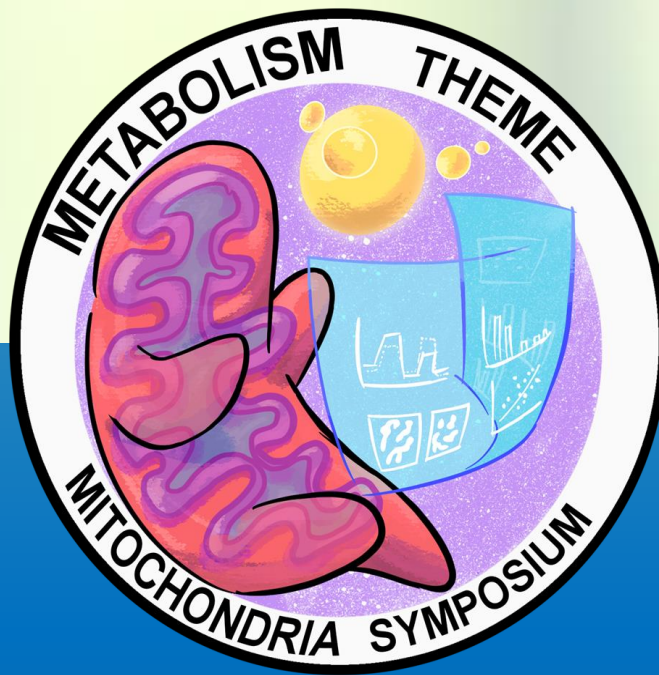




6<sup>th</sup> Annual **UCLA**  
**MITOCHONDRIA**  
**SYMPOSIUM**



# 2023 PROGRAM

December 7<sup>th</sup>-9<sup>th</sup>, 2023  
Covel Commons, UCLA

# The 2023 Organizing Team



6<sup>th</sup> Annual  
**MITOCHONDRIA  
SYMPOSIUM**



**Orian Shirihai,  
MD, PhD**  
Faculty Advisor  
Professor | UCLA



**Amy Wang, PhD, MBA**  
CEO | Enspire Bio | Senergy Bio



**Jenny Ngo  
(Jennifer), PhD**  
Post Doctoral Fellow  
Shirihai Lab | UCLA



**Marko Kostic,  
PhD**  
Staff Scientist  
Shirihai Lab | UCLA



**Alexandra  
Brownstein, PhD**  
Post Doctoral Fellow  
Shirihai Lab | UCLA



**Anthony Jones,  
PhD**  
Post Doctoral Fellow  
Divakaruni Lab | UCLA

# INVITED SPEAKERS



6<sup>th</sup> Annual  
MITOCHONDRIA  
SYMPOSIUM



**Karin Busch**

University of Münster  
Germany



**Jakob Wikström**

Karolinska Institute  
Solna, Sweden



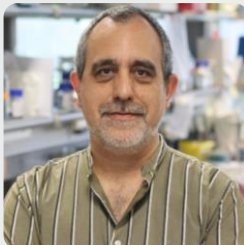
**Andreas Reichert**

University of Düsseldorf  
Germany



**Gerald Shadel**

Salk Institute for Biological Studies  
La Jolla, California



**José Antonio  
Enríquez Domínguez**

CNIC/CIBEFERES  
Madrid, Spain



**Thomas Langer**

Max-Planck-Institute  
Gesellschaft, Germany



**Carla Koehler**

University of California  
Los Angeles



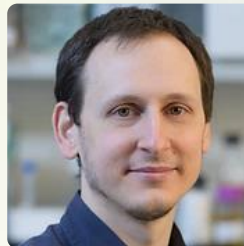
**Gulcin Pekkurnaz**

University of California  
San Diego



**Rajarshi Chakrabarti**

Thomas Jefferson University  
Philadelphia, Pennsylvania



**Marco Tigano**

Thomas Jefferson University  
Philadelphia, Pennsylvania



**Erin L. Seifert**

Thomas Jefferson University  
Philadelphia, Pennsylvania



**Carlo Viscomi**

University of Padova  
Padova, Italy

# INVITED SPEAKERS



6<sup>th</sup> Annual  
MITOCHONDRIA  
SYMPOSIUM



**György Csordás**

Thomas Jefferson University  
Philadelphia, Pennsylvania



**Martin Picard**

Columbia University  
New York City, New York



**Douglas Mashek**

University of Minnesota  
Minneapolis, Minnesota



**Anu Suomalainen**

University of Helsinki  
Finland



**Deborah Muoio**

Duke University  
Durham, North Carolina



**Catherine Clarke**

University of California  
Los Angeles



**Alexander M. van  
der Blik**

University of California  
Los Angeles



**Rajat Singh**

University of California  
Los Angeles



**Valerio Carelli**

University of Bologna  
Bologna, Italy

# PANELISTS / INTERROGATORS/ WORKSHOP LEADERS



6<sup>th</sup> Annual  
MITOCHONDRIA  
SIMPOSIUM



**Dale Abel**

University of California  
Los Angeles



**Tamer Sallam**

University of California  
Los Angeles



**Richard Kibbey**

Yale School of Medicine  
New Haven, Connecticut



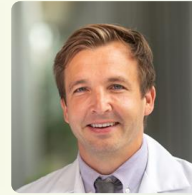
**Marc Liesa-Roig**

IBMD  
Barcelona, Spain



**Matthew Merrins**

University of Wisconsin-Madison



**Mark Hepokoski**

University of California  
San Diego



**Fernanda Cerqueira**

Mitochondria Emotion Inc.



**Nika Danial**

Harvard University, Dana-Farber  
Cancer Institute  
Boston, MA



**Slavica Tudzarova-  
Trajkovska**

University of California  
Los Angeles



**Hagai Abeliovich**

Institute of Biochemistry, Food  
Science and Nutrition  
Hebrew University of Jerusalem



**Thomas Graeber**

University of California  
Los Angeles



**Ajit Divakaruni**

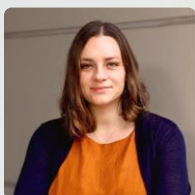
University of California  
Los Angeles



# PANELISTS / INTERROGATORS/ WORKSHOP LEADERS



6<sup>th</sup> Annual  
MITOCHONDRIA  
SYMPOSIUM



**Tara TeSlaa**

University of California  
Los Angeles



**Ambre Bertholet**

University of California  
Los Angeles



**György Hajnóczky**

Thomas Jefferson University



**Henry N. Higgs**

Dartmouth College  
Hanover, New Hampshire



**Timothy Shutt**

University of Calgary



**Anthony Molina**

University of California  
San Diego



**Jonathan Wanagat**

University of California  
Los Angeles



**Evan Taddeo**

Guggenheim Partners



**Karel Erion**

Capacity Bio



**Laurent Vergnes**

University of California  
Los Angeles

# PANELISTS / INTERROGATORS/ WORKSHOP LEADERS



6<sup>th</sup> Annual  
MITOCHONDRIA  
SYMPOSIUM



**Lucía Fernández del Río**

University of California  
Los Angeles



**Cristiane Benincá**

University of California  
Los Angeles



**Alfredo Sadun**

University of California, Los Angeles  
Stein Eye Institute/DOHENY Eye  
Institute



