Welcome
to the 2019 Frontiers in Metabolism meeting at the Morgridge Institute for Research in Madison, Wisconsin.

Metabolism research is experiencing a renaissance driven by an increasing realization that changes in basic metabolic processes define and drive diverse human diseases. This burgeoning field has sparked the creation of new subfields, launched new journals, and ushered in new technologies for probing and quantifying metabolic processes. Frontiers in Metabolism was founded to assemble leading scientists from across the metabolism space to discuss topics that transcend traditional boundaries. The meeting is intentionally broad in theme and small in size, forcing us to stretch our thinking and to learn from the important advances that lie outside of our individual areas of expertise. Frontiers is also intended to be a venue that highlights emerging talent and fosters the type of interactions that seed collaborations and launch careers.

Frontiers in Metabolism is part of a larger Metabolism Initiative within the Morgridge Institute and the University of Wisconsin–Madison that aims to build upon our campus’s rich history metabolic research, and is conducted in partnership with the Lausanne Integrative Metabolism and Nutrition Alliance (LIMNA).

We hope you enjoy your time in Madison, and look forward to your participation!

Dave Pagliarini
Jenelle Gierhart-Sutter
## 2019 Conference Agenda

Sessions are held in the DeLuca Forum  
■ = Event located in Main Court

### Monday, September 16th

<table>
<thead>
<tr>
<th>TIME</th>
<th>ACTIVITY</th>
<th>WHO</th>
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<tbody>
<tr>
<td>1:30 – 3:30 pm</td>
<td>Registration and Welcome</td>
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<tr>
<td>3:30 – 3:45 pm</td>
<td>Welcome and official opening</td>
<td>Dave Pagliarini</td>
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<tr>
<td>3:45 – 5:15 pm</td>
<td>Session 1: Mitochondria, Metabolism, and Disease</td>
<td>Chair: Dave Pagliarini</td>
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<tr>
<td>3:45 – 4:10 pm</td>
<td>Mitochondria and Aging</td>
<td>Johan Auwerx</td>
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<tr>
<td>4:10 – 4:35 pm</td>
<td>Defective lipid trafficking</td>
<td>Helen Hobbs</td>
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<td>4:35 – 5:00 pm</td>
<td>The New Biology of Type 2 Diabetes</td>
<td>Gerald Shulman</td>
</tr>
<tr>
<td>5:00 – 5:25 pm</td>
<td>Role of Autophagy in Cancer</td>
<td>Eileen White</td>
</tr>
<tr>
<td>5:25 – 5:45 pm</td>
<td>Refreshment Break</td>
<td>Everyone</td>
</tr>
<tr>
<td>5:45 – 6:30 pm</td>
<td>Special Session – Stephen Meyn – UW Center for Human Genomics and Precision Medicine</td>
<td>Stephen Meyn</td>
</tr>
<tr>
<td>6:30 – 6:45 pm</td>
<td>Closing Remarks</td>
<td>Morgridge Institute CEO - Brad Schwartz</td>
</tr>
<tr>
<td>6:45 pm – 8:00 pm</td>
<td>Welcome Reception (Heavy Hors d’oeuvres) &amp; Poster Session #1</td>
<td>Everyone</td>
</tr>
</tbody>
</table>
## Tuesday, September 17th

