The beautiful coastal city of San Diego, California hosted the twenty-first triennial ISHR World Congress with activities held in the San Diego Convention Center and adjacent Marriott Hotel. This premier cardiovascular research conference featured 40 symposia with ~180 speakers representing all seven regional sections of the ISHR. Conference organizers, Joan Heller Brown and Yibin Wang, and Scientific Program Committee Chair, Richard Moss, in collaboration with their organizing committees, ensured that this was a compelling and memorable event.

The four-day congress opened with a half-day pre-symposium, arranged by James Bell and his committee, focused on Early Career Investigators (ECIs). The program included oral presentations by graduate students, postdocs and new assistant professors highlighting their research accomplishments and was followed by a lively Career
Participants at the Pre-Congress Workshop for Early Career Investigators: Carlos Valverde, Randi Parks, Alejandro Orlowski, James Bell, Jeff Erickson, Aref Najafi, Helena Viola and Kimberly Mellor (left to right).

Development Discussion on the “Do’s, Don’ts, and Dilemmas of Publishing” led by Elizabeth Murphy (ISHR President-Elect) and David Eisner (JMCC Editor). The incorporation of ECI-focused activities into the Congress program is a reflection of the Society’s strong commitment to fostering the growth and development of young scientists.

The main Congress opening ceremonies held that evening included award lectures by Deepak Srivastava (winner of the Outstanding Investigator Award) on determining how chamber-specific gene networks are established at the transcriptional level to drive cell fate and differentiation, and Karin Sipido (winner of the Keith Reimer Distinguished Lecture award) on calcium homeostasis and t-tubule reorganization in cardiac hypertrophy and heart failure. Following the opening ceremonies, attendees filtered onto the Coronado Terrace for the opening reception and enjoyed breathtaking views of the San Diego Bay and Coronado Island.

Day two of the congress featured the Research Achievement Award lecture by Eric Olson, who was recognized for his contributions to the understanding and treatment of cardiovascular disease and...
spoke about his pioneering work on the discovery of cardiac transcription factors, microRNAs and his recent studies on the molecular basis of cardiac regeneration. Afternoon presentations from the four finalists in the Richard J Bing Young Investigator Award competition showcased work from Shenuarin Bhuiyan (CCHMC), Dominic Del Re (Rutgers), Zheng Maggie Huang (Temple) and Chen Gao (UCLA). Ms Gao was the 2013 award winner for her work elucidating a novel mechanism of alternative splicing which regulates postnatal cardiac development and function.

Presentations of cutting-edge research continued into the third day of the conference with an emphasis on regenerative medicine for heart disease and ion channel mechanisms and therapeutic targets for arrhythmias. Outgoing ISHR President, Masatsugu Hori, received the prestigious Peter Harris Distinguished Scientist Award in recognition of a lifetime of scientific achievement. His award lecture highlighted his work on cardioprotection against ischemic injury. Conference proceedings concluded early in the afternoon to give individuals the opportunity to explore local attractions, including the world renowned San Diego Zoo and the historic Gaslamp Quarter (within walking distance of the conference center), or to try their skill at paddleboarding in the La Jolla Cove. Alternatively, guests could relax on lounge chairs next to the pool or enjoy scientific conversation with colleagues by the outdoor poolside bar.

During the final days of the conference, award lectures were given by Michael
Marber (Janice Pfeffer Distinguished Lecture), whose research focuses on the myocardial response to ischemic stress with an emphasis on p38-MAPK, and Richard Kitsis (President’s Distinguished Lecture), who has made seminal contributions to our understanding of how and why cells die and the role of cell death in heart disease.

Throughout the conference, poster sessions were held in the glass-enclosed Sails Pavilion, whose transparent roof consists of distinctive Teflon-coated fiberglass sails, reflecting San Diego’s maritime history and proximity to the San Diego shore. Outstanding posters from each of the three sessions were selected by a panel of judges and awarded the ISHR International Poster Prize. Congratulations to this year’s recipients, Alessandra Castaldi (Inst Clin Humanitas), Justus Stenzig (Univ Hamburg-Eppendorf), and Naoto Muraoka (Keio Univ), for their outstanding achievements. In addition, 88 Travel Awards and 8 Registration Awards were provided to attendees from all seven ISHR sections to enhance the global diversity of the cardiovascular researchers attending the Congress.

The closing banquet on the final evening of the conference brought us again to the Coronado Terrace, gave us a taste of American-style barbeque and provided a relaxing social evening with the sun setting over the Pacific Ocean. Once again the ISHR World Congress proved to be a memorable experience filled with lectures from leading cardiovascular scientists, workshops and poster sessions promoting the exchange of ideas and the development of collaborations and opportunities to connect with friends and colleagues from around the globe. We hope you will join us in 2016 for the next ISHR World Congress in Buenos Aires, Argentina!