**David Brown**

Stealth BioTherapeutics



**Stan Nelson**

University of California  
Los Angeles

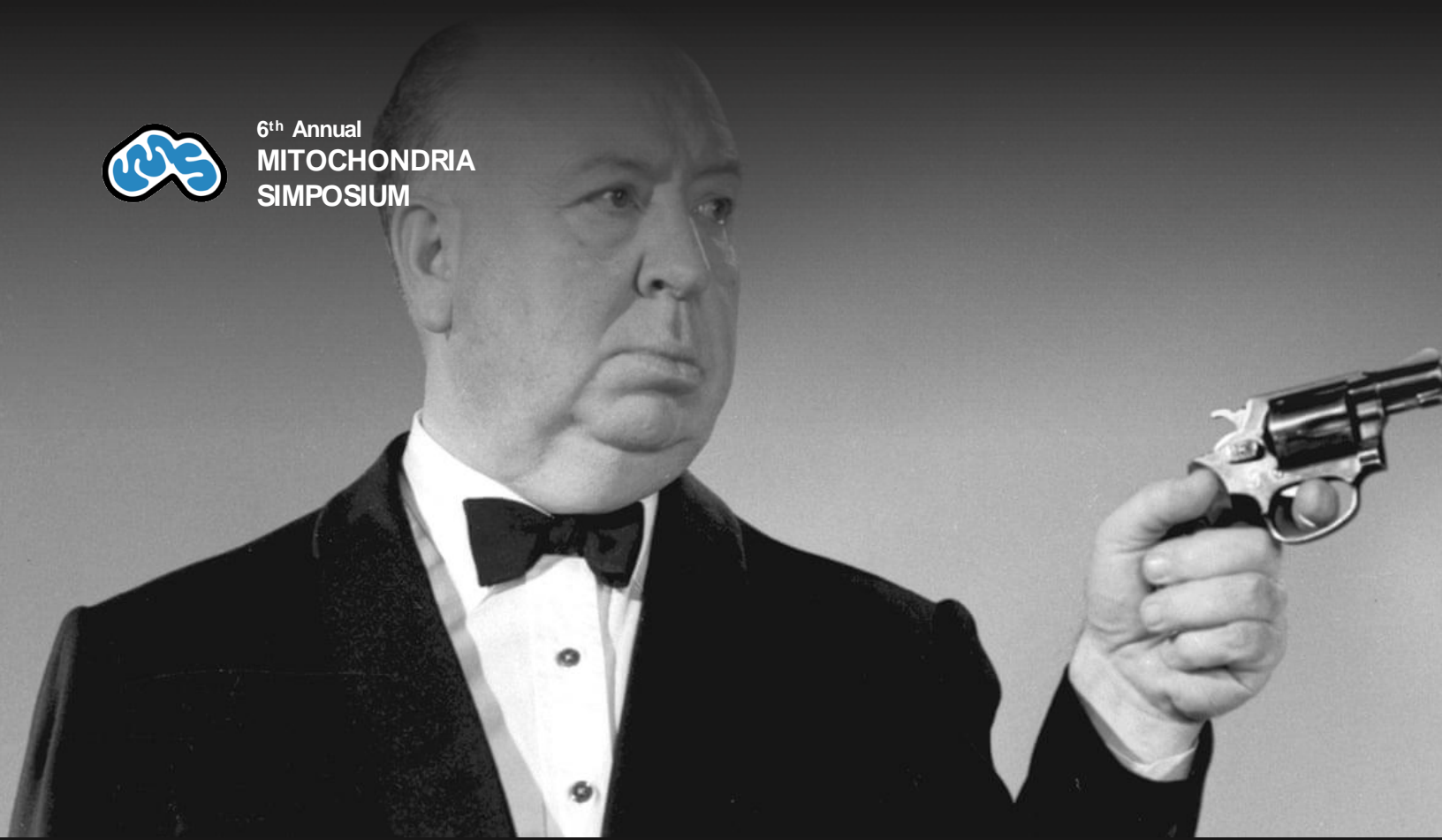


**Amy Wang**

Capacity Bio



6<sup>th</sup> Annual  
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# KILL THE EXPERT PANELS

**By far, the most popular, memorable and informative session at this conference!**

Ironically, "Kill the Expert" is also the most lively session. How does it work? We ask the experts to address a common simple question about mitochondria research methodology, such as their recommended way to quantify mitophagy or mitochondrial architecture, and we hope to get a simple answer. You will be surprised how difficult this task is for the expert. Although most experts swear they will never step on that stage ever again, they keep coming back.



# KILL THE EXPERT PANELS

## Assessing Mitochondrial DNA Release

(Thur. Dec 7th 2:00-2:30 PM)

### Panelists:

**Gerald Shadel**, PhD | Professor | Salk Institute  
**Mark Hepokoski**, MD | Professor | UC San Diego  
**Fernanda Cerqueira**, PhD | Senior Scientist | Mitochondria Emotion Inc.

### Interrogator:

**Timothy Shutt**, PhD | Professor | University of Calgary

### Questions:

- 1) What is an accessible and reliable method to measure mtDNA release?
- 2) What are reliable surrogate markers of mtDNA release?
- 3) What are the common artifacts that may affect mtDNA release measurements?
- 4) What would be a proper method to identify and convincingly demonstrate the mechanism of mtDNA release in one's experimental system?

## Assessing Mitochondrial Fuel Preference and Utilization

(Thur. Dec 7th 5:45-6:15 PM)

### Panelists:

**Thomas Graeber**, PhD | Professor | UCLA  
**Ajit Divakaruni**, PhD | Professor | UCLA  
**Tara TeSlaa**, PhD | Professor | UCLA

### Interrogators:

**Orian Shirihai**, MD, PhD | Professor | UCLA  
**Ambre Bertholet**, PhD | Professor | UCLA

### Questions:

- 1) What is an accessible and reliable method to measure mitochondrial fuel preference?
- 2) How does one differentiate between fuel preference and fuel dependency?
- 3) Can metabolomics be used to study fuel preference, fuel utilization and fuel dependency?
- 4) Can respirometry and mass spectrometry complement each other in the study of fuel preference, utilization, and dependency?

## Mitochondria Motility

(Fri. Dec 8th 5:15-5:45 PM)

### Panelists:

**Gulcin Pekkurnaz**, PhD | Professor | UC San Diego  
**Henry N. Higgs**, PhD | Professor | Dartmouth College

### Interrogators:

**György Hajnóczky**, MD, PhD | Professor | Thomas Jefferson University

### Questions:

- 1) What is an accessible and reliable method to measure mitochondrial motility in axons and non-neuronal cells?
- 2) What are the essential positive and negative controls for increased and decreased motility?
- 3) What are the common artifacts that may affect measurements of mitochondrial motility?
- 4) What is an accessible and reliable image analysis method for quantifying mitochondrial motility?



# KEEP THE EXPERT PANELS

**In Keep the Expert, each expert is asked to present a new hypothesis that can address an open gap in the field.**

Two to three interrogators will be ready to help the experts sharpen their ideas, followed by a call to the crowd to contribute suggestions for experiments or tell us about their own observations that can support or challenge new theories. This is a mind-blowing session!

