

World Mitochondria Society

# Targeting Mitochondria

15<sup>TH</sup>  
CONGRESS

## Agenda



OCTOBER  
29»31 2024

BERLIN  
GERMANY



# 15<sup>th</sup> World Congress on Targeting Mitochondria

October 29-31, 2024 – Berlin, Germany

Tuesday, October 29, 2024

13h00 – Badges & Welcoming of Attendees

## Mitochondria Workshop 2024: How to Evaluate Mitochondria Function?

14h00 **Session 1:** Methods for analyzing mitochondrial function: Bioenergetics

14h45 **Session 2:** Methods for analyzing mitochondria: Biogenesis, dynamics and mitophagy

*15h30 - Coffee Break & Networking*

16h00 **Session 3:** Biochemical strategies for the diagnosis of mitochondrial disorders

17h00 **Session 4:** Presentation of Practical Cases & Interactive Discussion

17h30 End of the Workshop



**Naïg Gueguen**

Mitovasc Institute, Mitolab team,  
INSERM 1083, CNRS 6215,  
Centre Hospitalier Universitaire d'Angers  
Angers, France

For full agenda, registration, and information, please follow this link

MITOCHONDRIA  
WORKSHOP



# 15<sup>th</sup> World Congress on Targeting Mitochondria

October 29-31, 2024 – Berlin, Germany

– Day One –

Wednesday, October 30, 2024

**8h00 – Materials Distribution & Welcoming of Attendees**

**8h50 – Welcome Note**

**Volkmar Weissig**, *President of the World Mitochondria Society*

**Marvin Edeas**, *Founder & Chairman of the Scientific Committee of the World Mitochondria Society*



**9h00 Keynote Speech**

**Mitochondria in Alzheimer Disease: It's not What you Think**

*Eric Schon, Columbia University, USA*

## Session 1 – Mitochondrial Dynamics in Health and Diseases: Mechanistic and Perspectives

*Presentations length: 20 minutes + 5 minutes Q&A*

*Moderators: Volkmar Weissig, Marvin Edeas*



**9h30 Cracking the Code of Aging: Exploring Mitochondrial Dynamics and Organelle Connections**

*Antentor Hinton, Vanderbilt University, USA*



**9h55 Dynamics of Mitochondrial Membrane and Genome Regulate Mitochondrial Activity**

*Naotada Ishihara, Osaka University, Japan*



**10h20 Mitochondrial Dynamics: Updates and Perspectives**

*Petr Ježek, Institute of Physiology of the Czech Academy of Sciences, Czech Republic*

*10h45 - Coffee Break, Networking & Poster Session*

*Moderators: Carsten Culmsee, Maik Hüttemann*



**11h25 Cellular Dynamics: The Synergistic Interplay of Iron, Mitochondria, and Ferroptosis in Health and Disease**

*Carsten Culmsee, University of Marburg, Germany*



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**11h50 Mitochondria Iron Metabolism: Its Role in Pathogenesis of Diseases**

*Sonia Levi, Vita-Salute San Raffaele University, Italy*



**12h15 Blood-Based Marker: Mitochondrial DNA Damage in Parkinson's Disease**

*Laurie Sanders, Duke University School of Medicine, USA*

*12h40 – Lunch Break, Networking & Poster Session*

## **Session 2 – Evaluation of Quality Control of Mitochondrial Function: Hands on Demonstrations**

*Moderators: Naig Gueguen, Egbert Mik*



**14h00 Introduction and Update on the Evaluation and Quality Control of Mitochondrial Function**

*Egbert Mik, Erasmus MC, The Netherlands*



**14h10 Evaluation of Mitochondrial Dysfunctions: Metabolic Analysis & Respirometry**

*Naig Gueguen, CHU Angers, France*



**14h30 Development of New Biosensors Dedicated to the Study of Mitochondrial Function and Mitophagy**

*Giulia Bertolin, CNRS, Université de Rennes, France*

### **14h55 Short Oral Presentations**

*Presentations length: 7 minutes + 3 minutes for questions*

**Mitochondrial Dysfunction in Peripheral Mononuclear Blood Cells (PMBCs) of Individuals with Mild Cognitive Impairment – A Pilot Study**

*Gunter P. Eckert, Justus-Liebig University Giessen, Germany*

**Mitochondrial Nucleic Acid Sensing in Immune and Inflammatory Responses to Respirable Particles**

*Juliet Wilmot, UCLouvain, Belgium*

**Role of Mitochondrial Dysfunction in the Pathogenesis of Fabry Cardiomyopathy and Potential Effects of the Novel Enzyme Replacement Therapy Pegunigalsidase Alfa**

