

Saturday August 22nd

15:00-16:30 Registration - Aula Magna Foyer

Aula Magna (A+B)

16:30-18:00 Welcome & Peter Mitchell Medal Award

Chair: Ville Kaila

Ville Kaila: Welcome

Introduction of awardee: **Hartmut Michel** (Nobel Prize in Chemistry 1988)

Joachim Heberle: Following the Proton: A Journey Through Bioenergetics

18:00-20:00 Reception - Aula Magna Foyer

Sunday August 23rd

Aula Magna (A+B)

09:15-09:30 *In memoriam* Rudy Marcus and Richard Cross

S1. Structure & function of respiratory chain proteins
Chair: Robert Gennis

09:30-09:50 **Harmut Michel**: Structures of the intermediates of the catalytic cycle of the bacterial cytochrome c oxidase

09:50-10:10 **Gisela Brändén**: Structural mechanism of proton pumping by *ba*₃-type cytochrome c oxidase

10:10-10:30 **Shara Safarian**: Dissecting the conformational complexity and mechanism of cytochrome *bd* biogenesis

10:30-11:00 Coffee break - Aula Magna Foyer

S2. Bioenergetic complexes & supercomplexes
Chair: Maria Falkenberg

11:00-11:30 **Vamsi Mootha**: Mitochondrial bioenergetics through the lens of evolution and disease

11:30-11:50 **Nils-Göran Larsson**: The effect of depleting respirasome formation in mice expressing COX7A2L

11:50-12:10 **Anu Wartiovaara**: Folate and NAD cofactors at crossroads of metabolic regulation and disease

12:00-13:30 Lunch - Aula Magna Foyer

12:15-14:30 Poster session 1 - Aula Magna Foyer

S2. Bioenergetic complexes & supercomplexes
Chair: Irene Vercellino

14:30-14:50 **James Letts**: In mitochondrial disease respiratory complex III₂ assembles complex I via toxic intermediate

14:50-15:10 **Florian Waltz**: Exploring mitochondrial molecular architecture across eukaryotes *in situ*

15:10-15:30 **Jan Schuller**: Structural basis for coupling methyl-transfer to sodium pumping in the Mtr complex

15:30-15:50 **Cristina Ugalde**: Rebuilding Power: Structural Strategies to Rescue OXPHOS Dysfunction

16:00-16:30 Coffee break - Aula Magna Foyer

S6. ATP synthase and ATPases
Chair: Christoph von Ballmoos

16:30-16:50 **Hiroyuki Noji**: Diversification of gear ratio of ATP synthase

16:50-17:10 **John Walker**: How mitochondria assemble human ATP synthase

17:10-17:30 **Werner Kühlbrandt**: High-resolution cryoEM of mitochondrial ATP synthase and complex

17:30-19:00 Poster session 2 - Aula Magna Foyer

Aula Magna

EBEC 2026 STOCKHOLM, SWEDEN AUGUST 22-27

Welcome to the 23rd European Bioenergetics Conference!



Stockholm University

Monday August 24th

Aula Magna A

S7. Photosynthetic energy conversion

Chair: Johannes Messinger

09:00-09:20 **Junko Yano**: Complementary approaches for understanding water oxidation reaction in Photosystem II with serial X-ray crystallography and X-ray spectroscopy

09:20-09:40 **Bill Rutherford**: Far-Red Photosystem II: Less Energy but New Light

09:40-10:00 **Roberta Croce**: Photosynthesis in the far-red: mechanisms and challenges

10:00-10:20 **Felix Buchert**: ATP Synthase Redox Regulation Couples Dark Bioenergetics to Senescence in *Arabidopsis*

10:20-10:40 **Dimitris Petroutsos**: Environmental signal integration in *Chlamydomonas reinhardtii*

10:30-11:00 Coffee break - Aula Magna Foyer

S14. Mitochondrial physiology
Chair: Nils-Göran Larsson

11:00-11:20 **Martin Jastroch**: Deciphering thermogenic functionality of UCP1 by evolutionary reconstruction

11:20-11:40 **Maria Falkenberg**: Allosteric activation of DNA polymerase gamma as a therapeutic strategy in POLG-related mitochondrial disease

11:40-12:00 **Jukka Kallijärvi**: A crucial role for liver mitochondria in thermogenesis in complex III-deficient mice

12:00-12:10 **Roberta Filograna**: *(Short)* Loss of CHCHD2 and CHCHD10 causes tissue-specific bioenergetic failure and severe myopathy driven by impaired postnatal myogenesis

12:10-12:30 **Uwe Schlatter**: Subcellularly targeted AMPfret nanosensors reveal spatiotemporal propagation of energy stress and discriminate physiological from toxic responses

