



MiP
Mitochondrial
Physiology Society

14th MiP *SCHOOL*

May 18-23rd, 2025
Baton Rouge, LA, USA



pb Pennington Biomedical
Research Center
Louisiana State University

 THE UNIVERSITY of
NEW ORLEANS

MiPschool 2025

MiPschool 2025 is the 14th installment of the Mitochondrial Physiology Society's flagship training school focused on the history, fundamentals, and conceptual advances in the field of cellular bioenergetics. Participants will gain and improve working knowledge in key areas of study within the field of mitochondrial physiology including substrate coupling control, mechanisms of oxidative phosphorylation and electron transfer, redox regulation, and structural organization of the respiratory system, and more. Lecturers will provide detailed presentations on the principles of bioenergetics, and keynote speakers will deliver talks on cutting edge applications in biochemistry, cell biology, physiology, and biomedicine spanning multiple levels of biological organization.

The Mitochondrial Physiology Society

The Mitochondrial Physiology Society (MiP), founded in 2003, provides a multidisciplinary forum through high-level conferences, workshops and training courses. These forums bring together scientists working in divergent disciplines to discuss mitochondrial function and dysfunction, resolve differences, spread new knowledge and techniques, and to develop new research agendas and collaborations. Events of the MiP aim to provide the expertise necessary for successful application of techniques and concepts in mitochondrial physiology to the broader fields of molecular and cell biology, study of disease mechanisms, and comparative physiology.

Local Organizing Committee

Christopher L. Axelrod	Pennington Biomedical Research Center
Steven C. Hand	Louisiana State University
Ji Suk Chang	Pennington Biomedical Research Center
Brian A. Irving	Louisiana State University
Bernard B. Rees	University of New Orleans

MiP Executive Committee

Erich Gnaiger	Oroboros Instruments (Chair)
Christopher L. Axelrod	Pennington Biomedical Research Center (Co-chair)
Steven C. Hand	Louisiana State University (Treasurer)
Adam J. Chicco	Colorado State University
Pablo Garcia-Roves	University of Barcelona
Graham P. Holloway	University of Guelph
Verena Laner	Oroboros Instruments

Sponsors



May 18th (ARRIVAL)

4:00 – 6:00 PM	Registration (Cook Conference Center)
6:00 – 7:00 PM	Welcome Reception
7:00 – 9:00 PM	Dinner

May 19th (CONFERENCE DAY 1)

6:00 – 9:30 AM	Complimentary Breakfast (Cook Hotel)
8:00 – 9:00 AM	Registration (continued)
9:00 – 9:15 AM	<i>Opening Remarks</i> Christopher Axelrod (Pennington Biomedical); Local Organizing Committee
9:30 – 10:00 AM	<i>Introduction to Mitochondrial Respiratory Control</i> Erich Gnaiger (Oroboros Instruments)
10:00 – 10:30 AM	Coffee Break
10:30 – 11:15 AM	<i>Coupling Efficiency: Biological Regulation and Experimental States</i> Dominik Pesta (German Aerospace Center)
11:15 – 12:00 PM	<i>Convergence and Additivity of Oxidative Phosphorylation and Electron Transfer Pathways; Developing Substrate, Uncoupler, Inhibitor, Titration Protocols</i> Hélène Lemieux (University of Alberta)
12:00 – 1:00 PM	Lunch (Cook Conference Center)
1:00 – 2:30 PM	Walk and Talk (LSU Lakes)
2:30 – 3:00 PM	Coffee Break
3:00 – 4:00 PM	<i>Redox Homeostasis</i> Alexander Galkin (Weil Cornell)
4:00 – 5:00 PM	Selected Short Talks from Abstracts (10 + 5 format) #1 - TBD #2 - TBD #3 - TBD #4 - TBD
5:00 – 6:30 PM	<i>Mitochondrial Physiology: 125 Years From the “Bioblast”</i> Charles Hoppel (Case Western Reserve University)
6:30 – 8:30 PM	Dinner (Cook Conference Center)

May 20th (CONFERENCE DAY 2)

