AMPK

12th International Meeting

CONFERENCE PROGRAM

1 – 6 OCT 2023

MANTRA, LORNE

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WELCOME

We offer you a very warm Welcome to the 12th International Meeting on AMPK. This promises to be a very special meeting with high-profile speakers, exciting sessions, and opportunities to network and reconnect with colleagues and friends after several years away from face-to-face meetings. We hope you enjoy the exciting scientific program as well as the space and stunning natural beauty that makes Lorne such a special place.

We appreciate the enormous distances that many of our attendees have covered to attend this meeting. The least we can do is to make your visit enjoyable and memorable. Please do not hesitate to ask if there is anything we can do to make that happen.

Themes for this year's meeting include:

- AMPK Regulation/Physiology
- Signalling by AMPK and Related Kinases
- AMPK in Neurobiology and Neuropathy
- AMPK in Muscle
- AMPK in Heart
- AMPK in Metabolism
- New Tools/Directions

CONFERENCE COMMITTEE

Jon Oakhill
St. Vincent's Institute
Melbourne

Janni Petersen
Flinders University
Adelaide

John Scott
Monash University
Melbourne

Sandra Galic
St. Vincents Institute
Melbourne

Ben Parker
University of
Melbourne

DELEGATE INFORMATION

VENUE

Mantra, Lorne

Mount Joy Parade, Lorne Victoria

All talks, catering and poster sessions will be held in the Conference Centre, next to the hotel's reception.

ORAL PRESENTATION GUIDELINES

You should bring your talk on a USB, saved in a format for upload to the PC within your presentation room (i.e., PowerPoint). You will need to load your presentation well in advance before the start of the session with the in-room AV technician (i.e., the session break before your session). The technician will be on hand to assist with any transfer / loading issues and to help you check your presentation.

POSTER PRESENTATIONS

You will be able to display your poster when registration opens on Sunday 1 October within the conference centre. Your poster can be displayed for the entirety of the conference; however, you are required to stand next to your poster during your allocated poster session. Your poster must be removed after lunch on Thursday. Any posters left on poster panels after this time, will be taken down. Velcro will be supplied at your poster number to attach your poster. We request that you stand by your poster during your allocated poster session. This year everyone will be able to vote for their favourite poster during the conference.

REGISTRATION DESK

The registration desk is located in the foyer on the conference centre and will be staffed from;

Sunday 1 Oct: 3:00pm – 5.45pm
Monday 2 Oct: 8:30am – 6:30pm
Tuesday 3 Oct: 8:30am – 6:30pm
Wednesday 4 Oct: 8:30am – 6:30pm
Thursday 5 Oct: 8:30am – 5:00pm

SOCIAL FUNCTIONS

Welcome BBQ
Date: Sunday 1 October
Time: 6:00pm to 8:00pm
Location: Seagrass Lawn
Cost: Included in full registration and $75 for accompanying person ticket.

Poster Sessions
Date: Monday 2 & Tuesday 3 October
Time: 5:30pm – 6.30pm
Room: Conference Centre
Cost: Included in full registration

Conference Dinner
Date: Thursday 5 October
Time: 7:00pm – 10:30pm
Room: Heritage Ballroom
Cost: $40 for Delegates and $120 for accompanying person ticket.

Please see Jess at registration if you wish to book.

WIRELESS INTERNET

There is complimentary Wi-Fi available for AMPK Conference delegates within the Mantra for the duration of the conference. To access simply:

1. Simply connect to the Mantra WIFI
2. Password: mantra

CONFERENCE WEB-APP

To get the 'App', please open the below link in your internet browser.

http://ampk-2023.m.asnevents.com.au/

You will be prompted to add an icon onto your device home screen. The 'App' will allow you to:

- View the full conference program.
- View all abstracts for the conference.
- Save our favourite sessions and plan your day.
- Take notes which will then be saved and downloaded from your registration profile
- Participate in live polling during the sessions.

To use most of these functions, you will be prompted to "log in" each day. Simply enter the same email and password which you used to register.

ACCOMMODATION

If staying on-site the following information is for you.
Check In: 14:00 **Check Out:** 10:00

Breakfast is served in The Larder from 07:00 to 10:00.
Gym and Pool times are 07:00 to 22:00

MOBILE PHONES

Please ensure your mobile devices are switched to silent during any session you attend.

BUSES

Murray's Bus Services – they will be labelled AMPK 2023

Sunday 1 October
Tullamarine Airport to Lorne 11:00 (this bus will then go to Southern Cross Station)
Southern Cross Station 11:30
Friday 6 October
Mantra Lorne to Tullamarine Airport via Southern Cross Station 10:00 sharp

To book please add to your registration or see Jess at the registration desk.

SOCIAL ACTIVITIES

Surfing
Date: Wednesday 4 October **Time:** 12:00pm – 4:00pm
Location: Meet at reception to be escorted to the beach.
Cost: $51 per person

Phantom Falls Hike
Date: Wednesday 4 October **Time:** 12:00pm – 4:00pm
Location: Meet at reception. You will be carpooled up.
Cost: Free

Please see Jess at registration if you wish to book.

INVITED SPEAKERS

Associate Professor John Albeck

University of California USA

John Albeck, PhD, is an associate professor of Molecular and Cellular Biology at the University of California, Davis. He received a B.A. in Biological Sciences from Cornell University in 2000, completed his doctoral work in Computational and Systems Biology under Peter Sorger at MIT in 2007, and was a postdoc and Instructor in Cell Biology from 2007 to 2013 with Joan Brugge at Harvard Medical School.

