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<th>Clinical Program</th>
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</table>
| 8:00a-8:30a | Platform Session 1 - Mito Inflammation | Non CME Welcome and Opening Remarks  
Non CME - Patient Story - Kendall's Journey |  

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| 8:30a-9:00a | Platform Session 1 - Mito Inflammation | Nucleic Acid-mediated Mitonuclear Signaling  
Gerald Shadel, PhD  
Salk Institute for Biological Studies  
La Jolla, CA |  

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</table>
| 9:00a-9:30a | Platform Session 1 - Mito Inflammation | PINK1- and Parkin-mediated Mitophagy and Links to  
Inflammation and Neurodegeneration  
Richard J. Youle, PhD  
National Institutes of Health  
Bethesda, MD |  

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</table>
| 9:30a-10:00a | Platform Session 1 - Mito Inflammation | Extracellular ATP Signaling, Inflammation, and  
Mitochondrial Dysfunction  
Robert Naviaux, MD, PhD  
University of California San Diego  
La Jolla, CA |  

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</table>
| 10:00a-10:30a | Platform Session 1 - Mito Inflammation | OxPhos Defects, Inflammation and Hypermetabolism  
Martin Picard, PhD  
Columbia University Irving Medical Center  
New York, NY |  

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</table>
| 10:30a-11:00a | Platform Session 1 - Mito Inflammation | NON CME - Abstract Presentation Short Talks  
Allison Hanaford, PhD  
Peripheral Macrophages Causally Contribute to Disease  
Onset And Progression in the Ndufs4(KO) Model of  
Leigh syndrome  
Emily Warren, PhD  
Inflammatory and Interferon Gene Expression  
Signatures in Patients with Mitochondrial Disease |  

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| 11:00a-11:30a | Platform Session 1 - Mito Inflammation | NON CME - Abstract Presentation Short Talks  
Temiakov Dmitry, PhD  
Molecular Basis for Maternal Inheritance of Human  
Mitochondrial DNA  
Jose Luis Marin Franco, PhD  
Single-cell Evaluation of Bioenergetics by  
Flow Cytometry (e-Flo) |  

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</table>
| 11:30a-12:00p | Platform Session 1 - Mito Inflammation | NON CME - Abstract Presentation Short Talks  
Sonal Sharma, MD  
Identifying Neuroimaging Patterns in Mitochondrial  
Leukoencephalopathies  
Ngoc Hoang, PhD  
Sex-specific Colonic Mitochondrial Dysfunction and  
Improvement with Mitochondrial Targeted Therapies in  
the Indomethacin-induced Inflammatory Bowel  
Disease Model in Rats |  

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| 12:00p-12:30p | Platform Session 1 - Mito Inflammation | Mitochondrial-DNA Encoded Microproteins  
Pinchas Cohen, MD  
University of Southern California Davis  
Los Angeles, CA |  

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</table>
| 12:30p-2:00p | Platform Session 1 - Mito Inflammation | The Regulatory Interaction Between the  
Mitochondria and the Nucleus is Important for  
Health, Disease and Evolution  
Dan Mishmar, PhD  
Ben-Gurion University of the Negev  
Beer Sheva, Israel |  

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</table>
| 2:00p-2:30p | Platform Session 2 - Mysteries of mtDNA | Mitochondrial-DNA Encoded Microproteins  
Pinchas Cohen, MD  
University of Southern California Davis  
Los Angeles, CA |  

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<tr>
<th>TIME</th>
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</table>
| 2:30p-3:00p | Platform Session 2 - Mysteries of mtDNA | The Regulatory Interaction Between the  
Mitochondria and the Nucleus is Important for  
Health, Disease and Evolution  
Dan Mishmar, PhD  
Ben-Gurion University of the Negev  
Beer Sheva, Israel |  

For Continuing Medical Education (CME) Information, see last page.
## Scientific Program

