## Cardiac Physiome 2017: Metabolism, mechanics, and ion fluxes

Monday	6 Nov. 2017	
18:30 - 20:	00	Reception: Gerrard Room at Chelsea Hotel
Tuesday 7 7:30	Nov. 2017	University of Toronto Faculty Club, 41 Willcox St. Breakfast and registration
Session I -	Introduction:	Chairs: Jim Bassingthwaighte / Craig Simmons, $UW/UT$
8:30	Jim Bassingthwaighte University of Washington	Introduction & Overview of the meeting
8:35	Denis Noble (by Video) Oxford University	Putting the genome in its place in physiology and evolution
Session II	$oldsymbol{A}$ - Metabolism and Integrated	d Cardiac Function Chair: Graham Collingridge, U of T
8:45	<b>KEYNOTE:</b> Heinrich Taegtme Texas Health Science Center	yer Cardiac metabolism
9:20	Discussion	
9:30	Edmund Crampin University of Melbourne	Modeling Cardiac Metabolism
10:00 COFFEE / TEA		
Session III	B - Metabolism and Integrated	l Cardiac Function Chair: Brenda Andrews, U of T
Session III 10:15	3 - Metabolism and Integrated Christine Des Rosiers Montreal Heart Institute	Chair: Brenda Andrews, U of T  Long chain acylcarnitines: from metabolism to heart function
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10:15	Christine Des Rosiers Montreal Heart Institute Fabio Recchia	Long chain acylcarnitines: from metabolism to heart function  Novel circulating modulators of cardiac
10:15 10:45	Christine Des Rosiers Montreal Heart Institute Fabio Recchia Temple University Johannes HGM van Beek	Long chain acylcarnitines: from metabolism to heart function  Novel circulating modulators of cardiac substrate metabolism  Alpe d'Huez cycling, PCr shuttle
10:15 10:45 11:15	Christine Des Rosiers Montreal Heart Institute Fabio Recchia Temple University Johannes HGM van Beek Vrije Universiteit Amsterdam Flash poster presentations	Long chain acylcarnitines: from metabolism to heart function  Novel circulating modulators of cardiac substrate metabolism  Alpe d'Huez cycling, PCr shuttle to whole body energy balance
10:15 10:45 11:15 11:45 12:05-13:00	Christine Des Rosiers Montreal Heart Institute Fabio Recchia Temple University Johannes HGM van Beek Vrije Universiteit Amsterdam Flash poster presentations	Long chain acylcarnitines: from metabolism to heart function  Novel circulating modulators of cardiac substrate metabolism  Alpe d'Huez cycling, PCr shuttle to whole body energy balance  (20 presenters, each 1 slide, 1 minute)  H + POSTERS
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10:15 10:45 11:15 11:45 12:05-13:00 Session III	Christine Des Rosiers Montreal Heart Institute Fabio Recchia Temple University Johannes HGM van Beek Vrije Universiteit Amsterdam Flash poster presentations  LUNC - Cardiac Energetics and Me KEYNOTE: Robert Balaban NIH/NHLBI	Long chain acylcarnitines: from metabolism to heart function  Novel circulating modulators of cardiac substrate metabolism  Alpe d'Huez cycling, PCr shuttle to whole body energy balance (20 presenters, each 1 slide, 1 minute)  H + POSTERS  Chair: Michael Sefton, U of T