<table>
<thead>
<tr>
<th>TIME</th>
<th>ACTIVITY</th>
<th>WHO</th>
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<tbody>
<tr>
<td><strong>7:30 – 8:30 am</strong></td>
<td>Breakfast</td>
<td>Everyone</td>
</tr>
<tr>
<td><strong>8:30 – 9:50 am</strong></td>
<td><strong>Session 2: Metabolism and Aging</strong></td>
<td>Chair: Ricki Colman</td>
</tr>
<tr>
<td>8:30 – 8:55 am</td>
<td>Metabolism as an intrinsic modulator of Aging</td>
<td>Rozalyn Anderson</td>
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<tr>
<td>8:55 – 9:20 am</td>
<td>Epigenetic and metabolic regulation of aging</td>
<td>Anne Brunet</td>
</tr>
<tr>
<td>9:20 – 9:35 am</td>
<td>Decreased consumption of branched-chain amino acids promotes lifespan and healthspan in wild-type and progeroid mice</td>
<td>Nicole Cummings</td>
</tr>
<tr>
<td>9:35 – 9:50 am</td>
<td>Targeting macrophage metabolism to improve therapy in pancreatic cancer</td>
<td>Christopher Halbrook</td>
</tr>
<tr>
<td><strong>9:50 – 10:15 am</strong></td>
<td>Coffee Break</td>
<td>Everyone</td>
</tr>
<tr>
<td><strong>10:15 – 11:30 am</strong></td>
<td><strong>Session 3: Immunometabolism</strong></td>
<td>Chair: Jing Fan</td>
</tr>
<tr>
<td>10:15 – 10:40 am</td>
<td>Immunometabolic Integration in Health and Disease</td>
<td>Gökhan Hotamisligil</td>
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<tr>
<td>10:40 – 11:05 am</td>
<td>Dynamic Remodeling of Mitochondrial Metabolism in Macrophages Over a Course of Immune Response</td>
<td>Jing Fan</td>
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<tr>
<td>11:05 – 11:30 am</td>
<td>Mitochondrial lipid composition in memory T cell metabolism and function</td>
<td>Erika Pearce</td>
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<tr>
<td><strong>11:30 – 2:00 pm</strong></td>
<td>Lunch &amp; Poster Session #2</td>
<td>Everyone</td>
</tr>
<tr>
<td><strong>2:00 – 3:20 pm</strong></td>
<td><strong>Session 4: Mitochondria in Metabolism</strong></td>
<td>Chair: Natalie Niemi</td>
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<tr>
<td>2:00 – 2:25 pm</td>
<td>Mitochondrial DNA Stress Signaling</td>
<td>Gerald Shadel</td>
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<td>2:25 – 2:50 pm</td>
<td>The nutrient microenvironment of tissues and tumors affects the metabolism of resident cells</td>
<td>Alexander Muir</td>
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<tr>
<td>2:50 – 3:05 pm</td>
<td>Profiling of cell type-specific mitochondria reveals functional and molecular diversity in the central nervous system</td>
<td>Caroline Fecher</td>
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<tr>
<td>3:05 – 3:20 pm</td>
<td>Perilipin 5 Links ATGL Lipolytic Activity to PGC-1a/PPAR-α signaling</td>
<td>Charles Najt</td>
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<tr>
<td><strong>3:20 – 3:50 pm</strong></td>
<td>Coffee Break</td>
<td>Everyone</td>
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<tr>
<td><strong>3:50 – 5:05 pm</strong></td>
<td><strong>Session 5: Lipid Metabolism</strong></td>
<td>Chair: Judith Simcox</td>
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<tr>
<td>3:50 – 4:15 pm</td>
<td>Vitamin K2 Synthesis and ER-Associated Degradation of HMG CoA Reductase</td>
<td>Russell DeBose-Boyd</td>
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<tr>
<td>4:15 – 4:40 pm</td>
<td>New pathways for cellular and systemic lipid transport</td>
<td>Peter Tontonoz</td>
</tr>
<tr>
<td>4:40 – 5:05 pm</td>
<td>Phase of Fat: Mechanisms and regulation of fat storage</td>
<td>Tobias Walther</td>
</tr>
<tr>
<td><strong>5:05 – 7:00 pm</strong></td>
<td>Meet the Speakers Dinner</td>
<td>RSVP’d Attendees and Speakers Only</td>
</tr>
</tbody>
</table>

**Following formal meeting activities**

Optional: Informal Gathering – Memorial Union Terrace located at 800 Langdon Street, Madison, WI 53706. Come grab a chair and enjoy the atmosphere at the historic Memorial Union Terrace with fellow meeting attendees. The Terrace is among the most iconic locations on the UW–Madison campus for relaxing and taking in a fall evening. Please join us!
# Conference agenda