### Wednesday, June 28

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker &amp; Topic</th>
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</table>
| 3:00p-3:30p | Stem Cells, Organoids, and Imaging Technologies to Delineate the Cellular and Molecular Changes in COVID-19  
Robert E. Schwartz, MD, PhD  
Weill Cornell Medicine  
New York, NY |
| 3:30p-4:00p | Break                                                                             |
| 4:00p-4:30p | mtDNA Haplogroup Disease Associations  
Douglas Wallace, PhD  
Children’s Hospital of Philadelphia Research Institute  
Philadelphia, PA |
| 4:30p-5:00p | NON CME - Abstract Presentation Short Talks  
Ryan Snyder, PhD  
Hemin Impairs Mitochondrial Gene Expression and Induces Guanine Quadruplexes in Human Renal Proximal Tubule Cells  
Katherine Mitchell, MA  
Mitochondrial Dysfunction In Neuropsychiatric Disorders |
| 5:00p-5:30p | NON CME - Abstract Presentation Short Talks  
Suraiya Haroon, PhD  
Identification of Two Mitophagy Modulators that Rescue Mitochondrial Stress in a Heteroplasmic Single Large-scale mtDNA Deletion (SLSMD) C. elegans Animal Model  
Mikhail Alexeyev, PhD  
TFAM's Contributions to mtDNA Replication andOXPHOS Biogenesis are Genetically Separable |
| 5:30p-7:30p | Break and Poster Sessions - Even Numbers Stay at Posters - NON CME               |

### Thursday, June 29

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker &amp; Topic</th>
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</table>
| 8:00a-8:30a | Mitochondrion and Immune System  
Wayne W. Hancock, MBBS, PhD, FRCPA  
University of Pennsylvania  
Philadelphia, PA |
| 8:30a-9:00a | Viral Exposures in Primary Mitochondrial Disease (PMD) Patients  
Peter J. McGuire, MS, MD  
National Human Genome Research Institute (NHGRI)  
Bethesda, MD |
| 9:00a-9:30a | Mitochondrial Dysfunction Driven by Key microRNAs Contributing to Acute COVID-19 and Post-Acute Sequelae of COVID-19 (PASC)  
Afshin Beheshti, PhD  
COVID-19 International Research Team (CDV-IRT)  
Broad Institute of MIT and Harvard |
| 9:30a-10:00a | Coronaviruses: Intersection of Innate Immune and Unfolded Protein Responses  
Susan R. Weiss, PhD  
University of Pennsylvania  
Philadelphia, PA |
| 10:00a-10:30a | Break                                                                             |
## Scientific Program

### 10:30a-11:00a

**Flaviviruses and Integrated Stress Response**  
Sonja M. Best, PhD  
National Institute of Allergy and Infectious Diseases, NIH  
Bethesda, MD

### Thursday, June 29

11:00a-11:30a  
**NON CME - Abstract Presentation Short Talks**

- **Amanda Fuchs, PhD**  
  Systemic Cytokine Storm Exacerbates Acute Influenza A Infection in Ndufs4 KO Mouse

- **Yentli Soto Albrecht, MD, PhD candidate**  
  Non-pathogenic variation in mitochondrial DNA modulates murine SARS-CoV-2 pathogenesis

11:30a-12:00p  
**NON CME - Abstract Presentation Short Talks**

- **Nicole DeFoor, BS**  
  Remdesivir Increases mtDNA Copy Number Causing Mild Alterations to Oxidative Phosphorylation

- **Joseph Guarnieri, PhD**  
  Targeted Down Regulation Of Core Mitochondrial Genes During Sars-Cov-2 Infection

12:00p-12:30p  
**NON CME - Abstract Presentation Short Talks**

- **Hsin-Pin Lin/ Derek Narendra MD, PhD**  
  The OMA1-DELE1 Mitochondrial Integrated Stress Response is Activated by Diverse Mitochondrial Stressors to Promote Growth and Survival in Mitochondrial Myopathy

- **Ryan Morrow, PhD**  
  Deficits in Mitochondrial Oxidative Phosphorylation Enhance SARS-CoV-2 Replication

12:30p-2:00p  
**Lunch**

### Platform Session 4 - Mitochondrial Signaling

2:00p-2:30p  
**Mitochondrial and Cellular Metabolism**  
Jared Rutter, PhD  
University of Utah  
Salt Lake City, UT

2:30p-3:00p  
**mtDNA Conformational Regulation**  
Brett Kaufman, PhD  
University of Pittsburgh  
Pittsburgh, PA