## Mitochondria in the Heart

(Thur. Dec 7th 1:00-1:30 PM)

Panelist:

**Dale Abel**

MD, PhD | Professor | UCLA

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Interrogators:

**Rajat Singh**, MD | Professor | UCLA

**Tamer Sallem**, MD, PhD | Professor | UCLA

# KEEP THE EXPERT PANELS

## Mitochondria in Diabetes

(Thur. Dec 7th 1:30-2:00 PM)

Panelist:

**Richard Kibbey**

MD, PhD | Professor | Yale School of  
Medicine

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Interrogators:

- **Orian Shirihai**, MD, PhD | Professor | UCLA
- **Marc Liesa-Roig**, PhD, | Professor | IBMB-CSIC
- **Matthew Merrins**, PhD, | Professor | University of Wisconsin-Madison

## Mitochondria in Cancer

(Thur. Dec 7th 4:45-5:10 PM)

Panelist:

**Nika Danial**

PhD | Professor | Harvard University,  
Dana-Farber Cancer Institute

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Interrogators:

- **Orian Shirihai**, MD, PhD | Professor | UCLA
- **Slavica Tudzarova-Trajkovska**, PhD | Professor | UCLA
- **Martin Picard**, PhD | Professor | Columbia University

## Mechanisms of Mitochondria Quality Control

(Thur. Dec 7th 5:10-5:40 PM)

Panelist:

**Hagai Abeliovich**

PhD | Professor | Hebrew University

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Interrogators:

- **Alexander M. van der Bliek**, PhD | Professor | UCLA
- **Thomas Langer**, PhD | Professor | Max Planck Institute

## Mitochondria in Aging

(Fri. Dec 8th 5:45-6:15 PM)

Panelist:

**Jonathan Wanagat**

MD, PhD | Professor | UCLA

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Interrogators:

- **Anu Suomalainen**, MD, PhD | Professor | University of Helsinki
- **Anthony Molina**, PhD | Professor | UC San Diego



# FUNDAMENTAL TOPICS IN MITOCHONDRIAL BIOLOGY: ROUND TABLE DISCUSSIONS

The round table discussions have been the most successful platform to connect people at the symposium. Each table will have approximately 12-25 people that signed up to join the table. We will arrange the attendees so that each table will have a diversity of clinicians, basic research scientists, biotech/pharma and scientists from investment firms. The discussion at the table will focus on the following questions:

1. What are the open gaps in knowledge in the field?
2. What are the missing technological tools for measurement and intervention?
3. Are you aware of emerging developments that may address the missing knowledge and technology?

You will be surprised by hearing completely different views coming from clinicians, researchers and industry when talking about the current needs of the field. It is a mind opening event as much as it is the best place to connect with people.

Each table has two Speakers and one Leader. The discussion will be opened by the leader who will present the topic and the questions, and be the first to voice her/his opinion. There are no slides, but sometimes some people prepared handouts to distribute around the table.

# FUNDAMENTAL TOPICS IN MITOCHONDRIAL BIOLOGY: ROUND TABLE DISCUSSIONS

Friday Dec. 8th 2:20 - 3:10 PM

## 1. MITOCHONDRIA MOTILITY & DYNAMICS

Moderator: **Fernanda Cerqueira** (Mitochondria Emotion)

Speakers: **Aydin Halil** (CU Boulder)

**Yasemin Sancak** (UW)

## 2. CELLULAR ENERGY EXPENDITURE AS A THERAPEUTIC TARGET

Moderator: **Ambre Bertholet** (UCLA)

Speakers: **Jason Bazil** (MSU)

**Katsu Funai** (UofU)

## 3. ADIPOSE TISSUE REMODELING & MITOCHONDRIAL LIPID DROPLET INTERACTION

Moderator: **Jameel Dennis** (Rivus)

Speakers: **Laurent Vergenes** (UCLA)

**Babu V. Sepuri Naresh** (UoH)

## 4. MITOPHAGY AND MITOCHONDRIAL QUALITY CONTROL

Moderator: **Karel Erion** (Capacity Bio)

Speakers: **Katarzyna Goljanek-Whysall** (UCG)

**Zhenqi Zhou** (UCLA)

## 5. MITOCHONDRIA INVOLVEMENT IN AGING

Moderator: **Rick Tsai** (LUCA Science)

Speakers: **David Walker** (UCLA)

**Anthony Covarrubias** (UCLA)

**Robert Musci** (LMU)

## 6. OBESITY & DIABETES

Moderator: **Debbie Thurmond** (City of Hope)

Speakers: **Lu Geming** (City of Hope)

**Matthew Merrins** (UW-Madison)

## 7. MITOCHONDRIA AND THE IMMUNE SYSTEM

Moderator: **Ajit Divakaruni** (UCLA)

Speakers: **Julia Mack** (UCLA)

**Timothy Shutt** (UCalgary)

## 8. NEURODEGENERATION

Moderator: **Kammy Moalemzadeh** (Arcadia)

Speakers: **Lindsay M. De Biase** (UCLA)

**Elizabeth Videlock** (UCLA)

**Kathy Rodgers** (UArizona)

## 9. REDOX SIGNALING

Moderator: **Patrice Rioux** (Thiogeneration)

Speakers: **Marc Liesa** (IBMB-CSIC)

**Mehdi Yeganeh** (Laval University)

## 10. MITOCHONDRIA AND THE EYE

Moderator: **Alfredo Sadun** (UCLA Stein/DOHENY Eye Inst.)

Speakers: **Nan Hultgren** (UCLA)

**Nan-Kai Wang** (Columbia University)

## 11. MITOCHONDRIA AND CANCER

Moderator: **Brianna Dalesandro** (Rivus)

Speakers: **David Shackelford** (UCLA)

**Laura Hulea** (UdeM)

**Neema Jamshidi** (UCLA)

## 12. BIOMARKERS FOR CLINICAL STUDIES

Moderator: **Shirin Kapur** (Capacity Bio)

Speakers: **Anu Suomalainen** (University of Helsinki)

**David Brown** (Stealth BioTherapeutics)

## 13. RESPIRATORY CHAIN PHYSIOLOGY & PATHOPHYSIOLOGY

Moderator: **Cristiane Benincá** (UCLA)

Speakers: **Alena Zikova** (Biology Centre CAS)

**Rebeca Acin-Perez** (Enspire Bio)

## 14. MITOCHONDRIAL CALCIUM IN PHYSIOLOGY & DISEASE

Moderator: **György Hajnóczky** (TJU)

Speakers: **Maria Castromonte** (TJU)

**Arijita Ghosh** (TJU)

**Slavica Tudzarova-Trajkovska** (UCLA)

## 15. MITOCHONDRIA IN CARDIOVASCULAR DISEASES

Moderator: **Erhu Ebay** (Cedars Sinai)

Speakers: **Thomas A. Valim** (UCLA)

**Jake Lusic** (UCLA)



## MEET THE SPEAKERS

After each session, attendees will have the opportunity to meet with the speakers and ask any additional questions. After the last talk of the session, the speakers will go to the **West Coast Room**, where they will be available to meet and continue discussions with attendees. This is a unique opportunity with designated time for those interested to interact with the speakers.

# MEET THE SPEAKERS

## Thursday, Dec. 7<sup>th</sup>

10:30-11:00 AM

- Karin Busch
- Andreas Reichert
- Jose Antonio Enriquez Dominguez

2:30-3:00 PM

- Carla Koehler
- Richard Kibbey
- Dale Abel
- Rajarshi Chakrabarti

4:15-4:45 PM

- Catherine Clarke
- Erin L. Seifert
- György Csordás

## Friday, Dec. 8<sup>th</sup>

10:00-10:30 AM

- Douglas Mashek
- Nika Danial
- Hagai Abeliovich

4:45-5:15 PM

- Deborah Muoio
- Gerald Shadel
- Jakob Wikström

## Saturday, Dec. 9<sup>th</sup>

10:25-10:55 AM

- Thomas Langer
- Gulcin Pekkurnaz
- Marco Tigano

2:20-2:50 PM

- Anu Suomalainen
- Martin Picard
- Carlo Viscomi



# ABBERIOR WORKSHOP (during Coffee Breaks)

<https://abberior.rocks/>

## Session 1

Thursday, Dec 7<sup>th</sup>  
2:30 - 3:00 PM

## Session 2

Friday, Dec 8<sup>th</sup>  
10:00 - 10:30 AM

## Session 4

Saturday, Dec 9<sup>th</sup>  
10:25 - 10:55 AM

## Session 3

Friday, Dec 8<sup>th</sup>  
4:45 - 5:15 PM

## Session 5

Saturday, Dec 9<sup>th</sup>  
2:20 - 2:50 PM

Attendees will have the incredible opportunity to demo the newest **Abberior STEDycon microscope**. The UCLA Mitochondrial Imaging Core Director **Cristiane Benincá** will demonstrate Abberior's new technology dedicated to visualizing mitochondria cristae. The microscope will be set up during the entire duration of the conference in the **West Coast Room**.