## Wednesday, September 18th

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<td>Breakfast</td>
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<tr>
<td>8:30 – 10:00 am</td>
<td><strong>Session 6: Systems Approaches to Metabolic Analyses</strong></td>
<td>Chair: Daniel Amador-Noguez</td>
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<tr>
<td>8:30 – 8:55 am</td>
<td>Metabolic Dysregulation and Human Disease Phenotypes</td>
<td>Ralph DeBerardinis</td>
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<tr>
<td>8:55 – 9:20 am</td>
<td>Tracing energy metabolism / Tracing metabolism in vivo</td>
<td>Joshua Rabinowitz</td>
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<tr>
<td>9:20 – 9:45 am</td>
<td>From enzyme expression landscapes to metabolomes – how a new generation of high-throughput analytics enables the prediction of entire cellular metabolomes</td>
<td>Markus Ralser</td>
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<tr>
<td>9:45 – 10:00 am</td>
<td>The source of glycolytic intermediates in mammalian tissues</td>
<td>Tara TeSlaa</td>
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<tr>
<td>10:00 – 10:30 am</td>
<td>Coffee Break</td>
<td>Everyone</td>
</tr>
<tr>
<td>10:30 – 11:45 am</td>
<td><strong>Session 7: Metabolism in Cellular Homeostasis and Disease</strong></td>
<td>Chair: Jason Cantor</td>
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<tr>
<td>10:30 – 10:55 am</td>
<td>Metabolic Transitions in Cancer: Lessons from Viral Infection</td>
<td>Heather Christofk</td>
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<tr>
<td>10:55 – 11:20 am</td>
<td>Regulation of Growth and Metabolism</td>
<td>David Sabatini</td>
</tr>
<tr>
<td>11:20 – 11:45 pm</td>
<td>Mapping Biochemical Pathways in Human Biology and Disease by Activity-Based Proteomics</td>
<td>Ben Cravatt</td>
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<tr>
<td>11:45 – 1:30 pm</td>
<td>Lunch &amp; Poster Session #3</td>
<td>Everyone</td>
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<tr>
<td>1:30 – 2:45 pm</td>
<td><strong>Session 8: Mitochondrial Communication</strong></td>
<td>Chair: Mateusz Manicki</td>
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<tr>
<td>1:30 – 1:55 pm</td>
<td>ER-Mitochondrial Contact Sites Act as a Platform for Morphological Decision Making</td>
<td>Gia Voeltz</td>
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<tr>
<td>1:55 – 2:20 pm</td>
<td>Mitochondrial SUMOylation as a central organizer of signaling complexes</td>
<td>Heidi McBride</td>
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<tr>
<td>2:20 – 2:35 pm</td>
<td>The small GTPase Rab32 resides on lysosomes to regulate mTORC1 signaling</td>
<td>Kristina Drizyte-Miller</td>
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<tr>
<td>2:35 – 2:50 pm</td>
<td>Brain creatine deficiency, increased grooming and structural cerebellar changes in a new Ki rat model of creatine transporter deficiency</td>
<td>Lara Duran-Trio</td>
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<tr>
<td>2:50 – 3:20 pm</td>
<td>Refreshment Break</td>
<td>Everyone</td>
</tr>
<tr>
<td>3:20 – 4:35 pm</td>
<td><strong>Session 9: Metabolism Dynamics</strong></td>
<td>Chair: Alan Attie</td>
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<tr>
<td>3:20 – 3:45 pm</td>
<td>Mitochondria at the crossroads of metabolic flexibility and bioenergetics</td>
<td>Deborah Muoio</td>
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<tr>
<td>3:45 – 4:10 pm</td>
<td>Circadian regulation of exercise physiology</td>
<td>Katja Lamia</td>
</tr>
<tr>
<td>4:10 – 4:25 pm</td>
<td>Inhibiting triglyceride storage in adipose tissue induces beiging of white fat, and increased glucose disposal by brown fat</td>
<td>Chandramohan Chitraju</td>
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<tr>
<td>4:25 – 4:45 pm</td>
<td><strong>Award Presentations and Closing Remarks</strong></td>
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<tr>
<td>4:25 – 4:35 pm</td>
<td>Awards Ceremony</td>
<td>Dave Pagliarini</td>
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<tr>
<td>4:35 – 4:45 pm</td>
<td>Closing remarks</td>
<td>Dave Pagliarini</td>
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</table>
Invited Speakers

**Rozalyn Anderson, PhD**
Associate Professor of Medicine
SMPH, UW–Madison

Metabolism as an Intrinsic Modulator of Aging
Tuesday, September 17th – 8:30 am

**Johan Auwerx, M.D., Ph.D.**
Professor
Ecole Polytechnique Federale de Lausanne, Switzerland

Mitochondria and Aging
Monday, September 16th – 3:45 pm

**Anne Brunet, Ph.D.**
Michele and Timothy Barakett Professor of Genetics
Stanford University

Epigenetic and Metabolic Regulation of Aging
Tuesday, September 17th – 8:55 am

**Heather Christofk, Ph.D.**
Associate Professor of Biological Chemistry
UCLA

Metabolic Transitions in Cancer: Lessons from Viral Infection
Wednesday, September 18th – 10:30 am
Speakers