His work is focused on identifying systems-level regulatory properties that govern the behavior of cells in both normal tissue and in cancers. Since 2013, his research group at UC Davis has brought together biologists and engineers to study how multiple pathways are integrated to control cellular metabolism, proliferation, and death. Their approach is centered on time-lapse image analysis and computational modeling of biochemical signaling networks in individual cells.

Prof Sandrine Horman

University of Louvain Medical School, Belgium

Sandrine Horman is Research Professor at the University of Louvain Medical School (UCLouvain, Belgium). After a PhD degree in Biological Sciences obtained from the Free University of Brussels, she spent 7 years within the de Duve Institute (UCLouvain) and focused her research on the identification of new targets of AMP-activated protein kinase (AMPK) in the cardiovascular system. She became a principal investigator (FNRS Research Associate) in 2008, and then set up a research group within the Pole of Cardiovascular Research (Institute of Experimental and Clinical Research, UCLouvain). Her main objective is to investigate the molecular and cellular mechanisms involved in atherothrombosis and thrombo-inflammation, adverse post-infarction fibrosis and heart failure. In the last decade, she has built up expertise on intracellular signaling, platelet, endothelial cell and cardiac fibroblast biology, in vivo models of sepsis and myocardial fibrosis. The focus on translational research, with a basic research team strongly connected to the clinical department of cardiovascular diseases, is a key feature of her work.

Prof Luc Bertrand

University of Louvain, Belgium

Previously Research Director of the FNRS, Prof. Luc Bertrand is currently Full Professor in Biochemistry and Deputy Dean of the faculty of Pharmacy and Biomedical Sciences at the UCLouvain University (Brussels, Belgium). He is group leader in the pole of Cardiovascular Research of the IREC Institute and fellow of the Walloon Excellence Research Institute. His research group aims to understand the relationship between metabolism and cardiac dysfunction in heart failure. He is particularly interested in the impact of post-translational modifications including O-GlcNAcylation and acetylation, as well as in their regulation by metabolic sensors such as the AMP-activated protein kinase. He is board member of international scientific organizations (European section of the International Society for Heart Research, Working group of myocardial function of the European Society of cardiology) and Consulting Editor of the American Journal of Physiology: Heart and Circulatory Physiology.

Associate Prof Lykke Sylow

University of Copenhagen, Denmark

Lykke Sylow is an Associate Professor and group leader of the Molecular Metabolism in Cancer & Aging Group at the University of Copenhagen. With over 14 years of experience in muscle metabolism research, her focus is on understanding the regulation of glucose uptake in response to insulin and exercise. Recently, her work has centered on the role of AMPK in skeletal muscle metabolic dysfunctions in aging and cancer. She aims to utilize her research on exercise adaptations to harness the positive effects of exercise on aging and cancer.

Prof David Carling

Imperial College London, United Kingdom

During his PhD at Dundee University, David characterized a protein kinase termed AMPK. He was awarded an MRC Training Fellowship at the MRC Clinical Research Centre to develop molecular biology skills to clone AMPK. In 1992 he moved to the MRC London Institute of Medical Sciences where he have worked ever since. David was made Professor in Biochemistry at Imperial College in 2004. His research continues to investigate the regulation and physiological role of AMPK, particularly in the control of metabolism. David's research focuses on investigating the physiological role of AMPK in metabolism. AMPK is the central component of a protein kinase cascade that plays a key role in maintaining energy homeostasis. Dysregulation of energy metabolism occurs in a wide range of human diseases, including obesity and cancer. His group is particularly interested in determining the efficacy of AMPK activation for the treatment of fatty liver disease, obesity and prostate cancer. Recently, they developed a gain-of-function AMPK mouse model that they are using to support their pre-clinical studies. Genetic AMPK activation protects mice against diet-induced obesity. One of the mechanisms for this protection involves the reprogramming of white adipocytes to a skeletal muscle-like cell that has increased thermogenesis mediated by calcium futile cycling. They have also shown that AMPK activation reduces prostate cancer progression in a Pten-deletion mouse model. Their current emphasis is to move their work closer to the clinic.

Professor Robyn Murphy

La Trobe University

Robyn Murphy is the Deputy Dean and Associate Dean, Learning and Teaching in the School of Agriculture, Biomedicine and Environment at La Trobe University, Melbourne, Australia. She is the President of the Australian Physiological Society and is the Secretary for the International Research Group on Biochemistry of Exercise. Robyn has published over 105 peer-reviewed research articles. The overall research interest of the Murphy lab is skeletal muscle in health and disease, from a muscle biochemistry perspective. Using very small sample sizes of segments of individual skeletal muscle fibres, proteins important for metabolic and overall muscle health are examined in a manner which allows issues with the heterogeneity of skeletal muscle to be overcome. The lab also examines movement of proteins following micro-dissection of fibres, allowing the redistribution of proteins following various interventions to be quantitatively assessed.

Julien Courchet

Ingham Institute for Applied Medical Research

Julien Courchet is a research director at Inserm and independent group leader since 2016 at the Institut NeuroMyoGène from the University of Lyon. His long term interest is the regulation of mitochondria trafficking, physiology and metabolic activity and how this controls the development and function of cortical circuits, in physiological and pathological conditions. Current research in the Courchet lab focus on the polarity kinase LKB1 and the effectors AMPK and the autism-linked kinase NUAK1 in axon development and maintenance, as well as in mouse phenotyping and behavior. We furthermore develop strategies to modulate neuronal metabolism and test their relevance in mouse models of autism. Julien Courchet was the recipient of an ERC-Starting Grant (2016-2022), and is principal investigator and partner on projects (including from the Fondation Recherche Medicale and AFM-Telethon) and partner on an ANR-grant and RHU project.

