

SATELLITE MEETING ON

## Bioenergetics and the major evolutionary transitions

Wednesday 14 – Thursday 15 November 2012

The Royal Society at Chicheley Hall: Home of the Kavli Royal Society International Centre, Buckinghamshire

Organised by Dr Nick Lane, Professor John Allen, Professor John Raven FRS, Professor William Martin

THE  
ROYAL  
SOCIETY

DAY 1				DAY 2			
SESSION 1: Origin of Life Chair: Dr Nick Lane		SESSION 2: Photosynthesis Chair: Professor John Raven FRS		SESSION 3: Eukaryotes Chair: Professor William Martin		SESSION 4: Multicellularity Chair: Professor John Allen	
09:00	Welcome by Royal Society						
09:05	Did pyrophosphate (PPi) precede ATP as prebiological and early biological energy carrier? <b>Professor Herrick Baltscheffsky</b>	13:45	Early evolution of photosynthesis and the transition to an aerobic world <b>Professor Robert Blankenship</b>	09:00	Unravelling the origins of eukaryotes: trees, genomes and organelles <b>Professor Martin Embley</b>	13:45	Was oxygen a limiting factor in early animal evolution? <b>Professor Nick Butterfield</b>
09:30	Discussion	14:15	Discussion	09:30	Discussion	14:15	Discussion
09:45	Geochemical environments for prebiotic chemistry and early microbial metabolism <b>Dr Tom McCollom</b>	14:30	Accidents and aeons Free oxygen and fixed nitrogen in the origins of cyanobacteria and chloroplasts <b>Professor John Allen</b>	09:45	Origins of the Eukaryotic cell: new data and new methods <b>Professor James McInerney</b>	14:30	Mitonuclear coadaptation in the evolution of eukaryotes <b>Dr Nick Lane</b>
10:15	Discussion	15:00	Discussion	10:15	Discussion	15:00	Discussion
10:30	Coffee	15:15	Tea	10:30	Coffee	15:15	Tea
11:15	Heat traps and RNA replication <b>Professor Dieter Braun</b>	16:00	Cyanobacteria, chlorophyll biosynthesis and the origin of oxygenic photosynthesis <b>Professor William Martin</b>	11:15	Stress and the evolution of reproductive altruism <b>Dr Aurora Nedelcu</b>	15:45	Natural selection shapes mitochondrial genetic variation within cells, populations and species <b>Professor Dan Mishmar</b>
11:45	Discussion	16:30	Discussion	11:45	Discussion	16:15	Discussion
12:00	The geological environment: energy sources and evolutionary leaps <b>Professor Euan Nisbett</b>	16:45	Geostable molecules and the Late Archean 'Whiff of Oxygen' <b>Professor Roger Summons</b>	12:00	On the Origin of Cell Death at Sea: the role of infochemicals in mediating the life and death of algal blooms <b>Dr Assaf Vardi</b>	16:30	Levels of autocatalysis, evolvability and the major transitions in evolution <b>Professor Eörs Szathmáry</b>
12:30	Discussion	17:15	Discussion	12:30	Discussion	17:00	Discussion
12:45	LUNCH	17:30	CLOSE	12:45	LUNCH	17:15	CLOSE
		18:30	Predinner drinks				
		18:45	DINNER				