*Jessica Gambardella, University of Naples Federico II, Italy*

*15h25 - Coffee Break, Networking & Poster Session*



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## Session 3 – Emerging Trends and Strategies in Mitochondria Research

*Presentations length: 20 minutes + 5 minutes Q&A*

*Moderators: Eric Barrey, Antetor Hinton*



**16h10 Mitochondrial Extracellular Vesicles: Orchestrating Brain Plasticity and Recovery**  
*Stefano Pluchino, University of Cambridge, United Kingdom*



**16h35 Mitochondria Delivery via Extracellular Vesicles to the Blood-Brain Barrier**  
*Devika S Manickam, Duquesne University, USA*

### 17h00 Short Oral Presentations & Innovations

*Presentations length: 7 minutes + 3 minutes for discussion*

#### **Regulation of Mitochondrial Calcium Uniporter Complex in Human Microglia Derived from iPSC of Alzheimer's Disease Patients**

*Amalia Dolga, University of Groningen, The Netherlands*

#### **Effects of a Modified Ketogenic Diet and Glutamine Supplementation on the Cerebellar Metabolome of Mouse Model of Mitochondrial Disease**

*María Morán, Instituto de Investigación Sanitaria Hospital '12 de Octubre', Spain*

#### **Mitochondria to Plasma Membrane Redox Signaling is Essential for Fatty Acid-Stimulated Insulin Secretion**

*Martin Jaburek, Academy of Sciences, Czech Republic*

#### **Aging-Associated Mitochondrial Signature in Human Fibroblasts and Corresponding Fibroblast-Derived Neurons**

*Amandine Grimm, University of Basel, Switzerland*

#### **Increased Instability Levels of Circulating Cell-Free Mitochondrial DNA are Associated with Worse Clinical Outcomes in Late-Life Depression**

*Ana Paula Mendes-Silva, University of Saskatchewan, Canada*

#### **MNRR1, a Moonlighting Druggable Target for Mitochondrial Disease**

*Lawrence Grossman, Wayne State University, USA*

#### **The MICOS Complex as a Therapeutic Target that Modulates Age-Dependent Mitochondrial Metabolic and Structural Deficits in Kidney**

*Kit Neikirk, Vanderbilt University, USA*



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## **Defective Mitochondrial Protein Import in Secondary Mitochondrial Damage-Related Neuromuscular Diseases**

*Evrin Aksu Menges, Hacettepe University, Turkey*

## **Quantifying Mitochondrial Dynamics And Function In Primary Mitochondrial Diseased Fibroblasts Linked with Mitochondrial DNA Mutations And Deletions**

*Shilpa Iyer, University of Arkansas, USA*

## **A Novel GPCR Agonist Induces Selective Mitophagy in a Complex III Deficiency Model Improving Bioenergetic Function and Overall Cellular Health**

*Cristiane Beninca, University of California, USA*

## **Structure of the II2-III2-IV2 Mitochondrial Supercomplex from a Parasite Reveals a Protein Inhibitor of Complex III**

*Alexey Amunts, Westlake University, China*

18h50 **End of Targeting Mitochondria 2024 Day 1**

20h15 **Meet the Speakers Dinner (for ticket holders only)**

*The dinner will be held at DoubleTree by Hilton Berlin Ku'damm*

*Book your ticket via our website: <https://wms-site.com/speakers-dinner-2024>.*





# 15<sup>th</sup> World Congress on Targeting Mitochondria

October 29-31, 2024 – Berlin, Germany

– Day Two –

Thursday, October 31, 2024

8h00 – Registration & Welcoming of Attendees

8h25 – Day 2 Opening Session



8h30 **Keynote Speech**  
**Mitochondria: More Heat than Light?**  
*Howy Jacobs, Tampere University, Finland*

## Session 3 – Emerging Trends and Strategies in Mitochondria Research (Continued)

*Presentations length: 20 minutes + 5 minutes Q&A*

*Moderators: Vladimir Gogvadze, Yuma Yamada*



9h00 **Mitochondria and Photomedicine: Advances in Infrared Light Treatment**  
*Maik Hüttemann, Wayne State University, USA*



9h25 **Role of Light in Regulating Blood Glucose via Mitochondrial Stimulation**  
*Michael B. Powner, City University of London, United Kingdom*



9h50 **Investigating Mitochondria as Age-Old Drivers of Inflammation**  
*Stephen Tait, University of Glasgow, United Kingdom*