Ben Cravatt, Ph.D.
Professor and Gilula Chair of Chemical Biology
Scripps Research

Mapping Biochemical Pathways in Human Biology and Disease by Activity-Based Proteomics
Wednesday, September 18th – 11:20 am

Ralph J. DeBerardinis, MD. PhD.
Investigator, Howard Hughes Medical Institute
Professor, UT Southwestern Medical Center

Metabolic Dysregulation and Human Disease Phenotypes
Wednesday, September 18th – 8:30 am

Russell A. DeBose-Boyd, Ph.D.
Professor of Molecular Genetics
University of Texas Southwestern Medical Center, Dallas, TX

Vitamin K2 Synthesis and ER-Associated Degradation of HMG CoA Reductase
Tuesday, September 17th – 3:50 pm

Jing Fan, Ph.D.
Metabolism Investigator, Morgridge Institute for Research
Assistant Professor of Nutritional Sciences
University of Wisconsin – Madison

Dynamic Remodeling of Mitochondrial Metabolism in Macrophages Over a Course of Immune Response
Tuesday, September 17th – 10:40 am

Helen H. Hobbs
Investigator, HHMI
Professor of Internal Medicine and Molecular Genetics
University of Texas Southwestern Medical Center

Defective lipid trafficking
Monday, September 16th – 4:10 pm
Heidi M McBride, Ph.D.  
Professor, Neurology and Neurosurgery  
McGill University, Montreal  
Mitochondrial SUMOylation as a Central Organizer of Signaling Complexes  
Wednesday, September 18th – 1:55 pm

Deborah M. Muoio, Ph.D.  
Professor Departments of Medicine and Pharmacology & Cancer Biology  
Director, Basic Science Research  
Sarah W. Stedman Nutrition and Metabolism Center  
Duke Molecular Physiology Institute  
Mitochondria at the Crossroads of Metabolic Flexibility and Bioenergetics  
Wednesday, September 18th – 3:20 pm

Katja A. Lamia, Ph.D.  
Associate Professor of Molecular Medicine  
Scripps Research, La Jolla, CA  
Circadian Regulation of Exercise Physiology  
Wednesday, September 18th – 3:45 pm

Erika Pearce, Ph.D.  
Director of the Department of Immunometabolism  
Max Planck Institute of Immunobiology and Epigenetics – Germany  
Mitochondrial Lipid Composition in Memory T Cell Metabolism and Function  
Tuesday, September 17th – 11:05 am

Gökhan S. Hotamışlıgil, MD, PhD  
James S. Simmons Chair of Genetics & Metabolism  
Director, Sabri Ulker Center for Metabolic Research  
Department of Genetics & Complex Diseases  
Assoc. Member, Harvard-MIT Broad Institute, Harvard Stem Cell Institute  
Harvard T.H. Chan School of Public Health  
Immunometabolic Integration in Health and Disease  
Tuesday, September 17th – 10:15 am
Speakers

Joshua Rabinowitz, M.D., Ph.D.
Professor of Chemistry & Integrative Genomics
Princeton University

Tracing Energy Metabolism / Tracing Metabolism in Vivo
Wednesday, September 18th – 8:55 am

Markus Ralser, Ph.D.
Group Leader
Charité University Medicine, Berlin, and
The Francis Crick Institute, London

From Enzyme Expression Landscapes to Metabolomes - How a New Generation of High-throughput Analytics Enables the Prediction of Entire Cellular Metabolomes
Wednesday, September 18th – 9:20 am

David M. Sabatini, M.D., Ph.D.
Member, Professor of Biology
Whitehead Institute for Biomedical Research, MIT

Regulation of Growth and Metabolism
Wednesday, September 18th – 10:55 am

Dr. Gerald S. Shadel
Professor and Audrey Geisel Chair
Salk Institute of Biological Sciences

Mitochondrial DNA Stress Signaling
Tuesday, September 17th – 2:00 pm

Gerald I. Shulman, MD, PhD
Cowgill Professor of Medicine and Cellular & Molecular Physiology
Yale University School of Medicine

