



***Bioenergetics and Health  
In Memory of Frederick L. Crane***

June 21-24, 2018  
Faculty House, Columbia University, NYC

**Thursday, June 21**

- 9.00 – 12.00** Meeting of the Executive Committee
- 14.00 – 17.30** Registration (*1<sup>st</sup> floor lobby*)
- 17.45 – 18.30** **Introductory remarks** (*Seminar Room 2<sup>nd</sup> floor*)
- P. Navas**  
**M. Hirano**
- 18.35 – 19.00** **In Memory of Professor Frederick Loring Crane**  
Plenary Lecture  
**Richard Dilley, Purdue University**
- 19.15** Welcome reception (*Presidential Room 3<sup>rd</sup> floor*)

## Friday, June 22

### 8.30 – 10.25 Mitochondrial Bioenergetics (Seminar Room 2<sup>nd</sup> floor) Chairpersons: **M.L. Genova** and **U. Brandt**

- 08.30 **M.L. Genova** *Overview on the theme of the session*  
08.45 **U. Brandt** *Mechanism and regulation of mitochondrial complex I*  
09.10 **A. Osyczka** *New spectroscopic insight into semiquinone of the quinone reduction site of complex III and its mechanistic consequences*  
09.35 **M. Schlame** *Cardiolipin Remodeling and Assembly of the OXPHOS System*  
10.00 **A. Mourier** *An unexpected link between mitochondrial dynamics and coenzyme Q*

10.25 Coffee break (Presidential Room 3<sup>rd</sup> floor)

### 10.50 – 13.15 CoQ Biosynthesis (Seminar Room 2<sup>nd</sup> floor) Chairpersons: **C. Clarke** and **M. Kawamukai**

- 10.50 **M. Kawamukai** *A novel gene involved in CoQ biosynthesis in fission yeast*  
11.15 **C. Santos Ocaña** *Ptc7/PPTC7, a post-translational regulator of mitochondrial metabolism in eukaryotic cells*  
11.40 **D. Pagliarini** *Defining CoQ biosynthesis and regulation through systems biochemistry*  
12.05 **M. Barros** *Identification of critical amino acids in Coq proteins using networks of co-evolved residues*  
12.30 **A. Ayer** *Genome-wide screening of *S. cerevisiae* to identify novel regulators of cellular CoQ content*  
12.50 **F. Pierrel** *Escherichia coli synthesizes Q thanks to a soluble multiprotein complex*

13.15 Lunch (Presidential Room 3<sup>rd</sup> floor)

### 14.10 – 16.30 CoQ in ROS Signaling (Seminar Room 2<sup>nd</sup> floor) Chairpersons: **R. Stocker** and **G. Lenaz**

- 14.10 **G. Lenaz** *Introduction and Overview*  
14.25 **A. Orr** *Selective suppressors of oxidant formation at the Q- binding sites of complexes I and III*  
14.50 **M. Murphy** *Role of CoQ and RET in mitochondrial superoxide/H<sub>2</sub>O<sub>2</sub> formation*  
15.15 **P. Pasdois** *Succinate and reactive oxygen species in reperfusion injury.*  
15.40 **R. Hamalainen** *mtDNA mutagenesis disturbs stem cell function by altering ROS-mediated signaling*

16.05 **D. Fazakerley** *Mitochondrial CoQ deficiency is a common driver of oxidative stress and insulin resistance.*

16.30 Coffee break (*Presidential Room 3<sup>rd</sup> floor*)

**17.00 – 18.40 CoQ Deficiency and Mitochondrial Myopathies** (*Seminar Room 2<sup>nd</sup> floor*)  
Chairpersons: **C. Quinzii** and **L. Salviati**

17.00 **Catarina M Quinzii** *The role of sulfide oxidation impairment in the pathogenesis of CoQ deficiency*

17.25 **Helene Puccio** *Understanding the pathophysiological mechanisms underlying ARCA2, a recessive ataxia due to mutation in COQ8A*

17.50 **Leonardo Salviati** *Genotype-phenotype correlations for primary CoQ deficiency*

18.15 **Luis C Lopez** *Therapeutic approaches in experimental models of CoQ deficiency*

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## Saturday, June 23

**08.10 – 10.00 Cardiovascular Diseases** (*Seminar Room 2<sup>nd</sup> floor*)  
Chairpersons: **P. Langsjoen** and **F. Rosenfeldt**

08.10 **U. Alehagen** *Selenium and coenzyme Q10 - anti-aging substances? What do we know?*

08.45 **Y.Matsuzawa** *Ubiquinol Improves Endothelial Function in Patients with Heart Failure with Reduced Ejection Fraction: A Randomized Double-blind Placebo-controlled Cross-over Study*

09.10 **S.Pepe** *Mitochondria in human systolic heart failure.*

09.35 **F. Rosenfeldt** *Statins and cognitive decline: Coenzyme Q10 as a possible therapeutic strategy*

