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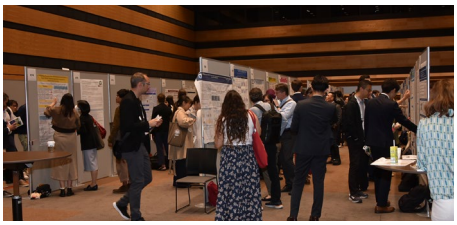
HEART NEWS AND VIEWS

THE NEWS BULLETIN OF THE INTERNATIONAL SOCIETY FOR HEART RESEARCH

XXV World Congress
May 11-14, 2025



Poster session in Nara

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Celebration of the XXV World Congress

May 11-14, 2025: NARA

Group photo taken at the President's Dinner

From May 11-14, 2025, the 25th International Society for Heart Research (ISHR) World Congress was held at the Nara Prefectural Convention Center. Nara, located in the Kansai region of Japan, is renowned as the nation's first permanent capital, established more than 1,300 years ago. The city is home to several UNESCO World Heritage Sites, including Todai-ji Temple, famous for housing the Great Buddha, and Horyu-ji Temple, one of the world's oldest surviving wooden structures. Surrounded by historic landmarks and rich in cultural heritage, Nara continues to inspire visitors with its timeless beauty and profound historical significance.

The Congress was organized by ISHR-Internatinal and the Japanese Section of ISHR. Professor Issei Komuro (Professor, International University of Health and Welfare / Project Professor, Emeritus Professor, The University of Tokyo) served

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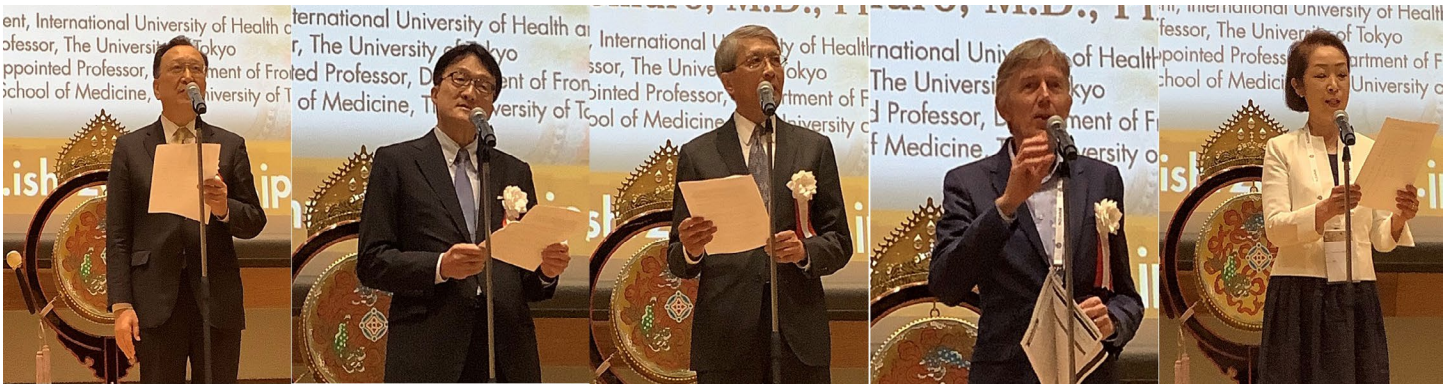


Five presenters in the opening ceremony; (left to right) Yoshihiko Saito, Issei Komuro, Hiroyasu Iso, Thomas Eschenhagen, and Satomi Akahane.

as Congress Chair, with Professor Yoshihiko Saito (CEO, Nara Prefecture Seiwa Medical Center / Emeritus Professor, Nara Medical University) as Vice Chair and Professor Toyoaki Murohara (Nagoya University) as the Secretary General. The Congress welcomed 1,190 delegates from 44 countries, including Japan, the United States, China, Australia, Germany, the United Kingdom, Singapore, the Netherlands, Italy, and Canada.

The meeting began with an opening ceremony, during which the following distinguished guests delivered congratulatory remarks: Prof. Yoshihiko Saito (outgoing President of ISHR), Prof. Issei Komuro (Congress Chair), Prof. Hiroyasu Iso (Vice President of the Science Council of Japan), and Prof. Thomas Eschenhagen (Past-President of ISHR, University Medical Center Hamburg-Eppendorf, Germany). Japanese Prime Minister Shigeru Ishiba, sent a message which was read on his behalf by Prof. Satomi Akahane (Toho University).

The scientific program featured 24 international symposia covering seven thematic areas: (1) New Mechanisms of Cardioprotection and Injury, (2) New Insights into Cardiac Dysfunction, (3) Ion Channel Mechanisms and Arrhythmias, (4) Signaling in Cardiac Disease and Therapy, (5) Emerging Concepts for Cardiac Regulation: Beyond the Genome, (6) Regenerative and Re-engineering Approaches for Heart Disease, and (7) Cardiac Metabolism. In addition, the program included 3 keynote lectures, 8 distinguished award lectures, 4 presentations by Richard J Bing Young Investigator Award Finalists, and both Early Career Investigator (ECI) and Mid-Career Investigator (MCI) sessions.

In parallel with these international sessions, 8 symposia of the 42nd Annual Meeting of the ISHR Japanese Section were held under the leadership of Prof. Yasuchika Takeishi (Chair, Japanese Section, Fukushima Medical University).

Keynote Lectures were delivered by:

- Prof. Kazutoshi Mori (Kyoto University): “Dynamics of the function and regulation of the endoplasmic reticulum.”
- Prof. Masashi Yanagisawa (University of Tsukuba): “Deciphering the mysteries of sleep: from basic neuroscience to real world applications”
- Prof. Shizuo Akira (Osaka University): “Regnase-1 is an endoribonuclease involved in inflammation, immunity and metabolism”.

All three keynote lectures served as sources of renewed inspiration for the ISHR2025 attendees.

Kagami-biraki was performed at the Welcome Reception.

Award Lectures

Ten researchers were honored with prestigious awards, including:

■ **Peter Harris Distinguished Scientist Award:**
- Prof. Thomas Eschenhagen: "The long and winding road to cardiac regeneration"
- Prof. Issei Komuro: "Mechanisms of heart failure revealed by genomic and single cell analysis - from mice to humans."

■ **Research Achievement Award:**
- Prof. Jeffery Molkentin (The Heart Institute Cincinnati Children's Hospital Medical Center): "Cardiomyocyte TGFbeta 1/2/3 genes are required for developmental mouse heart maturation and viability as adults."