Dr. Alice Pollard

Imperial College London

Dr Alice Pollard is a BBRSC Discovery Fellow working at the Institute of Clinical Sciences, Imperial College London. After conducting her PhD in the lab of Professor David Carling, she took a post-doctoral position at AstraZeneca, based in the Carling lab to continue her work on AMPK in adipose stem cell metabolism. As a fellow, her work focuses on the role of metabolism in adipose stem cell fate and function. Adipose-derived stem cells (ADSCs) are abundant in adult adipose tissue, and are recruited to form new adipocytes when required for depot expansion. Loss of stem cell function leads to a reduction in storage capacity, causing lipids to be stored peripherally, where they may become toxic. In addition, incomplete or incorrect differentiation can lead to a fibrotic phenotype that exacerbates an already inflammatory environment. Dr Pollard works to identify the key metabolic alterations that occur during ADSC commitment to different lineages, how these are altered in disease states, and how these pathways may be targeted in vivo, using immortalised human ADSCs and bariatric surgery patient-derived cell cultures.

Aside from her lab work, Dr Pollard is an advocate of healthy associations between patients and food, having worked in the fitness industry for 10 years. Her vision includes the involvement of patients with their adipose stem cell profiles, monitoring health benefits through sampling of ADSCs over time. She looks to promote diversity and inclusion in all studies, in the hope that a database may be established for the recruitment of volunteers worldwide.

Dr. Daniel Frigo

The University of Texas MD Anderson Cancer Center

Dr. Daniel Frigo received his B.S. in biochemistry from the University of Notre Dame and earned his Ph.D. in molecular and cellular biology from Tulane University. He was then awarded a postdoctoral fellowship and appointed to research scientist within the Department of Pharmacology & Cancer Biology at Duke University Medical Center in Durham, NC. He was appointed to a faculty position as an Assistant Professor at the University of Houston's Center for Nuclear Receptors & Cell Signaling and the Department of Biology & Biochemistry in 2010. In 2017, he moved his laboratory to The University of Texas MD Anderson Cancer Center where he is currently a tenured Associate Professor in the Departments of Cancer Systems Imaging (primary) and Genitourinary Medical Oncology (secondary). He remains an Adjunct Associate Professor with the University of Houston. Dr. Frigo's research is focused on understanding the basic biology of prostate cancer for the purpose of developing new therapies to treat the advanced stages of the disease. Currently, the Frigo laboratory is investigating how various signaling pathways, such as those regulated by the androgen receptor, CAMKK2, AMPK, mTOR, and MYC drive the progression of prostate cancer.

Professor Olga Göransson

Lund University, Sweden

Since January 2021 I serve as Deputy head of the Department for Experimental Science, with special responsibility for PhD studies.

I regard external engagement important and rewarding and I have participated in several outreach activities, such as "Forskningens Dag 2015 - " and the NMT-days, where I lectured on the topics "How fat cells work" and "The fat cell - friend or foe?".

Dr Sheng Cai Lin

School of Life Sciences, Xiamen University, China

Education:
1984, B.Sc. Xiamen University;
1991, Ph.D., UT Southwestern Medical Center at Dallas.

Professional Experience:
1991-1995, Postdoctoral Fellow at the Howard Hughes Medical Institute, UCSD;
1995-2001, Principal Investigator, IMCB, Singapore;
2001-2006, Assistant/Associate Professor, Hong Kong University of Science and Technology;
2006-Present, Professor, Cheung Kong Scholar, Xiamen University.
2021, Member, the Chinese Academy of Sciences.

Dr Sophie Bozec

Lyon, France

Associate Professor Morgan Fullerton

Faculty of Medicine, University of Ottawa
Co-director of the Centre for Infection, Immunity and Inflammation

Morgan Fullerton is an Associate Professor in the Faculty of Medicine at the University of Ottawa and co-Director of the Centre for Infection, Immunity and Inflammation. His lab's research is focused on understanding how metabolic pathways underpin and are connected to various aspects of immunity through the lens of both chronic metabolic dysfunction (obesity, type 2 diabetes/insulin resistance, MAFLD and atherosclerosis) and acute inflammation (models of infection). The research is supported by grants from the Canadian Institutes of Health Research (CIHR), Natural Sciences and Engineering Research Council, Diabetes Canada and Heart and Stroke Foundation of Canada (HSFC). Morgan has held new investigator awards from CIHR and HSFC and is currently supported by the Camille Villeneuve Chair in Cardiovascular Immunometabolism.

Associate Professor Bruno Guigas

Leiden University Medical Center, The Netherlands

Dr. Bruno Guigas is a molecular biologist with a broad expertise in the pathophysiology of metabolic disorders. His research group at the Leiden University Medical Center (The Netherlands) is driving projects within the field of immunometabolism aiming to identify new druggable molecules and/or molecular targets involved in the immune regulation of metabolic homeostasis in the context of obesity, NAFLD/NASH and type 2 diabetes. He is also actively involved in several international collaborations on multidisciplinary projects dealing with AMPK and metabolic disorders. He has co-authored >100 publications and is serving as external reviewer for multiple journals and national/EU funding agencies. He is a member of the Scientific Advisory Board of Valbiotis, a biotech developing innovative plant-derived molecules for preventing metabolic syndrome..