The New Biology of Type 2 Diabetes
Monday, September 16th – 4:35 pm
Peter Tontonoz, M.D., Ph.D.  
University of California, Los Angeles  
Professor of Pathology and Laboratory Medicine  
**New Pathways for Cellular and Systemic Lipid Transport**  
Tuesday, September 17th – 4:15 pm

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Gia Voeltz  
Professor of MCD Biology  
HHMI-University of Colorado-Boulder  
**ER-Mitochondrial Contact Sites Act as a Platform for Morphological Decision Making**  
Wednesday, September 18th – 1:30 pm

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Tobias Walther, PhD  
Professor of Genetics and Complex Diseases (Harvard T.H. Chan SPH)  
Professor of Cell Biology  
HHMI Investigator  
**Phase of Fat: Mechanisms and Regulation of Fat Storage**  
Tuesday, September 17th – 4:40 pm

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Eileen White, PhD  
Deputy Director  
Rutgers Cancer Institute of New Jersey  
**Role of Autophagy in Cancer**  
Monday, September 16th – 5:00 pm
Meeting Sessions and Location
All meeting sessions will take place in the H.F. DeLuca Forum located on the 1st floor of the Discovery Building (330 N. Orchard Street, Madison, WI).

Meet the Speakers Dinner – Dinner with speakers at Steenbock’s on Orchard. This dinner is for RSVP’d attendees and speakers only. Dinner will take place on Tuesday, September 17th, starting with cocktails at 5:05 pm and dinner served at ~5:30 pm.

**Special note: On Tuesday, September 17th following meeting activities, there will be an informal gathering at the Memorial Union Terrace located at 800 Langdon Street, Madison, WI 53706. Come grab a chair and enjoy the atmosphere at the historic Memorial Union Terrace with fellow meeting attendees. The Terrace is among the most iconic locations on the UW–Madison campus for relaxing and taking in a fall evening. Please join us!

Registration
Registration will start at 1:30 PM on Monday, September 16th. The registration table will be located outside of the H.F. DeLuca Forum on the 1st floor of the Discovery Building (330 N. Orchard Street, Madison, WI) Your meeting registration gives you entry to a range of programming activities, including:

- Talks and Poster Sessions
- Program Book
- Welcome Reception
- Lunches
- Breaks

Traveling to Meeting Venue
TAXI SERVICE
The city of Madison has taxi services.
Green Cab: 608-255-1234
Union Cab: 608-242-2000

RIDESHARE SERVICES
Lyft and Uber operate in Madison. Download the respective apps in your mobile app store for pricing and availability.

Map
See page 12

Badges
For catering purposes, please ensure that you wear your conference badge throughout the conference. Replacement badges are available at the registration desk.

Speakers
Oral presenters are reminded to be in the H.F. DeLuca Forum no later than 10 minutes before the start of the session in order to preload presentation. An A/V specialist will be available to assist with the transition.
**Poster Sessions**

Poster sessions will take place in the Main Court.

Poster presenters should bring their poster with them to registration to be hung. Poster should remain hung for the duration of the meeting.

**Poster Session 1**
*All Poster Presenters*
Monday, September 16th
6:45 pm – 8:00 pm

**Poster Session 2**
*Odd Numbered Posters*
Tuesday, September 17th
11:30 pm – 2:00 pm

**Poster Session 3**
*Even Numbered Posters*
Wednesday, September 18th
11:45 am – 1:30 pm

**Twitter**

The official meeting #Hashtag is:
*#FrontiersinMetabolism*

Please use this #Hashtag when tweeting about the conference.

**Wi-fi**

Wi-Fi is available free of charge through the conference venue during the conference.

Go to Settings and select:
*Discovery-Guest or Towncenter*

Open a browser - Enter the following address in the search bar:
*http://discovery.wisc.edu*

You will be redirected to a wireless authentication page – Scroll to the bottom of the page and click *Accept*
Lake Mendota

(W. Johnson Street)
(11 minute walk to Memorial Union Terrace)

Kohl Center
Chazen Museum
Library Mall

Lake Street
Langdon Street

State Street

N. Park Street

W. Johnson Street

W. Dayton Street

N. Charter Street

Howard Temlin Lakeshore Path

Memorial Union Terrace

DoubleTree by Hilton Hotel

Hampton Inn & Suites

General information
Exhibition Sponsors

**Agilent**

Agilent is a leader in life sciences, diagnostics, and applied chemical markets. Agilent’s innovative instruments and solutions provide trusted answers to customers’ most challenging questions.