■ **Outstanding Investigator Award:**
- Dr. Xi Fang (University of California, San Diego): "Genetic mitochondrial cardiomyopathy: from Barth syndrome to beyond"
- Dr. Simon Sedej (Medical University of Graz, Austria): "Caloric restriction mimetics to the rescue for an aging and failing heart"

■ **Keith Reimer Distinguished Lecture Award:**
- Prof. E Dale Abel (David Geffen School of Medicine and UCLA Health): "Mitochondria, metabolism and heart failure - Beyond ATP"

■ **Janice Pfeffer Distinguished Lecture Award:**
- Prof. Koichiro Kuwahara (Shinshu University): "Neurohormonal and transcriptional signaling in cardio-vascular remodeling"

■ **President's Distinguished Lecture Award:**
- Prof. Pilar Alcaide (Tufts University School of Medicine): "T cell inflammation at the heart of cardiac remodeling"

■ **ISHR Distinguished Leader Award:**
- Dr. Elizabeth Murphy (National Institute of Health).

■ **Richard J Bing Young Investigator Award:**
Finalists included Dr. Jin Komuro (Keio University), Dr. Jennifer Petrosino (University of Pennsylvania), Dr. Pamela Swiatlowska (Imperial College London), and Dr. Abigail Giles (National Heart, Lung and Blood Institute/NIH). Dr. Giles received the award for her presentation: "Real-time assessment of mitochondrial membrane potential in cardiac ischemia-reperfusion injury reveals rapid mitochondrial repolarisation upon reperfusion".

Peter Harris Distinguished Scientist Awardees; (left) Thomas Eschenhagen with Yoshihiko Saito (Chair), and (right) Issei Komuro with Thomas Eschenhagen (Chair).

Research Achievement Awardee; Jeffery Molkentin (left), with Bin Zhou as chair (right).

(continued on page 16)

PRESIDENT'S LETTER

It is my most profound honor and privilege to serve as President of the ISHR for the next 3 years. As I write my first letter, I want to begin by extending my sincere thanks to my predecessors. Their hard work and leadership have shaped the ISHR, leaving it in an excellent state and providing a strong foundation for the future.

I'd first like to thank outgoing President Yoshihiko Saito, outgoing Past-President Thomas Eschenhagen, and all other ISHR Officers for their exceptional leadership over the past three years. My sincere gratitude is also extended to Secretary-General Jolanda van der Velden for her exceptional work in the successful organization of the scientific program at the ISHR World Congress in Nara. I am pleased she will continue in this capacity for the upcoming term. Furthermore, I'd like to thank Livia Hool (Treasurer) and Charles Steenbergen (Financial Committee) for their excellent handling of our funds and investments. I also want to express my sincere gratitude to Rong Tian, the outgoing Editor-in-Chief of the Journal of Molecular and Cellular Cardiology (JMCC), the official journal of the ISHR, who served from 2019-2025. Rong has done a tremendous job ensuring JMCC remains a leading journal in cardiovascular research. Her positive changes and outstanding leadership have been invaluable. I'd also like to welcome Lorrie Kirshenbaum, our newly appointed Editor of the JMCC. A big congratulations goes to Davor Pavlovic and his team for achieving several significant milestones for JMCC Plus, ISHR's new open-access journal. JMCC Plus was recently accepted for indexing in PubMed Central and received its first impact factor of 2.2 in June 2025 – a truly impressive accomplishment! Finally, a huge thank you to Leslie Lobaugh, our ISHR Executive Secretary. She is invaluable to the society, acting as its true heart and memory, and ensuring everything runs seamlessly.

I also want to extend thanks and congratulations to Issei Komuro, Congress Chair, and the local organizers of the World Congress in Nara. They made the ISHR World Congress 2025 an amazing meeting, featuring internationally renowned speakers and engaging cultural activities for attendees. The meeting was a huge success, with participants enjoying research presentations from basic and clinical scientists, fostering fruitful exchanges of ideas to promote cardiovascular health worldwide. Although it feels like we just returned from Nara, planning is already underway for the 2028 ISHR World Congress in Philadelphia, to be held May 8-11. John Elrod and his organizing committee are putting together another outstanding meeting.

The mission of the ISHR is to promote the discovery and dissemination of knowledge in the cardiovascular sciences on a worldwide basis. During my term as President, I would like to focus on promoting the growth and membership of our sections. This includes supporting and expanding Early Career Investigator (ECI) and Mid-Career Investigator (MCI) activities at local section meetings and at the next World Congress. The sections and their members are the foundation of ISHR International, and we simply would not exist without them. Another key objective is to establish an Investment Subcommittee to determine how to best support the growth of the sections while protecting our financial stability. I also aim to update our website and establish a strong social media presence to ensure members of our various sections worldwide remain connected and updated on ongoing activities between World Congresses. I am fortunate to have a wonderful Executive Committee that will assist me in achieving these objectives during my term as President.

Asa Gustafsson
President, ISHR-International

Early Career Investigator Reflections on the 2025 ISHR World Congress

(May 11-14, 2025; Nara, Japan)

To all participants of the ISHR World Congress 2025—thank you for coming to Nara! We hope you enjoyed your time in Japan and liked seeing the deer in the Nara Park. The white deer of Nara came to be revered as messengers of the gods in legend and are still cherished as sacred creatures today. We hope you were able to enjoy both the cutting-edge science presented at the World Congress and the beauty of Japan and its culture during your time here.

A sacred white deer of Nara.

Our committee, formed from ECI representatives from all eight ISHR sections, had been preparing the various ECI activities at the 2025 ISHR World Congress for over a year. These included the ECI symposia, ECI panel discussions, ECI lunches and networking sessions with senior scientists, ECI workshops, the ECI/MCI social event, and the Visiting Research Fellowships. Although some sessions started early in the morning, the venues were filled with ECI participants from around the world. The symposia featured a record breaking 30 oral presentations, and over 200 ECI participants gathered for the ECI career panel discussion - a highly successful event! Additionally, networking events and social events provided opportunities to make connections with MCIs and senior scientists, fostering meaningful opportunities for discussion and exchange of ideas. The Visiting Research Fellowships allowed ECIs from every ISHR section to stay at host Japanese laboratories, learn new methodologies, and forge new collaborations and friendships – perfectly capturing the spirit of the World Congress.

We hope that these ECI activities have set the groundwork for future exciting cardiovascular research by strengthening collaborations among the next generation of leaders in the field. Finally, we would like to express our deepest gratitude to all those involved in the organization of the international conference and to all ECIs. To all our dear friends, may the deer bring you happiness and peace.

ARIGATOU (which means thank you in Japanese).

Akiyasu Iwase, PhD
Vice-Chair - ISHR International ECI Committee, The University of Tokyo
Naofumi Yoshida, MD, PhD
Secretary - ISHR International ECI Committee, National Cerebral and Cardiovascular Center Hospital

Members of the 2025 ECI Committee.