Professor Grahame Hardie

University of Dundee, United Kingdom

Grahame Hardie became Professor of Cellular Signalling at Dundee University in 1994. He is a Fellow of the Royal Society, the Royal Society of Edinburgh, and the Academy of Medical Sciences. He was awarded the Rolf Luft prize for Endocrinology and Metabolism of the Karolinska Institute (2008), the Novartis Medal (2010) and Philip Randle Prize Lecture (2022) of the UK Biochemical Society, and the Solomon Berson Distinguished Lectureship of the American Physiological Society (2015). He has received an honorary degree from the Medical University of Bialystok, Poland, and was a Distinguished Visiting Professor at the Universities of Hong Kong and Xiamen, China. He originally defined the AMP-activated protein kinase (AMPK) system and demonstrated that it maintained energy balance at the cellular and whole-body levels. He discovered that the tumour suppressor LKB1 acted upstream of AMPK, which led to the current worldwide interest in the role of AMPK in cancer..

Dr Nolan Hoffman

Australian Catholic University, Australia

Dr Nolan Hoffman is a Senior Research Fellow based in the Exercise and Nutrition Research Program at Australian Catholic University (ACU)'s Mary MacKillop Institute for Health Research in Melbourne, Australia. Nolan earned his BSc with Honours in Biology from Butler University in 2007 and PhD in Cellular and Integrative Physiology from Indiana University in 2012 in his hometown of Indianapolis, Indiana USA. Prior to commencing at ACU in 2016, Nolan completed his postdoctoral research from 2012 to 2016 in Sydney at the Garvan Institute of Medical Research and the University of Sydney. Nolan's research utilises cellular, animal and human model systems to investigate molecular networks underlying exercise and metabolic control. Within this scope, his research is aimed at mapping exercise-regulated signalling networks and interrogating cellular energy-sensing mechanisms with a focus on skeletal muscle and the AMPK pathway. His multidisciplinary research projects involve 'omics-based technologies (primarily phosphoproteomics and metabolomics) and a range of molecular, cellular, biochemical and physiological approaches. Using this integrative approach, the overall goal of Nolan's research program at ACU is to uncover pathways and mechanisms involved in maintaining skeletal muscle and whole-body metabolic homeostasis and eliciting the health benefits of exercise..

Rémi Mounier

Institute NeuroMyoGène

The team of Rémi Mounier (Research Director at CNRS) in Institute NeuroMyoGène (Lyon, France) investigates the role of metabolism in the regulation of MuSC fate, with a specific focus on the role of the energy sensor AMPK, and the metabolic characteristics of MuSCs during skeletal muscle plasticity and homeostasis. They identified the AnxA1/FPR2/AMPK (JCI 2020) and Glucocorticoid/AMPK/FOXO3 (EMBO Rep 2022) axes as novel pathways regulating skeletal muscle regeneration. Furthermore, they showed that AMPK controls self-renewal/differentiation of MuSCs (EMBO J 2017) and they demonstrated a MuSC-intrinsic role for AMPK in the regulation of MuSC-to-myofiber fusion (Kneppers, BioRxiv 2022). Rémi Mounier has been invited in 21 international meetings, has organized the European AMPK Workshop (2017) and the 11th International AMPK meeting (2021) and will be the organizer of the next EMBO Workshop "Skeletal Muscle Development, Metabolism, and Repair during Homeostasis and Disease" in 2024. He is laureate of the Bronze Medal of CNRS of Physiology (2018) (79 publications, H-index of 37 including EMBO Rep 2022, JCI 2020, EMBO J 2017, J Immunol 2016, Immunity 2016, J Immunol 2015, Cell Metab 2013).

Professor Mark Rider

UCLouvain

Mark Rider was born in West Yorkshire, UK. He is Professor of Biochemistry at Université catholique de Louvain Brussels campus and Group Leader of the Protein Phosphorylation "PHOS" research team at the de Duve Institue. Mark Rider graduated in Biochemistry at Bristol University in 1979, then moved to University College London where he completed his PhD on the control of glycerol phosphate acyltransferase activity in white adipose tissue under the supervision of David Saggerson. In 1983 he joined the group of Louis Hue in Brussels and was the first to provide evidence for the existence of tissue specific isoenzymes of the key control enzyme of glycolysis, 6-phosphofructo-2-kinase (PFK-2). He went on to show that heart PFK-2 was activated by insulin via protein kinase B (PKB)-induced phosphorylation and that the heart isoenzyme was also activated by AMP-activated protein kinase (AMPK) during ischaemia, providing a new explanation for the Pasteur effect. He has continued to work on the control of cell function by PKB and AMPK and identified several new targets of AMPK. He also elucidated crosstalks between the AMPK and other signalling pathways. An important aspect of his research is the use of mass spectrometry, established for phosphorylation site identification and studies of differential changes in protein expression.

Website: https://www.deduveinstitute.be/research/metabolism-hormones/diabetes.

Professor Kei Sakamoto

University of Copenhagen, Denmark

Kei Sakamoto is the vice executive director and Professor at the Novo Nordisk Foundation Center for Basic Metabolic Research, University of Copenhagen. Prior to this role, Kei was the Head of Metabolic Health Department at the Nestlé Institute of Health Sciences in Lausanne, Switzerland. Before that Kei was Programme Leader at the MRC Protein Phosphorylation Unit in Dundee. His research is focused on elucidating key molecular signaling mechanisms that control energy homeostasis associated with exercise, insulin resistance and type 2 diabetes. The ultimate aim of his lab is to identify and validate molecular candidates and small-molecues/natural bioactives to prevent or treat insulin resistance. He has received several awards, for examples from the American Physiological Society, the Society for Experimental Biology and Medicine, and the American College of Sports Medicine.