## Thursday (December 7<sup>th</sup>) - Mitochondria Structure and Function

8:00 - 9:00 am	Arrival and Check-in
8:30 - 9:00 am	Coffee and Pastries
<b>Session 1:</b>	
9:00 - 9:30 am	Opening Remarks
9:30 - 9:50 am	<b>Karin Busch</b> (University of Münster, Münster, Germany) "Controlling ATP synthase in mitochondria – more than a spatio-temporal task"
9:50 - 10:10 am	<b>Andreas Reichert</b> (University of Düsseldorf, Düsseldorf, Germany) "From cristae membrane structure and dynamics to metabolic implications"
10:10 - 10:30 am	<b>José Antonio Enríquez Domínguez</b> (CNIC, Madrid, Spain) "The devil is in the OxPhos details"
10:30 - 11:00 am	Coffee Break <b>Meet the Speakers</b> (West Coast Room): Karin Busch, Andreas Reichert, José Antonio Enríquez Domínguez
<b>Session 2:</b>	
11:00 - 11:15 am	<b>Alexander van der Blik</b> (University of California, Los Angeles, CA, USA) "Control of NCLX-mediated mitochondrial calcium release by Mfn2"
11:15 - 11:35 am	<b>Carla Koehler</b> (University of California, Los Angeles, CA, USA) "Mitochondrial double stranded RNA is a new DAMP"
11:35 - 11:55 am	<b>Rajarshi Chakrabarti</b> (Thomas Jefferson University, Philadelphia, PA, USA) "Actin-mitochondria interactions"
12:00 - 1:00 pm	Lunch
<b>Session 3:</b>	
1:00 - 1:30 pm	<b>Keep the Expert: Mitochondria in Heart</b> Panelist: <b>Dale Abel</b> (UCLA); Interrogators: <b>Rajat Singh</b> (UCLA) & <b>Tamer Sallam</b> (UCLA)
1:30 - 2:00 pm	<b>Keep the Expert: Mitochondria in Diabetes</b> Panelist: <b>Richard Kibbey</b> (Yale); Interrogators: <b>Marc Liesa-Roig</b> (IBMB-CSIS), <b>Matthew Merrins</b> (University of Wisconsin), <b>Orian Shirihai</b> (UCLA)
2:00 - 2:30 pm	<b>Kill the Expert: Assessing mtDNA Release</b> Panelists: <b>Gerald Shadel</b> (Salk), <b>Mark Hepokoski</b> (UCSD), <b>Fernanda Cerqueira</b> (Mitochondria Emotion Inc.) Interrogator: <b>Timothy Shutt</b> (University of Calgary)
2:30 - 3:00 pm	Coffee Break <b>Abberior Workshop #1: Imaging Mitochondria with the STED</b> (West Coast Room) <b>Meet the Speakers</b> (West Coast Room): Carla Koehler, Richard Kibbey, Dale Abel, Rajarshi Chakrabarti
<b>Session 4:</b>	
3:00 - 3:20 pm	<b>Catherine Clarke</b> (University of California, Los Angeles, CA, USA) "Chaperones, Contact Sites, and Membrane Lipid Transport – a Nexus for Biosynthesis and Trafficking of Coenzyme Q"
3:20 - 3:40 pm	<b>Erin L. Seifert</b> (Thomas Jefferson University, Philadelphia, PA, USA) "Mitochondrial Pi Carrier and Ca <sup>2+</sup> handling"
3:40 - 3:55 pm	<b>Charlene Smith-Geater</b> (University of California, Irvine, CA, USA) "CryoET reveals mitochondrial phenotypes in Huntington's disease patient iPSC-derived and mouse primary neurons"
3:55 - 4:15 pm	<b>György Csordás</b> (Thomas Jefferson University, Philadelphia, PA, USA) "Mitochondrial plasticity in the cardiac muscle"
4:15 - 4:45 pm	Coffee Break & Light Reception <b>Meet the Speakers</b> (West Coast Room): Catherine Clarke, Erin L. Seifert, György Csordás
<b>Session 5:</b>	
4:45 - 5:10 pm	<b>Keep the Expert: Mitochondria in Cancer</b> Panelist: <b>Nika Danial</b> (Harvard); Interrogators: <b>Orian Shirihai</b> (UCLA), <b>Martin Picard</b> (Columbia University), <b>Slavica Tudzarova-Trajkovska</b> (UCLA)
5:10 - 5:40 pm	<b>Keep the Expert: Mechanisms of Mitochondrial Quality Control</b> Panelist: <b>Hagai Abeliovich</b> (Hebrew University); Interrogators: <b>Alexander van der Blik</b> (UCLA), <b>Thomas Langer</b> (Max Planck Institute), <b>Orian Shirihai</b> (UCLA)
5:45 - 6:15 pm	<b>Kill the Expert: Assessing Mitochondrial Fuel Utilization</b> Panelists: <b>Thomas G Graeber</b> (UCLA), <b>Ajit Divakaruni</b> (UCLA), <b>Tara TeSlaa</b> (UCLA). Interrogators: <b>Ambre Bertholet</b> (UCLA) & <b>Orian Shirihai</b> (UCLA)
6:15 - 7:30 pm	Dinner
7:30 - 9:00 pm	<b>Poster Session # 1 (Odd Numbers)</b>
8:30 - 9:00 pm	Self - Networking