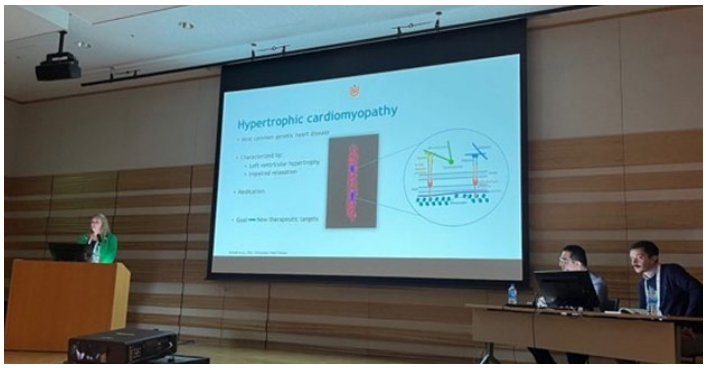
ECI Symposia

In collaboration with the ISHR Executive Council and the local organizing committee of the XXV World Congress, the ISHR International ECI Committee organized the ECI symposia. The ECI symposia were the first scientific events of the World Congress and showcased the brilliant research being conducted by our ECI community.

Two concurrent streams featured 20 flash talks followed by 10 full-length orals. In total, a record-breaking 30 presentations on the world stage featured presenters from all eight ISHR sections. The sessions were extremely well attended, and our ECIs engaged in a lively exchange of information, insightful questioning, chairing, and judging.

The winners in each category, including the newly established People's Choice Award chosen by the audience, were as follows (in no particular order): Annabelle Brusacoram and Jordan Chan (Flash Talks), Alejandro Ciocci and David Weissman (Flash Talks, honorable mention), Tim Koopmans and Jarmon Lees (Full-length Orals), and Inez Duursma, Andrew Laskary, Yifan Xie, and Margaret Nandudu (People's Choice).

Qutuba Karwi, PhD
Memorial University of Newfoundland



Presentation at the ECI Symposium

ECI Panel: "Navigating Next Steps: Transitioning to Independence"

Following a very fulfilling morning ECI Symposia session on the first day of the ISHR Nara World Congress XXV, the ECI team hosted a dynamic and well-attended lunchtime session titled "Navigating Next Steps: Transitioning to Independence." The panel was co-chaired by Dr. Chang Jie Mick Lee and Dr. Rijan Gurung (NUS, Singapore; SEA Section), and brought together a diverse group of panelists from different career stages: Dr. Tim McKinsey (University of Colorado, NAS Section), Dr. Kate Weeks (University of Melbourne, AUS Section), Dr. Fang Xi (UCSD, NAS Section), and Dr. Simon Lebek (University Hospital Regensburg, EU Section).

The session centered upon challenges and opportunities faced by ECIs as they transition from trainees to independent investigators. The topics discussed were voted for by our ECI audience, ranging from grant and fellowship writing to personal well-being and work-life balance. The interactive format, featuring live audience polling and a word cloud activity, was a huge plus that fostered open dialogue and engagement. Our ECIs appreciated the honest and grounded insights from the panelists across diverse institutional and geographic contexts.

Chang Jie (Mick) Lee, PhD
Yong Loo Lin School of Medicine |
National University of Singapore

Lunchtime panel discussion on "Navigating Next Steps: Transitioning to Independence"

ECI Networking lunch

The ECI Networking lunch was a great success, providing a relaxed and engaging environment for ECIs to connect with senior scientists. The luncheon fostered meaningful conversations between ECIs and experienced professionals in the field, offering ECIs the opportunity to ask questions, seek career advice, and learn more about academic life and research. The event was organized in small discussion groups, with each group comprising several ECIs and one or two senior scientists. The event was fully subscribed at 200 registered ECIs and 25 senior scientists, resulting in a full and dynamic room.

ECIs interact with senior investigators at the ECI Lunch.

Attendees received a traditional Japanese bento box lunch and engaged in informal conversation and cultural exchange. The positive atmosphere helped to promote a truly enriching experience for all attendees, both ECIs and senior scientists, creating a platform for professional development and mentorship within the ISHR community. The ISHR International ECI Committee would like to express our sincere gratitude to the many senior scientists who participated in our networking lunch and gave their time to mentor the next generation of ISHR ECIs.

Mayarling Troncoso, PhD
University of Chile

JMCC ECI Special Issue and ECI workshop

In partnership with the *Journal of Molecular and Cellular Cardiology*, the ISHR International ECI Committee has launched a Call for Papers targeted specifically at ISHR ECIs that will consider original research and review articles. This Call is accepting articles on a broad range of topics related to the metabolic contributions to heart disease, although more general cardiovascular topics will be considered on a case-by-case basis. Please contact the guest editors if you would like to discuss the suitability of your article for inclusion in this special issue (Dr Jarmon Lees: jlees@svi.edu.au; Dr Qutuba Karwi: qutuba.karwi@mun.ca; and Dr. Cheng Yuan Yuan: nataschayuanyuan@gmail.com). More information can be found on the *JMCC* website. (https://www.sciencedirect.com/special-issue/316568/metabolic-contributions-to-heart-disease-insights-from-the-next-generation-of-cardiovascular-researchers).

On the second day of the World Congress, an early morning ECI workshop was held to brainstorm potential review topics and collaborative opportunities for submission to the recently opened *JMCC ECI: Call for Papers*. The session promoted a useful exchange of ideas, provided a framework for further collaboration, and allowed ECIs to speak and ask questions directly to the guest editors. ISHR ECIs are strongly encouraged to submit their original research articles and reviews to this special issue for consideration in *JMCC*.

Jarmon Lees, PhD
Chair - ISHR International ECI Committee, St Vincent's Institute of Medical Research

ECI/MCI Social Event

The Early and Mid-Career Investigator Social Event, held at the beautiful Kotowa Narakouen Premium View venue in Nara, was indeed a success! 200 ECIs and MCIs enjoyed a vibrant evening of networking, great food, drinks and dancing. The standing dinner with high-top tables fostered meaningful peer connections over traditional Japanese food and refreshing drinks. The night ended on a high note with a DJ and dancefloor, where both ECIs and MCIs came together to relieve some congress stress! The lively atmosphere and excellent turnout made it a true highlight of the week. Many thanks to all who joined in!

Jonathan P. Lambert, PhD
University of Padua
Karoline B. Rypdal, PhD
University of Oslo

ECIs congregate at the ECI Social.

ECI Workshop: "Early Career Initiatives for Journal Review"

The second ECI workshop instalment focused on demystifying the peer review process and empowering ECIs to engage meaningfully with academic publishing. It was heartening to see motivated early-career and mid-career scientists arriving early in the morning before the main sessions on the last day of the World Congress! Co-chaired by Dr Chang Jie Mick Lee (National University of Singapore, SEA Section) and Dr Qutuba Karwi (Memorial University of Newfoundland, NAS Section), the session featured a panel of experienced editors and reviewers: Dr. Cat Makarewich (Cincinnati Children's Hospital Medical Centre, NAS Section), Dr. Yibin Wang (Duke-NUS, SEA Section), and Dr. Nathan Palpant (University of Queensland, AUS Section).