The Editor thanks Dr David Eisner, who provided the photos for this article.

Sarah Franklin, Ph.D.
Department of Internal Medicine,
Cardiology Division,
University of Utah,
Salt Lake City, UT
Dear Colleagues,

It is my deepest honour and privilege to take post as President of the ISHR, having previously served our Society as Secretary General from 2004 to 2010 and as President-Elect for the past 3 years. I thank the ISHR Council for entrusting me with this role. The occasion has prompted me to reconsider what the International Society for Heart Research truly stands for and, to do that, I have done what I used to do as a schoolboy learning English… I have consulted the dictionary!

The dictionary defines “International” as “Existing, involving, or carried on between two or more nations”. With 7 active Sections across the globe, the ISHR certainly is truly international, and that is a unique characteristic and strength of our Society. For the past 9 years of my participation in the ISHR executive, I have worked with my colleagues on the Society’s Council to promote and enhance the interactions among our global membership, for mutual and synergistic benefit. I am grateful to the leadership of our Sections for their support in this endeavor and delighted that, for 3 consecutive World Congresses since 2007, the Sections have participated fully in each Congress, by organizing and sponsoring symposia as an integral part of the Congress program, in some cases forgoing regional meetings. Indeed, at the recent XXI World Congress in San Diego, there were participants from all 7 ISHR Sections and over 35 different countries, which reflects the inclusive nature of our Society. As President for the next 3 years, I will continue to work towards promoting international cooperation in all ISHR activities and look forward to breaking new ground with an inaugural World Congress in South America in 2016.

The literal dictionary definition of “Society” in the appropriate context is a “Group or organization formed for the purpose of promoting some branch of study or research by means of meetings, publications, etc.”, and that is indeed what the ISHR does. However, another definition of society is “The sum of human conditions and activity regarded as a whole functioning interdependently”, i.e. a community or an extended family. An additional unique feature of the ISHR is indeed its collegial, familial nature, which I hope will be maintained during my tenure. For any community or family to thrive, it must nurture its young, as well as recognize and respect the “not so young” and benefit from their wisdom and experience, and support its less privileged members towards fulfilling their potential. As President, I will strive to build on the initiatives that the ISHR executive has set in train in recent years towards these objectives, such as the young investigator travel awards, the early career investigator network, and free registrations at the World Congress for participating ISHR members from developing countries.

“Heart”… You may be relieved to hear that the dictionary definition of the wonderful organ that we are all so fascinated by did not really add much to what I knew already! However, heart has many meanings, including conviction and enthusiasm. These are difficult times globally and the economic problems around the world have also adversely impacted science, including cardiovascular research. It is important therefore that we do not lose heart, but continue to believe in the value and importance of what we do, and redouble our efforts to convince our lawmakers that our work makes a key contribution to greater health and wealth in our nations.

Courage, another definition of heart, may exhibit in many forms. It certainly takes courage to volunteer to organize and host a meeting of the magnitude of a World Congress, particularly under the prevailing economic circumstances. I would like to take the opportunity of this inaugural letter to once again thank Joan Heller Brown and her colleagues, for their courage in hosting the outstanding XXI World Congress last summer and for their wonderful hospitality in beautiful San Diego.
In 1952, like many other medical students, I was taught that chronically failing hearts operate on the descending limb of the Starling curve, where increasing end-diastolic volume reduces the heart’s ability to eject. This error is surprising because Starling’s classical paper (1) had detailed why the heart must respond to increased filling by ejecting the added volume. Were a heart to operate on the descending limb, increasing venous return would reduce ejection, which by increasing ventricular volume would reduce ejection further. Starling recognized that this initiates a vicious cycle that ends when the heart ceases to eject:

…dilatation, which is the mechanical result of unchanging inflow and failing outflow, [can proceed] to such an extent that the tension of the muscle fibres becomes increasingly inadequate in producing rise of intracardiac pressure. The mechanical disadvantage, at which in the dilated spherical heart the skein of muscle fibres must act, finally smashes up the system and the circulation comes to an end. (1475).

