect of type 2 diabetes on contractility of cardiomyocytes from the different heart regions

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THE GRAND OPENING.
PLENARY LECTURES

MAY 26
13.00-15.00 (EKB)

Hall 1 - Popova st., 30

Chairs: Sutunkova M.P., Solovyova O.E.

13.00-13.30	Solovyova O.E. <i>Ekaterinburg</i>	On the Ural School of Cardiac Physiology and Biomechanics, Vladimir Markhasin and his contribution to the theory of heart heterogeneity
13.30-14.00	Sutunkova M.P. <i>Ekaterinburg</i>	The main results of an experimental study of the effect on the body of metal and metal-oxide nanoparticles
14.00-14.30	Avetisyan A.I. <i>Moscow</i>	Digital transformation of medicine. Challenges and prospects
14.30-15.00	Fedotov S. <i>UK</i>	Non-Markovian models of intracellular transport

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**Experimental and computational models
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**MAY 26
15.15-16.30 (EKB)**

Hall 1 - Popova st., 30

Chairs: Syunyaev R.A., Katsnelson L.B.

15.15-15.35	Syunyaev R.A. <i>Dolgoprudny</i>	Personalized simulation of ventricular and atrial myocytes
15.35-15.55	Aleksandrov D.V. Starodumov I.O. Sokolov S.Y. Zubarev A.Y. Bessonov I.S. Pavlyuk E.V. Blyakhman F.A. <i>Ekaterinburg</i>	Modeling of hemodynamics in bifurcation lesions of coronary arteries before and after myocardial revascularization
15.55-16.10	Syomin F.A. Khabibullina A. Osepyan A. Tsaturyan A.K. <i>Moscow</i>	Multiscale simulation of inherited cardiomyopathies: the effects of cellular disorders on heart mechanics
16.10-16.20	Pikunov A.V. Syunyaev R.A. <i>Dolgoprudny</i>	Validation of mathematical models of the human atrial action potential
16.20-16.30	Komarov I.A. <i>Syktyvkar</i>	Mathematical porcine heart-torso model for electrophysiological simulations

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**Experimental and computational models
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**MAY 26
17.00-18.25 (EKB)**

Hall 1 - Popova st., 30

Chairs: Azarov J., Ryvkin A.

17.00-17.20	Azarov J. Vityazev V. Vaykshnorayte M. <i>Syktyvkar</i>	Myocardial electrical heterogeneity as a manifestation of thermal adaptation in fish
17.20-17.35	Bernikova O. Durkina A. Sedova K. Azarov J. <i>Syktyvkar</i>	Determinants of reperfusion arrhythmias: action potential duration vs dispersion of repolarization
17.35-17.45	Sereda Y. Osipov G. <i>Nizhny Novgorod</i>	Problems and prospects of applying deep learning networks to the analysis of electrocardiograms
17.45-17.55	Rybashlykov D.I. Syunyaev R.A. <i>Dolgoprudny</i>	Low-cost optical mapping system with open-source software
17.55-18.05	Myachina T.A. Butova X.A. Khokhlova A. Kuznetsov D.A. <i>Ekaterinburg</i>	The effect of estrogen deficiency on contractile function of single cardiomyocytes from atria and ventricles
18.05-18.15	Butova X.A. Myachina T.A. Khokhlova A. <i>Ekaterinburg</i>	The effect of paroxysmal atrial fibrillation on the mechanical function of single cardiomyocytes from the left and right rat atria
18.15-18.25	Ryvkin A.M. Markov N.S. <i>Ekaterinburg</i>	Calcium sparks in cardiac pacemaker cells at different temperatures. Computer modelling