12:30-13:30 Lunch - Aula Magna Foyer

13:00-14:30 Poster session 3 - Aula Magna Foyer

Aula Magna B

S3. Redox enzymes, electron transfer, electron bifurcation

Chair: Jan Schuller

09:00-09:20 **Artur Osyczka**: Mechanism of binding of quinone to the catalytic sites of cytochrome *bc*₁

09:20-09:40 **Matthias Ullmann**: Describing the Coupling of Charge Transfer and Chemical Reactions in Proteins: A Microstate Model Large Enzyme Complexes

09:40-09:50 **Abbas Abou-Hamdan**: *(Short)* CybB and its paralogs contribute to compensation of redox backpressure in *E. coli*

09:50-10:00 **Corinne Pellon**: *(Short)* The priority of the external NADH dehydrogenase for electron transfer in the respiratory chain of *Saccharomyces cerevisiae* is substrate and electron flux dependent

10:00-10:10 **Jonathan Lasham**: *(Short)* Multiscale Computational Insights into Long-Range Electron Transfer in Hydrogen dependent CO₂ Reductase

10:10-10:20 **María González-Viegas**: *(Short)* Contrasting binding pockets of the two flavins of Bifurcating Electron Transferring Flavoprotein observed through FTIR spectroelectrochemistry

10:20-10:30 **Patrycja Kielb**: *(Short)* Systematic disruption of Tyr/Trp pathways amplifies the ROS formation 25-fold in multicopper oxidase: theoretical predictions of ET pathways and RRDE electrochemical

10:30-11:00 Coffee break - Aula Magna Foyer

S4. Terminal oxidases
Chair: Amandine Marechal

11:00-11:20 **Pia Ädelroth**: The two cytochrome bds in the respiratory chain of *Mycobacterium smegmatis*

11:20-11:40 **Daniel Jancura**: High-energy” metastable (O_h) and “as isolated”(O) states of the oxidized bovine cytochrome c oxidase

11:40-12:00 **Frederic Melin**: Heme redox potentials and cooperative interactions in the obligate CIII₂CIV₂ supercomplex from *Mycobacterium smegmatis*

12:00-12:10 **Clément J.L. Chevreton**: *(Short)* Dynamic modulation of complex IV excess capacity by a redox-dependent uncoupling mechanism in a metabolically active bean beetle line

12:10-12:30 **Fabien Pierrel**: Biochemistry and physiology of ubiquinone biosynthesis under anaerobic conditions

12:30-13:30 Lunch - Aula Magna Foyer

13:00-14:30 Poster session 3 - Aula Magna Foyer

Monday August 24th

Aula Magna A

Aula Magna B

S9. Transporters and channels

Chair: Bruno Miroux

14:30-14:50 **David Drew**: Stepwise ATP translocation into the endoplasmic reticulum by human SLC35B1

14:50-15:10 **Edmund Kunji**: Molecular basis of substrate recognition and transport by the human mitochondrial citrate carrier SLC25A1

15:10-15:30 **Katie Henzler-Madison**: Mechanism of loosely coupled transport by EmrE and its functional impact in vitro and in bacteria

15:30-15:50 **Greg Cook**: Role of the MmpS5L5 Efflux Pump in Potentiating the Evolution of Untreatable Multi-Drug-Resistant Strains of *Mycobacterium tuberculosis*

15:50-16:00 **Jan Nedergaard**: *(Short)* Human and mouse UCP1: bioenergetic similarities and discrepancies

16:00-16:30 Coffee break - Aula Magna Foyer

S10. Prokaryotic bioenergetics, microbial drug targets

Chair: Tony Moore

16:30-16:50 **Christoph von Ballmoos**: Roles of reactive oxygen species in bacterial bioenergetics

16:50-17:10 **Gerhard Grüber**: Understanding the powerhouse of Gram-positive and -negative pathogens to identify and design new targets and leads

17:10-17:30 **Axel Magalon**: Tubular respiratory architectures redefine quinone interaction in prokaryotic bioenergetics

19:30-00:00 Vasa museum: Gala dinner



Aula Magna B

S7-S8. Bioenergetic machines / Light Energy Conversion

Chair: Rob Burnap

14:30-14:50 **María Maldonado**: Structure of giant kelp Photosystem I-FCP uncovers drivers of antenna evolution across the red lineage

14:50-15:10 **Marilyn Gunner**: Directionality of electron and proton transfers in Type II reaction centers

15:10-15:30 **Wojciech Nawrocki**: Thylakoid-wide loss of protein segregation upon state transitions in *Chlamydomonas reinhardtii*