Even earlier, Fothergill observed that in a distended frog heart:

When much blood has been located in the ventricles, and they are not capable of completely emptying themselves, a portion remains at each systole. At each diastole, however, an equal quantity of blood is again thrown into the ventricle, and thus at the next systole a larger quantity remains unexpelled; and this process goes on until death, or until some compensatory relief is attained (26)… In this condition, the administration of a drug whose physiological action is to stimulate the [muscular fibres] into excessive contraction [can restore] the equilibrium. This is beautifully exemplified in the heart of a frog, [that] when paralysed [is] dilated or distended… Then administer digitalis, and watch the result. The distended globe, just pumping painfully a little off the top of the contained blood… begins to contract with more vigour; each ventricular systole is more and more complete; and the bulk of blood remaining unexpelled - and that is the great point - becomes less and less in quantity. Shortly, the distension [is reduced] and contraction come[s] gradually back to the norm… (328).

**The Law of Laplace**

The misconception that failing hearts operate on the descending limb was promulgated during much of the 20th century (4-6) in part because physicians and physiologists had lost sight of the Law of Laplace, a key determinant of cardiac hemodynamics and energetics.

Ventricular volume not only influences the heart’s ability to eject, but also the stress developed by its walls. The latter is described by the Law of Laplace, which states that the tension (T) on the walls of a thin-walled cylinder is proportional to the radius of curvature (r) and the pressure (P) within the cylinder according to the equation $T = P \times r$. In the thick-walled heart this relationship is $\sigma = P \times r/h$, where $\sigma$ is wall stress and h is wall thickness. Dilatation increases wall stress by increasing r and decreasing h.

Physiologists in the late 19th century understood the importance of the Law of the Laplace in determining cardiac performance. In the 1890s Roy and Adami wrote: “…the strain on the heart wall in systole… increases with the circumference of these walls” (7281), and Frank noted: “…if, during the contraction of a hollow muscular organ, hydrostatic pressure is unchanged, the tension acting on each cross-sectional unit must decrease.” (8299-300). At the same time Woods, a throat surgeon and anatomist at Trinity College in Dublin, measured cavity size and wall thickness in the two ventricles, and used the Law of Laplace to calculate that aortic pressure is ~6 times higher than pulmonary artery pressure (9).

Because dilatation increases wall stress, additional energy must be expended to stretch elasticities in the walls of a dilated heart. This decreases efficiency because much of the additional energy is degraded to heat when the heart relaxes. A simple
geometrical effect also reduces efficiency when the heart dilates. This occurs because increased circumference reduces the amount of sarcomere shortening needed to eject a given stroke volume. As a result, when the heart dilates, less of the potential energy stored in the stretched elasticities during isovolumic contraction is used to eject blood and more is degraded to heat.

The application of the Law of Laplace to the heart was largely forgotten in the early 20th century, but was rediscovered in 1952 by Burch et al. (10) who described how dilatation increases ventricular wall stress. Five years later, Burton noted that the increased wall stress in dilated hearts decreases cardiac efficiency (11). However, Burton also wrote:

The eventual failure of Starling’s law, (i.e., of the increased force of contraction with increased initial fiber length) when a critical length of fiber is exceeded, is undoubtedly an important factor in heart failure (11). (12)

The persistence of this error stimulated me to write an editorial in 1965 reiterating that failing hearts cannot operate on the descending limb:

...the geometry of the heart imposes certain functional requirements upon the physiology of its muscular walls. The most important of these is that contractile force must increase with increasing ventricular volume; failure to meet this requirement (operation of the heart on the descending limb of the Starling curve) sets the stage for the establishment of a vicious cycle which [can] lead to progressive cardiac dilatation and death of the organism. (12)

I was tempted to speculate that operation of the heart on the descending limb initiates acute pulmonary edema, but because I was only a beginning assistant professor I did not dare. I learned later, however, that 19th century physicians often referred to pulmonary edema as “acute dilatation”.

Acceptance of Simple Explanations Based on an Established Paradigm

Acceptance of simple explanations that although wrong are easily understood has a long history. For example, explanations for pleural effusions in heart failure continued to follow Hippocratic teaching that the fluid was phlegm which had descended from the brain long after Vieussens had correctly attributed the edema to fluid transudated from engorged pulmonary vessels (13).

The continued acceptance of the view that failing hearts operate on the descending limb of the Starling curve was described as a “pervasive and powerful misconception” by Feltovich et al. (14). These authors found that in the 1980s 64% of first- and second-year medical students in a prominent US medical school attributed heart failure to sarcomere overstretching. This error was especially remarkable because the textbook used by the students stated that operation on the descending limb “represents a highly unstable state [that] provides the setting for a vicious cycle from which the heart has no simple means of recovery” (15).

Feltovich et al. attribute perpetuation of this error to “initially simpliﬁed approaches [that] impede the later acquisition of complexity” (14) and lead to “...speciﬁc misunderstandings of concepts...mal-adaptive biases in the thought processes that are brought to bear in dealing with conceptual complexity [and] an insidious tendency for misconceptions to compound each other within a general climate of oversimpliﬁcation” (14).