## Friday (December 8<sup>th</sup>) - Mitochondrial Metabolism and Pathophysiology

7:00 - 8:00 am	Workout session with <b>Tony Kurkowski</b> (Equinox)
7:30 - 8:45 am	Coffee & Light Snacks
<b>Session 6:</b>	
8:50 - 9:15 am	<b>Rajat Singh</b> (University of California, Los Angeles, USA) "Nutrient regulation of mitochondrial dynamics "
9:15 - 9:35 am	<b>Douglas Mashek</b> (University of Minnesota, Minneapolis, MN, USA) "Lipid droplet and mitochondria intimacy"
9:35 - 9:50 am	<b>Karthickeyan Chella Krishnan</b> (University of Cincinnati, Cincinnati, OH, USA) "Hepatic lipid droplet associated mitochondria is bioenergetically active but compromised for fatty acid oxidation in nonalcoholic steatohepatitis"
10:00 - 10:30 am	Coffee Break <b>Abberior Workshop #2:</b> Imaging Mitochondria with the STED (West Coast Room) <b>Meet the Speakers</b> (West Coast Room): Douglas Mashek, Nika Danial, Hagai Abeliovich
<b>Session 7:</b>	
10:30 - 10:50 am	<b>Deborah Muoio</b> (Duke University, Durham, NC, USA) "Fueling Mitochondrial Efficiency: Pyruvate and Ketones Fan the Flames of Fat Oxidation"
10:50 - 11:05 am	<b>Melissa Herrero</b> (University of Washington, Seattle, WA, USA) "Extracellular Mitochondria in HFpEF"
11:05 - 11:25 am	<b>Jakob Wikström</b> (Karolinska Institute, Solna, Sweden) "Mitochondria in human skin wound healing"
11:25 - 11:40 am	<b>Grigor Varuzhanyan</b> (University of California, Los Angeles, CA, USA) "Mitochondrial bioenergetics as an emerging target for pan small cell neuroendocrine cancer"
11:40 - 12:40 am	Lunch
<b>Session 8:</b>	
12:40- 1:10 pm	<b>Bioenergetics Workshop: Measuring Respiration and ATP Hydrolysis in Frozen Samples</b> Presenter: <b>Lucía Fernández del Río</b> (UCLA)
1:10 - 1:40 pm	<b>Technique workshop: Calculation of ATP production rates using the Seahorse XF Analyzer</b> Presenter: <b>Ajit Divakaruni</b> (UCLA)
1:40 - 2:10 pm	<b>Microscopy workshop: Super-resolution of live mitochondria. Stimulated Emission Depletion Microscopy (STED) and analysis of cristae morphology and dynamics</b> Presenter: <b>Cristiane Benincá</b> (UCLA)
2:10 - 2:20 pm	Find your round tables for discussion
2:20 - 3:10 pm	<b>Round Table Discussion</b>
3:10 - 3:40 pm	Coffee Break
<b>Session 9:</b>	
3:40 - 4:00 pm	<b>Gerald Shadel</b> (Salk Institute for Biological Studies, La Jolla, CA, USA) "Nucleic Acid-mediated Mitonuclear Signaling"
4:00 - 4:15 pm	<b>Ana Valencia</b> (University of Washington, Seattle, WA, USA) "A battle between immune cell mitochondria and weight loss"
4:15 - 4:30 pm	<b>Valerio Carelli</b> (University of Bologna, Bologna, Italy) "Histopathological and molecular characterization in ocular post-mortem analyses following AAV2 gene therapy for Leber hereditary optic neuropathy"
4:30 - 4:45 pm	<b>Jonathan Brestoff</b> (Washington University in St. Louis, MO, USA) "Mitochondria transfer-based therapy reduces the morbidity and mortality of Leigh Syndrome"
4:45 - 5:15 pm	Coffee Break & Light Reception <b>Abberior Workshop #3:</b> Imaging Mitochondria with the STED (West Coast Room) <b>Meet the Speakers</b> (West Coast Room): Deborah Muoio, Gerald Shadel, Jakob Wikström
<b>Session 10:</b>	
5:15 - 5:45 pm	<b>Kill the Expert: Mitochondrial Motility</b> Panelists: <b>Gulcin Pekkurnaz</b> (UCSD) & <b>Henry N. Higgs</b> (Dartmouth College); Interrogator: <b>György Hajnóczky</b> (Thomas Jefferson University), <b>Orian Shirihai</b> (UCLA)
5:45 - 6:15 pm	<b>Keep the Expert: Mitochondria in Aging</b> Panelist: <b>Jonathan Wanagat</b> (UCLA); Interrogators: <b>Anthony Molina</b> (UCSD) & <b>Anu Suomalainen</b> (University of Helsinki)
6:15 - 7:30 pm	Dinner
7:30 - 9:00 pm	<b>Poster session # 2 (Even numbers)</b>
8:30 - 9:30 pm	Self - Networking

## Saturday (December 9<sup>th</sup>) - Mitochondrial Dynamics, Quality Control and Aging

7:00 - 8:00 am Workout session with **Tony Kurkowski** (Equinox)

7:30 - 8:45 am Coffee & Light Snacks

### Session 11:

8:50 - 9:10 am **Thomas Langer** (Max Planck Institute, Gesellschaft, Germany)  
"Nucleotide imbalance and mitochondrial innate immune signaling"

9:10 - 9:30 am **Gulcin Pekkurnaz** (University of California, San Diego, CA, USA)  
"Energizing Neurons: Unfolding Metabolic Plasticity Mechanisms"

9:30 - 9:50 am **Marco Tigano** (Thomas Jefferson University, Philadelphia, PA, USA)  
"Mitochondrial control of cellular immunity"

9:50 - 10:10 am **Carlo Viscomi** (University of Padova, Padova, Italy)  
"Mitochondrial diseases: from mechanisms to therapy"

10:10 - 10:25 am **Pablo Hernansanz-Agustín** (CNIC, Madrid, Spain)  
"A Na<sup>+</sup> gradient controls  $\Delta\psi$  through the Na<sup>+</sup>/H<sup>+</sup> antiporter activity of respiratory complex I and is impaired in LHON disease"

Coffee Break

10:25 - 10:55 am **Abberior Workshop #4:** Imaging Mitochondria with the STED (West Coast Room)  
**Meet the Speakers** (West Coast Room): Thomas Langer, Gulcin Pekkurnaz, Marco Tigano

### Session 12:

#### Parallel Sessions

11:00 - 11:55 am	<b>1. Recipes for what to do with my PhD</b> Grand Horizon Ballroom Panelists: <b>Amy Wang, Evan Taddeo, Karel Erion, Cristiane Benincá, Laurent Vergnes</b>	<b>2. Mentoring Challenges &amp; Solutions: Top 10 Practices of good mentoring</b> West Coast Room
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12:00 - 1:00 pm Lunch

### Session 13:

1:00 - 1:15 pm **Tatjana Kleele** (ETH, Zurich, Switzerland)  
"Mitochondrial remodeling during cell state transitions"

1:15 - 1:30 pm **Melissa Lubeck** (Heinrich Heine University, Düsseldorf, Germany)  
"Role of the MICOS subunit MIC26 in the early development of insulin resistance"

1:30 - 1:45 pm **Michaela Veliova** (CNIC, Madrid, Spain)  
"Mitochondrial subpopulations in cardiomyocytes are shaped by their intracellular environment"

#### Parallel Sessions

1:45 - 2:20 pm	<b>1. MitoBiotech Opportunities Fair</b> Grand Horizon Ballroom Presenters: <b>MitochondriaWorld, LUCA Science Inc</b>	<b>2. How to develop a mutually beneficial, long lasting relationship with Biotech/Industry</b> West Coast Room
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Coffee Break & Light Reception

2:20 - 2:50 pm **Abberior Workshop #5:** Imaging Mitochondria with the STED (West Coast Room)  
**Meet the Speakers** (West Coast Room): Anu Suomalainen, Martin Picard, Carlo Viscomi

### Session 14:

2:50 - 3:50 pm **Translational Mitochondrial Medicine Workshop: Bringing Mitochondria Therapeutics Towards FDA Approval**  
**Alfredo Sadun** (UCLA, DOHENY Eye Institute), **Valerio Carreli** (University of Bologna), **Anu Suomalainen** (University of Helsinki), **David Brown** (Stealth BioTherapeutics), **Stan Nelson** (UCLA), Moderator: **Amy Wang** (Capacity Bio)

3:50 - 4:05 pm **Ziwei She** (Dartmouth College, Hanover, NH, USA)  
"Actin-dependent glycolytic activation downstream of mitochondrial damage: identification of the actin-activated glycolytic step"

4:05 - 4:25 pm **Martin Picard** (Columbia University, New York City, NY, USA)  
"Mouse and human brain mitochondrial diversity"

4:25 - 4:45 pm **Anu Suomalainen** (University of Helsinki, Helsinki, Finland)  
"Viruses, immunity and manifestation of mitochondrial brain disease"

