

ACSM Conference on
**Integrative
Physiology
of Exercise**

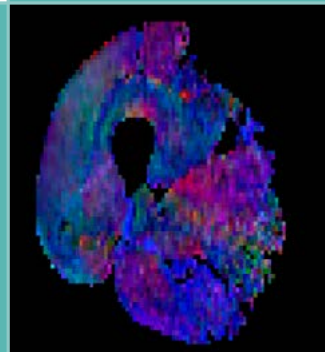
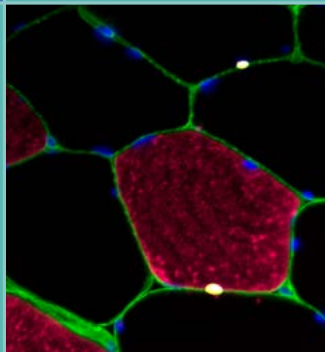
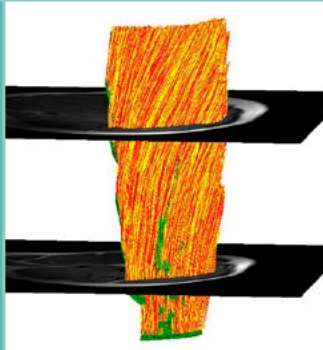
Sheraton San Diego
Hotel & Marina
San Diego, California, USA
September 5-8, 2018

Earn 22 CECs

This conference has been endorsed by:



Advance Program



www.acsm.org/ipe





Friends and Colleagues:

On behalf of the Scientific Planning Committee and the American College of Sports Medicine, it is my pleasure to invite you to attend the 2018 ACSM Specialty Conference, "INTEGRATIVE PHYSIOLOGY OF EXERCISE" to be held at the Sheraton San Diego Hotel & Marina in San Diego, California on September 5-8, 2018. A 7:00 p.m. keynote lecture given by Dr. Michael

Joyner followed by a reception will be held on Wednesday, September 5 to welcome you to San Diego and the conference.

To emphasize the rapid research developments in key areas of exercise physiology, the IPE 2018 program will focus on the following major themes:

- Integrative exercise physiology and metabolism
- Skeletal muscle, exercise, inactivity, and signaling
- Hot topics in exercise physiology
- Cardiovascular exercise physiology

To achieve a balanced schedule, we have organized morning and late afternoon symposia and scientific debates around the four conference themes. The symposia lectures will be given by senior as well as emerging scientists and are intended to provide a springboard for dynamic scientific exchanges. Importantly, each symposium will include aspects of how advances in basic science lead to changes in practice.

Scientific poster sessions are scheduled on each day of the conference (1:00-3:00 p.m.) and these unopposed poster presentations will comprise a major component of the conference. Indeed, the abstracts that you present will shape the exchange of information and ideas that transpire in this exciting venue. Please note that we will begin taking abstract submissions in early May and the abstract submission deadline is June 28, 2018 (see the ACSM website for details).

Finally, we're very excited that Michael Joyner will be delivering the opening keynote address and that several senior scientists will be participating in the mid-day debates we have planned during the 2018 IPE meeting in their respective disciplines. So, mark your calendars for September 5-8, 2018 and set your sights on beautiful San Diego.

Sincerely,

*Scott K. Powers, Ph.D., FACSM
Chair, ACSM Integrative Physiology of Exercise Conference*

Keynote Lecturer



Michael J. Joyner, M.D., is a physician-researcher and one of the world's leading experts on human performance and exercise physiology. He will be delivering the opening keynote address of the 2018 IPE conference. Using humans as his model system, he has made major contributions to understanding muscle and skin blood flow, blood pressure regulation, and human athletic performance. His ideas about human performance are widely quoted in both the popular media and scientific publications.

Joyner has been a consultant to the National Institutes of Health (NIH) and NASA and has held leadership positions with prestigious scientific journals. His research lab at Mayo Clinic has been continuously funded by the NIH since 1993. Mayo Clinic named him a Distinguished Investigator in 2010. He received the ACSM Citation Award in 2009. His lab has provided significant educational opportunities for students and trainees, many of whom have established independent research programs at leading institutions throughout the world.