15:30-15:40 **Jiao Li**: *(Short)* High-resolution in situ structures of plant photosystem supercomplexes

15:40-16:00 **Alexei Stuchebrukhov**: Complex I: An Electrostatic Coulomb Pump Model Similar to Cytochrome c Oxidase

16:00-16:30 Coffee break - Aula Magna Foyer

S5. Short talks on Complex I and related systems

Chair: Judy Hirst

16:30-16:40 **Mirjam Odermatt**: *(Short)* Functional diversification of respiratory complex I in anaerobic bacteriathrough exchangeable electron input modules

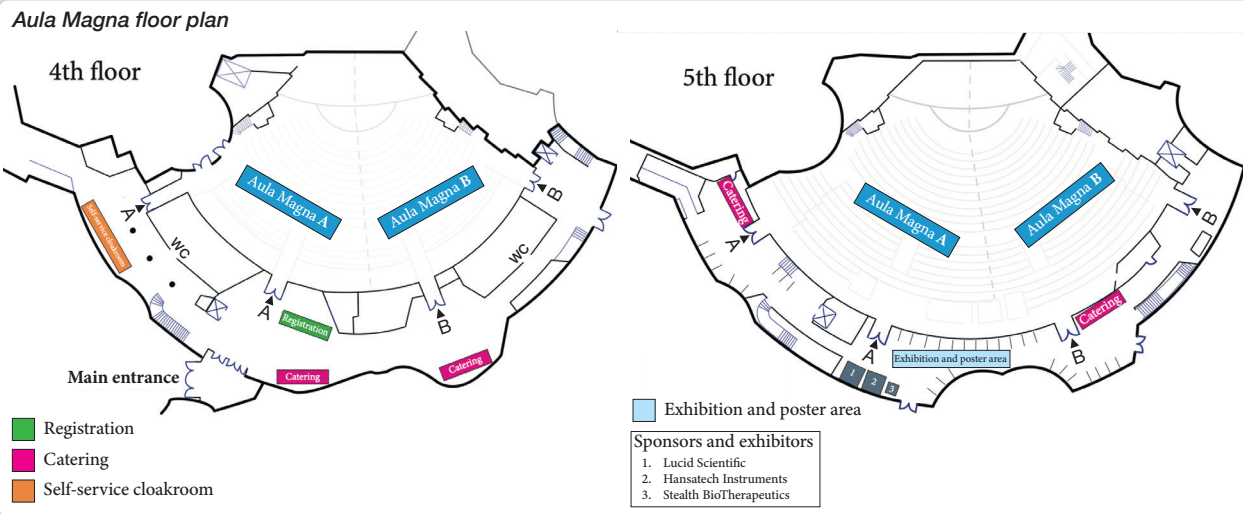
16:40-16:50 **Ana Gamiz-Hernandez**: *(Short)* Molecular Principles Underlying Quinone Binding and Proton-Coupled Electron Transfer in Complex I

16:50-17:00 **Sofia Badolato**: *(Short)* Biophysical characterization of engineered modules of respiratory Complex I

17:00-17:10 **Janne Purhonen**: *(Short)* Loss of dGTP in postmitotic tissues due to respiratory complex I instability

17:10-17:20 **Niklas Hoja**: *(Short)* From Simulations to Experiments: Relating Redox Chemistry to Proton Transfer in Complex I

17:20-17:30 **Oleksii Zdorevskyi**: *(Short)* Role of dynamic lipid-protein scaffold in quinone transport by respiratory chain coupling proteins