The panel explored topics including ECI initiatives in esteemed journals, co-reviewer recognition, and mentorship programs. The panelists offered practical advice on how to get started, steps towards editorial roles, and the importance of mentorship, which opens up doors through professional networks. The panelists also shared valuable lessons and tips to contribute meaningfully to the peer review process!

The session concluded with a very interactive live Q&A, with engaging panelists and attendees reflecting upon their experiences across different roles during the editorial process, sharing valuable lessons and reinforcing the importance of an inclusive and transparent peer review process. The ECI Panel discussion and Workshop Committee would like to extend their deepest gratitude to all our attendees and panelists for their support of our ECI events!

Chang Jie (Mick) Lee, PhD
Yong Loo Lin School of Medicine | National University of Singapore

ECI *(continued on page 15)*

REPORT ON MID CAREER INVESTIGATOR (MCI)

ACTIVITIES AT ISHR NARA 2025

The Mid Career Investigator (MCI) community played a prominent role in the ISHR 2025 World Congress held in Nara, Japan. Notably, this marked the first time in ISHR history that all eight international sections, including the newly established Southeast Asia (SEA) section, were represented in MCI-led events. This milestone was celebrated through two dedicated scientific sessions and a collaborative social gathering, significantly strengthening global engagement among mid-career cardiovascular researchers.

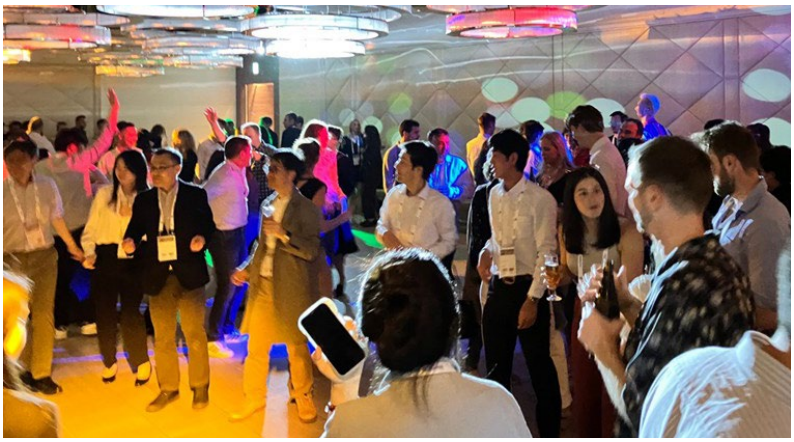
The ISHR-MCI Rising Star Symposium 1 and Symposium 2 featured a total of 16 outstanding speakers—two representatives from each of the eight ISHR sections (LAT, CHI, AUS, ES, IND, JPN, NAS, and SEA). These symposia highlighted cutting-edge cardiovascular research and underscored the diversity, creativity, and leadership emerging from the global MCI community.

To further foster connection and collaboration, a joint ECI+MCI social event was held at *KOTOWA Nara Park Premium View*, a scenic venue overlooking historic Nara Park. This memorable evening brought together early- and mid-career investigators in an informal and inspiring setting, encouraging cross-sectional dialogue and future collaboration.

The success of the MCI activities at ISHR Nara 2025 reflects the increasing visibility and impact of mid-career scientists and sets a new standard for future international engagement within the ISHR.

We would like to express our sincere gratitude to the ISHR 2025 organizing committee for their generous support and thoughtful coordination, which made these MCI initiatives possible and meaningful. Their commitment to nurturing the next generation of cardiovascular researchers was deeply appreciated by all participants.

Ippei Shimizu (Japanese Section) and
Nicole Purcell (North American Section)
(MCI co-chairs)



ECI&MCI social event

MCI-Symposium

2025 ISHR OUTSTANDING INVESTIGATOR AWARD WINNERS

(MAY 11, 2025; XXV ISHR WORLD CONGRESS, NARA, JAPAN)

Xi Fang, PhD

"Genetic Mitochondrial Cardiomyopathy: From Barth Syndrome to Beyond"

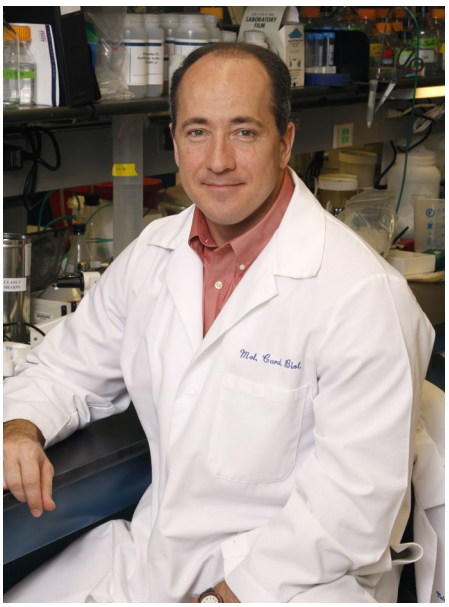
Dr. Xi Fang is an Associate Professor at the University of California, San Diego (UCSD). A major focus of her research is to understand molecular mechanisms underlying cardiac development and disease. Dr. Fang has emerged as an active and highly regarded investigator in the cardiovascular research community. Throughout the early stages of her career and into the beginning of her mid-career, she has made significant contributions to understanding the molecular basis of genetic cardiomyopathies, cardiovascular metabolism, cardiac development and disease. Over the past several years, her group has made significant contributions to understanding the role of cardiolipin (CL), the signature lipid of mitochondria, in the heart. Dr. Fang's team investigated the therapeutic effects of safflower oil-based linoleic acid (LA) supplementation on Barth syndrome (BTHS) cardiomyopathy, highlighting its temporary benefits. In addition, using genetic models of mitochondrial cardiomyopathy, Dr. Fang's group investigated the mechanism and pathophysiological consequences of the mitochondrial dysfunction-triggered integrated stress response (MSR). Currently, Dr. Fang's group is intensifying their efforts to develop potential therapies for mitochondrial cardiomyopathy based on modulating MSR signaling. Looking ahead, Dr. Fang is excited to continue building a lab where trainees and mentors grow together, embarking on a shared and rewarding journey in cardiovascular research.