He is also an entertaining lecturer and has a keen interest in how new ideas emerge, fade and then re-emerge in physiology. And he is a forceful advocate for the increased relevance of physiology in a scientific landscape currently dominated by reductionism.

Submit an Abstract!

The submission site will open in early May 2018. Visit www.acsm.org/ipe for more information.

Deadline: June 28, 2018, 11:59 p.m. PST

WEDNESDAY SEPTEMBER 5, 2018

- 6:30-7:30 p.m. Keynote Lecture
Can Exercise Physiology Help Fill the
Reductionist Gap?
*Michael Joyner, FACSM, Mayo Clinic,
Rochester*
- 7:30 - 9:00 p.m. Opening Reception

THURSDAY SEPTEMBER 6, 2018

8:25-10:30 a.m. Concurrent Symposia

Session 1A **Cancer Prevention by Exercise: Role of Endocrine and Immune Function**

Chair: Lee Jones

- 8:25-8:30 a.m. Introduction
*Lee Jones, Memorial Sloan Kettering
Cancer Center*
- 8:30-9:00 a.m. Molecular Mechanisms Linking Exercise to
Control of Cancer Progression
Pernille Hojman, University of Copenhagen
- 9:00-9:30 a.m. Impact of Exercise on the Gut Microbiome:
Implications for Cancer Risk
*Jeffrey Woods, FACSM,
University of Illinois-Urbana-Champaign*
- 9:30-10:00 a.m. Understanding the Interaction between Diet
and Exercise for Cancer Survival: A Role
for Anabolic Resistance
*James Carson, FACSM,
University of South Carolina*
- 10:00-10:30 a.m. Exercise in Prevention of Cancer
Recurrence in Humans
*Lee Jones, Memorial Sloan Kettering
Cancer Center*

Session 1B **Interactions between Mitochondrial Morphology and Turnover in Healthy and Diseased Skeletal Muscle**

Chair: David Hood, FACSM

- 8:25-8:30 a.m. Introduction
David Hood, FACSM, York University
- 8:30-9:00 a.m. Mitochondrial Morphology in Muscle
Brian Glancy, National Institutes of Health

- 9:00-9:30 a.m. Exercise and Mitochondrial Adaptations in
Mitochondrial Disease and Patients with
COPD
Tanja Taivassalo, University of Florida
- 9:30-10:00 a.m. Mitochondrial Morphology determines
Muscle Mass
Marco Sandri, University of Padua
- 10:00-10:30 a.m. Mitochondria and Lysosomal Interactions:
Effects of Exercise and Age
David Hood, FACSM, York University

10:30-11:00 a.m. Break

11:00 a.m.-12:00 p.m. **Debate: Are Exercise ‘Mimetics’ a Realistic Substitute for Exercise Training?**

*Moderator: Frank Booth, FACSM,
University of Missouri*

Introduction to Debate
*Michael Joyner, FACSM, Mayo Clinic,
Rochester*

PRO: Exercise Mimetics can Substitute for Exercise Training

*Professor Ron Evans, Salk Institute,
California*

CON: Exercise Mimetics are NOT a Substitute for Exercise Training

*John Hawley, MacKillop Institute for Health
Research*

12:00-1:00 p.m. Lunch Break

1:00-3:00 p.m. Poster Sessions

3:00-5:05 p.m. Concurrent Symposia

Session 1C **Understanding the Physiological Basis for Sex Differences in the Response to Exercise and Pathological Stimuli: A Role for Estrogen and the Ovaries**

Chair: Michael Toth, University of Vermont

- 3:00-3:05 p.m. Introduction
Michael Toth, University of Vermont
- 3:05-3:35 p.m. Role of Sex in Skeletal Muscle Structural
and Functional Response to Disuse and
Exercise
Michael Toth, University of Vermont