10.00 Coffee break (*Presidential Room 3<sup>rd</sup> floor*)

**10.30 – 13.00 CoQ in Healthy Aging** (*Seminar Room 2<sup>nd</sup> floor*)  
Chairpersons: **K. Higuchi** and **G. Lopez-Lluch**

10.30 **R. de Cabo** *Quinone Reductases and Aging; Potential Roles in Metabolism*

10.55 **K. Higuchi** *Coenzyme Q<sub>10</sub> could improve healthy aging. New findings obtained in mouse models and in vitro studies*

11.20 **M. Takahashi** *An Age-Associated Decline in the Brain Function and Its Amelioration by Water-Solubilized Coenzyme Q<sub>10</sub> in Mice*

- 11.45 **F. Sierra** *Geroscience, an alternative venue towards healthy aging*  
12.10 **R. Casper** *CoQ10 and Reproductive Aging*  
12.35 **G. Lopez-Lluch** *Coenzyme Q in age-related chronic diseases*

13.00 Lunch (*Presidential Room 3<sup>rd</sup> floor*)

**14.00 – 16.30 Clinical Benefits of CoQ** (*Seminar Room 2<sup>nd</sup> floor*)

Chairpersons: **P. Navas** and **L. Tiano**

- 14.00 **L.Tiano** *Impact of Ubiquinol supplementation on endothelial function in healthy subjects with moderate risk of cardiovascular disease development*
- 14.25 **K.Brismar** *Coenzyme Q10 and diabetes*  
14.50 **M. Donnino** *Coenzyme Q10 in critical illness*  
15.15 **N. Klimas** *CoQ10 and Gulf War Illness*  
15.40 **R. Bonakdar** *CoQ10 in Nociception and Chronic Pain*  
16.05 **Y. Watanabe** *Beneficial effects of 12-week Ubiquinol supplementation on fatigue, sleep, and oxidative stress.*

16.30 Coffee break (*Presidential Room 3<sup>rd</sup> floor*)

**17.00 – 18.40 Gene regulation and Epigenetics** (*Seminar Room 2<sup>nd</sup> floor*)

Chairpersons: **E. Trevisson** and **D. Fernandez-Ayala**

- 17.00 **Jaime Carvajal** *New players in the transcriptional regulation of muscle atrophy/hypertrophy*
- 17.25 **Siegfried Hekimi** *Characterizing the functions of ubiquinone with molecular genetics and new pharmacological tools.*
- 17.50 **E. Trevisson** *COQ4 joins up and regulates Respiratory Superassemblies in mammalian cells*
- 18.15 **D. Fernandez-Ayala** *A wide gene expression analysis that predicts the pathogenesis of Coenzyme Q deficiency: severity and target organs.*

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**20.30** Social dinner (*Presidential Room 3<sup>rd</sup> floor*)

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## Sunday, June 24

### 8.30 – 09.30 Young Participant Awards (*Seminar Room 2<sup>nd</sup> floor*) Chairpersons: **G. Dallner** and **F. Beal**

- 8.30 **A. Awad** *Chromatin-remodeling SWI/SNF complex regulates Coenzyme Q<sub>6</sub> synthesis and a metabolic shift to respiration in yeast*
- 8.40 **L. Fernandez del Rio** *Coenzyme Q and its regulation by polyunsaturated fatty acids*
- 8.50 **K. Griffiths** *Evidence of a Discrete and Targetable Mitochondrial Defect in the Developing Fragile X Syndrome Brain*
- 9.00 **A.L. Mortensen** *Remarkable therapeutic efficacy of CoQ10 in the Europeans of Q-SYMBIO*
- 9.10 **L. Bujnowicz** *Spin-coupling of semiquinone to Rieske cluster as protection against ROS generation in cytochrome bc<sub>1</sub>*
- 9.20 **S. Silvestri** *A combination of Coenzyme Q<sub>10</sub> intake and moderate physical activity counteracts mitochondrial dysfunctions in a mouse model of oxidative stress (SAMP8 mice)*

### 9.30 – 12.30 CoQ in Cellular Homeostasis (*Seminar Room 2<sup>nd</sup> floor*) Chairpersons: **P. Navas** and **G. P. Littarru**

- 9.30 **G.Lopez-Lluch** *Study of the variability in bioavailability of different CoQ10 preparations in humans*
- 9.55 **A. Straub** *Cyb5R3, CoQ and Cardiomyocyte function*
- 10.20 **D. Ross** *Redox modulation of NQO1*
- 10.45 Coffee break (*Presidential Room 3<sup>rd</sup> floor*)
- 11.15 **W. Ju** *Coenzyme Q10 and oxidative stress-induced retinal neurodegeneration*
- 11.40 **A. di Francesco** *Role of NQO1 in insulin signaling and mRNA translation*
- 12.05 **T. Blatt** *Mitochondrial dysfunction in a senescence model of CoQ10 deprived dermal fibroblasts*

### 12.30-12.50 Closing Keynote Lecture: **S. DiMauro**

### 12.50 –13.10 Concluding remarks

Lunch (*Presidential Room 3<sup>rd</sup> floor*)