

Dawn of the Precision Medicine Era

Druggable and undruggable KLF/SP factors,
Phosphatases & other signaling effectors
in human disease

October 19 - 22, 2024

European Cultural Center of Delphi
Delphi, Greece

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Coordinator

Linda T. and John A. Mellows Center
for Genomic Sciences & Precision Medicine
Medical College of Wisconsin, USA



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European Cultural Center of Delphi
"Phrynihos" Multi-purpose Hall
Delphi, Greece

Chairs (alphabetically)

Konstantinos Drosatos, University of Cincinnati, USA
Jonathan Katz, University of Pennsylvania, USA

Honorary Chair

Raul Urrutia, Medical College of Wisconsin, USA

Organizing Committee (alphabetically)

Agnieszka Bialkowska, Stony Brook University, USA
Joseph Camp, Medical College of Wisconsin, USA
Ceshi Chen, Kunming Medical University, China
Ichiro Manabe, Chiba University, Japan
Angela Mathison, Medical College of Wisconsin, USA
Goutham Narla, University of Michigan, USA
Kate Quinlan, UNSW Sydney, Australia
Toru Suzuki, University of Leicester, UK

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Welcome Letter

We are delighted to welcome you to the Dawn of the Precision Medicine Era: Druggable and Undruggable KLF/SP Factors, Phosphatases, and Other Signaling Effectors in Human Disease, an international symposium taking place from October 19 - 22, 2024 in the historic setting of Delphi, Greece.

This symposium marks the first European edition of the prestigious KLF/SP conference series, following the successful meetings previously held in the USA (2010, 2012, 2014, 2016) and Japan (2008, 2018). The event serves as a premier global platform for scientific exchange, fostering collaboration and dialogue around systems biology, organ function, and cellular signaling in both health and disease.

We extend our deepest gratitude to the Linda T. and John A. Mellowes Center for Genomic Sciences and Precision Medicine at the Medical College of Wisconsin, USA, for their generous support and auspices of this meeting. We are also grateful to the Department of Pharmacology, Physiology and Neurobiology of the University of Cincinnati College of Medicine and RAPPTA Therapeutics for the financial support of the meeting.

This symposium brings together presenters and attendees from four continents, representing both senior and early-career scientists. Our collective goal is to advance the understanding of human disease mechanisms and progression, showcasing cutting-edge technological advancements in both translational medicine and laboratory research. Participants will share groundbreaking insights into new treatments, potential interventions, and the application of innovative technologies to address some of medicine's most pressing challenges.

Gathering leading experts in this historic and naturally beautiful environment underscores our shared commitment to improving lives worldwide through research and innovation.

We eagerly anticipate engaging discussions, insightful presentations, and a wonderful, shared experience in Delphi—an inspiring setting often hailed as the birthplace of Philosophy and Science.

The Chairs of the Organizing Committee:



Konstantinos Drosatos, PhD
University of Cincinnati College of Medicine, OH, USA



Jonathan P. Katz, MD
University of Pennsylvania
Philadelphia, PA, USA



Participating Institutes

- 1 Aristotle University of Thessaloniki, Greece
- 2 Baylor College of Medicine, USA
- 3 Biomedical Research Foundation, Academy of Athens, Greece
- 4 Biomedical Sciences Research Center "Alexander Fleming", Greece
- 5 Brown University, USA
- 6 Case Western Reserve University, USA
- 7 Cedars-Sinai Medical Center, USA
- 8 Chiba University, Japan
- 9 China Medical University, China
- 10 Cincinnati Children's Hospital Medical Center, USA
- 11 Columbia University, USA
- 12 Dana Farber Cancer Institute, USA
- 13 Duke University, USA
- 14 Ghent University, Belgium
- 15 Heidelberg University, Germany
- 16 Humanitas University, Milan, Italy
- 17 Kunming Medical University, China
- 18 Medical College of Wisconsin, USA
- 19 Monash University, Australia
- 20 Mount Sinai School of Medicine, USA
- 21 National Cancer Institute, NIH, USA
- 22 National Cerebral and Cardiovascular Center Research Institute, Japan
- 23 Scripps Research, USA
- 24 Southern University of Science and Technology, China
- 25 Stony Brook University, USA
- 26 Stony Brook University, USA
- 27 Temple University, USA
- 28 University Medical Center Göttingen & Justus-Liebig-Universität Gießen, Germany
- 29 University of Alabama at Birmingham, USA
- 30 University of Arkansas, USA
- 31 University of Athens, Greece
- 32 University of Bristol, UK
- 33 University of Cincinnati, USA
- 34 University of Cologne, Germany
- 35 University of Leicester, UK
- 36 University of Michigan, USA
- 37 University of Minnesota, USA
- 38 University of Pennsylvania, USA
- 39 University Research Center of Ioannina, Greece
- 40 UNSW Sydney, Australia
- 41 Yale University, USA