- 3:35-4:05 p.m.** Sex Dependent Responses of Skeletal Muscle to the Cancer Environment: Implications for Exercise
James Carson, FACSM, University of South Carolina
- 4:05-4:35 p.m.** Re-Thinking the Role of Estrogens in Skeletal Muscle Metabolism and Function
Espen Spangenberg, East Carolina University
- 4:35-5:05 p.m.** Estrogen's Role in Muscle Regeneration and Contractile Function
Dawn Lowe, FACSM, University of Minnesota

Session 1D

Recent Advances in Exercise and Arterial Stiffness

Chair: Gary Pierce, University of Iowa

- 3:00-3:05 p.m.** Introduction
Gary Pierce, University of Iowa
- 3:05-3:35 p.m.** Exercise, Arterial Stiffness and the Aging Brain
Rong Zhang, University of Texas Southwestern Medical Center
- 3:35-4:05 p.m.** Exploiting Exercise Signals for Counteracting Age- Related Arterial Stiffening
Douglas Seals, University of Colorado Boulder
- 4:05-4:35 p.m.** Exercise Attenuates Obesity-Related Arterial Stiffness
James Sowers, University of Missouri
- 4:35-5:05 p.m.** Sex-Differences in Arterial Stiffness and Endothelial Function Response to Exercise in Aging: Mechanistic Insights
Kerrie Moreau, University of Colorado Anschutz Medical Campus

FRIDAY, SEPTEMBER 7, 2018

8:25-10:30 a.m. Concurrent Symposia

Session 2A

Metabolic Flexibility in Health and Disease

Chair: Lawrence L. Spriet, FACSM, University of Guelph

- 8:25-8:30 a.m.** Introduction
Lawrence L. Spriet, FACSM, University of Guelph
- 8:30-9:00 a.m.** Overview of Substrate Selection during Rest and Exercise: Carbohydrate-Fat Interactions
Lawrence L. Spriet, FACSM, University of Guelph
- 9:00-9:30 a.m.** Carbohydrate vs Fat: Metabolic Flexibility for Sports Performance
Louise Burke, FACSM, Australian Institute of Sports
- 9:30-10:00 a.m.** Metabolic Flexibility, Insulin Action and Benefits of Exercise
Bret Goodpaster, Sanford Burnham Medical Discovery Institute-Orlando
- 10:00-10:30 a.m.** Mitochondria at the Cross Roads of Metabolic Flexibility
Debra Muoio, Duke University

Session 2B

Exercise Pressor Reflex Function in Health and Disease

Chair: Marc Kaufman, Penn State Hershey Medical Center

- 8:25-8:30 a.m.** Introduction
Marc Kaufman, Penn State Hershey Medical Center
- 8:30-9:00 a.m.** Muscle Metaboreflex-induced Coronary Vasoconstriction in Heart Failure
Donal O'Leary, Wayne State University
- 9:00-9:30 a.m.** Alterations in Mechanoreflex and Metaboreflex Function in Hypertension
Bill Farquhar, FACSM, University of Delaware
- 9:30-10:00 a.m.** Group III/IV Muscle Afferents Impair Limb Blood in Patients with Chronic Heart Failure
Markus Amann, University of Utah
- 10:00-10:30 a.m.** Oxidative Stress and Exercise Pressor Reflex Dysfunction in Peripheral Arterial Disease
Marc Kaufman, Penn State Hershey Medical Center

10:30-11:00 a.m.	Break
11:00 a.m.-12:00 p.m.	Special Event
	Molecular Transducers of Physical Activity in Humans – Research Update <i>Karyn Esser, FACSM, University of Florida/ Marcas Bamman, FACSM, University of Alabama-Birmingham</i>
12:00-1:00 p.m.	Lunch Break
1:00-3:00 p.m.	Poster Sessions
3:00-5:05 p.m.	Concurrent Symposia

Session 2C

Exercise and Energy Restriction to Improve Health: The Crossroads of Energetics and Protein Turnover