Tuesday August 25 th		Wednesday August 26 th		Thursday August 27 th	
Aula Magna A		Aula Magna B		Aula Magna (A+B)	
S9. Channels and Transporters		S7. Photosynthetic energy conversion		S12. Protein assembly and function, organelle dynamics	
<i>Chair: David Drew</i>		<i>Chair: Bill Rutherford</i>		<i>Chair: Erika Fernandez-Vizarra</i>	
09:00-09:20 Giuseppe Fiermonte: UCP3 couples branched-chain amino acid metabolism to fatty acid oxidation and glucose sparing		09:00-09:20 Stefania Viola: Role of respiratory oxidases in photosynthetic electron transport in <i>Synechococcus elongatus</i> PCC 7942		09:30-09:50 Volker Zickermann: Insights into the biogenesis of complex I and the molecular mechanism of tafazzin	
09:20-09:40 Vito Nicola de Pinto: VDAC structure in mitochondrial connectivity and modulation		09:20-09:40 Johannes Messinger: Atomic resolution structure of spinach rubisco reveals protons and dynamics		09:50-10:10 Ashleigh Kropp: A novel and widespread mechanism of membrane-coupling drives microbial respiration	
09:40-10:00 Bruno Miroux: A novel mechanism of regulation of UCP1 mediated respiratory uncoupling		09:40-10:00 Ho Fong (Marco) Leong: Deciphering far-red pigment absorption in chlorophyll-f-containing Photosystem II		10:10-10:30 Irene Vercellino: The structure-based assembly mechanism of the mitochondrial respiratory chain	
10:00-10:20 Paul Crichton: Acyl-CoA binds directly to UCP1 to interplay with nucleotide and fatty acid regulation of its uncoupling activity		10:00-10:20 Samuele Perin: Uncovering the role of Flv3 in nitrogen metabolism in <i>Synechocystis</i> sp. PCC 6803			
10:20-10:30 Ziyu Zhao: (<i>Short</i>) Structural Insights into the Twin-Arginine Translocase (Tat) Receptor and Its Substrate Recognition Mechanism		10:20-10:30 Yat Kei Lo: (<i>Short</i>) Structural Basis of Redox-Coupled CO ₂ hydration by the Cyanobacterial NDH-1MS' complex			
10:30-11:00 <i>Coffee break - Aula Magna Foyer</i>		10:30-11:00 <i>Coffee break - Aula Magna Foyer</i>		10:30-11:00 <i>Coffee break - Aula Magna Foyer</i>	
S5. Complex I and related systems I		S12. Protein assembly and function, organelle dynamics		S5. Complex I and related systems	
<i>Chair: Thorsten Friedrich</i>		<i>Chair: Cristina Ugalde</i>		<i>Chair: Volker Zickermann</i>	
11:00-11:20 Rob Burnap: Redox-Driven CO ₂ Hydration by NDH-1: Long-Range Coupling in a Divergent Complex I System		11:00-11:20 Luca Scorrano: Aralar couples metabolic state to mitochondrial cristae organization through Opa1		11:00-11:20 Thorsten Friedrich: Substrate binding by respiratory complex I	
11:20-11:30 Adel Beghiah: (<i>Short</i>) Integrative investigations of the quinone-triggered proton translocation mechanism of <i>E. coli</i> Complex I		11:20-11:40 Erika Fernandez-Vizarra: Evolutionary incremental complexity in the formation of the cytochrome c oxidase catalytic center		11:20-11:40 Leonid Sazanov: Complex I mechanism	
11:30-11:50 Vivek Sharma: Computer simulations of molecular gates and switches in the membrane domain of respiratory complex I		11:40-12:00 Ilka Wittig: From Damage to Recovery: Stress-Dependent Maintenance Turnover of Mitochondrial OXPHOS Complexes		11:40-12:00 Ville Kaila: Towards the Molecular Mechanism Underlying Long-Range Energy Transduction in Complex I	
11:50-12:00 Patricia Saura: (<i>Short</i>) Disease mutation perturbs long-range charge transfer reactions in the respiratory Complex I		12:00-12:10 Paula San Román Ruiz: (<i>Short</i>) NDUFb7 Dysfunction: Impact on Respirasome Assembly and Mitochondrial Bioenergetics		12:00-12:20 Judy Hirst: How does complex I pump protons? Defining the proton-wiring diagram and identifying proton-transfer gates and control points in the membrane domain	
12:00-12:20 Guilherme Arantes: Protonation states defining quinone binding and catalysis in respiratory complex I		12:10-12:20 Esperanza López-Merino: (<i>Short</i>) Complexome profiling reveals novel links between mitochondrial genome maintenance and OXPHOS assembly			
12:20-12:30 Anuj Kumar: (<i>Short</i>) An ancient carbon monoxide-driven respiratory system composed of a CODH nanowire and a basal complex-I		12:20-12:30 Christian Buratto: (<i>Short</i>) Beyond assembly: ACAD9 stabilizes a novel extended conformation of mitochondrial complex I		12:30-14:30 <i>Lunch - Aula Magna Foyer</i>	
