



ACSM's
**Integrative Physiology
of Exercise Conference**

Sept. 21-24, 2022
Hilton Baltimore Inner Harbor
Baltimore, Maryland

Agenda

Evening: Wednesday, Sept. 21

7 to 7:15 p.m. Welcome Remarks
L. Bruce Gladden, Ph.D., FACSM
ACSM Past-President, 2021-22
Scott K. Powers, Ph.D., FACSM
Chair, IPE Program Committee

7:15 to 8 p.m. **Keynote Lecture | To Endure is Everything: New Discoveries in the Science of Endurance Exercise**
Andrew M. Jones, Ph.D., FACSM
University of Exeter
Exeter, U.K.

8 to 9:30 p.m. Social

Meeting Day 1: Thursday, Sept. 22

8 to 9:20 a.m. **Symposium | Cardiovascular Physiology**
High Dietary Salt and Altered Neurovascular Control: Exercise Blood Pressure, Women's Health and Novel Therapeutic Targets

Session Chair: Austin Robinson, Ph.D.

Introduction

Austin Robinson, Ph.D.
Auburn University
Auburn, Alabama

The Effects of Dietary Salt on Blood Pressure Responses to Acute Aerobic Exercise

Matthew C. Babcock, Ph.D.
University of Colorado at Denver
Denver, Colorado

Salt Intake and Sympathetic Neural Control in Women

Qi Fu, M.D., Ph.D.
University of Texas Southwestern
Medical Center
Dallas, Texas

Novel Mechanisms of Autophagy-Mediated Vasculoprotection

Cameron McCarthy, Ph.D.
University of South Carolina
School of Medicine
Columbia, South Carolina

8 to 9:20 a.m.

Symposium | Exercise Metabolism
Exercise and Metabolic Modulation through the Microbiome

Session Chair: John Thyfault, Ph.D., FACSM

Exercise, Microbiome and Skeletal Muscle

Taylor Valentino
University of Kentucky
Lexington, Kentucky

Exercise and the Gut-Liver Axis

Jonathan G. Stine, M.D.
Penn State University
State College, Pennsylvania

Lactate Fixation by the Gut Microbiome as a Strategy to Boost Exercise and its Metabolic Benefit

Alex Kostic, Ph.D.
Harvard University
Boston, Massachusetts

9:20 to 9:30 a.m. Break

9:30 to 10:50 a.m. Symposium | Skeletal Muscle Skeletal Muscle Hypertrophy

Session Chair: Michael Roberts, Ph.D.

Introduction

*Michael Roberts, Ph.D.
Auburn University
Auburn, Alabama*

Integrin Signaling in Skeletal Muscle Hypertrophy

*Marni Boppart, Ph.D., FACSM
University of Illinois at Urbana-Champaign
Urbana, Illinois*

Intracellular Hypertrophic Signaling

*Troy Hornberger, Ph.D.
University of Wisconsin-Madison
Madison, Wisconsin*

Regional Loading Changes with Muscle Contractions

*Martino Franchi, Ph.D.
University of Padua
Padua, Italy*

9:30 to 10:50 a.m. Symposium | Physical Activity and Health Physical Activity and Cancer Survivorship

Session Chair: NiCole R. Keith, Ph.D., FACSM

Introduction

*NiCole R. Keith, Ph.D., FACSM
Indiana University-Purdue University
Indianapolis, Indiana*

Effects of Exercise on Clinically Relevant Biomarkers of Inflammation on Adult Survivors of Cancer

*Kathryn H. Schmitz, Ph.D., MPH, FACSM
Penn State Cancer Institute
Hershey, Pennsylvania*

The Role of Exercise Oncology in Precision Medicine

*Lee Jones, Ph.D.
Memorial Sloan Kettering Cancer Center
New York, New York*

Exercise as a Therapeutic Strategy for Cancer — Biological Mechanisms and Clinical Outcomes

*Allison Betof-Warner, M.D., Ph.D.
Memorial Sloan Kettering Cancer Center
New York, New York*

10:50 to 11:10 a.m. Break

11:10 to Noon Keynote Lecture | Exercise and Bone Health: All It's Cracked Up to Be?