15:00 - 15:10 COFFEE / TEA

Denis Loiselle University of Auckland

David Nordsletten King's College London

14:20

14:40

Estimating the thermodynamic efficiencies of initial and recovery metabolism

Regional flows, mechanical work and energetics

Session IV Tokyo	-Multicellular interact	ions in cardiac remodeling. Chair: Seiryo Sugiura, University of
15:10	Mansoor Husain C University of Toronto	ardiac protection via metabolic modulation of coronary vascular cells: effects of a small peptide therapeutic
15:40	Milica Radisic Univ Toronto	How to make cardiomyocyte cultures thrive
16:00	Dunja Aksentijevic King's College, London	Causal link between intracellular Na <sup>+</sup> elevation and metabolic remodeling in heart failure
16:20	Eleonora Grandi N UC Davis	ew insight into subcellular heterogeneity and temporal characteristics of the fight or flight response in cardiac myocytes
16:40	Peter Kellman NHLBI/NIH	Magnetic resonance imaging application of myocardial perfusion models
Tuesday ev	vening: Unprogramme	i
Wednesd	ay 8 Nov. 2017	U of T Faculty Club 41 Willcox St.
7:30 -8:30		Breakfast
Session V-	Cardiac Substrate Me	ctabolism Chair: John Chatham, Johns Hopkins U
8:30	<b>KEYNOTE:</b> Gary Lop Univ. Alberta	aschuk Metabolic flux control
9:10	Doug Lewandowski U. Illinois-Chicago	Cardiac lipid dynamics and metabolic remodeling
9:40	Forbes Dewey MIT	Modeling oxygen requirements in ischemic cardiomyocytes
10:00 - 10:10 COFFEE / TEA		
Session VI	- Cardiac Metabolism	and EC Coupling Chair: James Schwaber, Thomas Jefferson U
10:15	Chae Hun Leem Korea	Functional changes of mitochondria with/without substrates
10:30	Yael Yaniv Haifa Technion, Haifa	Bioenergetic feedback between heart cell contractile machinery and mitochondrial 3D deformations
10:45	Coert Zuurbier AMC, Amsterdam	Diabetes, heart failure, and the effective SGLT2 inhibitors: linked by cardiac sodium.
11:00	M. Saleet Jafri George Mason U	Calsequestrin mutation and EC coupling dynamics
11:15	Frank Sachse U. Utah	Cardiac fibroblasts in cardiac conduction and remodeling
11:30	Jeff Saucerman U. Virginia	Signaling fibrosis in post-infarct remodeling
11:45	Flash poster presentation	ns (20 presenters, each 1 slide, 1 minute)
12:05 -13:30 POSTERS and LUNCH		
Session VI	I - Growth and Remo	deling: Chair: Craig Simmons, U of T
13:30	Jeff Omens USCD	Structural responses in resynchronization therapy
13:50	Philippe Pasdois University Bordeaux	Early metabolic and mitochondrial remodeling in a pig model of atrial fibrillation

14.10	Ellen Kuhl	Dradicting drug induced amounthming by multiscale modeling
14:10	Standford University	Predicting drug-induced arrhythmias by multiscale modeling
14:30	Michael Sacks University of Texas a	In vivo myocardial compressibility and its impact on contractile energetics in the healthy and the infarcted heart
14:50	Rodrigo Fernandez-C U of Toronto	Stochastic force patterns promote coordinated cell movements during scarless wound repair
15:10- 15:2	0	TEA / COFFEE
Session VI	II - Signaling and F	emodeling Chair: Christopher Yip, U of T
15:20	Peter Kohl	Sat-Nav for the inner cities of the heart: Mapping 3D cell-nanostructure
15:40	Michael Regnier U Washington	Supercharging the heart: Elevating 2-deoxy-ATP to increase myocardial performance
15:55	Naomi Chesler U Wisconsin	LV influence on RV contraction
16:10	Alex Quinn Dalhousie U, Halifax	Metabolic, mechanical, and electrical considerations for optical mapping studies of ischemia and infarction
16:25	Polina Mamoshina Oxford U	Beyond electrophysiology: Predicting drug-induced cardiotoxicity by combining transcriptome analysis and machine learning
16:40	Peter Backx York U & U Toronto	Signaling in atrial remodeling and fibrillation
16:55	Jim Bassingthwaight U Washington	Meeting Summary. Next day plans: Tutorials, CiPA
17:00	Gather at the bar w	tile the dinner is being set up.
18:00	Conference Banquet	at U of T Faculty Club
Thursday	. 0 Nov. 2017	
Thursday	9 Nov. 2017	
7:30 - 8:30		nting Institute, Room 131, 100 College Street across from MaRS Bldg.
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12:00 Lunch: MaRS Tower West (661 University Avenue) at the 14th Floor TBEP (Translational Biology and Engineering) Lounge. From Banting, cross the street. From the Chelsea walk north on Elizabeth to MaRS East and walk indoors to MaRS West. Take elevator to 14th Floor, Room 1440.

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CIPA	in-silico	modelling	workshop:
	III DIIICO	modelling	WOI INDIIOP

co-Chairs: Gary Mirams and David Strauss

Stem cell derived myocyte models

13:00 - 19:00	Walk South from MaRS elevator into Toronto General Hosp 200 Elizabeth Street
	Room $025/026$

13:00	David Strauss (FDA)	Introduction and regulatory perspective
13:40	Kylie Beattie (FDA / GSK) Adam Hill (Victor Chang) Wendy Wu (FDA) Randall Rasmusson (University at Buffalo,	hERG and IKr modelling, Kinetic models of drug interaction, Data quality and experimental considerations, New York State)
14.35	Zhihua Li (FDA) Brian Carlson (University of Michigan)	Action potential modelling, optimising conductances for studying drug action,

15:35-15:45 COFFEE/TEA

Trine Krogh-Madsen (Cornell)

15.45	Jonathan Moreno (Washington University in St. Louis)	Other channels (INa, ICaL,)
	Ken Wang (Roche)	

17.00 Zhihua Li (FDA) Pro-arrhythmic risk markers, Validation plans

Jaimit Parikh (IBM)
Mark Davies (QT Informatics)
Elisa Passini (Oxford)
Sebastian Polak (Certara)
Ele Grandi (UC Davis)

18.00 - 19.00 David Strauss (FDA) Future plans, Discussion Gary Mirams (University of Nottingham)

## PROGRAM COMMITTEE SCIENTIFIC ADVISORY COMMITTEE

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