4:45 - 5:00 pm Awards & Closing Remarks

No.	Author	Affiliation	Poster Title
1	Matthew Tippin	UC Riverside	Molecular basis of LONP1 binding to DNA
2	Soon-Gook Hong	UCLA	LPCAT3 supports endothelial cell homeostasis
3	Ziwei She	Dartmouth College	Actin-dependent glycolytic activation downstream of mitochondrial damage: identification of the actin-activated glycolytic step
4	Galih Haribowo	Gladstone Institutes/UCSF	Oxygen toxicity causes cyclic damage by destabilizing specific Fe-S cluster-containing protein complexes
5	Frieda Kage	Dartmouth College	A novel protein interaction between INF2 and VAP implicated in ER-mitochondria functions
6	Michael D. Guile	UCLA	Delivery of exogenous Coenzyme Q to mitochondria in <i>Saccharomyces cerevisiae</i> relies on the dynamin homolog Vps1 and autophagic machinery
7	Jennifer Ngo	UCLA	Mitochondrial elongation protects against fibrosis of proximal tubule cells
8	Jennifer Ngo	UCLA	Mitochondrial morphology controls fatty acid utilization by changing CPT1 sensitivity to malonyl-CoA
9	Xinxin Chen	University of Virginia	SEL1L-HRD1 ERAD and autophagy synergistically maintain mitochondrial homeostasis in BAT
10	Cathy Hou	Stanford University	Visualizing mitochondria under various biochemical conditions with cryogenic electron tomography
11	Ushodaya Mattam	University of Cincinnati	Hepatic Lipid droplet associated mitochondria is bioenergetically active but compromised for fatty acid oxidation in nonalcoholic steatohepatitis.
12	Valerie Lisnyak	Monash University	Reaching beyond the mitochondrial fold: Interactome mining of the MICOS from different tissues
13	Sukrut C. Kamerkar	Dartmouth College	Multifaceted role of LACTB in mitochondria and lipid droplet dynamics
14	Durba Banerjee	University of Washington	Mitochondrial uptake by macrophages alters cell function.
15	Laura E. Kropp	Stealth BioTherapeutics	Cytoprotection by the novel compound SBT-588 across models of Leigh syndrome
16	Naresh Babu V. Sepuri	University of Hyderabad	Lipid associated mitochondria promotes fatty acid oxidation through a distinct bioenergetic pattern to ameliorate NAFLD
17	Alyssa Vadovsky	Michigan State University	Sexual dimorphism of calcium homeostasis in isolated cardiac mitochondria
18	Ethan L. Ostrom	University of Washington	Inducible SOD2 knockdown impairs mitochondrial pyruvate oxidation and OxPhos capacity by reversible oxidative post translational modification in mouse skeletal muscle
19	Laurent Vergnes	UCLA	Sex differences in adipose mitochondrial activity in sedentary and exercised mice
20	Pau B. Esparza-Moltó	Salk Institute for Biological Studies	Location matters: glycolytic enzymes go to mitochondria upon oxidative stress
21	Sean Atamdede	UCLA	A role for SLC25A46 in mediating mitochondrial dynamics and protein quality control
22	Panagiota Kolitsida	UCLA	Control of calcium efflux from mitochondria by Mfn2 and its possible relevance for a peripheral neuropathy
23	Miriam Lee	Dartmouth College	Regulatory mechanism of formin INF2 by Transgelin
24	Noelle Alexa Novales	UCLA	Investigation of the endoplasmic reticulum-mitochondria encounter structure (ERMES) as a regulator of CoQ biosynthesis
25	Alexandra Brownstein	UCLA	Mitochondria isolated from lipid droplets in WAT reveal functional differences based on lipid droplet size
26	Mingqi Han	UCLA	Spatial and temporal mapping of mitochondrial networks and bioenergetics in lung cancer
27	Amy Rios	UCLA	Unraveling the role of angiotensin converting enzyme (ACE) in macrophage metabolism
28	Lisa Eshun-Wilson	The Scripps Research Institute	Structural snapshots of AAA+ protease YME1 reveal substrate-free ADP-bound states that are proteolytically inactive
29	Sen Yang	Indiana University Bloomington	NMNAT2 links bioenergetics and proteostasis in cortical glutamatergic neurons
30	Dongqiang Yuan	City of Hope	Regulation of nuclear transcription by mitochondrial RNA
31	Marko Kostic	UCLA	Mitochondrial ATP hydrolysis is linked to impaired mitophagy in aging
32	Jordan Tibbs	UCLA	Developing mammalian cell model system for identifying small molecule modulators of mitochondrial protein import in the context of PH1
33	Albert Macias	UCLA	Characterizing the NAD Metabolism of Senescent Macrophages
34	Kaitlyn Nguyen	UCLA	Evaluating the role of nitric oxide in macrophage metabolism and the pro-inflammatory response
35	Ritam Naha	Heinrich Heine University	The "Seeder Model" of MICOS assembly: MIC13 and SLP2 seeds the assembly of MIC60-subcomplex to promote crista junction formation
36	Ivan A. Salladay-Perez	UCLA	Pro-inflammatory macrophage memory as a source of immune metabolic dysfunction
37	Ayush D. Midha	UCSF/Gladstone Institutes	Physiological adaptation to hypoxia involves organ-specific rewiring of glucose and fatty acid metabolism
38	Ao Liu	Dartmouth College	MiD49/51 function as long-chain fatty acyl-coenzyme A sensors on mitochondria to activate Drp1
39	Laura Hulea	University of Montreal, Canada	Targeting resistance to cancer therapy through translational control of metabolism