Simon Sedej, PhD

"Caloric restriction mimetics to the rescue for an aging and failing heart"

Dr. Simon Sedej is Associate Professor of Cardiovascular Physiology and a Research Group Leader at the Division of Cardiology, Medical University of Graz in Austria. He is a distinguished mid-career biologist and experimental cardiologist, leading a research program on cardiovascular aging and heart failure. In the last decade, Dr. Sedej made notable contributions to basic and translational cardiovascular research by elucidating the cardioprotective mechanisms of caloric restriction mimetics in heart failure induced by most prevalent global comorbidities, namely obesity, hypertension and aging. Dr. Sedej is recognized for revealing that nicotinamide adenine dinucleotide (NAD+)-based therapy can mitigate cardinal signs of HFpEF. In addition, Dr. Sedej elucidated how regulation of the cardiac insulin-like growth factor-1 (IGF-1) receptor signaling in the course of aging promotes health and longevity, transforming our understanding about the role of IGF-1 signaling in an aging and failing heart. Dr. Sedej's pioneering work on the cardioprotective mechanisms of caloric restriction mimetics in HFpEF, cardiac aging and longevity has guided his research on the application of these agents in cardiovascular medicine. Currently, the research group led by Dr. Sedej continues advancing research in the area of improving health span to benefit human cardiovascular disease and aging. He is now a key researcher of the Excellence Cluster METAGE (Metabolic control of aging and disease – From models to humans), addressing how disturbances in metabolic control influence age-related cardiac decline and HFpEF pathophysiology.

2025 RESEARCH ACHIEVEMENT AWARD



Jeffery Molkentin, PhD

"Cardiomyocyte TGFbeta1/2/3 genes are required for developmental mouse heart maturation and viability as adults"

2025 Research Achievement Award

(May 12, 2025; Nara, Japan)

Dr. Molkentin was born in Milwaukee Wisconsin where he also graduated with his PhD from the Medical College of Wisconsin in Milwaukee in 1994. He performed a postdoctoral fellowship with Dr Eric Olson in Texas at UT Southwestern Medical Center (USA) from 1994-1997, followed by his first faculty appointment in 1997 at the Cincinnati Children's Hospital Medical Center of the University of Cincinnati (USA). Dr Molkentin was a Pew Scholar early in his faculty appointment, and he was promoted to full Professor in 2006. From 2008-2021 he was an Investigator of the Howards Hughes Medical Institute. Dr Molkentin as been a faculty member at Cincinnati Children's Hospital of the University of Cincinnati for greater than 27 years, where today he is division director of Molecular Cardiovascular Biology and co-Director of the Heart Institute.

Dr. Molkentin has published over 450 original articles with a Scopus h-index of 131 and a Google Scholar h-index of 161. He has won multiple awards from the American Heart Association (AHA) such as the Louis N and Arnold M Katz award to young investigators in 1999, the Basic Research Prize in 2012, the Thomas W. Smith Memorial Lecture in 2008, the Geroge E Brown Memorial lecture in 2024 and the Distinguished Scientist in 2020. From the International Society of Heart-failure Research (ISHR) he gave the Presidents lecture in 2018, won the Outstanding Investigator Award in 2010, and won the Eric N. Olson mentorship award in 2020. Dr. Molkentin also won the Lucian Award from McGill University, which is a prize for cardiovascular research excellence. He has organized past BCVS meetings of the AHA, we well as organized scientific meetings and scientific sessions for the ISHR over some 20 years.

Dr Molkentin has placed approximately 40 of his past trainees into academics as laboratory principal investigators and he continues today as a dedicated training mentor for the next generation of cardiovascular researchers in the field. Several of his past trainees have won the prestigious Louis N and Arnold M Katz Award or the Markus Award to young investigators from the AHA, as well as winning the ISHR young investigator competition. With respect to funding, Dr Molkentin has held over 6 NIH grants as PI or Project Director for more than 20 years, as well as the Co-PI of a T32 training grant in cardiovascular biology for the past 10 years.

Dr. Molkentin's research program continues to focus on cardiovascular and skeletal muscle disease through examination of basic signaling mechanisms. His larger projects include defining the molecular mechanisms that underlie cell death, with a special interest in mitochondrial-dependent mechanisms of non-apoptotic death, and how mitochondrial calcium enters and exits and how this can directly affect metabolism. The laboratory also characterizes the intracellular signaling pathways that control cellular growth, differentiation, and proliferation in cardiac and skeletal muscle. For example, the laboratory has a strong track record of publications detailing the intracellular signaling effectors (kinases and phosphatases) that underlie the cardiac hypertrophic response or the transition of the heart into dilated failure, as well as the disease response of dystrophic skeletal muscle. His laboratory is also actively engaged in identifying novel secreted protein factors (cytokines, growth factors, chemokines, etc) from the heart and skeletal muscle that might control disease responsiveness. His laboratory is also actively engaged in studying cardiac and skeletal muscle fibroblasts and how they function during disease to alter the extracellular matrix, which impacts tissue remodeling and signaling. The laboratory also investigates the cellular mechanisms underlying cardiac repair, either by regulating cell cycle in cardiomyocytes or rejuvenation by selective modulation of the innate immune response, especially defining the role of tissue resident macrophages and their ability to control fibroblasts and inflammation. Finally, the laboratory continues to investigate basic mechanisms of intracellular calcium handling in cardiac and skeletal muscle to further explore the paradigms of excitation-transcription coupling, excitation-metabolism coupling, and excitation-signaling coupling. Publications covering these project areas span high impact journals such as Cell, Science, Nature, and Nature Medicine.

2025 ISHR PETER HARRIS DISTINGUISHED SCIENTIST AWARD WINNERS

Thomas Eschenhagen, PhD

"The long and winding road to cardiac regeneration"

Dr. Thomas Eschenhagen is Professor of Pharmacology and serves as Director of the Department of Experimental Pharmacology and Toxicology at the University Medical Center Hamburg Eppendorf (UKE), Germany. He is also founding director (2011-2020) of the German Centre for Cardiovascular Research (DZHK).

Dr. Eschenhagen has concentrated his research efforts on understanding molecular mechanisms of heart failure with a focus on β-adrenergic signaling, its adaptation in heart failure and consequences on contractile function. A second focus of his group has been pharmacogenetics of β-adrenergic receptors and beta-blockers. Dr. Eschenhagen is perhaps best known for his pioneering work on 3-dimensional engineered heart tissue (EHT). Recently, using modern optogenetic tools and CRISPR/Cas9, his group provided the first proof that hiPSC-derived human grafts directly contribute to the improved contractile function of the heart, thus providing a rationale for regenerative approaches with hiPSC-cardiomyocytes.

Dr Eschenhagen has received numerous awards and honors including the Sandoz Award for Translational Science (1995), Fraenkel Award of the German Society of Cardiology (1997), the Ursula M. Händel Award for the Replacement of Animal Experiments of the DFG (2011), and the ISHR Outstanding Investigator Award (2012), the ISHR President's Distinguished Lecture Award (2016), the Brutsaert Lecture of the European Society of Cardiology Heart Failure Association (2019), and the Prize of the Heart Center Münster (2023). He was named Fellow of the AHA, ESC and ISHR. He is member of the Academy of Science, Göttingen (2004), and the National Academy of Science Leopoldina (2011).