*Wendy Kohrt, Ph.D., FACSM
University of Colorado Health Sciences
Center*

Noon to 1 p.m. Break

1 to 3 p.m. Posters

3 to 4 p.m. Break

4 to 5:20 p.m. Symposium | Environmental Physiology Health, Productivity and Performance in a Warming Climate

Session Chair: Lacy Alexander, Ph.D., FACSM

Introduction

*W. Larry Kenney, Ph.D., FACSM
Penn State University
University Park, Pennsylvania*

Global Warming and Worker Productivity

*George Havenith, Ph.D., FACSM
Loughborough University
Loughborough, U.K.*

Global Warming and Athlete Safety and Performance

*Ollie Jay, Ph.D., FACSM
University of Sydney
Sydney, Australia*

Global Warming in an Aging World

*W. Larry Kenney, Ph.D., FACSM
Penn State University
University Park, Pennsylvania*

4 to 5:20 p.m. Symposium | Hot Topics in Integrated Physiology of Exercise Molecular Bases of Exercise Adaptations

Session Chair: Ben Parker, Ph.D.

The Use of Phosphoproteomics to Study Signaling across Exercise

*Ben Parker, Ph.D.
University of Melbourne
Melbourne, Victoria, Australia*

A Novel Role for Acetyltransferases in Skeletal Muscle Metabolism and Exercise

*Simon Schenk, Ph.D.
University of California, San Diego
San Diego, California*

Transcriptional and Post-Transcriptional Regulation of Mitochondrial Content in Muscle

*David A. Hood, Ph.D., FACSM
York University
Toronto, Ontario, Canada*

Meeting Day 2: Friday, Sept. 23

8 to 9:20 a.m.

Symposium | Hot Topics in Integrated Physiology of Exercise **Using Technology to Augment Human Performance Physiology**

Session Chair: Nisha Charkoudian, Ph.D., FACSM

Human Performance Augmentation for the Military: "Skin-In," "Skin-Out" and Magnitude Considerations

Nisha Charkoudian, Ph.D., FACSM
U.S. Army Research Institute of Environmental Medicine
Natick, Massachusetts

The Biomechanics and Energetics of Record-Breaking Running Shoe Technology

Wouter Hoogkamer, Ph.D.
University of Massachusetts, Amherst
Amherst, Massachusetts

Human Performance Optimization: Are Sensors & Data Old News or a New Frontier

Brad Wilkins, Ph.D.
Gonzaga University
Spokane, Washington

8 to 9:20 a.m.

Symposium | Skeletal Muscle **New Concepts in Muscle Biology**

Session Chair: Karyn Esser, Ph.D., FACSM

Introduction

Karyn Esser, Ph.D., FACSM
University of Florida
Gainesville, Florida

Importance of RNA Transport in Skeletal Muscle

Eric Wang, Ph.D.
University of Florida
Gainesville, Florida

Looking at Mitochondria and Myofibrils in 3D

Brian Glancy, Ph.D.
NHLBI/NIAMS
Bethesda, Maryland

Muscle Macro 3D and Mechanics

Silvia Blemker, Ph.D.
University of Virginia
Charlottesville, Virginia

9:20 to 9:30 a.m. Break

9:30 to 10:50 a.m. **Symposium | Environmental Physiology**
Exercise at High Altitude: Integrative Physiology and Countermeasures Against Decreased Performance

Session Chair: Nisha Charkoudian, Ph.D., FACSM

Introduction

Nisha Charkoudian, Ph.D., FACSM
U.S. Army Research Institute of Environmental Medicine
Natick, Massachusetts

Influences of Acute and Lifelong Hypoxia on Autonomic Vascular Control During Exercise

Justin Lawley, Ph.D.
University of Innsbruck
Innsbruck, Austria

Altitude Acclimatization and Integrative Cardiovascular Control

Craig Steinback, Ph.D.
University of Alberta
Edmonton, Alberta, Canada

Nontraditional Countermeasures to Performance Decrements at Altitude

Roy Salgado, Ph.D.
U.S. Army Research Institute of Environmental Medicine
Natick, Massachusetts