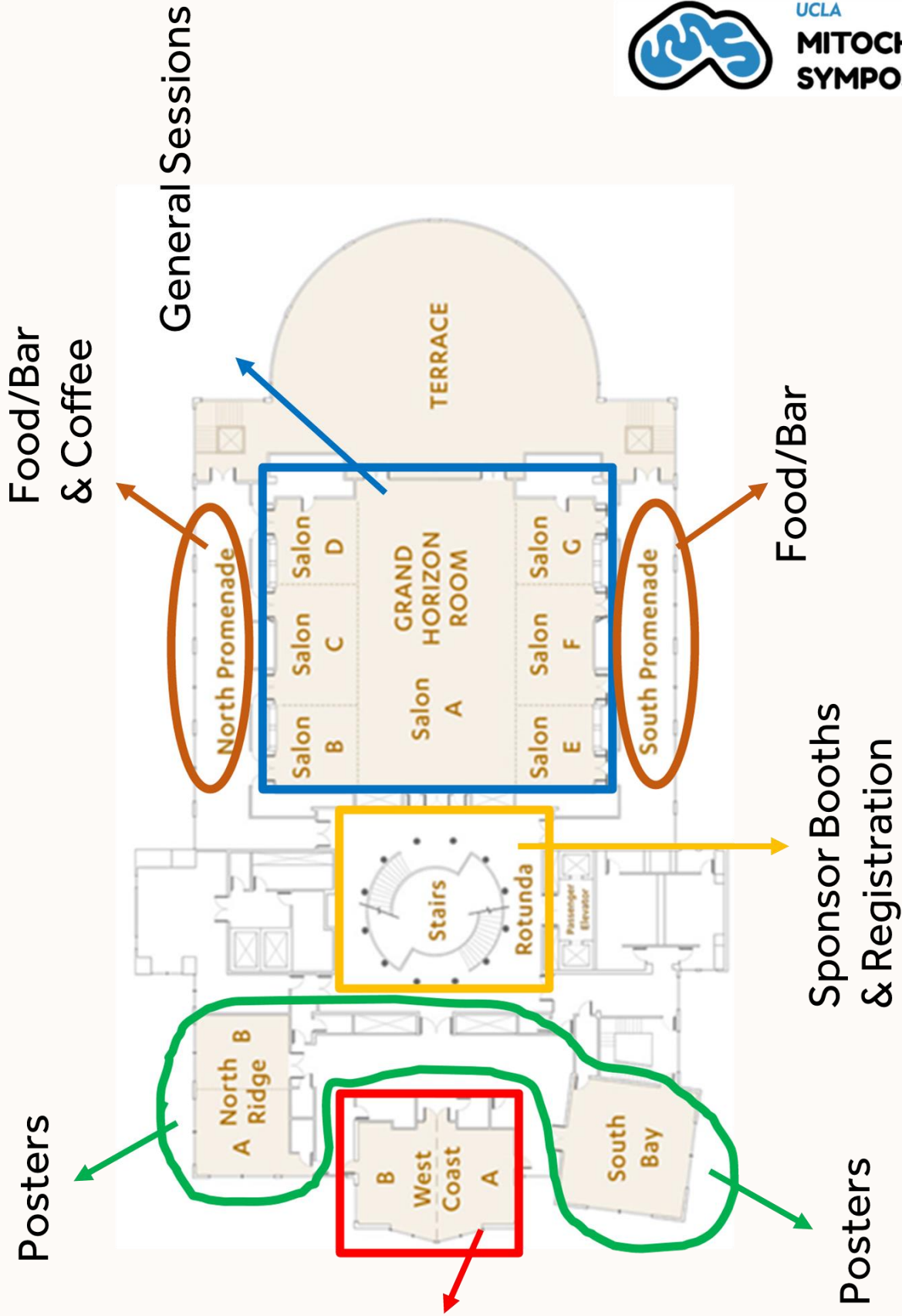
40	Tim Shutt	University of Calgary	Characterization of the Q367H MFN2 variant from a patient with distal myopathy reveals a novel disease mechanism via mtDNA/TLR9-mediated inflammation.
41	Chiara La Morgia	IRCCS, University of Bologna	New insights into idebenone therapy in relation to NQO1
42	Doyeon Kim-Vasquez	UCLA	Development of a cell free model of mitochondria-lipid droplet attachment and detachment identifies signals that detach mitochondria from lipid-droplets
43	Vaibhav Sidarala	University of Michigan	Glucose stimulation activates mitochondrial dynamics in pancreatic $\beta$ -cells.
44	Alena Zíková	Biology Centre, Czech Academy of Sciences	FoF1-ATP synthase: when it pays to go reverse
45	Kavit Raval	UCLA	Mitoribosomes and genes encoding mitochondrial respiration represent major phenotypic interface of b-cell fitness in diabetes
46	Jeffrey Hablewitz	UCLA	Mitochondrial calcium concentration is an important mediator of mitochondria-lipid droplet Detachment
47	Corey Osto	UCLA	Saliva as a non-invasive sampling biomarker to measure mitochondrial respirometry in humans
48	Jason Bazil	Michigan State University	Calcium overload, cristae remodeling, and oxidative phosphorylation impairment
49	Katarzyna Goljanek-Whysall	University of Galway	Novel variants in ATP6V0a1 are associated with dysfunction of autophagy, nutrient sensing and mitochondria in skeletal muscle
50	Ricardo Aparicio	UCLA	Examining the role of cytosolic mtDNA during Drosophila aging
51	Ivy Xiong	UCLA	Sexual dimorphism in renal metabolism, hemodynamics and diseases
52	Eugene Yu-Chuan Kang	Columbia University Irving Medical Center	Mitochondrial dysfunction in retinal degeneration-a pilot study based on the model of inherited optic atrophy
53	Emily Walker	University of Michigan	Loss of the mitochondrial inorganic phosphate transporter impairs $\beta$ cell glucose-stimulated insulin secretion despite a maintenance of ATP levels.
54	Andrea Estes	UCLA	Novel small-molecule improves mitochondrial function and mitophagy in a complex III deficiency model
55	María Teresa Castromonte	MitoCare, Thomas Jefferson University	Ca <sup>2+</sup> signaling in cancer: learning from Uveal Melanoma
56	Arijita Ghosh	Thomas Jefferson University	Investigating the role of IP3receptors in Non-alcoholic fatty liver disease induced changes in hepatic ER-mitochondria contacts
57	Linlin Zhao	UC Riverside	Novel functions of mitochondrial transcription factor A in damaged mitochondrial DNA turnover
58	Haoming Wang	UCSD	Glycolytic metabolon assembly on mitochondria via O-GlcNAcylation
59	Joseph M. Hoolachan	City of Hope	Is STX4 the next contender in lipotoxic-stressed skeletal muscle mitophagy?
60	Iman Gauhar	UCLA	Imaging mitochondrial cristae in live cellular models of mitochondrial diseases
61	Gargi Mahapatra	UCSD	Peripheral blood mononuclear cells from older adults exhibit sex-associated Differences in mitochondrial function
62	Yasemin Sancak	University of Washington	Mitochondrial calcium signaling regulates branched chain amino acid catabolism in fibrolamellar carcinoma
63	Gabriel Sturm	UCSF	Mitochondrial Pearling: an emerging class of mitochondrial dynamics
64	Matthew Krieger	UCLA	Characterizing the role of polynucleotide phosphorylase in mitochondrial double-stranded RNA (mtdsRNA) escape and elicitation of the innate immune response
65	Geming Lu	City of Hope	Myc inhibition impairs pancreatic $\beta$ -cell function, identity, and mitochondrial bioenergetics while enhances mitophagy markers
66	Matthew Donnelly	Salk Institute	Molecular mechanism of oxidative mitohormesis in heart
67	Sagnika Ghosh	Salk Institute	Regulation of mitochondrial respiration by interferon stimulated gene-15 (ISG15) in melanoma
68	Ashwaq Yehya	UCLA	Mitochondrial stress in the gut epithelium of mice overexpressing $\alpha$ -Synuclein
69	Jasmine Gasilla	UCLA	PCR-based enrichment methods bias detection and characterization of mitochondrial DNA deletions using long-read sequencing
70	Kelsey Feustel	UCLA	Disentangling the MDM12-COQ10 relationship: a reassessment of the roles of Coq10 and the ER-Mitochondrial Encounter Structure (ERMES) in Coenzyme Q (CoQ) biosynthesis
71	Celeste Medina-Seymour	UCLA	Exploring the effect of dimerization on the activity of COQ5, a C-methyltransferase in coenzyme Q biosynthesis
72	Cindy Wang	UCLA	Mutating substrate-binding residues in a promiscuous enzyme – the case of COQ5, a C-methyltransferase in coenzyme Q biosynthesis
73	Wenting Dai	City of Hope	FASN-deficiency induces a cytosol-to-mitochondria citrate flux to mitigate detachment-induced oxidative stress
74	Katherine Espinoza	UCLA	Structural remodeling of microglial mitochondria across brain regions and developmental stages
75	Ari Schaler	UCLA	Mapping the mitochondrial landscape in microglia during aging and models of PD
76	Sarah Shemtov	UCLA	Selective removal of deleterious mtDNA mutations from mammalian cells
77	Nico Marx	University of Münster	Unveiling the Complex problem with Mdivi-1
78	Ross Steinberg	USC	Alcohol intake disproportionately effects specific hepatic mitochondrial subpopulations
79	Shane Kennedy	UC Riverside	Dexamethasone impairs mitochondrial function in trabecular meshwork cells
80	Hisashi Ota	LUCA Science	Storable mitochondria organelle complex – structural integrity, incorporation into cell and energy production -
81	Serena Z. Huang	UCLA	Can calcium stand in as an alternative mechanism for thermogenesis?