6:00 – 9:30 AM	Complimentary Breakfast (Cook Hotel)
8:00 – 9:00 AM	Registration (continued)
9:00 – 10:00 AM	<i>Protonmotive Force and Respiratory Control</i> Erich Gnaiger (Oroboros Instruments)
10:00 – 10:30 AM	Coffee Break
10:30 – 11:15 PM	<i>Role and Regulation of the Lactate Shuttle</i> George Brooks (UC Berkeley)
11:15 – 12:00 PM	<i>Structural Regulation of Bioenergetic Function</i> Nelli Mnatsakanyan (Yale)
12:00 – 1:00 PM	Lunch (Cook Conference Center)
1:00 – 2:30 PM	Walk and Talk (LSU Campus)
2:30 – 3:00 PM	Coffee Break
3:00 – 4:00 PM	<i>Mitochondrial Preparations, Respiratory Buffers, and Sample Quality Control</i> Luiza Cardoso (Oroboros Instruments)
4:00 – 6:00 PM	Poster Session
6:00 – 6:30 PM	Break
6:30 – 8:30 PM	Dinner (Cook Conference Center)

May 21st (CONFERENCE DAY 3)

6:00 – 9:30 AM	Complimentary Breakfast (Cook Hotel)
9:00 – 1:00 PM	MiPschool Excursion (<i>Optional Registration Item</i>) Atchafalaya Basin Swamp Tour
12:00 – 1:00 PM	Lunch (Cook Conference Center)
1:00 – 2:00 PM	<i>Reductive Stress in Health and Disease</i> P. Darrell Neuffer (Wake Forest University)
2:00 – 2:30 PM	<i>Bioenergetic Adaptation in Mitochondrial Diseases</i> Shilpa Iyer (University of Arkansas)
2:30 – 3:00 PM	<i>Immunoenergetics and Exercise</i> Brian Irving (LSU)
3:15 – 3:45 PM	Coffee Break
3:45 – 4:45 PM	Selected Short Talks from Abstracts (TBD; 10 + 5 format) #1 - TBD

#2 - *TBD*

#3 - *TBD*

#4 - *TBD*

4:45 – 5:00 PM

Break

5:00 – 5:45 PM

Mitochondrial Bioenergetics and Healthy Aging

Anthony Molina (UCSD)

5:45 – 6:30 PM

Does Mitochondrial Fitness Decline with Age? A Case Study of Centenarian Skeletal Muscle Mitochondrial Fitness

Christopher Axelrod (Pennington Biomedical Research Center)

6:30 – 8:30 PM

Dinner (Cook Conference Center)

May 22nd (CONFERENCE DAY 4)

6:00 – 9:30 AM

Complimentary Breakfast (Cook Hotel)

8:00 – 9:00 AM

Registration (continued)

9:00 – 10 AM

Adipose Tissue Thermogenesis

Martin Jastroch (Stockholm University)

10:00 – 10:30 AM

Coffee Break

10:30 – 11:15 AM

Regulation of Brown Adipose Tissue Thermogenesis by PGC-1alpha

Ji Suk Chang (Pennington Biomedical Research Center)

11:15 – 12:00 PM

Adaptation of Energy Metabolism to Low Oxygen Availability

Bernard Rees (University of New Orleans)

12:00 – 1:00 PM

Lunch (Cook Conference Center)

1:00 – 2:30 PM

Walk and Talk (Mississippi River Walk)

2:30 – 3:00 PM

Coffee Break

3:00 – 3:35 PM

Mitochondrial Function in the Etiology of Metabolic Diseases

Pablo Garcia-Roves* (University of Barcelona)

3:45 – 4:30 PM

Cancer Bioenergetics

Kelsey Fisher-Wellman* (Wake Forest University)

4:30 – 5:30 PM

Selected Short Talks from Abstracts (TBD; 15 + 5 format)

#1 - *TBD*

#2 - *TBD*

#3 - *TBD*

#4 - TBD

5:30 – 5:45 PM

Break

5:45 – 6:15 PM

*Oxidative Stress and Metabolic Transitions:
Challenges Due to Lifestyle of Invertebrate Extremophiles.*

Steven Hand (Louisiana State University)

6:15 – 6:30 PM

Closing Remarks

6:30 – 8:30 PM

Dinner (Cook Conference Center)

Zydeco Band Performance

May 23rd (Departure)

6:00 – 9:30 AM

Complimentary Breakfast (Cook Hotel)

11:00 AM

Check Out from Cook Hotel

Program Notes

The scientific program is up to date as of 12-20-2024. Speakers, timeslots, and scheduling are subject to change.

*Indicates an unconfirmed invited speaker