Chair: Colin Selman, University of Glasgow

3:00-3:05 p.m.	Introduction <i>Colin Selman, University of Glasgow</i>
3:05-3:35 p.m.	Changing Energetics to Change Health <i>John Speakman, University of Aberdeen</i>
3:35-4:05 p.m.	Integrated Stress Response and Protein Synthesis <i>Tracy Anthony, Rutgers University</i>
4:05-4:35 p.m.	Using Energetic Stress to Improve Mitochondria Protein Synthesis and Muscle Health <i>Karyn Hamilton, FACSM, Colorado State University</i>
4:35-5:05 p.m.	Ischemia during Exercise and the Influence on Protein Turnover <i>Kristian Vissing, Aarhus University</i>

Session 2D

The Role of Exosomes in Skeletal Muscle & Systemic Adaptation to Exercise

Chair: John McCarthy, University of Kentucky

3:00-3:05 p.m.	Introduction <i>John McCarthy, University of Kentucky</i>
3:05-3:35 p.m.	Influence of Acute Endurance Exercise and Aging upon Extra Cellular Vesicles <i>Mark A. Tarnopolsky, McMaster University</i>
3:35-4:05 p.m.	Exosomal miRNA Regulation of Extracellular Matrix during Skeletal Muscle Hypertrophy <i>Charlotte A. Peterson, University of Kentucky</i>

4:05-4:35 p.m.	The Effect of Milk-Derived Exosomes on Skeletal Muscle Physiology <i>Michael D. Roberts, Auburn University</i>
4:35-5:05 p.m.	Exercise-induced Exosomal MyomiR Regulation of Adipocyte Metabolism <i>Ivan Vechetti, University of Kentucky</i>

SATURDAY, SEPTEMBER 8, 2018

8:25-10:30 a.m.	Concurrent Symposia
-----------------	---------------------

Session 3A

Molecular Transducers of Exercise-induced Muscle Hypertrophy

Chair: Marcas Bamman, FACSM, University of Alabama-Birmingham

8:25-8:30 a.m.	Introduction <i>Marcas Bamman, FACSM, University of Alabama-Birmingham</i>
8:30-9:00 a.m.	Transcriptome Response to Exercise in the Aging Athlete <i>Scott Trappe, FACSM, Ball State University</i>
9:00-9:30 a.m.	Role of Protein Turnover and Anabolic Signaling in Exercise-induced Muscle Hypertrophy <i>Blake Rasmussen, University of Texas Medical Branch-Galveston</i>
9:30-10:00 a.m.	The Role of Ribosome Biogenesis in Skeletal Muscle Hypertrophy <i>John McCarthy, University of Kentucky</i>
10:00-10:30 a.m.	Integrin Regulation of Muscle Growth <i>Marni Boppart, FACSM, University of Illinois-Champaign-Urbana</i>

Session 3B

Men ≠ Women: Effects of Sex Hormones and Physical Activity on Vascular Function

Chair: Lacy Alexander, FACSM, Penn State University

8:25-8:30 a.m.	Introduction <i>Lacy Alexander, FACSM, Penn State University</i>
8:30-9:00 a.m.	The Impact of Sex Hormones on Vascular Function <i>Nina Stachenfeld, FACSM, Yale University</i>

- 9:00-9:30 a.m.** Testosterone Regulation of Vascular Function with Aging
Kerrie Moreau, University of Colorado-Anschutz Medical Campus
- 9:30-10:00 a.m.** Sex Hormones and Sympathetic Responses to Chemoreflex Activation
Charlotte Usselman, McGill University
- 10:00-10:30 a.m.** Role of Beta 2 Adrenergic Receptor and Estrogen- Mediated Vasodilation in Women
Sushant Ranadive, University of Maryland

10:30-11:00 a.m. Break

11:00 a.m.-12:00 p.m. **Debate: Do Genetics Really Influence Exercise Capacity or Trainability?**
Moderator: J. Timothy Lightfoot, FACSM, Texas A&M University

Introduction to Debate
J. Timothy Lightfoot, FACSM, Texas A&M University

PRO: Genetics do Influence the Exercise Capacity and Trainability
Claude Bouchard, FACSM, Pennington Biomedical Research Center, LSU

CON: Genetics do NOT Influence the Exercise Capacity and Trainability
Michael Joyner, FACSM, Mayo Clinic, Rochester, Minnesota