Conclusion

The emergence and remarkable persistence of the view that chronically failing hearts operate on the descending limb of the Starling curve illustrates three hazards in using basic science to explain clinical phenomena. The first is the absence of an important concept. Although simple hemodynamic considerations led Starling to recognize the vicious cycle initiated when an increase in venous return causes a decrease in stroke volume, failure to appreciate the Law of Laplace exacerbated the problem by overlooking decreased cardiac efficiency, an additional detrimental consequence of dilatation. A more dangerous hazard is the acceptance of a simple explanation based on familiar concepts instead of more complex explanations that require the learning of a new and complex paradigm. This appeal of operating within a familiar but invalid paradigm is enhanced by a third hazard: the avoidance of admitting error by reluctance to abandon a flawed explanation, even after the flaw has become apparent.

References


(continued on page 15)
The 30th annual meeting of International Society for Heart Research (ISHR) Japanese section was held at La Jolla in San Diego before the World Congress. The meeting venue was the historic and beautiful La Valencia Hotel, which is one of the most magnificent hotels in the United States. The conference attendees enjoyed stimulating discussions in the presence of leading scientists under fine weather with a fresh breeze coming in from the Pacific Ocean. The 2013 ISHR Japanese meeting was hosted by the Keio University School of Medicine, and organized by Dr Keiichi Fukuda. Even though the conference was held outside of Japan, over one hundred people from Japanese medical institutions attended the meeting. The 135 attendees came together from 52 institutions, 33 speakers talked about the latest scientific developments and 57 posters were exhibited. This year’s conference featured the two special themes of inflammation and regeneration in addition to general topics such as heart failure and arrhythmia. The meeting contained two symposia, two mini symposia, a featured research session, a young investigator’s award, two morning, luncheon and evening seminars, and two special lectures.

The meeting opened with the morning seminars. Dr Nobuhisa Hagiwara (Tokyo Women’s Medical School) spoke on the topic of, “Sleep apnea and cardiac arrhythmia.” Dr. Michihiro Yoshimura (The Jikei University School of Medicine) gave a talk on “Non-genomic effects of aldosterone on cardiomyocytes.”

The theme of Symposium 1 was inflammation. It was chaired by Dr Yasuchika Takeishi (Fukushima Medical University) and Dr Hiroyuki Tsutsui (Hokkaido University). The relationship between inflammation and cardiac diseases was actively discussed. Symposium 2, which was chaired by Masatsugu Hori (Osaka Medical Center for Cancer and Cardiovascular Diseases) and Dr Shigeru Miyagawa (Osaka University), focused on cardiac regeneration. The invited speaker, Mark Sussman (San Diego State University), gave an outstanding presentation on cardiac progenitor cells and cardio-protective kinase Pim-1 (CPCEP).

Two distinguished scientists were also invited for the special lectures. In special lecture 1, Dr Filip K. Swirski (Harvard Medical School) gave an excellent presentation on “Extramedullary hematopoiesis in cardiovascular disease.” His lecture described how monocytes and macrophage contribute to vascular inflammation, and proposed new mechanical aspects of atherosclerosis. In special lecture 2, Dr Benoit G. Bruneau (University of California, San Francisco) addressed the issue of cardiac development. The title of his talk was “Epigenetic regulation of cardiac lineage development.” He clearly explained how cardiac development was systematically regulated by epigenetic modification, such as Baf60 and histone modifications.

In the luncheon seminars, both Dr Ichiro Manabe (The University of Tokyo) and Dr Tohru Minamino (Niigata University) gave excellent talks about inflammation in association with heart failure and lifestyle-related diseases.

In mini symposium 1, chaired by Dr Tetsushi Furukawa (Tokyo Medical and Dental University) and Haruaki Nakaya
Attendees had vigorous discussions in the poster sessions. Attendees had vigorous discussions in the poster sessions.

(Chiba University), ion channels and long QT syndromes were discussed. In mini symposium 2, chaired by Dr Kensuke Egashira (Kyushu University) and Dr Yuichi Oike (Kumamoto University), the relationship between atherosclerosis and inflammation, metabolic syndrome, and endothelial dysfunction was discussed.

The poster sessions were divided into eight categories: inflammation, ischemia, regeneration, ion channels, vascular biology, heart failure, development/hypertrophy, and metabolism. High-quality posters were exhibited and people enjoyed stimulating scientific discussions in each session.