Arrival to Delphi

"Phrynios" Multi-purpose Hall

Early Career Investigators – Session A

15:30 - 17:00

Chair: Merlin Crossley, UNSW Sydney, Australia

15:30-15:45 - Nikolaos Mylonas, University of Athens, Greece
Targeting KLF5: A Novel Therapeutic Approach to Reduce Myocardial Ischemia/Reperfusion Injury

15:45-16:00 - Manan Shah, UNSW Sydney, Australia
The epigenetic reader WDR5 influences genomic localisation of and gene regulation by KLF3

16:00-16:15 - Caitlin O'Connor, University of Michigan, USA
Haploinsufficiency of the PPP2R1A tumor suppressor gene promotes spontaneous mammary tumorigenesis

16:15-16:30 - Kelley Weinfurter, University of Pennsylvania, USA

Precision medicine approaches in hepatocellular carcinoma

16:30-16:45 - Jiuzhou (Jojo) Huo, Cincinnati Children's Hospital Medical Center, USA
Mitochondrial calcium regulated fuel selection and its implications in striated muscle disorders

16:45-17:00 - Angeliki Daiou, Aristotle University of Thessaloniki, Greece
Inhibition of HIF-1α prolongs the cardiomyocyte regenerative window in neonatal mice

17:00

BREAK

17:15 - 18:30

Early Career Investigators – Session B

Chair: Raul Urrutia, Medical College of Wisconsin, USA

17:15-17:30 - Yusuke Watanabe, National Cerebral and Cardiovascular Center Research Institute, Japan

Developmental and reparative function of Klf1 in mouse hearts

17:30-17:45 - Ivan Ferrer Vicens, University of Bristol, UK

The Yin and Yang of KLF1: Targeting the 'Undruggable'

Erythroid Master Regulator

17:45-18:00 - Joel Gabre, Columbia University, USA

Modeling Esophageal Development using iPSC-Derived Esophageal Organoids

18:00-18 - Ilia Droujinine, Scripps Research, USA

Untangling interorgan communication networks

18:15-18:30 - Angela Mathison, Medical College of Wisconsin, USA

Advancing Multi-Omics Technologies for Precision Medicine

18:30

COFFEE BREAK

19:00 - 19:45

Opening Session

Chairs:

Jonathan Katz, University of Pennsylvania, USA

Konstantinos Drosatos, University of Cincinnati, USA

Keynote Lecture

William C. Hahn, Dana-Farber Cancer Institute, Harvard Medical School, USA

Using a Cancer Dependency Map

Introduction by **Goutham Narla**

20:30 - 22:30

Opening Dinner - EPIKOUROS Restaurant at Delphi

8:30 - 10:10 | "Phrynihos" Multi-purpose Hall

Inflammation & Immunology

Chairs

Agnieszka Bialkowska, Stony Brook University, USA
Ceshi Chen, Kunming Medical University, China

8:30 – 8:55 - **Ceshi Chen**, Kunming Medical University, China

Post-translational modifications of KLF5 in breast cancer

8:55 – 9:20 - **Jessica Salmon**, Monash University, Australia

Unravelling the anti-inflammatory function of KLF3

9:20 – 9:45 - **Marinos Kallikourdis**, Humanitas University, Italy

Innovative immunomodulation - potential for Heart Failure Therapeutics

9:45 – 10:10 - **Lalitha Nayak**, Cedars Sinai Medical Center, USA

Targeting neutrophils in Immunothrombosis

10:10 | COFFEE BREAK

10:30 - 12:10 | Development and Differentiation

Chairs

Merlin Crossley, UNSW Sydney, Australia
Terry Yamaguchi, National Cancer Institute, NIH, USA

10:30 – 10:55 - **Klaus H. Kaestner**, University of Pennsylvania, USA

The FoxA transcription factors – pioneers or settlers?