Professor Reuben Shaw

Molecular and Cellular Biology Laboratory, Salk Institute

Reuben Shaw is a full professor in the Molecular and Cellular Biology Laboratory at the Salk Institute. Dr. Shaw's lab focuses on the AMPK signaling pathway, which coordinates metabolism and growth at the cellular and organismal levels across eukaryotes. This pathway is altered in a number of human cancers and altered in metabolic diseases as well. Starting as an Assistant Professor at the Salk Institute in 2006, Dr. Shaw's lab has been using a combination of biochemistry, cell biology, and genetically engineered mouse models of cancer to dissect the role of the LKB1 – AMPK tumor suppressor pathway in coordinating metabolism, autophagy, and cell growth. This work has led to the identification of several new direct substrates of AMPK which help to provide a molecular framework for how cells reprogram their metabolism and growth under conditions of low nutrients and in response to mitochondrial insults. Dr. Shaw's lab also utilizes genetic engineered mouse models to explore the roles that reprogramming of glucose and lipid metabolism contributes to tumorigenesis, and to develop and test novel therapeutic approaches for multiple cancer types. In 2016, he was named the Director of the Salk NCI-Designated Cancer Center.

Professor Gregory Steinberg

McMaster University

Dr. Steinberg is a professor of medicine at McMaster University where he holds a Tier 1 Canada Research Chair and a J. Bruce Duncan Endowed Chair in Metabolic Diseases and is Co-Director of the Centre for Metabolism, Obesity and Diabetes Research.

Greg completed his PhD in 2002 at the University of Guelph studying muscle metabolism. He then conducted postdoctoral research for 5 years at the University of Melbourne in molecular biology and protein biochemistry. In 2008, he returned to Canada as an Associate Professor in the Department of Medicine at McMaster University.

His research studies cellular energy sensing mechanisms and how endocrine factors, lipid metabolism and insulin sensitivity are linked and contribute to the development of obesity, NAFLD/NASH, type 2 diabetes, cardiovascular disease and cancer. He has published over 220 papers and since 2020 has made the list of the world's most highly cited researchers. Importantly, many of these studies have laid the foundation for therapies that have recently been approved or are in clinical trials for liver disease or cardiovascular disease.

His scientific contributions have been recognized by the Endocrine Society, Diabetes Canada, the Canadian Institutes of Health Research and the American Diabetes Association who have presented him with outstanding/early career scientific achievement awards.

Benoit Viollet

Institut National de la Santé et de la Recherche Médicale (INSERM), France

Benoit Viollet is research director at INSERM and is leading the team "Physiopathology of AMPK and AMPK-related protein kinase in diabetes and obesity" at Institut Cochin in Paris. During the last decade, his team has investigated by the extensive use of knock-out mouse models the function of LKB1/AMPK signalling in the regulation of cellular energy balance and metabolic homeostasis. By investigating how AMPK integrates stress responses such as exercise as well as nutrient and hormonal signals, his team established that AMPK provides an attractive target for therapeutic intervention in the treatment of metabolic disorders. Recently, his team has focussed on the function of AMPK in gastrointestinal tract and on the elucidation of the role of the AMPK-related protein kinase SIK in the control of hepatic glucose production. The overall objective of his team is to assess their utility in diagnosis and efficacy in therapeutics for type 2 diabetes and obesity.

Professor Lawrence Young

Yale University, USA

Lawrence H. Young MD is professor of medicine (cardiovascular) and professor of cellular and molecular physiology at Yale University. He serves as vice chair in the Yale Department of Internal Medicine and has mentored PhD and medical students, post-doctoral trainees and junior faculty. As a physician-scientist, his primary interest is elucidating basic cellular and molecular mechanisms of cardiovascular diseases. His laboratory investigates the role of AMPK in protecting against metabolic stress and myocardial remodelling in the context of ischemia, heart failure and atrial fibrillation. The over-arching goal is to develop novel therapeutic strategies for the prevention and treatment of heart disease.

PROGRAM

Sunday, 1st October 2023

Registration Opens
3:00PM - 6:00PM **Convention Centre Foyer**

Welcome to Country & Conference Opening
6:00PM - 6:30PM **Seagrass Lawn**

Welcome BBQ
6:30PM - 8:00PM **Seagrass Lawn**

Monday, 2nd October 2023

Registration Opens
8:30AM - 6:30PM **Convention Centre Foyer**

Committee Welcome
9:00AM – 9:10AM **Convention Room 1 & 2**

Jon Oakhill

1.1 AMPK Regulation/Physiology I
9:10AM - 10:30AM **Convention Room 1 & 2**

Chair: Grahame Hardie

Stabilize the Powerhouse: decoding how AMPK restores mitochondrial homeostasis - **Reuben Shaw - *Abs 1***

AMP-Activated Protein Kinase (AMPK) is essential for cytokinesis following an environmental stress-induced delay to cell division - **Bridget A Mooney - *Abs 2***

AMP/AMPK-dependent and independent control of glucose/glycogen metabolism in muscle - **Kei Sakamoto - *Abs 3***

Morning Tea & Group Photo
10:30AM - 11:00AM **Convention Room 3**

1.2 AMPK Regulation/Physiology II

11:00AM - 12:20PM **Convention Room 1 & 2**

Chair: Robyn Murphy

AMPK-dependent regulation of metabolic homeostasis and AMPK-independent control of cell fate in low glucose. - **Sheng-Cai Lin - *Abs 4***