[agilent.com](http://agilent.com)

**Cayman Chemical**

Cayman Chemical specializes in the areas of eicosanoids and lipids, immunology and inflammation, oxidative stress and reactive species, mitochondrial health, fluorescence probes, and drugs of abuse. Custom services are also available. Cayman has manufactured and distributed assay kits, high-purity biochemicals, antibodies, and proteins for more than 35 years.

[caymanchem.com](http://caymanchem.com)

**Promega**

Promega provides cell-based assays to measure metabolic activity in cells such as glucose uptake, glycolysis, glutaminolysis, lipogenesis, and oxidative stress. These sensitive bioluminescent methods for measuring metabolic changes are powerful tools in the pursuit of understanding cell health and disease. Located in Madison, WI, Promega is here to help you in your research.

[promega.com](http://promega.com)

**Thermo Fisher Scientific**

At Thermo Fisher Scientific, we are committed to helping researchers and scientists in academia and industry harness the power of metabolomics to gain in-depth biological insight, facilitate biomarker discovery, and advance scientific research. We've developed leading solutions in the areas of separation, detection, and software. We'll continue to pursue advancements to delve deeper into the metabolome, so you can go beyond the edge of what we ever thought possible.

Drosophila larvae maintain NAD+ redox balance by coordinately regulating lactate and glycerol-3-phosphate metabolism

Indiana University

S100A9 extends lifespan in insulin deficiency

Despina Mikropoulou, Serena Ricci, Giorgio Ramadori, Sanda Ljubicic, Xavier Brenachot, Christelle Veyrat-Dubreux, Ebru Aras, Rafael M. Ioris, Jordi Altitirriba, Elisabeth Malle, Dirk Foell, Thomas Vogl, and Roberto Coppa
University of Geneva

Dysregulated Branched Chain Amino Acid Metabolism Acts as a Diagnostic Predictor of Insulin Sensitivity and Cardiometabolic Outcomes