9:30 to 10:50 a.m. **Symposium | Exercise Metabolism**
Exercise and Lipid Metabolism

Session Chair: Jill Kanaley, Ph.D., FACSM

Exercise Induced Adaptations in White and Brown Adipose

Kristin Stanford, Ph.D.
The Ohio State University
Columbus, Ohio

Intermuscular Adipose Tissue, Insulin Sensitivity and Regulation with Exercise

Bryan Bergman, Ph.D.
University of Colorado Anschutz Medical Campus
Aurora, Colorado

Adipose Metabolism and Exercise in Metabolic Disease

Lauren Sparks, Ph.D.
Advent Health Research Institute
Orlando, Florida

10:50 to 11:10 a.m. Break

11:10 a.m. to noon **Keynote Lecture | Sex Differences in Athletic Performance**

Sandra Hunter, Ph.D., FACSM
Marquette University
Milwaukee, Wisconsin

Noon to 1 p.m. Break

1 to 3 p.m. Posters

3 to 4 p.m. Break

4 to 5:20 p.m.

Symposium | Cardiovascular Physiology
It's Been a Long Haul: COVID-19 and Cardiovascular Health

Session Chairs: John Quindry, Ph.D., FACSM & Tracy Baynard, Ph.D., FACSM

Introduction

John Quindry, Ph.D., FACSM
University of Montana
Missoula, Montana

Tracy Baynard, Ph.D., FACSM
University of Illinois Chicago
Chicago, Illinois

An Overview of Long Haul COVID (PASC) and the Role Physical Activity and Exercise May Play in Lessening Disease Severity

Gregory J. Bix, M.D., Ph.D.
Tulane University School of Medicine
Tulane, Louisiana

Pathophysiology of "Long COVID" (PASC) in Relation to Quarantine and Physical Activity

Erica Spatz, M.D., MHS
Yale University
New Haven, Connecticut

Risk of Myopericarditis and Implications for Return to Play after COVID Infection in Athletes

Benjamin Levine, M.D., FACSM
University of Texas Southwestern
Medical Center
Dallas, Texas

4 to 5:20 p.m.

Symposium | Physical Activity and Health
Physical Activity, Exercise and the Brain

Session Chair: William E. Kraus, M.D., FACSM

Introduction

William E. Kraus, M.D., FACSM
Duke University School of Medicine
Durham, North Carolina

Irisin — Harnessing the Neuroprotective Effects of Exercise

Christiane Wrann, Ph.D.
Harvard Medical School
Boston, Massachusetts

Movement, Metabolic Function and Mental Flexibility: Examining Pathways and Profiles of Lifestyle Modification for Brain Health

Patrick Smith, Ph.D.
Duke University School of Medicine
Durham, North Carolina

Exercise, Brain and Cardiovascular Health (eBACH)

Kirk I. Erikson, Ph.D.
University of Pittsburgh
Pittsburgh, Pennsylvania

Meeting Day 3: Saturday, Sept. 24

8 to 9:20 a.m.

Symposium | Environmental Physiology
Therapeutic and Performance Aspects of Cold

Session Chair: John Castellani, Ph.D.

Introduction

John Castellani, Ph.D.
U.S. Army Research Institute of
Environmental Medicine
Natick, Massachusetts

Metabolic Responses to Cold Exposure — From Survival to Therapeutic Applications

Denis Blondin, Ph.D.
University of Sherbrooke
Sherbrooke, Quebec, Canada

Cold Impact on Military Performance

Billie Alba, Ph.D.
U.S. Army Research Institute of
Environmental Medicine
Natick, Massachusetts

Cold Exposure and Muscular Performance

Heather Massey, Ph.D.
University of Portsmouth
Portsmouth, U.K.

8 to 9:20 a.m.