10:55 – 11:20 - **Andrew Perkins**, Monash University, Australia

KLF1 acts as a pioneer transcription factor to redistribute GATA1

and direct erythroid differentiation from bi-potential progenitors

11:20 – 11:45 - **Sandeep Mallipattu**, Stony Brook University, USA

Targeting KLF-related signaling in Kidney Health and Disease

11:45 – 12:10 - **Terry Yamaguchi**, National Cancer Institute, NIH, USA

SP transcription factors are multimodal regulators of early mammalian development

12:10 | LUNCH BREAK

13:00 – 13:45 | Cutting edge methodologies in Systems Biology

Chair: **Angela Mathison**, Medical College of Wisconsin, USA

13:00 – 13:15 - **Michael Zimmermann**, Medical College of Wisconsin, USA

Computational Structural Genomics: A Transformational Approach for Biology and Medicine

13:15 – 13:30 - **Georgios Pavlopoulos**, Biomedical Sciences Research

Center "Alexander Fleming", Greece

Bioinformatics toys for Data Integration and knowledge representation

13:30- 13:45 - **Mingxia Gu**, Cincinnati Children's Hospital Medical Center, USA

Organ in a dish: Using organoids to understand human diseases

14:00 – 15:40 | "Phrynihos" Multi-purpose Hall

Regeneration and repair

Chairs

Joel Gabre, Columbia University, USA
Ichiro Manabe, Chiba University, Japan

14:00 – 14:25 - **Sarah E. Millar**, Mount Sinai School of Medicine, USA

Mechanisms coordinating hair follicle stem cell quiescence and activation

14:25 – 14:50 - **Kazu Kikuchi**, National Cerebral and Cardiovascular Center, Japan

KLF-mediated cardiac muscle regeneration mechanisms

14:50 – 15:15 - **Susmita Sahoo**, Mount Sinai School of Medicine, USA

Extracellular Vesicles in Pathogenesis, Diagnosis and Treatment of the Heart

15:15 – 15:40 - **Konstantinos Hatzistergos**, Aristotle University of

Thessaloniki, Greece

Heartbeats and Tailwinds: Navigating the crossroads of heart development and regeneration

15:40 | COFFEE BREAK

16:00 – 17:40 | Cellular Senescence and Aging

Chairs

Rosalie Simmen, University of Arkansas, USA
Konstantinos Drosatos, University of Cincinnati, USA

16:00 – 16:25 - **Jin-Tang Dong**, Southern Univ. of Science & Technology, China

KLF5 in prostate aging and development

16:25 – 16:50 - **Raul Urrutia**, Medical College of Wisconsin, USA

Chromatin, the Engine that Makes KLFs Work

16:50 – 17:15 - **John Elrod**, Temple University, USA

Discovery of a Conserved Signaling System Regulating Calcium-dependent

Mitochondrial Metabolons

17:15 – 17:40 - **Ichiro Manabe**, Chiba University, Japan

Epigenetic stress memory in heart failure and multimorbidity

9:30 - 21:30 | Dinner (Details TBA)