The young investigator award (YIA) competition was the highlight of the meeting. The five finalists were Dr Hisayuki Hashimoto (Keio University), Dr Kazuhiro Nagaoka (Kyushu University), Dr Munehiko Shibata (The University of Tokyo), Dr Yasuyuki Ohgino (Keio University), and Dr Shouji Matsushima (Hokkaido University). They presented excellent talks in fluent English. After difficult deliberations, Dr Munehiko Shibata was selected to receive the young investigator award.

In the evening seminars, Dr Carlos M. Ferrario talked about Losartan and HCTZ. Dr Masafumi Kitakaze gave a talk on "Neurohumoral Factors and Cardiovascular Diseases".

At the Closing Ceremony & Get Together, all attendees met together in the garden and poolside area at La Valencia hotel and promoted their mutual friendship with delicious food and drinks in an intimate and friendly atmosphere. The overall praise for the 30th annual meeting of the Japanese section was very high, and many memorable moments are likely to remain in the attendees’ hearts. The next annual meeting will be held in Nagoya, Japan. We look forward to seeing each other again and sharing new developments in science.
Report on the XXXVII Meeting of the Australasian Section
(August 8-11, 2013; Gold Coast, Australia)

The annual meeting of the Australasian Section of the ISHR for 2013 was held in association with the Cardiac Society of Australia and New Zealand (CSANZ) at Australia’s Gold Coast. The meeting was a great success with a large attendance. Scientists, both senior and junior, showcased their research during oral and poster presentations, covering different aspects of cardiovascular biology and making for a very informative and enjoyable meeting.

A particular favourite of the Scientific Program is the three prestigious lectures (RT Hall Lecture, Kempson Maddox Lecture and Basic Science Lecture) given by esteemed experts in the field. This year, the RT Hall Lecture was delivered by Prof. Hossein Ghofrani (University Hospital Giessen und Marburg GmBH, Germany). His lecture title was ‘Translational research – lost in translation? Examples from the field of pulmonary vascular diseases’. Prof. Ghofrani discussed the transition, process and outcomes of preclinical studies to clinical studies for the treatment of pulmonary arterial hypertension. The Kempson Maddox Lecture was delivered by Prof. Peter Macdonald (St Vincent’s Hospital, Australia) and the title of his talk was ‘How do you mend a donor heart?’ His fascinating lecture described the development and proof of concept of an ex vivo portable perfusion system for the transportation of donor hearts for optimal organ preservation, which hopefully can one day be used in clinical practice. The Basic Science Lecture was given by Prof. Roland Stocker (Victor Chang Cardiac Research Institute, Australia). In his talk, entitled ‘Heme oxygenase-1: from an enzyme involved in catabolism to a cardiovascular protectant’, Prof. Stocker described his research on the biology of heme oxygenase-1, including the role of direct and indirect actions of heme oxygenase-1 in regulating biliverdin- and bilirubin-mediated cell signalling and metabolic programming in the heart.

This year we were delighted to welcome ISHR Invited International Speakers Prof. Mark Anderson (University of Iowa Carver College of Medicine, USA) and Prof. Rui-Ping Xiao (Peking University, China) to the ISHR Australasian Section meeting. Prof. Anderson opened the ISHR Student Finalist presentations with a detailed talk describing the role of aldosterone in the development of cardiovascular disease. We were also delighted to hear about his research into the role of calcium/calmodulin-dependent protein kinase II (CaMKII) in heart failure and arrhythmia in his talk entitled, ‘CaMKII signalling, calcium and excitability in the heart’, in the Basic Mechanism symposia. Prof. Xiao opened the ‘Signalling and pathology in the heart’ and ‘Energy stress in injury and failure’ Basic Mechanism symposia with, firstly, a thorough bench to bedside overview of beta adrenergic receptor signalling, and secondly, her research into the role of MG53 in triggering metabolic syndrome and cardiac complications.

Along with the participation of our International Speakers, the Basic Mechanism symposia were enriched with talks from Australasian ISHR Scientists covering various aspects of cardiovascular biology including signalling and pathology in the heart, insult, injury and inflammation, CaMKII signalling, energy stress in injury and failure, and structure, function and regeneration.

The Australasian section of the ISHR places great emphasis on supporting and promoting Early Career Researcher (ECR) development. One aspect of this is the annual ISHR ECR workshop, aimed toward promotion of discussion among ECRs regarding various aspects of career progression. This year we were extremely fortunate and grateful to have both ISHR Invited International Speakers Profs Mark
Anderson and Rui-Ping Xiao, as well as Invited National Speakers Prof. Livia Hool (University of Western Australia, Australia) and Dr Dominic Ng (University of Melbourne, Australia) participate as workshop panellists. The topic of the workshop, organised by Dr Helena Viola (University of Western Australia, Australia) and Dr Jim Bell (University of Melbourne, Australia), focused on ‘How to maximize your competitiveness for fellowships/grants as an early career researcher’. Co-chairs Drs Bell and Kimberley Mellor (University of Auckland, New Zealand) ran a superb session that provided attendees with a unique opportunity to hear a well rounded discussion on funding opportunities within Australia and abroad from leading experts in the field. Workshop attendees thoroughly enjoyed the interactive discussion that took place, commenting that the relaxed and informal setting encouraged participation, and were very keen to see the ECR workshops continue as a tradition at ISHR Australasian meetings.