Symposium | Physical Activity and Health
Sedentary Behavior and Health: Recent Insights

Session Chair: Peter T. Katzmarzyk, Ph.D., FACSM

Sedentary Behavior and Health: From Basic Science to Epidemiology and Back Again

Peter T. Katzmarzyk, Ph.D., FACSM
Pennington Biomedical Research Center
Baton Rouge, Louisiana

Mitochondrial and Metabolic Changes Induced by Acute Sedentary Behavior: Impact on Recovery

Paul M. Coen, Ph.D.
Advent Health Research Institute
Orlando, Florida

Transcriptomic, Phenotypic and Behavioral Characteristics Associated with Inherited Physical Inactivity

Frank W. Booth, Ph.D., FACSM
University of Missouri
Columbia, Missouri

9:20 to 9:30 a.m.

Break

**9:30 to 10:50 a.m. Symposium | Exercise Metabolism
Ketogenic Diet and Exercise
Metabolism/Performance**

Session Chair: Louise Burke, Ph.D., FACSM

Introduction

*Louise Burke, Ph.D., FACSM
Australian Catholic University
Canberra, Australia*

Shifting Muscle Acetylation and Mitochondrial Function and Improving Learning and Memory with a Ketogenic Diet

*Keith Baar, Ph.D., FACSM
University of California, Davis
Davis, California*

Impact of Combined Ketogenic Diet and Exercise Training on Substrate Oxidative Capacity in Mice

*Robert Noland, Ph.D.
Pennington Biomedical Research Center
Baton Rouge, Louisiana*

**9:30 to 10:50 a.m. Symposium | Cardiovascular Physiology
Extraordinary Exercise and
Cardiovascular Health: Can There Be too
Much of a Good Thing?**

Session Chair: Benjamin Levine, M.D., FACSM

Introduction

*Benjamin Levine, M.D., FACSM
University of Texas Southwestern
Medical Center
Dallas, Texas*

Physical Activity and CAC: What's the Signal?

*Laura DeFina, M.D.
Cooper Institute for Aerobics Research
Dallas, Texas*

The Right Ventricle: The Vulnerable One?

*Bill Cornwell, M.D.
University of Colorado Medical School
Denver, Colorado*

Atrial Fibrillation in the Athlete: What's the Risk, and What Can You Do about It?

*Mark Link, M.D.
University of Texas Southwestern
Medical Center
Dallas, Texas*

10:50 to 11:10 a.m. Break

**11:10 a.m. to Noon Keynote Lecture | Potential Mechanisms
in Muscle Underlying Resistance
Exercise Hypertrophic Response
Heterogeneity**

*Charlotte Peterson, Ph.D.
University of Kentucky
Lexington, Kentucky*

Noon to 1 p.m. Break

1 to 3 p.m. Posters

3 to 4 p.m. Break

**4 to 5:20 p.m. Symposium | Exercise Metabolism
Connections between Systemic
Metabolism, Exercise and Neural/
Brain Health**

Session Chair: Laurie Goodyear, Ph.D., FACSM

Effects of Exercise and Lactate Metabolism on the Brain in Aging and Disease

*Jill Morris, Ph.D.
University of Kansas Medical Center
Kansas City, Kansas*

Exercise and Connections to Brain Metabolism and Cognition Through GD15

*Anders Klein
University of Copenhagen
Copenhagen, Denmark*

Exercise-Associated Pathways as Novel Neuroprotectants against CNS Aging and Alzheimer's Disease

*Constanza Cortes Rodriguez, Ph.D.
University of Alabama at Birmingham
Birmingham, Alabama*

**4 to 5:20 p.m. Symposium | Skeletal Muscle
Muscle Health in Aging and Disease**

Session Chair: Stuart Phillips, Ph.D., FACSM

Introduction

Muscle Growth with Aging

*Sue Bodine Ph.D.
University of Iowa
Iowa City, Iowa*

Pathophysiology of Muscle with Aging

*Beth Phillips, Ph.D.
University of Nottingham
Nottingham, U.K.*

Targeting Omega 3 Supplements to Preserve Muscle in Aging/Disease

*Chris McGlory, Ph.D.
Queen's University
Kingston, Ontario, Canada*

Schedule subject to change



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