12:00-1:00 p.m. Lunch Break

1:00-3:00 p.m. Poster Sessions

3:00-5:05 p.m. Concurrent Symposia

Session 3C

Is Mitochondrial Respiration a Limiting Factor of Oxidative Metabolism? An Integrated Approach to Exercise

Chairs: L. Bruce Gladden, FACSM, Auburn University and Michael C. Hogan, FACSM, UCSD

3:00-3:05 p.m. Introduction
L. Bruce Gladden, FACSM, Auburn University

3:05-3:35 p.m. Tools of Functional Evaluation of Oxidative Metabolism along the O₂ Pathway
Bruno Grassi, FACSM, University of Udine

3:35-4:00 p.m. Limitations to Oxidative Metabolism Upstream of Mitochondria: Maximal Cardiovascular O₂ Delivery
Carsten Lundby, University of Copenhagen

4:00-4:30 p.m. Limitations to Oxidative Metabolism Upstream of Mitochondria: Matching of Intramuscular O₂ Delivery/O₂ Uptake and Peripheral O₂ Diffusion
David C. Poole, FACSM, Kansas State University

4:30-5:05 p.m. Limitations to Oxidative Metabolism at the Mitochondrial Level
Russell T. Hepple, University of Florida

Session 3D

How Exercise Promotes Brain Health in Aging

Chairs: Michael Reid, FACSM, University of Florida and Jill Barnes, University of Wisconsin

3:00-3:05 p.m. Introduction
Michael Reid, FACSM, University of Florida

3:05-3:35 p.m. Mechanisms by which Exercise Promotes Brain Health
Carl Cotman, UC Irvine

3:35-4:05 p.m. Could Exercise Influence Neuronal Plasticity and Cognition through Epigenetic Mechanisms?
Marcelo Wood, UC Irvine

4:05-4:35 p.m. Aerobic Exercise in Alzheimer's Disease: Cognition and Hippocampal Volume
Fang Yu, University of Minnesota

4:35-5:05 p.m. How Aerobic Fitness Slows the Progression of Alzheimer's Disease
Jeffrey Burns, Kansas University

ACSM Conference on Integrative Physiology of Exercise

Sheraton San Diego
Hotel & Marina
San Diego, California, USA
September 5-8, 2018

Fee Schedule (register online at www.acsm.org)

Preregistration ends August 24, 2018.

		Register by 6/10/18	Register by 7/18/18 onsite	Register after 7/18/18 or
Current Members <i>This includes a member in good standing of the sponsoring societies: ACSM and APS (dues must be current at time of meeting).</i>	Professional, Fellow, or Professional-in-Training*	\$350	\$450	\$550
	Single day rate	\$225	\$225	\$225
	ACSM student members	\$175	\$175	\$200
	Single day/student rate	\$ 75	\$ 75	\$ 75
Join ACSM now! (first time members) <i>(fee includes ACSM membership and meeting registration fees)</i>	Professional	\$590	\$690	\$790
	Professional-in-Training*	\$505	\$605	\$705
	Student	\$185	\$185	\$210
Non-ACSM member	Non-member Professional	\$600	\$700	\$800
	Single day rate	\$300	\$300	\$300
	Non-member Student (student ID required)	\$195	\$195	\$220
	Single day/student rate	\$100	\$100	\$100

**Medical resident or postdoc*

San Diego Information

Located in San Diego's Point Loma Peninsula region, the Sheraton San Diego Hotel & Marina is a destination with iconic sunsets and a waterfront location. The resort is designed to make best use of San Diego's sunny weather offering access to water sport rentals and sailing tours and providing an extraordinary perspective of San Diego. It is located minutes from the historic Gaslamp District, Seaport Village, the San Diego Zoo and many other great attractions.

Make reservations online at Integrative Physiology of Exercise Conference 2018 or call (877) 734-2726 and mention the American College of Sports Medicine Integrative Physiology of Exercise (IPE) to receive the discounted rate. Reservations must be made by August 10, 2018 and are available on a first-come, first-serve basis. The IPE discounted Guest Room Rate is \$179, not inclusive of tax.



SanDiego.org