In addition to the workshop aimed at ECR development and advice, the ISHR Australasian section has long been a proud supporter of research students and early postdoctoral fellows. Numerous opportunities are given to young researchers to present their work and compete for prizes. The ISHR Student Investigator Oral Presentation finalists were Shaneel Bappayya (The University of Melbourne, Australia), Laura Bienvenu (The University of Melbourne and Prince Henry’s Institute, Australia), Jennifer Kozlovski (The University of Sydney, Australia) and Michelle Munro (University of Auckland, New Zealand). All students gave excellent and well prepared presentations. Congratulations to the winner of the prize, Michelle Munro, for her presentation titled “The organisation of and of T-tubules and junctional proteins in JPH2 transgenic mice”. The poster presentations are always a popular session to discuss cardiovascular research in an informal setting, usually over some wine and cheese. Congratulations to this year’s winner, Maria Jelinic (The University of Melbourne, Australia) for her poster entitled “Novel vascular phenotypes in the mesenteric artery of male relaxin-deficient mice”. The mini-oral presentation was highly competitive and won by Shan Liu (Monash University, Australia) for her mini-talk on “Myocardial infarction after subtotal nephrectomy accelerates pathological cardiac remodelling and renal impairment”. The student publication award went to Laura Bienvenu (The University of Melbourne, Australia). Her publication titled, “Macrophage mineralocorticoid receptor signaling plays a key role in aldosterone-independent cardiac fibrosis”, published in Endocrinology 153(7): 3416-25, 2012 was the first study to demonstrate that macrophage mineralocorticoid receptor signalling is crucially involved in translating cardiac inflammation and oxidative stress into fibrosis in the absence of elevated plasma aldosterone levels. Congratulations to all of our student prize winners and to all presenting students for their hard work towards scientific excellence.

The postdoctoral publication prize for the best original research paper published during the first six postdoctoral years was awarded to Dr Bianca Bernardo (Baker IDI Heart and Diabetes Institute, Australia). Her publication “Therapeutic inhibition of the miR-34 family attenuates pathological cardiac remodeling and improves heart function” was published in PNAS 109(43): 17615–20, 2012, and demonstrated that inhibition of miR-34 family, using tiny microRNA inhibitors, improved cardiac function in mice with pre-existing pressure overload-induced hypertrophy and systolic dysfunction, and can attenuate pathological remodelling after myocardial infarction. This article has been a Research Highlight in Nature Reviews Drug Discovery.
Our Annual General Meeting (AGM) was held on Friday 9th August at Alto Cucina Restaurant at the Oasis Centre Broadbeach, at which Prof. Lea Delbridge (President), Dr Salvatore Pepe (Finance Secretary), Dr Colleen Thomas (Member Secretary), Prof. Livia Hool (General Secretary & President Elect), A/Prof. Julie McMullen (ECR Development) and Dr Jim Bell (ECR representative) gave a summary of the Australasian section’s activities over the past year. Prof. Delbridge announced and welcomed four additional ISHR members to council, including ECR representative Dr Kimberley Mellor (University of Auckland, New Zealand), General Representatives A/Prof. Derek Laver (University of Newcastle, Australia) and Dr Enzo Porrello (University of Queensland, Australia), and CSANZ Liaison Prof. Jon Kalman (Royal Melbourne Hospital, Australia). Prof. Delbridge also thanked retiring council members Prof. David Allen (University of Sydney, Australia), Dr Yue-kun Ju (University of Sydney, Australia), and A/Prof. Ian LeGrice (University of Auckland, New Zealand) for their contributions and commitment to ISHR council. Special mention was also made recognising the contributions of Dr Helen Kiriazis (Baker IDI Heart and Diabetes Institute, Australia) to *Heart News and Views*.