3:00p-3:30p  
**MNRR1 Bicompartmental Mito Regulation**  
Lawrence L. Grossman, PhD  
Wayne State School of Medicine  
Detroit, MI

3:30p-4:00p  
**Break**

4:00p-4:30p  
**MAT (Mitochondrial Augmentation Therapy) and MEPAN (Mitochondrial Enoyl CoA Reductase Protein-Associated Neurodegeneration)**  
Yair Anikster, MD, PhD  
Sheba Medical Center Hospital - Tel Hashomer  
Israel
<table>
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| 4:30p-5:00p | NON CME - Abstract Presentation Short Talks  
Jie Yang, PhD  
DELE1 Oligomers Revealed by Cryo-EM Structure  
Promote the Integrated Stress Response Activation  
Hemangi Bhonsle PhD  
Neuron-specific CASK Loss in Mice Causes Epileptic Encephalopathy Associated with Impaired Cerebral Cortex Development and Mitochondrial Dysfunction | Facilitating Community-Based Genomic Data Analysis in Primary Mitochondrial Disease: Mitochondrial Disease Sequence Data Resource (Mseqdr) and Mitoshare Patient Registry Collaboration to Support Genomic Data Discoveries  
Emily Bogush, MS, LCGC  
Children's Hospital of Philadelphia |
| 4:30p-5:00p | | Racial Disparity in the Diagnosis of Mitochondrial Disease  
Daniel McGinn, GC  
Perelman School of Medicine of the University of Pennsylvania |

**Thursday, June 29**

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| 5:00p-5:30p | NON CME - Abstract Presentation Short Talks  
Natalie Niemi, PhD  
The Mitochondrial Phosphatase Pptc7 Maintains Mitochondrial Protein Content by Suppressing Receptor-mediated Mitophagy  
Nam Chul Kim, PhD  
FDA-approved PDE4 Inhibitors Reduce the Dominant Toxicity of ALS–FTD-associated CHCHD10S59L in Drosophila and Human Cells | Cardiac Manifestations Of Mitochondrial Disease:  
A Single Center Experience  
Divakar Mithal, MD, PhD  
Northwestern University Feinberg School of Medicine  
Mitochondrial Medicine Society (MMS) Updates  
Mary Kay Koenig, MD, MMS President |
| 6:00p-8:00p | Poster Sessions - Odd Numbers Stay at Posters - Reception  
Note: Poster Sessions are NON CME |

**Friday, June 30**

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<tr>
<th>Speaker &amp; Topic</th>
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</table>
| 8:00a-10:00a | Combined Sessions for All Attendees - NON CME:  
UMDF Welcome and Mito Medicine Community  
UMDF Research Impact  
Break | Mitochondrial Myopathy Symptoms Over Time – Sharing New Natural History Data  
Zuela Zolkipli-Cunningham, MD, Children’s Hospital of Philadelphia, PA  
Clinical Trial Updates - NON CME:  
Details and speakers are posted in the Mobile App. |
| 10:30a-11:00a | Lunch - Networking by Geographic (for those interested in connecting with attendees in their regions) |
| 11:00a-11:30a | | |
| 11:30a-12:00p | | |
| 12:00p-12:30p | | |
| 12:30p-2:00p | Platform Session 6 - Mito Genetic Therapy  
AAV-mediated Transduction of the Nuclear-coded Mitochondrial ANT1 Gene can Ameliorate Mouse Ant1-/- Pathology: a Step Toward the Treatment of Mitochondrial Cardiomyopathy  
Alessia Angelin, PhD  
Children's Hospital of Philadelphia  
Philadelphia, PA | |
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| 2:30p-3:00p | Promises and Perils of mtDNA Gene Editing  
Carlos T. Moraes, PhD  
University of Miami  
Miami, FL |  |
| 3:00p-3:30p | mtDNA & Deaminases  
Stephen C. Ekker, PhD  
Mayo Clinic  
Rochester, MN |  |
| 3:30p-4:00p |  | Break |

