

## SSIEM Travel & Training Bursary Awards Report

### 22<sup>nd</sup> European Bioenergetics Conference 2024, Innsbruck, Austria

From the 26<sup>th</sup> to 31<sup>st</sup> of August, 2024, I had the opportunity to attend the *22nd European Bioenergetics Conference EBEC: What is life?*, in Innsbruck, Austria.

EBEC is a conference meeting that occurs every 2 years, with the common theme of bioenergetics, as summarized by the statement below:

***The unifying theme of EBEC:** The central unifying theme of EBEC is Bioenergetics and by extension, chemiosmosis. Thus, essential topics for consideration for inclusion in the programme are oxidative phosphorylation in bacteria and mitochondria, photosynthesis, transmembrane transport of metabolites and other small molecules, passage of proteins through membrane barriers, bacterial motility and cell death via apoptosis and other mechanisms involving the mitochondria. As you are aware, in recent years great strides forward in understanding have been made in most of these fields. Thus, we recommend that these topics should provide the core of the programme. That is not to say that related topics such as mitochondrial diseases arising from mutations in both mt-DNA and nuclear genes, involvement of mitochondria in ageing and cancer and related medical issues should be excluded.*

EBEC 2024 was organized by a local committee led by Erich Gnaiger, Editor-in-Chief Bioenergetics Communications, Chair of the Mitochondrial Physiology Society and CEO of Oroboros Instruments GmbH, and the Mito&Chlora-team. They also had the support of a national and international scientific committees.

My abstract entitled "*Mitochondria-targeted antioxidants and selective peroxisome proliferator-activated receptor delta (PPAR $\delta$ ) agonist improve bioenergetics in glutaric acidemia type 1 patient's fibroblasts*" was accepted for poster presentation. I had the opportunity to discuss my results with many researchers from different fields, giving me different perspectives and insights.

They had 501 participants, around 300 poster presentations and more than 100 oral communications, organized around 23 different topics, including quantum physics to quantum biology of respiratory and photosynthetic electron transfer, protonmotive force, long-range electron transfer, magnetic fields, and thermodynamic and kinetic control of bioenergetics, evolution and bioenergetics, respiratory complexes and supercomplexes - structure and function, redox control of coenzymes and prosthetic groups in electron transfer: NADH, FADH<sub>2</sub>, Q, cytochromes, ATPases (F-type, V-type), transporters and channels - lipids, proteins, ions, uncouplers and proteins with uncoupling function, bioenergetic organelle biogenesis, protein assembly and function, organelle dynamics. All the talks and communications were very interesting, especially the sessions where these topics were discussed: *Mitochondrial physiology and pathology, mitochondrial reprogramming in health and disease, role of mitochondrial bioenergetics in infection and immune function, from mitochondrial monitoring in organ transplantation to mitochondrial*

*transplantation, exercise, nutrition, and the bioenergetics of aging, and mitochondrial pathologies – finding solutions.* As a researcher working with genetic metabolic diseases, it was very interesting to share my experience with mitochondria experts and think together solutions for inborn errors of metabolism that affect the mitochondrial function or are primarily mitochondrial.

I want to express my gratitude to SSIEM for the support provided to participate in the 22<sup>nd</sup> EBEC 2024 ([www.ebec2024.org](http://www.ebec2024.org)). It was a valuable opportunity for me to attend for the first time this important event and gain knowledge that will benefit my professional development.



*Official group photo, August 28<sup>th</sup>, 2024, EBEC2024, Innsbruck, Austria*

Link for abstracts:

[EBEC2024 Abstract Book \(oroboros.at\)](http://oroboros.at)

[View of EBEC2024 Late-breaking abstracts \(bioenergetics-communications.org\)](http://bioenergetics-communications.org)