Dipsikha Biswas, Kathleen Tozer, Lester J Perez, Christine Aguaire, Alexandra Yip, Jennifer Shea, Keith Brunt, Jean-Francois Legare, Ansar Hassan, Yassine Al Hiani, Petra Kienesberger, Thomas Puliniikkunnil
Dalhousie University
<table>
<thead>
<tr>
<th>POSTER #</th>
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</table>
| **4**    | **Dietary isoleucine is a key regulator of metabolic health**  
Deyang Yu, Nicole E. Cummings, Cara L. Green, Alexandra Spicer, Victoria Flores, cholsoon Jang, idilko Kasza, Maria Nikodemova, Matt H. Wakai, Jay L. Tomasiewicz, Shany E. Yang, Blake R. Miller, Heidi H. Pak, Jacqueline A. Brinkman, Caroline M. Alexander, Joshua D. Rabinowitz, Joseph A. Baur, Kristen C Malecki, Dudley W. Lamming  
University of Wisconsin – Madison |
| **5**    | **Early B Cell Factor activity controls developmental and environmental thermogenic gene programs in brown adipose tissue**  
Anthony R. Angueira, Suzanne N. Shapira, Jeff Ishibashi, Samay Sampat, Hee-Woong Lim, and Patrick Seale  
Perelman School of Medicine at the University of Pennsylvania |
| **6**    | **Use of physiologic media to understand the role of alanine in acute myeloid leukemia metabolism**  
Kimberly S. Huggler and Jason R. Cantor  
Morgridge Institute for Research |
| **7**    | **Metabolic Regulation of Bacterial Isoprenoid Synthesis**  
Mehmet Tatli, Julia Martien, Julio Rivera Vazquez, Alexander Hebert, Julio Rivera Vazquez, Joshua J. Coon and Daniel Amador-Noguez  
University of Wisconsin-Madison |
| **8**    | **When an oncometabolite isn’t an oncometabolite: endogenous L-2-hydroxyglutarate production is common among Dipteran larvae**  
Indiana University |
| **9**    | **Local tissue biomarkers of response to therapy for glioblastoma**  
Karishma R. Rajani, Lucas Carlstrom, Joshua Jacobs, Mark Schroeder, Ian Olson, Matthew Hainy, Xuewei Wang, Jann N. Sarkaria and Terry C. Burns  
Mayo Clinic |
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<tr>
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<tr>
<td>10</td>
<td>Identification of Trans-epistatic Inheritance of Two Alleles Protecting Against Obesity in Mice</td>
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<td></td>
<td>Zhonggang Li, Chris Gottsacker, Zirui Tao, Jenny Nguyen, Alexander Scharp, Fernanda B. Leyva Jaimes, Sophia Ly, Sydney C. Bruggeman, Samantha St. Clair, Dave Nelson, Mei-I Yen, Chi-Liang Eric Yen, Brian W. Parks</td>
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<td>University of Wisconsin – Madison</td>
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<td>11</td>
<td>Rescue of UBAID1 Deficient Embryonic Lethality By ERAD-Resistant HMGCR</td>
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<td>YoungAh Jo, Steven S. Kim, Kristina Garland, Iris Fuentes, Lisa Dicarlo, Sarah L. Booth, Bret Evers, Jonathan Rios, and Russell A. DeBose-Boyd</td>
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<td>University of Texas Southwestern Medical Center</td>
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<td>12</td>
<td>Angiopoietin-2– integrin α5β1 enhances vascular fatty acid transport and prevents ectopic lipid–induced insulin resistance</td>
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<td>Hosung Bae</td>
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<td>Korea Advanced Institute of Science and Technology (KAIST)</td>
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<td>13</td>
<td>Two-stage metabolic remodeling in macrophages in response to LPS and interferon-γ stimulation</td>
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<td>Gretchen L. Seim, Emily C. Britt, Steven V. John, Franklin J. Yeo, Aaron R. Johnson, Richard S. Eisenstein, David J. Pagliarini, Jing Fan</td>
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<td>Zhaoyue Zhang, Tara TeSlaa, Joshua Rabinowitz</td>
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<td><strong>Quantitative analysis of mitochondrial NADPH upon generation of mitochondria-specific H2O2</strong>&lt;br&gt;Sun Jin Moon&lt;br&gt;Massachusetts Institute of Technology</td>
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<td><strong>The role of Aldolase C in cholesterol metabolism</strong>&lt;br&gt;James Votava, Steve John, Danielle Golner, Zhonggang Li, Jing Fan, Brian Parks&lt;br&gt;University of Wisconsin – Madison</td>
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Overcoming hydrophobic barriers: How an isoprene lipid-binding protein promotes eukaryotic coenzyme Q biosynthesis
Morgridge Institute for Research

Pptc7 is an essential phosphatase for promoting mammalian mitochondrial metabolism and biogenesis
Morgridge Institute for Research

A Systems Genetics Approach to Understanding Obesity
Samantha L. St. Clair, Sabrina L. Belisle, Sydney C. Bruggeman, Fernanda Leyva Jaimes, Zhonggang Li, Brian W. Parks
University of Wisconsin – Madison

You are what (your bacteria) eat: how bacteria affect host epigenetic states
Sydney P. Thomas, Kimberly A. Krautkramer, Kymberleigh A. Romano, Federico E. Rey, John M. Denu
University of Wisconsin – Madison

Serine catabolism feeds NADH when respiration is impaired
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Profiling of cell type-specific mitochondria reveals functional and molecular diversity in the central nervous system
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Technical University of Munich

The source of glycolytic intermediates in mammalian tissues
Tara TeSlaa, Sheng Hui, Joshua Rabinowitz
Princeton University

Decreased consumption of branched-chain amino acids promotes lifespan and healthspan in wild-type and progeroid mice
University of Wisconsin – Madison
Dear Fellow Metabolism Researchers,

Thank you for attending the 2019 Frontiers in Metabolism – Mechanisms of Metabolic Disease meeting at the Morgridge Institute for Research.

We would like to offer our sincere thanks to everyone who worked diligently to organize this symposium and to all of our participants and attendees, especially our speakers who have traveled from all over the world to participate in this meeting. Finally, we are grateful to our generous meeting sponsors for without their support this meeting would not be possible – Agilent, Cayman Chemical, Promega, Thermo Fisher, and the Morgridge Institute for Research.

Best wishes,

Dave Pagliarini
Jenelle Gierhart-Sutter