10h15 **The Role of Mitochondria in Zika Virus Propagation: Mechanisms of Immune Evasion and Inter-Cellular Transmission**  
*Indira Mysorekar, Baylor College of Medicine, USA*

*10h40 - Coffee Break, Networking & Poster Session*



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## Session 4 – Mitochondrial Medicine 2024: From Bench to Bedside

*Presentations length: 20 minutes + 5 minutes Q&A*

*Moderators: James McCully, Ana Andreazza*



**11h10 Stem Cell Educator Therapy: A New Era in Mitochondrial Transfer and Regeneration**  
*Yong Zhao, Throne Biotechnologies, USA*



**11h35 The Power and Potential of Mitochondria Transfer**  
*Jonathan R. Brestoff, Washington University in St. Louis School of Medicine, USA*



**12h00 Mitochondrial Transplantation Mediates Improved Cellular Energy Metabolism, Restoration of Mitochondrial Function and Prevention of Cell Death**  
*Mark Kindy, James A. Haley VA Hospital and University of South Florida, USA*

*12h25 – Lunch Break, Networking & Poster Session*



**13h30 The Intersection of Mitochondrial Function and Psychiatric Disorders: Biomarkers, Gene Variants, and Patient Stratification**  
*Ana Andreazza, University of Toronto, Canada*



**13h55 State of the Science Mitochondria-specific Targets, Therapeutics and Biomarkers Investigation following Traumatic Brain Injury in the US Military**  
*Jignesh D. Pandya, Walter Reed Army Institute of Research, USA*



**14h20 Targeting Giant Mitochondria (Megamitochondria) in Human Liver Disease: Potential Diagnostic and Therapeutic Interventions**  
*Elena Palma, King's College London, United Kingdom*

*Moderators: Miria Ricchetti, Mercedes Rincon*

### 14h45 Short Oral Presentations & Innovations

*Presentations length: 7 minutes + 3 minutes for discussion*

**Frozen Xenogeneic Human Mitochondria Transplantation Prevents Ischemic Reperfusion Injury in Small and Large Animal Models of Acute Kidney Injury**

*Stephen B. Helliwell, Cellvie AG, Switzerland*

**Mitochondrial Transplantation Improves Skeletal Muscle Bioenergetics in Aging Mice and Rat Models**

*Tasnim Arroum, Wayne State University, USA*

**Optimization of Artificial Mitochondrial Transfer into Human Pancreatic Islets**

*Quentin Perrier, Wake Forest School of Medicine, USA*





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## **Trans-Cellular Mitochondrial Transfer: Mediator of Macrophage-Myocyte Cross Talk and Labor Onset**

*Lubna Nadeem, Lunenfeld-Tanenbaum Research Institute, Canada*

## **Diverse Effects of Mitochondrial Transfer from Wharton's Jelly- and Bone Marrow-Mesenchymal Stem Cells on Cellular Antioxidant Mechanisms in Osteoarthritic Chondrocytes**

*Candan Altuntas, Kocaeli University, Turkey*

## **Liposome-Based Mitochondrial Targeted Delivery of Hydrogen Sulphide for the Treatment of Neurodegenerative Diseases**

*Lissette Sanchez Aranguren, Aston University, United Kingdom*

## **Mitochondrial Transplantation as a Therapeutic Strategy to Mitigate Viral-Induced Lung Injury through MAVS-Dependent Antiviral Pathways**

*Felipe Grunenwald, Universidad de los Andes, Chile*

### **15h55 Targeting Mitochondria 2024: Key Questions & Concluding Remarks**

*Moderators: Volkmar Weissig, Marvin Edeas*

Participants at this debate: *Eric Barrey, Vladimir Gogvadze, Yuma Yamada, Miria Ricchetti, Mercedes Rincon, James McCully, Eric Schon, Howy Jacobs, Antetor Hinton, Naotada Ishihara, Ježek Petr, Carsten Culmsee, Sonia Levi, Laurie Sanders, Naig Gueguen, Egbert Mik, Giulia Bertolin, Stefano Pluchino, Devika S Manickam, Maik Hüttemann, Michael B. Powner, Indira Mysorekar, Yong Zhao, Jonathan R. Brestoff, Mark Kindy, Ana Andrezza, Jignesh Pandya, and Elena Palma.*

### **16h30 Best Short Oral & Poster Awards**

### **16h45 Drinks, Coffee and Snacks: Getting Together Networking – End of Meeting**

For more information, please visit: [www.wms-site.com](http://www.wms-site.com).