8:30 - 10:10	<p>“Phrynihos” Multi-purpose Hall</p> <p>Metabolism Chairs Kate Quinlan, UNSW Sydney, Australia Paschalis-Thomas Doulias, University Research Center of Ioannina, Greece 8:30 – 8:55 - Aleksandra Trifunovic, University of Cologne, Germany <i>Role of KLF/SP family members as regulators of mitochondrial stress responses</i> 8:55 – 9:20 - Adam Wende, University of Alabama at Birmingham, USA <i>Nutrient and epigenetic mediated transcriptional regulation via SP and KLF transcription factors</i> 9:20 – 9:45 - Themis Alissafi, Biomedical Research Foundation, Academy of Athens, Greece <i>Targeting Metabolism of regulatory networks in autoimmunity and cancer</i> 9:45 – 10:10 - Mattia Quattrocchi, Cincinnati Children's Hospital Medical Center, USA <i>Circadian-specific glucocorticoids unveil a critical GR-KLF15 interplay in clock and fuel control</i></p>
10:10	COFFEE BREAK
10:30 - 12:10	<p>Systems Biology Chairs Jonathan Katz, University of Pennsylvania, USA Frank Simmen, University of Arkansas, USA 10:30 – 10:55 - Mark Kahn, University of Pennsylvania, USA <i>Regulation of heart valve homeostasis by endothelial cell KLF2 and KLF4</i> 10:55 – 11:20 - Daniel Lacorazza, Baylor College of Medicine, USA <i>Pharmacological inhibition of KLF4 targets in leukemia</i> 11:20 – 11:45 - Laura Zelarayán, University Medical Center Göttingen & Justus-Liebig-Universität Gießen, Germany <i>Restoration of endogenous transcription factor activity by CRISPRa to prevent cardiac failure</i> 11:45 – 12:10 - Carolina Greco, Humanitas University, Milan, Italy <i>Reprogramming of hepatic diurnal rhythms in cardiac hypertrophy</i></p>
12:10	LUNCH BREAK
14:00 - 15:40	<p>Epigenetics & RNA biology Chairs Arica Beisaw, Heidelberg University Hospital, Germany Gwen Lomberk, Medical College of Wisconsin, USA 14:00 – 14:25 - James Bieker, Mount Sinai School of Medicine, USA <i>EKLf/KLF1: a highly effective erythropoietic influencer</i> 14:25 – 14:50 - Kate Quinlan, UNSW Sydney, Australia <i>KLF3 regulates gene expression in adipose tissue immune cells</i> 14:50 – 15:15 - Federica Accornero, Brown University, USA <i>RNA modification as homeostatic control system</i> 15:15 – 15:40 - Panos Ntziachristos, Ghent University, Belgium <i>Understanding and targeting transcriptome dysregulation in acute leukemia</i></p>
15:40	COFFEE BREAK
16:00 – 17:40	<p>“Phrynihos” Multi-purpose Hall</p> <p>Genomic Sciences Chairs Raul Urrutia, Medical College of Wisconsin, USA Georgios Pavlopoulos, Biomedical Sciences Research Center "Alexander Fleming", Greece</p>

16:00 – 17:40	<p>16:00 – 16:25 - Ann Harris, Case Western Reserve University, USA <i>Functional genomics of KLF5 in the airway epithelium</i> 16:25 – 16:50 - Johannes Backs, Heidelberg University, Germany <i>HDAC signaling in cardiometabolic disease.</i> 16:50 – 17:15 - Scott M Dehm, University of Minnesota, USA <i>Role of KLF5 in Prostate Cancer Cell Lineage Plasticity</i> 17:15 – 17:40 - Xiaoyun Mao, China Medical University, China <i>Functions of KLF5 in the cell cycle and breast cancer cell proliferation</i></p>
18:00 - 18:45	<p>The Ryozo Nagai Distinguished Lecture on KLF biology</p> <p>Mukesh K. Jain Brown University, USA <i>Krüppels in Aging and Age-associated Disorders</i></p> <p>Chair: Toru Suzuki, University of Leicester, UK</p> <p>Group Photo will be taken at the end of the Session (outside of the conference room)</p>
19:30 - 23:30	<p>Bus boarding</p> <p>Closing Dinner & Party Omfalos Tavern (5th km of the Delphi - Arachova National Road)</p>

9:00 – 10:00	<p>“Phrynihos” Multi-purpose Hall</p> <p>Business meeting (by invitation only) KLF/SP community: The next conference and the way forward</p>
10:00 - 11:40	<p>Translational Therapeutics Chairs William C. Hahn, Dana Farber Cancer Institute, USA Kelley Weinfurter, University of Pennsylvania, USA 10:00 – 10:25 - Goutham Narla, University of Michigan, USA <i>From mutations to drugs: lessons from protein phosphatases</i> 10:25 – 10:50 - Anton Bennett, Yale University, USA <i>Allosteric modulation of MAP kinase phosphatases as therapeutic targets in disease</i> 10:50 – 11:15 - Walter J. Koch, Duke University, USA <i>GRKs as Translational Targets for Heart Failure</i> 11:15 – 11:40 - Toru Suzuki, University of Leicester, UK <i>Drugging KLFs – our journey</i></p>
11:40	<p>Closing remarks Conference adjourns Lunch boxes pick-up</p>
13:00 – 16:00	<p>Bus boarding Tour at the Ancient Delphi site</p>
16:15	DEPARTURE to Athens

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