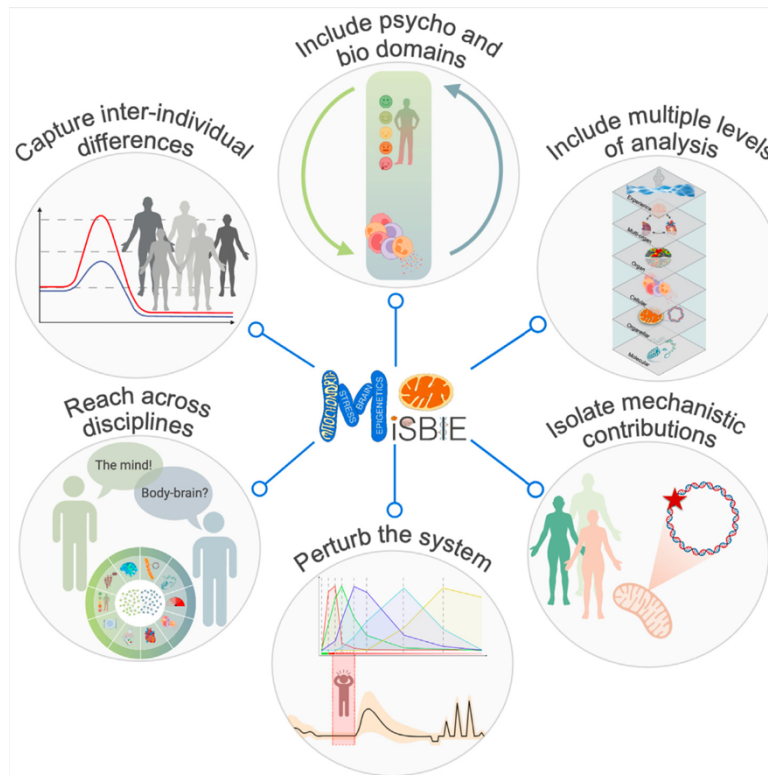


2025 MiSBIE Symposium

Mitochondria Psychobiology, Stress, and Health

December 12, 2025



The **Mitochondrial Stress, Brain Imaging, and Epigenetics (MiSBIE)** study was developed to understand the role of mitochondria and energy more generally in mind-body processes, as well as their potential relevance to people with mitochondrial diseases. At this Symposium, MiSBIE investigators and the international team of collaborators will share findings addressing some of the hypotheses we originally set out to test, plus some unexpected discoveries made along the way. The dataset and analyses conducted to date have linked mitochondria to immune, neuroimaging, endocrine, metabolic, psychosocial, and clinical outcomes relevant to the mind-mitochondria connection. We welcome you and your team to learn, discuss, question, and ideate to develop new collaborations.

The symposium will close with:

- Discussion of **future directions** and **opportunities** with the rich MiSBIE dataset.
- **Poster Session** for MiSBIE investigators and attendees wishing to present mitochondrial psychobiology-relevant research.
- **Celebratory reception** with food and drinks to commemorate MiSBIE's partners and success.

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Scientific Program

CUIMC Vagelos Building, 104 Haven Ave, Room 401
Columbia University Irving Medical Center

8:30 Breakfast

8:55 Zoom setup: <https://columbiacuimc.zoom.us/j/99125261233>

9:00 Part I – MiSBIE Study rationale and protocol | 45 min

9:00 Welcome

MiSBIE team, collaborators, partners – Martin Picard

Agenda for today's MiSBIE progress meeting –
Caroline Trumpff

9:15 MiSBIE Study overview – Martin Picard

Rationale, primary hypotheses, scientific opportunities

The stress-disease cascade hypothesis

MiSBIE mother paper, website



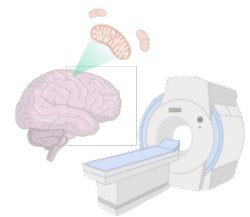
9:30 Part II – Looking inside the brain's mitochondria | 50 min

Session Chair – Anna Monzel

9:30 MitoBrain MRI map – Michel Thiebaut de Schotten (zoom)

9:50 Mitochondrial energy transformation capacity influences brain activation during sensory, affective, and cognitive tasks – Ke Bo / Tor Wager

10:10 Discussion and questions



10:20 - Break | 30 minutes

10:50 Part III – Immune cell bioenergetics | 70 min

Session Chair – Darshana Kapri

10:50 Immune mitochondrial phenotypes – Jack Devine

11:10 Immune cell bioenergetics (seahorse) in mitochondrial diseases – Anna Monzel

11:30 Life adversity moderates the relationship between immune cell mitochondrial respiration and mood symptoms – Cynthia Liu

11:50 Discussion and questions



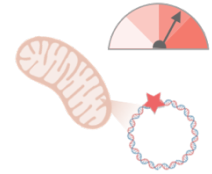
12:00 Part IV – Health indicators in mitochondrial disease | 50 min

Session Chair – Caroline Trumpff

12:00 Mitochondrial biology and time perception – Darshana Kapri

12:20 Mitochondrial disease and allostatic load – Alex Junker

12:40 Discussion and questions



12:50 - Lunch

2:00 Part V – The energetics of acute stress reactivity | 80 min

Session Chair – Evan Shaulson

2:00 The MiSBIE stress reactivity protocol – Natalia Bobba-Alves (zoom)

2:10 Physiological and neuroendocrine reactivity in health and mitochondrial disease – Natalia Bobba-Alves (zoom)

2:20 Saliva and blood cell-free mtDNA reactivity to acute psychosocial stress – David Shire

2:30 FGF21 reactivity to acute psychosocial stress – Mangesh Kurade

2:40 GDF15 reactivity to acute psychosocial stress – Caroline Trumpff

2:50 Novel pipelines to extract differences in proteome dynamics based on health status – Alan Cohen

3:10 Discussion and questions



3:20 Part VI – Opportunities and future directions | 40 min

3:20 The energetic cost of mitochondrial disorders across day and night: MDEE – Evan Shaulson

3:40 Summary: Opportunities, collaborations, data sharing – Martin Picard

4:00 – Break | 30 minutes

4:30 Roundtable Dialogue: new idea/best idea contest | 45 min

4:30 Instructions (5 min)

4:35 Breakout groups (10 min)

4:45 Group dialogue (30 min)



5:15 Poster session & Reception | 105 min

5:15 Food and drinks

5:30 - 7:00 Poster session