Issei Komuro, MD, PhD

"Mechanisms of Heart Failure Revealed by Genomic and Single Cell Analysis - From Mice to Humans"

Dr Issei Komuro became professor and chairman of the Department of Cardiovascular Medicine at Chiba University in 2001, Osaka University in 2009, and the University of Tokyo in 2012. He is now vice president of the International University of Health and Welfare, project professor of the Department of Frontier Cardiovascular Science of the University of Tokyo Graduate School of Medicine, and Emeritus Professor of the University of Tokyo, Tokyo, Japan.

He has made numerous world-class achievements in cardiology over the past 35 years: Dr. Komuro developed an original system to stretch cultured cardiomyocytes of neonatal rats and was the first to elucidate the molecular mechanism by which mechanical stress induces cardiac hypertrophy. He also studied the mechanism by which the normal heart is formed, isolating the homeobox gene Csx/Nkx2.5 as a heart-specific transcription factor. Additionally, using genetically engineered mice, he reported in 2024 that heart failure recurs and promotes multimorbidity, which is mediated by innate immune memory. Recently, Dr Komuro, along with international collaborators, has conducted genome-wide association analysis of more than hundreds of thousands of patients and has identified many novel molecules involved in heart failure, myocardial infarction, and atrial fibrillation; risk stratification has been successful and drug development is underway. He also succeeded in single-cell transcriptome and epigenome analysis using human heart tissue.

Dr Komuro received many awards including ACC/Merck fellowship award in 1991, the ISHR Outstanding Investigator Award (2003), Erwin von Bälz 1st Preis (1985, 2010), ISHR President's Distinguished Lecture Award (2010), Sato Award from the Japanese Circulation Society (JCS) (2000), ISHR Research Achievement Award (2019), Medical Award of The Japan Medical Association (2021), and Gold Medal from ESC and Commendation for Minister of Education, Culture, Sports, Science and Technology (2022). He was elected as an ISHR, AHA, ESC, APSC, and JCS Fellow.

ISHR EARLY CAREER INVESTIGATOR VISITING RESEARCH FELLOWS – 2025

Marilen Federico
Thomas Jefferson University, US
Host: Prof Ippei Shimizu
National Cerebral and Cardiovascular Center, Japan

It was a pleasure for me to visit Dr. Shimizu's Laboratory. From the beginning, the planning process with his team was smooth and well-organized. They kindly helped me arrange and book accommodation in the University dormitories and provided clear instructions on how to reach the lab using public transportation.

My visit to Dr. Shimizu's Laboratory took place from May 15-23. Upon arrival, the other VRF and I received a very warm welcome from the entire team, including a lovely lunch on the first day. They previously picked me up from the train station, helped me get settled, and gave all of us a tour of the laboratory. After lunch, we discussed the agenda for the following days. The team had thoughtfully prepared a schedule outlining the techniques and procedures they would demonstrate. It was great to have a plan in advance so that we could be well-prepared and make the most of the experience.

On the second day, all the visitors and lab members presented their research projects and engaged in discussions about potential future collaborations. It was a pleasure to hear about the diverse scientific projects, and the discussions were enriched by the variety of perspectives.

Throughout the week, we had full-day sessions of hands-on experiments. We learned how to isolate rat neonatal cardiomyocytes, several microscopy techniques, flow cytometry, staining protocols, tomography procedures for animals, and ultrasound for the heart and arteries. Additionally, one of the visiting researchers, who works in bioinformatics, provided an excellent introduction to how to analyze large datasets, which encouraged the rest of us to start learning about programming. We had a very good and productive time in the lab, sharing ideas and discussing different research approaches. These interactions were valuable for both scientific learning and professional development.

In summary, I have gained hands-on experience in several techniques, learned the Japanese approach to scientific research-which is different from the US-and, most importantly, built connections with Dr. Shimizu's lab and fellow visiting researchers from Australia and Canada. Outside the lab, we also had the opportunity to explore Osaka and experience Japanese culture, which added a tremendous personal dimension to the visit.

I am very grateful to both the ISHR VRF and Dr. Shimizu for giving me this incredible opportunity. It was a truly enriching and inspiring experience, both professionally and personally.

A group photo with Dr. Shimizu's research group at the end of the mini symposia.

Qutuba Karwi
Memorial University of Newfoundland
Host: Dr Ippei Shimizu
National Cerebral and Cardiovascular Center, Osaka, Japan

CT scan image from old mice where the abdominal adipose tissue is shaped as Mickey Mouse.

I had the pleasure of visiting Dr. Ippei Shimizu's laboratory at the National Cerebral and Cardiovascular Center (Osaka, Japan) between May 15-23 following the 2025 ISHR World Congress. Dr. Shimizu's research focuses on "Senocules" in circulation as molecules that contribute to the acceleration of aging. These include "Senometabolite" and "Senoprotein". Our interests in understanding metabolic perturbations in different organs with aging and the crosstalk between peripheral organs and the heart in cardiometabolic disease align closely.

Dr. Shimizu's research group put together an outstanding training program for the week. The week began with a social event and a shushi lunch (of course!), followed by a mini-symposium where the three visiting ISHR fellows and members of Dr. Shimizu's group shared insights from their research and discussed future collaborations.

The training program also included learning how to isolate high-quality neonatal rat ventricle cardiomyocytes (NRVC), a technique that Dr. Shimizu's group has recently refined. We also learned how to mimic aging processes in these cells and how to investigate the impact of potential therapeutic options on aging cells using flow cytometry. Following that, we learned how to characterize atrial fibrillation using a performed echocardiogram (ECG) in anesthetized mice and how to implant a telemetry ECG prob to measure ECG *in vivo*. We also learned how to perform vascular, as well as cardiac, echocardiography in anesthetized mice to assess vascular and cardiac function and structure *in vivo*, and determined how these might change with aging using an ultrasound machine. We also had hands-on experience in measuring mice's blood pressure *in vivo* using a tail-cuff probe and learned how to analyze the data. We also learned different exercise protocols that are regularly used in Dr. Shimizu's laboratory, as well as some tips on how to obtain reproducible results with the exercise machines. Dr. Shimizu's laboratory has several ultra-resolution microscopes that the group uses to investigate cellular and molecular changes in different tissues and cells during aging, as well as to test how some of the Senometabolites and/or Senoproteins the group is currently working on might impact aging-induced cellular changes. Lastly, we learnt how to perform a CT scan in young and old mice. While performing our CT scan, we noticed something really cool inside one of the old mice! We found that the abdominal adipose tissue is shaped like Mickey Mouse!! Yes, MICKY MOUSE. How cool is that?! So, I thought that I would share that with you here.