82	Casandra G Chamorro	UCLA	Alternative of UCP1-dependent thermogenesis in brown and beige adipocytes under cold adaptation
83	Irene Liparulo	UC Berkley	Brown adipose tissue CoQ deficiency reshapes mitochondrial morphology and activates the ISR.
84	Audrey Omidisalar	USC	Mitochondrial deletions in RNA-Seq: methodological considerations and analyses of aging, tissues, brain Regions and cortical layers
85	Talia Beglarian	USC	Mitochondrial DNA deletions and copy number in whole genome sequencing (WGS) data: analyses of cortical/cerebellar aging and Parkinson's disease effects
86	Alexander J Sercel	Mitoworld	MitochondriaWorld: a new web platform to organize and promote the global mitochondrial research community
87	Surya Dham	UCLA	Isolation and processing of salivary PBMCs as a biomarker for mitochondrial respiration in humans
88	Belle Henry-Kanarek	University of Michigan	LRRK2 promotes $\beta$ cell apoptosis following inflammatory damage
89	Hovsep Herayer Sultanian	UCLA	Unraveling the link between ATP hydrolysis and mitochondrial dynamics in progeria through the influence of (+)-epicatechin
90	Jack Devine	Columbia University	Individualized multi-tissue mitochondrial distribution patterns in mice and humans
91	Anna Sophia Monzel	Columbia University	Mapping human mitochondrial diversity and dynamics in human tissues and aging cells
92	Jocelyn Diane Rodriguez	UCLA	HSP75 inhibition as a therapeutic target for lung squamous cell carcinoma
93	Sachin Pathuri	UCLA	The role of Ca <sup>2+</sup> in UCP1-independent thermogenesis in beige and brown fat
94	Madeleine G. Milner	UCLA	Redox regulation of proton transport through the ADP/ATP carrier
95	Janell Smith	Columbia University	Mitochondria modulation of intercellular communication and bioenergetic response to adrenergic stress signaling in primary human fibroblasts
96	Timothy Locke	University of Washington	High-throughput identification of calcium regulated proteins across diverse proteomes
97	Rekha Balakrishnan	City of Hope	PAK1-enriched skeletal muscle promotes islet $\beta$ -cell insulin secretion
98	Sean D. Reardon	UCSD	In-vitro investigations into post-translational control of mitochondrial gene expression
99	Camille Pataki	Eikon Therapeutics	Machine-Learning-derived pixel-wise cell health score for high-throughput Single Molecule Tracking imaging
100	Gunjan Purohit	University of Nebraska	LACTB deletion alters mitochondrial metabolism and impacts intermembrane contacts
101	Ugochukwu Ihenacho	Medical College of Wisconsin	A conserved SKY insert regulates human Fis1's mitochondrial fission functions.
102	Sebastian Kreimendahl	UCLA	A hunt for mitochondrial restrictors of <i>Toxoplasma</i> growth
103	Alex Napior	UCLA	Interplay between mitochondrial ATP synthase reverse activity and cristae architecture
104	Zachary Whiddon /Natasha Carlson	UCSD	Neuronal activity-driven O-GlcNAcylation promotes mitochondrial plasticity
105	Joanne Garbincius	Temple University	TMEM65 regulates NCLX-dependent mitochondrial calcium efflux
106	Rebeca Acin-Perez	CNIC, Madrid	Inhibition of ATP-synthase reverse-activity restores energy homeostasis in mitochondrial pathologies
107	Robert Musci	HHSC, LMU	Lower mitochondrial genome turnover and greater mutation frequency in skeletal muscle of aged compared to adult OKC-HET rats

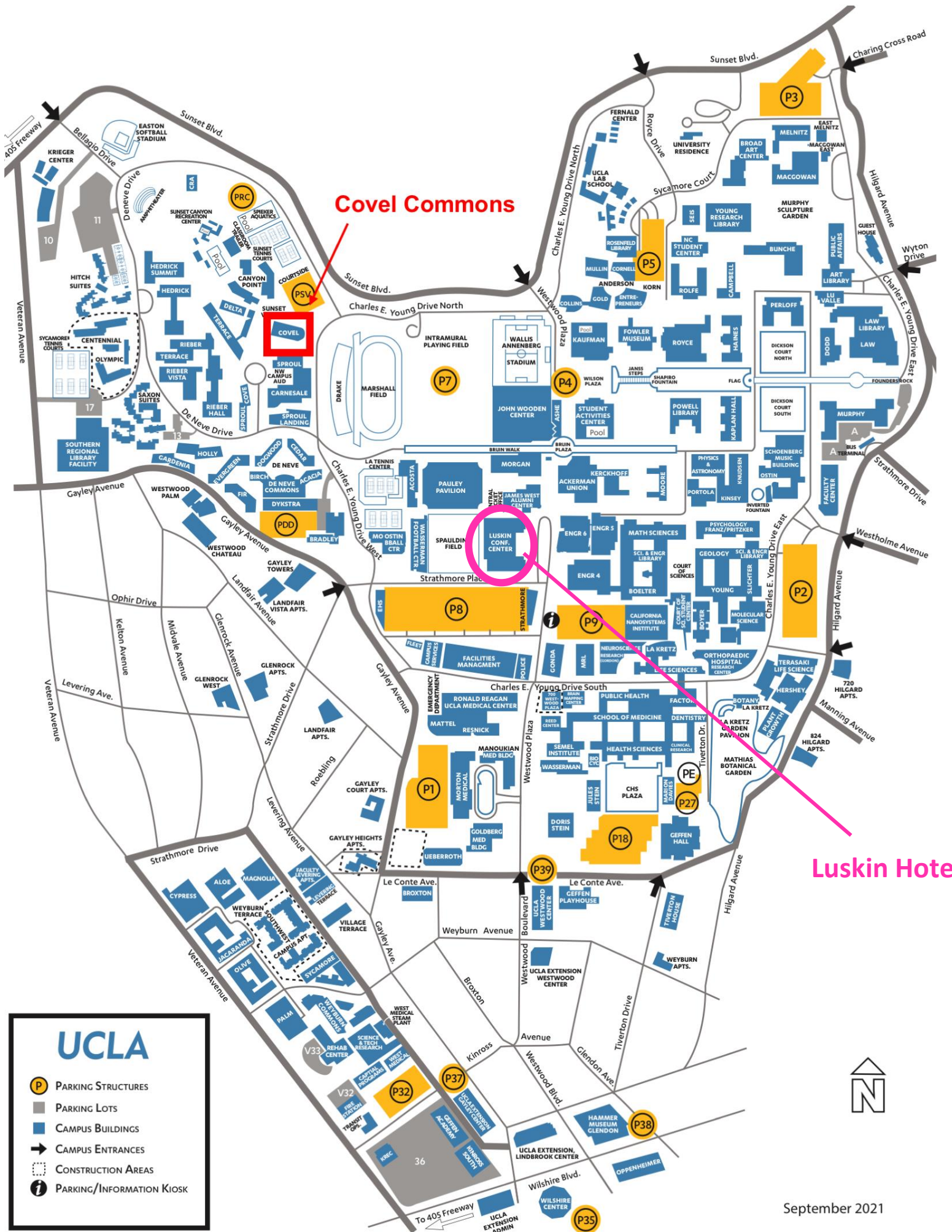
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# Event Rooms



1. Abberior Workshop (STED Microscope)
2. Meet the Speakers



**Covel Commons**

**Luskin Hotel**

**UCLA**

- P PARKING STRUCTURES
- PARKING LOTS
- CAMPUS BUILDINGS
- ➔ CAMPUS ENTRANCES
- CONSTRUCTION AREAS
- i PARKING/INFORMATION KIOSK



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UCLA Health

UCLA Metabolism Theme



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