Absolute quantification of AMPK subunits in rodent/human tissues by high-resolution mass spectrometry and implications for the control of white adipose tissue metabolism - **Mark Rider - *Abs 5***

Protection against cisplatin mediated renal tubular cell injury by the AMPK activator ATX-304 is not dependent on phosphorylation of acetyl-CoA carboxylase - **Peter F Mount - *Abs 6***

Lunch

12:30PM - 2:00PM **Convention Room 3**

1.3 AMPK Regulation/Physiology III

2:00PM - 3:20PM **Convention Room 1 & 2**

Chair: Chris Langendorf & Brittany Ellis Jewell

Cellular homeostasis is maintained by AMPK-mediated metabolic cycles in mammalian cells. - **John Albeck - *Abs 7***

Understanding sugar ubiquitination - **David Komander - *Abs 8***

Met1-linked ubiquitin signalling is required for AMPK activation in response to energetic stress - **Camilla Reiter Elbaek - - *Abs 19***

Afternoon Break

3:20PM - 4:00PM **Convention Room 3**

1.4 Plenary

4:00PM - 5:00PM **Convention Room 1 & 2**

Chair: David Carling

AMP Activated Protein Kinase: Past and Present- **D. Grahame Hardie - *Abs 10***

Posters Session #1

5:30PM - 6:30PM **Convention Room 1 & 2**

Targeting metabolic dysfunction to improve survival during cancer - **Justin P Hardee - *Abs 60***

Structural and Functional Characterization of Muscle-Specific AMPK—A Therapeutic Target for Type 2 Diabetes Mellitus - **Muhammad Nur Hamizan Bin Khabib - *Abs 61***

An in vivo functional survey of substrates of AMPK-related kinases in non-small cell lung cancer - **Christopher W Murray - *Abs 62***

Extracellular vesicles are enriched in activated AMPK following acute exercise. - **Nimna Perera -** ***Abs 63***

Novel torin1-sensitive phosphorylation sites on AMPK uncover regulation of cell proliferation under nutrient stress - **William J Smiles -** ***Abs 64***

Sex specific response to cardiomyocyte-specific, inducible AMPK α1/α2 deletion - **Malgorzata Tokarska-Schlattner -** ***Abs 65***

Hierarchical inhibition of mTORC1 by glucose starvation-triggered AXIN lysosomal translocation and by AMPK - **Xiaoyan Wei -** ***Abs 66***

Caspase-mediated nuclear retention of the AMPK-α1 energy sensor during apoptosis - **Anees R Cheratta -** ***Abs 67***

The designer cytokine and AMPK activator IC7Fc improves hepatosteatosis in the pathogenesis of non-alcoholic steatohepatitis - **Jingjing Zhao -** ***Abs 78***

Tuesday, 3rd October 2023

Registration Opens

8:30AM - 6:30PM **Convention Centre Foyer**

2.1 Signalling by AMPK and Related Kinases I

9:00AM - 10:10AM **Convention Room 1 & 2**

Chair: John Scott

Targeting CAMKK2 for the treatment of advanced prostate cancer - **Daniel Frigo -** ***Abs 11***

CaMKK2: at the interface of nutrient sensing and cancer cell progression - **Ayla Orang -** ***Abs 12***

Defining novel AMPK substrates by lysosome-enriched phosphoproteomics - **Ashfaqul Hoque -** ***Abs 13***

Morning Tea

10:10AM - 11:00AM **Convention Room 3**

2.2 Signalling by AMPK and Related Kinases II

11:00AM - 12:20PM **Convention Room 1 & 2**

Chair: Janni Petersen

The role of AMPK in prostate cancer - **David Carling -** ***Abs 14***

AMPK regulation of GBF1 controls Golgi morphology and trafficking - **Jordana B Freemantle -** ***Abs 15***

Regulation of Pancreatic Beta-Cell Function by Salt-Inducible Kinases. - **Kim Loh -** ***Abs 16***

Lunch

12:30PM - 2:00PM **Convention Room 3**

2.3 AMPK in Neurobiology and Neuropathy I

2:00PM - 3:10PM **Convention Room 1 & 2**

Chair: Sandrine Horman

"Cellular functions of the LKB1-NUAK1 signaling pathway during the development of the cerebral cortex" - **Julien Courchet - *Abs 17***

Hypothalamic Salt-inducible kinase 3: A novel regulator of Energy Homeostasis - **Danise Ann Onda - *Abs 18***

Serine threonine kinase 11 (liver kinase B1) SNP rs9282860 associates the diabetic peripheral neuropathy through the interaction of risk factors in Type 2 diabetic patients: Causal role of LKB1 and CREB binding sequence of SNP - **Yasuo Ido - *Abs 19***

Afternoon Break

3:10PM - 4:00PM **Convention Room 3**

2.4 AMPK in Muscle I

4:00PM - 5:20PM **Convention Room 1 & 2**

Chair: Mark Rider & Amanda Genders

AMPK as a mediator of tissue preservation: time for a shift in dogma? - **Lykke Sylow - *Abs 20***

C18ORF25 is a novel exercise-regulated AMPK substrate regulating skeletal muscle function - **Benjamin L Parker - *Abs 21***

Skeletal muscle signalling and metabolite networks underlying exercise and AMPK-glycogen interactions - **Nolan J Hoffman - *Abs 22***

Posters Session #2

5:30PM - 6:30PM **Convention Room 3**

Importance of liver-expressed SIK isoforms in the control of blood glucose levels - **Marc Foretz - *Abs 68***

Abstract title: Characterisation of a novel AMPK inhibitor - **Conchita Fraguas Bringas - *Abs 69***

