Cellular Bioenergetics Master Class

Led by Martin Brand and David Nicholls

Monday April 10- Thursday April 13, 2017

at Buck Institute for Research on Aging, Novato, Ca

Provisional program:

DN- David Nicholls; MB- Martin Brand; SM- Shona Mookerjee; AG- Akos Gerencser

Lecture	Lecturer	*lecture 60min*
1	DN	The proton circuit: volts, amps, ohms
2	DN	Essential thermodynamics and its application to cellular bioenergetics
3	MB	Function and dysfunction: isolated mitochondria
4	DN	Function and dysfunction: intact cells
5	MB	reactive oxygen species: sources and regulation
6	DN	Mitochondria and calcium
7	DN	Applying mitochondrial physiology to the β-cell and the brown adipocyte
8	DN	How to critically analyze and evaluate the cellular bioenergetic literature
		Experimental design and data manipulation 90min
1	SM	The Seahorse respirometer: isolated mitochondria: problem solving
2	DN	The Seahorse respirometer: intact cells: problem solving
3	SM	Monitoring glycolysis with the Seahorse
4	MB	The design of mitochondrial ROS experiments
5	DN	Monitoring $\Delta\psi_p$ and $\Delta\psi_m$ in cells: qualitative approaches
6	AG	Monitoring $\Delta\psi_p$ and $\Delta\psi_m$ in cells: quantitative approaches
7	DN/MB	'Town Hall' session with questions/input from students
8	DN/MB	Round up