This year’s AGM also marked the completion of two incredibly fruitful terms as President of the Australasian Section of the ISHR for Prof. Delbridge, who reflected on her time as President over the past 6 years. To mention just some of her accomplishments in her time as President, Prof. Delbridge has been instrumental in achieving an almost 3-fold increase in Australasian section membership, the development of a strong partnership with the CSANZ that supports the annual ISHR Basic Mechanism stream at the Scientific Meetings of the CSANZ, the development of a strong and continually growing ECR network, and good standing of the Australasian section of the ISHR within the International ISHR community. In looking forward, Prof. Delbridge was keen to see continual positive growth of the Australasian section of the ISHR, particularly with regard to the advancement of strong links with other developing International sections. Prof. Delbridge thanked all ISHR members and members of Council for their contributions and commitment to the section over the past 6 years, and passed on the Presidency, as of the AGM, to Prof. Livia Hool (University of Western Australia, Australia). On behalf of the Australasian section, Prof Hool expressed a heart-felt thank you to Prof. Delbridge for her leadership and utmost commitment to the society, particularly in regard to her efforts toward the development and advancement of every aspect of the section during her role as President of the Australasian section of the ISHR.

The AGM was followed with the annual ISHR dinner, also held at the Oasis Centre Broadbeach. The ISHR dinner made for a wonderful opportunity to network with fellow ISHR members all while celebrating a highly successful meeting, the achievements of the section thus far, and stimulating lively discussion about the ever growing future of the Australasian section of the ISHR.

Dr Bianca Bernardo
Dr Helena Viola

ISHR members should note there will not be a joint CSANZ/ISHR meeting in 2014. Members are invited to attend:

- **World Congress of Cardiology**
  4-7 May 2014, Melbourne, Australia

- **The Australian Health & Medical Research Congress**
  16-19 Nov 2014, Melbourne, Australia

- **CSANZ/ISHR 2015**
  Aug 2015, Melbourne, Australia
  Details to follow
James Bell, Ph.D.
University of Melbourne, Australia
Host: Dr Joan Heller Brown,
UC San Diego

As a recipient of one of the inaugural ISHR Early Career Investigator Travel Bursaries, I can report that I had a fantastic training experience and a thoroughly enjoyable collegial time visiting with Dr Joan Heller Brown and her research team at the University of California at San Diego in June 2013.

Spending time on a different continent in a busy lab where the talk is all about cardiac signaling processes was a great experience for me. Appointed as a post-doctoral Fellow of the Australian Heart Foundation, working at the University of Melbourne under the mentorship of Prof Lea Delbridge, I found that I could feel at home in Joan’s lab very quickly and actively interact about the important bench details of doing the science of interest to our two labs. My particular research theme is looking at the mechanisms of ischemia/reperfusion dysfunction and injury, with a more recent focus on how CaMKII may be differentially implicated in male and female cardiac stress responses.

My primary experimental goal in spending time in Joan’s Lab was to learn the CaMKII activity radioassay - a methodology well established in her lab (and in labs of a few other key CaMKII aficionados not far away). The idea of arranging a visit to Joan’s lab came through discussions with her at the Australasian ISHR meeting in 2012, where it was agreed that an alternative means for measuring CaMKII activity would strengthen my current findings. The radioassay measures total/autonomous CaMKII activity through the detection of the phosphorylation rate of the synthetic syntide-2 substrate, enabling me to measure CaMKII activity directly in cardiac ventricular homogenates. In the lab I worked most closely with Charlie Gray – he has done some fantastic work with CaMKII genetically manipulated rodents, exploring the role of the CaMKII splice variants in different scenarios. Charlie was a great instructor – and in return I hope he found me useful to have around to lend a hand with some experiments he had on the go.

I am truly grateful to Joan, Charlie and the rest of the lab for their generous hospitality, to the ISHR for supporting my visit and for investing in ECR development through the Travel Bursary initiative. I thoroughly recommend that early career researchers plan ahead to consider this excellent opportunity at the next World Congress in Buenos Aires. Beyond the immediate scientific outcomes, the experience for me has been great in fostering interactions between our two ISHR Sections and in developing networks of potential collaborators and advisors.

Leandro Sommese
University of La Plata, Argentina
Host: Dr Hector Valdivia,
Univ of Michigan Medical School

Before enjoying the ISHR World Congress, I stayed for two weeks in Ann Arbor, Michigan, at the Molecular and Integrative Physiology Department in the University of Michigan Medical School. There I had the pleasure of working with Dr Hector Valdivia and his lab team.

The group was very friendly and I learned about preparing sarcoplasmic reticulum-enriched rat microsomes, [3H]ryanodine binding and single channel recording techniques. Moreover, the lab group taught me how to analyze the data. I have benefitted greatly from these weeks of training because I now feel capable of reproducing the experiments in my country. This last issue is very important because my lab has several projects that involve the study of the RyR properties; thus we now can complete ongoing investigations and start new studies using the techniques that I acquired. This training period had enriched me personally and professionally. I will use these experimental techniques to finish my thesis and to undertake new projects and collaborations.