I'd like to thank the International ISHR ECI committee and Executive Council for awarding me a Visiting Research fellowship in 2025. I would also like to thank Dr. Ippei Shimizu and his research group for being awesome and generous hosts during my visit. The knowledge and techniques I learned during the week are beyond anything I imagined or planned for thanks to Dr. Shimizu's research group's generosity with their time and efforts. Most of these techniques are new to me, and I have no prior hands-on experience in using them; however, I will now implement them in my laboratory at Memorial University of Newfoundland.

Teagan Er
University of Western Australia
Host: Dr Hideki Uosaki
Jichi Medical University

For 2 weeks starting from the 19th of May I visited Prof Uosaki's laboratory at Jichi Medical University to learn about inducible pluripotent stem cells (iPSCs). As part of my PhD project, I aim to use iPSC derived cardiac myocytes (iPSC-CMs) to investigate the interactome involved in L-type calcium channel dependent regulation of mitochondrial function. Prof Uosaki's laboratory is experienced with using iPSCs to investigate cardiac physiology, maturation and disease modelling. As I am new to the use of iPSC-CMs in research, the Visiting Research Fellowship provided an invaluable experience to learn about iPSC differentiation and physiological experiments using iPSCs through first-hand experience.

During my visit Prof Uosaki showed me how their lab differentiates iPSCs into iPSC- CMs. By observing how iPSCs were handled by experienced researchers I was able to learn some tips and tricks that I would not have been able to learn through my readings. Under the guidance of Dr Pamorn Chittavanich and Dr Fuad Gandhi Torizal I was also shown how they measure contractility of the iPSC-CMs with CYTOMOTION.

Prof Uosaki's laboratory also produces adeno-associated viruses to modify iPSCs and to use for gene therapy. During my time in the lab, I was able to observe how adeno- associated viruses were produced by Dr Takeshi Tokuyama.

I would like to thank the ISHR ECI committee and the ISHR executive committee for awarding me the Visiting Research Fellowship and Prof Uosaki's laboratory for teaching me about iPSCs and adeno-associated viruses during my 2-week visit.

Enjoying a meal with Dr Uosaki's lab group.

Juma El-Awaisi
University of Birmingham, UK
Host: Prof Yoshikazu Nakaoka
National Cerebral and Cardiovascular Center

My recent visit to Professor Yoshikazu Nakaoka's laboratory at the National Cerebral and Cardiovascular Centre (NCVC) in Osaka, Japan, was an invaluable experience that significantly enhanced my research capabilities in the field of cardiopulmonary diseases. This opportunity allowed me to acquire hands-on training in advanced pulmonary hypertension (PH) models and associated phenotyping techniques, which are crucial for my future research plans into inflammatory mechanisms linking PH and cardiac dysfunction.

During the visit, I received comprehensive training in establishing and managing various PH models, including hypoxia-induced and Sugen-hypoxia (SuHx) models in both mice and rats. I learned to perform critical phenotypic assessments such as measuring right ventricular systolic pressure (RVSP) and calculating the right ventricle to left ventricle (RV/LV) weight ratio. These techniques are essential for evaluating disease progression and severity in PH models. Additionally, I gained experience in histological staining methods to assess pulmonary vascular remodelling, further broadening my technical skill set.

Beyond technical training, the visit facilitated the development of a robust collaborative relationship with Professor Nakaoka's team. We will aim to generate preliminary data to support future grant and fellowship applications. This collaboration will enable the integration of advanced PH models with in vivo imaging techniques at my home institution, the University of Birmingham, thereby expanding our research capabilities and fostering knowledge exchange between our laboratories.

The experience also provided a platform for networking with leading researchers in the field, opening avenues for future collaborations and knowledge sharing. Engaging with experts at NCVC has offered new perspectives and insights that will inform my research approach moving forward.

In summary, this lab visit has been instrumental in advancing my technical expertise, establishing international collaborations, and laying the groundwork for future research endeavors. I am deeply grateful to the International Society for Heart Research and Professor Nakaoka's lab for supporting this opportunity, which has significantly contributed to my development as an independent investigator in cardiopulmonary research.

(continued on page 19)

ECI *(continued from page 7)*

The ISHR International ECI Committee hopes our ECI initiatives provided an exciting and interactive program of events for ECIs attending the 2025 ISHR World Congress in Nara. We hope that these events provided opportunities to connect with and learn from your fellow ECIs, as well as network and learn from invited senior scientists. We look forward to continued engagement over the next 2 years, before we hand over the reins to the next committee to take us to the 2028 ISHR World Congress in Philadelphia!

Jarmon Lees, PhD
Chair - ISHR International ECI Committee, St Vincent's Institute of Medical Research

Academic publishing workshop.

XXV World Congress *(continued from page 3)*

Keith Reimer Distinguished Lecture Awardee; E Dale Abel (left), with Rong Tian as chair (right).

The congress emphasized the importance of early-career engagement, offering symposia organized by, and featuring as speakers, Early Career Investigators (ECIs) and Mid-Career Investigators (MCIs), ECI workshops and a joint social event for both ECIs and MCIs. The activities of the ECIs and MCIs will be featured in separate articles in this issue (see pgs 5 and 8).

President's Distinguished Lecture Awardee; Pilar Alcaide (left), with Tim Kamp as chair (right).

Janice Pfeffer Distinguished Lecture Awardee; Koichiro Kuwahara (left), with Issei Komuro as chair (right).

Finalists for the Richard J Bing Young Investigator Award (from left): David Lefer (Chair, Bing Selection Committee), Jin Komuro (Keio Univ), Jennifer Petrosino (Univ of Pennsylvania), Abigail Giles (Winner, NHLBI), Pamela Swiatlowska (Natl Heart & Lung Inst) and Yoshihiko Saito (outgoing President, ISHR-INTL).

Poster Award Winners.

Poster Awards

In addition, over 650 posters were presented and 26 presenters were recognized with Poster Awards, selected daily by a panel of senior investigators (Table 1).