Friday, June 30

<table>
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<th>Speaker &amp; Topic</th>
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</table>
| 4:00p-4:30p | Nuclear Transplantation  
Shoukhrat Mitalipov, PhD  
Oregon Health & Science University  
Portland, OR |
| 4:30p-5:00p | NON CME - Abstract Presentation Short Talks  
Noa Sher, PhD  
Characterization of Mitochondrial Augmentation at the Single Cell Level  
Santiago Castillo  
Unconstrained Mitochondrial Dna Base Editing For Disease Modeling And Gene Therapy Applications |
| 5:00p-5:30p | NON CME - Abstract Presentation Short Talks  
Chenxu Li, MS/Marcia Terluk, PhD  
Targeting Mitochondrial Metabolism using Nervonic Acid in Adrenoleukodystrophy  
Stella Varnum, BS  
Mitochondria Transfer Reduces the Morbidity and Mortality of Leigh Syndrome |
| 5:30p-9:30p | UMDF Evening of Energy Reception and Banquet Celebration for ALL Attendees  
The Big Pitch: UMDF accelerators Research Grant Program Presentations |

Saturday, July 1

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<tr>
<td>Platform Session 7 - Mito Transfer/Fatty Acid Synthesis</td>
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| 8:00a-8:30a | Vesicular Transfer  
Heidi McBride, PhD  
Montreal Neurological Institute  
Quebec, Canada |
| 8:30a-9:00a | Nanotube Transfer  
Shiladitya Sengupta, PhD  
Harvard Medical School  
Cambridge, MA |
| 9:00a-9:30a | Mitochondria Transfer and Leigh Syndrome  
Jonathan R. Brestoff, MD, PhD, MPH  
Washington University School of Medicine  
St. Louis, MO |
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<td>9:30a-10:00a</td>
<td><strong>Mitochondrial Transplantation: Clinical Application and Use</strong>&lt;br&gt;<strong>James D. McCully, PhD</strong>&lt;br&gt;Harvard Medical School&lt;br&gt;Cambridge, MA</td>
<td></td>
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<tr>
<td>10:00a-10:30a</td>
<td>Break</td>
<td></td>
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<tr>
<td>10:30a-11:00a</td>
<td><strong>mtFASII Pathway &amp; Mouse Model</strong>&lt;br&gt;<strong>Deborah Murdock, PhD</strong>&lt;br&gt;Children’s Hospital of Philadelphia&lt;br&gt;Research Institute&lt;br&gt;Philadelphia, PA</td>
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<tr>
<td>11:00a-11:30a</td>
<td><strong>Mito FASII in OXPHOS Biochemistry</strong>&lt;br&gt;<strong>Sara Nowinski, PhD</strong>&lt;br&gt;Van Andel Institute&lt;br&gt;Grand Rapids, MI</td>
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**Saturday, July 1**<br>**Speaker & Topic**

**Platform Session 7 - Mito Transfer/Fatty Acid Synthesis**

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<tr>
<td>11:30a-12:00p</td>
<td><strong>Small Molecule Therapeutics</strong>&lt;br&gt;<strong>Ethan Perlstein, PhD</strong>&lt;br&gt;Perlara PBC&lt;br&gt;Berkeley, CA</td>
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<tr>
<td>12:00p-12:30p</td>
<td><strong>Non CME Abstract Presentation</strong>&lt;br&gt;<strong>Kaylee Steiner, PhD</strong>&lt;br&gt;Mitochondrial Trans-2-Enoyl Coenzyme A Reductase (Mecr) Regulates CD4+ T Cell Function</td>
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<tr>
<td>12:30p-2:00p</td>
<td><strong>Non CME Closing Remarks</strong>&lt;br&gt;<strong>Douglas Wallace, PhD</strong></td>
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**2:00pm**<br>UMDF Mito Medicine Scientific/Clinical Sessions Adjourn

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**Accreditation and Designation Statements and Disclosure Report**

UMDF Mitochondrial Medicine 2023

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of PeerPoint Medical Education Institute and the United Mitochondrial Disease Foundation. PeerPoint Medical Education Institute is accredited by the ACCME to provide continuing medical education for physicians.

PeerPoint Medical Education Institute designates the live and enduring formats for this educational activity for a maximum of 19.50 AMA PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Live activity dates: June 28, 2023 – July 1, 2023
Enduring activity dates: October 2, 2023 – October 2, 2026

The following planners, speakers, reviewers or staff have relevant financial relationships to disclose:

To View Full Statement with Disclosure Report - visit www.umdf.org/mitoscience and click on CME Information.