I want to thank to all ECI coordinators, and also Tish Murphy!

(continued on page 14)
Luis Gonano  
*University of La Plata, Argentina*

Host: Dr Mark Sussman,  
San Diego State University

I am Luis Gonano from Argentina. I work at the University of La Plata, mentored by Dr Martin Vila Petroff at the Centro de Investigaciones Cardiovasculares. After enjoying the World Congress in San Diego, I joined Dr Mark Sussman’s group at the Department of Biology at San Diego State University. There I learned how they conduct cardiac progenitor cell research, and they trained me in confocal imaging, which is the main experimental approach for the projects I am currently working on. This experience also helped me to improve my English skills.

I found the whole experience exciting, and I am sure that it will be very useful for my future post-doctoral training and research career in general. I want to thank all the ECI coordinators for this opportunity, and also Dr Tish Murphy for her constant support.

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Zoltan Varga  
*Semmelweis University, Hungary*

Host: Dr Pal Pacher,  
NIAA/NIH

I would like to thank the ECI coordinators for awarding me an ECI grant in 2013. This grant allowed me to spend 2 weeks (from June 17 till 28) in the Laboratory of Physiologic Studies led by Prof. Pal Pacher at the National Institutes of Health in Bethesda, Maryland. Prof. Pacher has a wide range of experience in oxidative/nitrative stress research in relation to tissue injury, and he is also a leader in the field of cannabinoid research. The purpose of my visit was to learn techniques related to the measurement of mitochondrial function (bioenergetics, mitochondrial respiration) with the Seahorse Mitochondria Function Analyzer. During my stay I was able to perform a few pilot experiments, studying NO-donors as potential modulators of mitochondrial function. We also discussed potential future collaborations, and for this purpose I will join his research group for a year beginning in 2014.

It was interesting for me to see how research is performed in a large institute like the NIH. Visiting state-of-the-art core facilities and experiencing the international scientific environment was amazing for me. I sincerely appreciate the support of the ISHR, which allowed me to perform research in a top institute in the USA. This was also an excellent opportunity for my personal development.

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Alejandra Yeves  
*University of La Plata, Argentina*

Host: Dr Christopher Glembotski,  
San Diego State University

After the ISHR World Congress, I had the opportunity to visit the lab of Dr Christopher Glembotski, Director of SDSU Heart Institute at San Diego State University. I not only had the pleasure of meeting and interacting with very interesting and friendly colleagues, including Dr Glembotski, Dr Shirin Doroudgar, Dr Brandi Bailey, and Dr Donna Thuerauf, but also I learned highly updated and optimized immunohistochemistry/immunocytochemistry techniques and the corresponding molecular biology strategies necessary to obtain reliable results. Now, based on what I learned in San Diego, I am starting to conduct experiments at Dr Ennis’ Lab at the Cardiovascular Research Centre, in La Plata, Buenos Aires, Argentina.

At Dr Glembotski’s lab I participated in very interesting and motivating academic activities, such as scientific and experimental meetings. We also enjoyed stimulating conversations both during lunch breaks and while relaxing after the lab meetings. I really enjoyed the experience and I am sure it will contribute to improving my research career. Also, it was a great pleasure for me to co-chair a symposium during the ISHR World Congress with Dr Steven Houser, presenting such prestigious researchers as Dr Donald Bers, Dr Shigeo Wakabayashi, Dr David Eisner and Dr Seth Robia.

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*ECI Travel Bursary recipient, Alejandra Yeves (left), relaxes with members of Dr Christopher Glembotski’s lab.*
In a similar vein, I would like to take this opportunity to also thank Martin Villa-Petroff and his colleagues from Argentina for their courage, conviction and enthusiasm, their heart, in volunteering to host the XXII World Congress in Buenos Aires in 2016.

Finally, “Research”, the endeavour to discover new facts by scientific study. We must never lose sight of the fact that science is the bedrock of the ISHR and that recognizing, nurturing and promoting scientific excellence and integrity in cardiovascular investigation must be at the heart of all that we do professionally, through our Society’s conferences, awards, website, newsletter and journal, and also in our regional activities as ISHR members.

I am very fortunate to have an outstanding cadre of Officers and Council Members to work with over the next three years, which gives me great confidence that we will take significant strides in accomplishing the ISHR’s mission of promoting the discovery and dissemination of knowledge in the cardiovascular sciences, towards better prevention, diagnosis and treatment of an increasingly global health problem, cardiovascular disease.

Metin Avkiran, PhD DSc
President, ISHR
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