12:30-13:30 <i>Lunch - Aula Magna Foyer</i>		12:30-13:30 <i>Lunch - Aula Magna Foyer</i>		13:00-14:30 <i>Poster session 4 - Aula Magna Foyer</i>	
13:00-14:30 <i>Poster session 4 - Aula Magna Foyer</i>		13:00-14:30 <i>Poster session 4 - Aula Magna Foyer</i>		12:30-13:30 <i>EBEC Board Business meeting</i>	
12:30-13:30 <i>EBEC Board Business meeting</i>		12:30-13:30 <i>EBEC Board Business meeting</i>			
S16. Recent methodological developments		S6. ATP synthase and ATPases		S11. Bioenergetics of pathogens and parasites	
<i>Chair: Joachim Heberle</i>		<i>Chair: Werner Kühlbrandt</i>		<i>Chair: Greg Cook</i>	
14:30-14:50 Nadav Amdursky: The Dynamics of Proton Transport Processes on the Surface of Biological Membranes		14:30-14:50 Nelli Mnatsakanyan: Cryo-EM reveals the gating mechanism of ATP synthase leak channel and its role in mitochondrial permeability transition		14:30-14:50 Tony Moore: Alternative oxidases: mechanisms, functions and therapeutic opportunities	
14:50-15:10 Alfredo Cabrera-Orefice: ComplexomA: a user-friendly R/Shiny platform for comprehensive analysis and visualization of complexome profiling data		14:50-15:10 Ryan Steed: Analysis of proton transport in <i>E. coli</i> and <i>Pseudomonas aeruginosa</i> ATP synthases		14:50-15:10 Lilach Sheiner: New insights from divergent organisms: convergent evolution of supercomplexes and a complex III natural inhibitor	
15:10-15:30 Princess Cabotaje: Ultrastructural mapping of an anaerobic microbial eukaryote lacking a canonical FeS biogenesis system		15:10-15:30 Michael Börsch: Monitoring subunit rotation in a single F ₀ F ₁ -ATP synthase by quantum sensing		15:10-15:30 Lena Pernas: NMVB lecture: Pathogen induced formation of a nascent organelle derived from mitochondria	
15:30-15:50 Jessica Swanson: Toward Mechanistic Resolution of Nonequilibrium Transport in Coupled Bioenergetic Complexes		15:30-15:50 Anton Kavaleuski: Ca ²⁺ -Induced Conformational Changes in Mammalian ATP Synthase			
15:50-16:00 Larissa Henke: (<i>Short</i>) Microfluidic Encapsulation of ATP-Producing Liposomes in GUVs: Toward Synthetic Mitochondria		15:50-16:00 Alena Ziková: (<i>Short</i>) ATP synthase architecture controls cristae formation and bioenergetic remodeling in <i>T. brucei</i>			
16:00-16:30 <i>Coffee break - Aula Magna Foyer</i>		16:00-16:20 Wayne D. Frasch: The F ₀ F ₁ -ATP synthase Mechanism		15:30-16:30 <i>Closing session, poster and talk awards</i>	
16:00-16:30 <i>Coffee break - Aula Magna Foyer</i>		16:00-16:30 <i>Coffee break - Aula Magna Foyer</i>		19:00-00:00 Stockholm City Hall Reception	
S2. Terminal oxidases		Short talks			
<i>Chair: Pia Ädelroth</i>		<i>Chair: Jessica Swanson</i>			
16:30-16:50 Amandine Marechal: Nuclear isoforms and higher-order organisation of cytochrome c oxidase		16:30-16:40 Guillermo Climent Gargallo: (<i>Short</i>) Disentangling the biotic flow of electrons in the continental subsurface			
16:50-17:10 Petra Hellwig: Molecular Determinants of Oxygen Reactivity in Bacterial Terminal Oxidases: Functional Roles of Acidic Residues in Cytochrome bd		16:40-16:50 Sofia Appelgren: (<i>Short</i>) Using structural phylogenetics to map and root the evolutionary history of respiration			
17:10-17:30 Constantinos Varotsis: UV-Visible Raman of the Nitric Oxide Reductase and Heme-Copper Oxidase/NO Reactions		16:50-17:00 Vladana Sušić: (<i>Short</i>) High-Turnover Redox-Coupled Proton Pumping of the Bacterial Complex I in Proteoliposomes			
		17:00-17:10 Himanshu Khandelía: (<i>Short</i>) Measurement of basal proton leak through Uncoupling Protein 1			
		17:10-17:20 Rebecca Oot: (<i>Short</i>) V-ATPase Regulation by TLDc proteins: from Yeast to Neurodegenerative Disease			
		17:20-17:30 Stuti Sharma: (<i>Short</i>) Structural studies of the human V-ATPase containing the a2-isoform			
17:30-19:00 <i>Poster session 5 - Aula Magna Foyer</i>		17:30-19:00 <i>Poster session 5 - Aula Magna Foyer</i>			



STOCKHOLM, SWEDEN

AUGUST 22-27

EBEC 2026

Scientific Program

Sponsors & Academic Funding



Lucid Scientific







BBA - Bioenergetics







SVENSKA NATIONALKOMMITTÉN FÖR MOLEKYLÄRA BIOVETENSKAPER



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