Exploring the impact of AMPK signaling on the plasticity and differentiation of intestinal stem cells - **Brittany Ellis Jewell - *Abs 70***

mTORC1 may inhibit AMPK a2b2g3 by phosphorylation of a2 ser345 and ser377 to suppress the insulin-sensitizing effect of exercise in humans - **Magnus Romme Leandersson - *Abs 71***

Targeting AMPK activity to potentiate the action of venetoclax in leukemia - **Juliet Mullen - *Abs 72***

Metformin induces an AMPK-independent NEAT1 isoform switch in colorectal cancer cells - **Nadine E Smith - *Abs 73***

Exploring the role of AMPK in bacterial infection - **Tyler K.T. Smith - *Abs 74***

Low-dose metformin targets the lysosomal AMPK pathway through PEN2 – **Xiao Tian - *Abs 75***

The aldolase inhibitor aldometanib mimics glucose starvation to activate lysosomal AMPK - **Yu Wang -** ***Abs 76***

Deciphering the role of AMPK in pancreatic cancer - **Shira Yomtoubian -** ***Abs 77***

Wednesday, 4th October 2023

Registration Opens

8:30AM - 6:30PM **Convention Centre Foyer**

3.1 AMPK in Heart

9:00AM - 10:30AM **Convention Room 1 & 2**

Chair: Kei Sakamoto

AMPK prevents cardiac atrial metabolic remodeling and fibrillation - **Lawrence Young - *Abs 23***

Spotlight on the cardioprotective role of AMPK beyond the cardiomyocyte - **Sandrine Horman - *Abs 24***

Targeting AMPK as a heart failure therapy, from old concepts to new paradigms - **Luc Bertrand - *Abs 25***

Morning Tea

10:00AM - 11:00AM **Convention Room 3**

3.2 AMPK in Muscle II

11:00AM - 12:00PM **Convention Room 1 & 2**

Chair: Gregory Steinberg

AMPK association with glycogen in skeletal muscle – in vivo and in vitro tell a different story - **Robyn Murphy - *Abs 26***

NUAK1-dependent metabolic underpinnings of adult muscle stem cells - **Rémi Mounier - *Abs 27***

Lunch

12:00PM - 12:30PM **Convention Room 3**

Afternoon Excursion/Activity: Walk/Surfing

12:30PM - 4:00PM

3.3 AMPK in Metabolism I

4:30PM - 6:30PM **Convention Room 1 & 2**

Chair: Alice Pollard

Role of dendritic cell-intrinsic LKB1-AMPK/SIK signaling in obesity-associated metabolic dysfunctions. - **Bruno Guigas - *Abs 28***

Dissecting the role of AMPK-mediated control of mTORC1 - **Morgan Fullerton - *Abs 29***

The role of AMPK in the regulation of lipid synthesis in adipocytes - lessons learned from the use of ADaMs activators - **Olga Göransson - *Abs 30***

Direct AMPK Activation: From Preclinical to Clinical. Perspectives in Rare Metabolic Disease. - **Sophie Bozec - *Abs 31***

Thursday, 5th October 2023

Registration Opens

8:30AM - 5:30PM **Convention Centre Foyer**

4.1 AMPK in Metabolism II

9:00AM - 10:20AM **Convention Room 1 & 2**

Chair: Mark Febbraio

Metabolic regulation of adipose stem cell fate and function: from bench to clinic - **Alice Pollard - *Abs 32***

The role of macrophage and hepatocyte AMPK in response to acetaminophen-induced liver injury - **Julia RC Nunes - *Abs 33***

AMPK inhibition of non-alcoholic steatohepatitis (NASH) and hepatocellular carcinoma (HCC) - **Gregory Steinberg - *Abs 34***

Morning Tea

10:20AM - 11:00AM **Convention Room 3**

4.2 New tools/Directions I

11:00AM - 12:30PM **Convention Room 1 & 2**

Chair:

AMP-Activated Protein Kinase Deletion Precipitates Myelin Loss in Mouse Model of X-Linked Adrenoleukodystrophy - **Jaspreet Singh - *Abs 41***

Impact of AMPK deficiency on infection and cancer : a journey across the intestine. - **Benoit Viollet - *Abs 35***

Excitatory neuron-specific repression of AMPKβ2 impairs recognition memory, synaptic morphology, and hippocampal LTP in mice. - **Nathaniel Swift - *Abs 36***

Suppression of MKRN1 E3 ligase activity activates liver AMPK, inhibiting nonalcoholic steatohepatitis progression - **JaeWhan Song - *Abs 38***

Lunch

12:30PM - 2:00PM **Convention Room 3**

4.3 New tools/Directions II

2:00PM - 3:00PM **Convention Room 1 & 2**

Chair: Jon Oakhill

Stoichiometric quantification of AMPK phosphorylation sites by label-free mass spectrometry. - **Ashley J. Ovens -** ***Abs 39***

Isoform-specific roles of AMPK catalytic subunit in Alzheimer's disease - **Tao Ma -** ***Abs 40***

An AMPK-based fluorescent nanosensor distinguishes physiological from toxic stress - **Uwe Schlattner -** ***Abs 37***