Table 1. Poster award winners

Name	Affiliation
Lorena Cascarano	Université catholique de Louvain
Cassy Le	King's College London
Chantal van Opbergen	Amsterdam UMC
Galvin Tang	National University of Singapore
Durba Banerjee	University of Washington
Jesse Pace	University of Pennsylvania
Tamara Tomin	Technische Universität Wien
Zhan Chen	Peking University Health Science Center
Moyra Schweizer	Universitätsklinikum Hamburg-Eppendorf UKE
Qian Hua Phua	ASTAR
Jennifer Petrosino	University of Pennsylvania
Olivia Baines	University of Birmingham
Francesco Paolo Ruberto	National University of Singapore
Mariana Shumliakivska	Goethe University Frankfurt am Main
Alice Whitley	The University of Manchester
Rosa Kim	Justus-Liebig-Universität Gießen
Marion Delaunay	University of Colorado Anschutz
Robert Johnson	Aarhus University
Taylor Coughlin	Cincinnati Children's Hospital
Akiyasu Iwase	The University of Tokyo
Peter Siedler	University Medical Center Göttingen
Julie Pan	University of Ottawa Heart Institute
Yohan Santin	Monzino Cardiology Center
Dominik Hofreither	Vienna University of Technology
Mateusz Tomczyk	King's College London
Julie Heffler	Cornell University

This year, alongside the scientific program, the meeting also provided many networking opportunities for both young and established scientists. On the opening night, a welcome reception was held for all participants in the Nara Prefectural Convention Center. In the Welcome Reception, Kagami-biraki, literally meaning "opening the mirror," a traditional Japanese ceremony in which a sake barrel is opened and shared to celebrate a special occasion, was performed and participants enjoyed sake and local dishes. On the second night, Presidential Garden Dinner Party welcomed the participants at Nara Kasugano International Forum Garden. The party guests enjoyed Japanese cuisine in a refreshing garden setting, along with Japanese drum performances and a live mochi-pounding demonstration.

On the final day, the Closing Ceremony was held after the final scientific sessions. Prof. Yasushi Sakata (Osaka University) delivered the organizer's closing remarks, and Prof. Issei Komuro expressed his sincere gratitude to all participants. In celebration of the success of ISHR 2025, Prof. Asa Gustafsson (incoming President of ISHR, University of California, San Diego) honored and commended Prof. Komuro and Prof. Saito for their dedicated leadership in organizing the Congress.

On the final evening, the Meeting Banquet was held at the Nara Royal Hotel. Attendees enjoyed the last night of the Congress with heartfelt farewells and promises to reunite at the next ISHR World Congress in 2028 in Philadelphia.

We sincerely thank all participants and contributors who made ISHR2025 NARA a memorable and meaningful success. For four unforgettable days, the city of Nara became a gathering place for the world's leading heart researchers—a dreamlike experience that passed all too quickly. The excitement and inspiration from this extraordinary Congress still linger with us. As we look ahead to the next ISHR World Congress in three years, we remain hopeful that the connections formed and the science shared in Nara will continue to fuel future discoveries. May all participants and ISHR members go on to make even greater contributions to the advancement of cardiovascular science.

Kenji Onoue
Department of Cardiovascular Medicine,
Nara Medical University

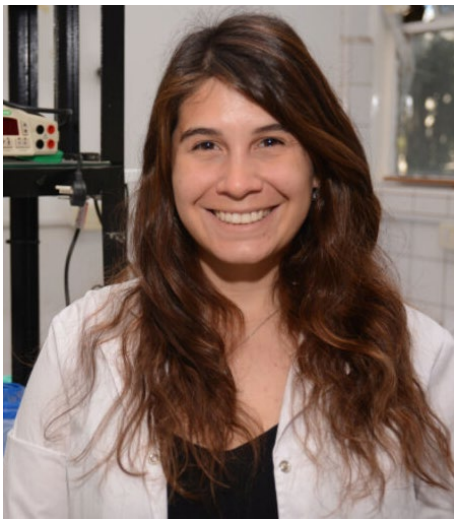
Closing ceremony; (left to right) Issei Komuro (Congress President), Asa Gustafsson (incoming President, ISHR-INTL), and Yoshihiko Saito (Congress Vice-President, outgoing President ISHR-INTL).

Meeting Banquet with Nara Prefecture's beloved mascot, Sento-kun (third from the left).

Presidential Garden Dinner Party.

VRF *(continued from page 14)*

Romina Di Mattia
Spanish National Center for Cardiovascular Research (CNIC)
Host: Prof Yuji Shiba
Shinshu University



As a recipient of the Research Visiting Fellowships, I had the opportunity to visit Dr. Yuji Shiba's laboratory at Shinshu University in Matsumoto, Japan. This experience was not only scientifically enriching but also personally meaningful, thanks to the warm welcome and hospitality extended by the entire research group.

Both Dr. Shiba's group and our lab, led by Dr. Florian Weinberger, share a strong focus on cardiac regeneration therapies using cardiomyocytes derived from human induced pluripotent stem cells (iPSCs). During the visit, I was able to observe the approaches and protocols implemented in their lab, exchange ideas with team members, and gain valuable insights that will certainly enrich our ongoing projects.

I had the opportunity to interact closely with the group, witnessing their laboratory routines and how they manage the cultivation of iPSCs. A particularly valuable aspect of the visit was learning histological techniques applied to samples from non-human primates. I also had the chance to observe surgical procedures and experimental interventions in guinea pigs, which further broadened my understanding of the preclinical models used in their research.

Beyond the scientific dimension, I truly appreciated the kindness and generosity of everyone in the lab. They organized a happy hour in my honor, where I enjoyed a wide variety of delicious local food. They also arranged a memorable dinner at a sushi restaurant, allowing me to explore and savor the regional cuisine of Matsumoto.

This visit reinforced for me the importance of international scientific collaboration. Sharing knowledge and experiences across research groups not only accelerates scientific progress but also fosters a spirit of cooperation and mutual support.

I would like to thank the ISHR ECI Committee for giving me the chance to have this gratifying experience and especially thank Dr. Shiba and his team for their kindness, enthusiasm, and hospitality throughout my stay.

Calendar

- **August 14-17, 2025.** XLIX Annual Meeting of the Australasian Section (held jointly with the Cardiac Society of Australia and New Zealand). Brisbane, Australia. Inquiries: Fadi Charchar, f.charchar@federation.edu.au
- **April 28-29, 2026.** II Annual Meeting of the Southeast Asian Section. Kuala Lumpur, Malaysia. Inquiries: Dr Kamisah Yusof kamisah_y@hctm.ukm.edu.my
- **May 31-June 3, 2026.** XLIV Annual Meeting of the North American Section. Minneapolis, Minnesota, US. Inquiries: Tim O'Connell, tdoconne@umn.edu, Jop van Berlo, jvanberl@umn.edu, Julia Liu, julialiu@umn.edu
- **June 22-25, 2026.** XXXIX Annual Meeting of the European Section. Birmingham, UK. Inquiries: Davor Pavlovic, d.pavlovic@bham.ac.uk
- **August 6-9, 2026.** L Annual Meeting of the Australasian Section (held jointly with the Cardiac Society of Australia and New Zealand). Sydney, Australia. Inquiries: Julie McMullen, julie.mcmullen@hri.org.au
- **October 3-4, 2026.** XLII Annual Meeting of the Japanese Section. Koriyama, Fukushima-prefecture, Japan. Inquiries: Masafumi Watanabe, masafumi-tky@umin.net

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