Afternoon Break

3:00PM - 4:00PM **Convention Room 3**

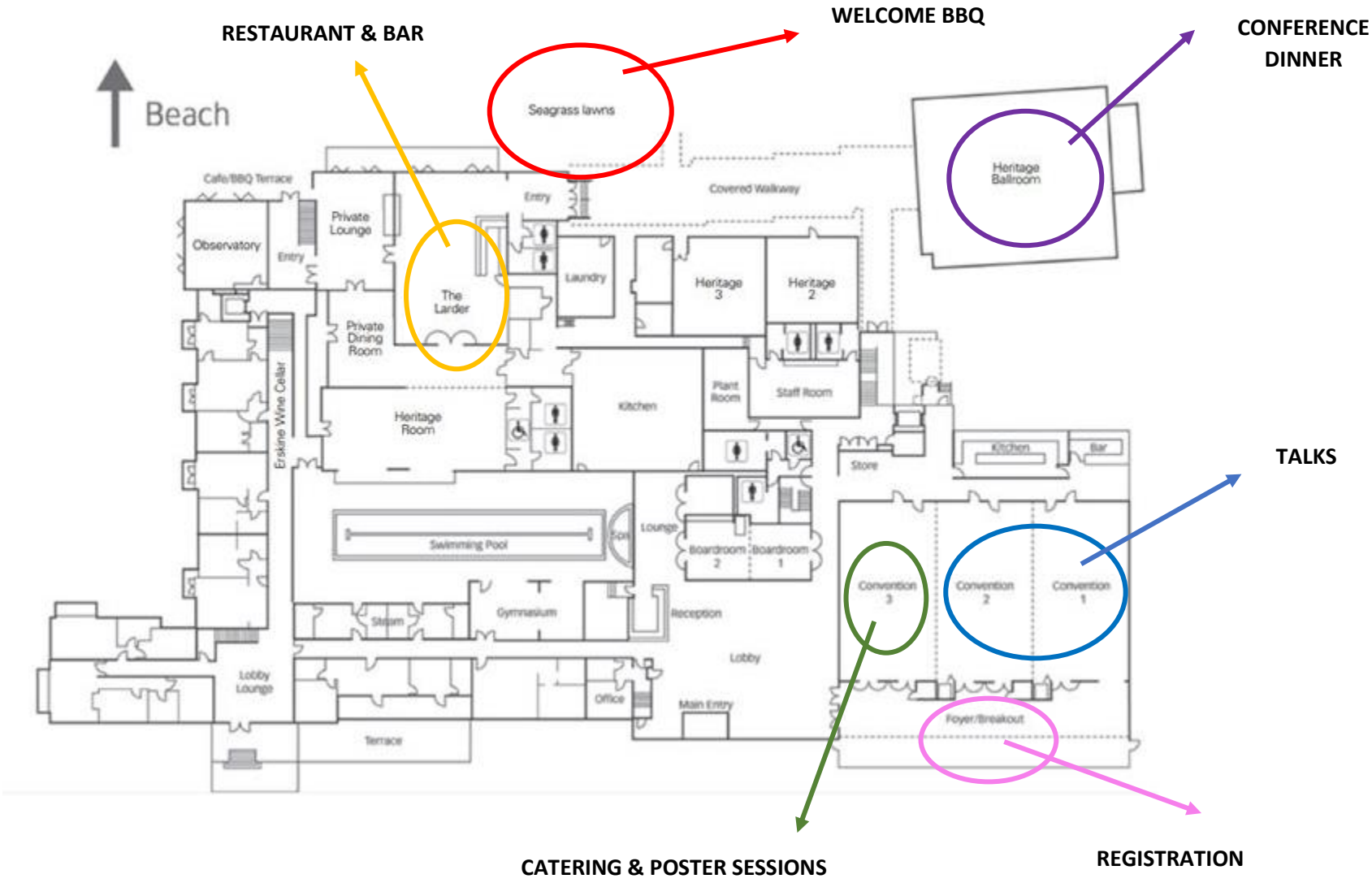
Close/Awards

4:00PM - 5:00PM **Convention Room 1 & 2**

Conference Dinner

7:00PM - 10:30PM **Heritage Ballroom**

VENUE FLOORPLAN



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Amplifier Therapeutics, a Sweden-based biopharmaceutical company, is focused on the development of AMP-activated protein kinase (AMPK) activator compounds to treat diseases associated with aging including metabolic conditions, cardiovascular diseases, kidney diseases, and cancer. The lead clinical-stage compound is ATX-304, a pan-AMPK activator. ATX-304 was discovered by three leading AMPK researchers: Helena Edlund, Thomas Edlund, and the late Olof Karlsson.

Amplifier Therapeutics is a pipeline company of Cambrian Bio, a clinical stage biotechnology company focused on treating and preventing chronic diseases of aging.

For more information, please visit www.Amplifier-Tx.com and www.cambrianbio.com

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About St Vincent's Institute

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We work collaboratively to tackle some of the some of the most critical health challenges facing society today, including cancer, diabetes, osteoporosis, cardiovascular disease, infectious disease, and dementia.

We celebrate fundamental biological discovery and practical application alike because both are required to improve the treatment, diagnosis, and prevention of disease. There are no breakthroughs, no new wonder drugs, no big leaps forward, without new understanding.

SVI is located on the campus of St Vincent's Hospital Melbourne, is affiliated with The University of Melbourne, and operates proudly in one of the world's most dynamic biomedical hubs.

About Pfizer

Pfizer is a research-based, global biopharmaceutical company. We apply science and global resources to bring therapies to people that extend and significantly improve their lives through the discovery, development, manufacture, marketing, sales and distribution of biopharmaceutical products worldwide. We work across developed and emerging markets to advance wellness, prevention, treatments, and cures that challenge the most feared diseases of our time. We collaborate with healthcare providers, governments, and local communities to support and expand access to reliable, affordable healthcare around the world. For more than 170 years, we have worked to make a difference for all who rely on us.

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