In this issue:

- 2004 Peter Harris Award ........... 1
- New ISHR Council ............... 2
- President’s Letter ................. 3
- Past Truth & Present Poetry by Richard J. Bing ............. 4
- Bridging the Gap, where clinical and basic sciences meet by Karl T. Weber ........... 5
- 2004 World Congress in Brisbane .................. 7
- New ISHR Fellows .................... 9
- Dr Anversa receives AHA Research Achievement Award 10
- 2004 Satellite Meetings in: Melbourne .................. 11
  Iguazu Falls ....................... 12
  Kruger National Park .............. 13
  Hong Kong ...................... 14
- Meetings Calendar ................. 15

Arnold M. Katz, M.D.

Winner of the seventh Peter Harris Distinguished Scientist Award

Dr Katz’s research centers on the link between basic science and clinical cardiology and has been published in more than 400 articles and chapters and two single-authored books. His research career began in 1951 when, as a student at the University of Chicago, he found that short-chain fatty acids inhibit yeast metabolism. He spent the following summer at Woods Hole, MA, examining cold-induced contraction of smooth muscle. During vacations from Harvard Medical School he worked with his father, Louis N. Katz, with whom he recorded left ventricular pressure-volume loops and described the hypoxia-induced increase in left ventricular compliance. While an intern at Massachusetts General Hospital he published a review of Echinococcus disease in the United States and, between 1957-1959 with Christian B. Anfinsen Jr. at the NIH, he described a method for peptide analysis that became a “Citation Classic”. In 1961, as a cardiology fellow with Paul Wood in London, he measured the trans-septal conduction time in patients with intermittent bundle branch block. Between 1961-1964, during a research fellowship with W.F.H.M. Mommaerts at UCLA, he characterized the cardiac contractile proteins and, in 1963, was the first to show that purified tropomyosin regulates muscle contraction.

At Columbia University in New York, where he was Assistant Professor of Physiology from 1964-1967, he quantified the effects of calcium on the cardiac muscle. (continued on page 2)
contractile proteins, demonstrated that calcium uptake by the cardiac sarcoplasmic reticulum was sufficient in rate and extent to relax the heart, and showed that the failing heart could not operate on the descending limb of the Starling curve. Between 1967-1969, as Associate Professor of Medicine and Physiology at the University of Chicago, he postulated that acidosis contributes to the early pump failure of the ischemic heart. After becoming the first Philip J. and Harriet L. Goodhart Professor of Medicine (Cardiology) at the Mount Sinai School of Medicine in New York City, and in 2000 became Professor of Medicine and Physiology Emeritus. He is currently Visiting Professor of Medicine and Physiology at Dartmouth Medical School where, in addition to continuing to study the pathophysiology of heart failure, he is pursuing his long-standing interest in Medical History.

Dr Katz has been a member of the ISHR since 1969, was a member of the International Advisory Committee from 1976-1992, and President of the American Section from 1986-1988. He served on the Editorial Board of the Journal of Molecular and Cellular Cardiology since its founding in 1970; in 1979 he became an Associate Editor and from 1986-1992 was the first elected Editor. He served three terms on the Basic Science Council of the American Heart Association, which he chaired from 1992-1994, after which he became Vice President for Councils and a member of the Board of Directors. He served many years on the Stanley J. Sarnoff Endowment for Cardiovascular Science and was the first chair of its Scientific Board. He was Mosely Traveling Fellow of Harvard University from 1960-1961, received a Humboldt-Prize in 1976, and in 1994 was awarded an honorary Doctorate in Medicine from the Carol Davila University, Bucharest, Romania. In 1989 he shared the Research Achievement Award of the American Heart Association, which in 1995 joined his name to that of his father in the “Louis N. and Arnold M. Katz Prize” for outstanding basic science research by a young investigator. He received several teaching awards at the University of Connecticut including the 21st Charles N. Loeser Award for Outstanding Teaching of Basic Medical Sciences. Dr Katz has been married for 45 years to Phyllis, a classicist who named phospholamban and lusitropy; they have four children, eight grandchildren, and live in Vermont with two springer spaniels.

Arnold M. Katz, M.D. is the seventh recipient of the Peter Harris Distinguished Scientist Award (Brisbane, Australia; 2004). This Award of International importance is the highlight of each World Congress of the ISHR. It is conferred in recognition of lifetime achievements in the field of cardiovascular research.

Previous recipients are:
- Setsuro Ebashi, Japan (Melbourne, Australia; 1986)
- Albrecht Fleckenstein, Germany (Ann Arbor, USA; 1989)
- Robert B. Jennings, USA (Kobe, Japan; 1992)
- Howard E. Morgan, USA (Prague, Czech Republic; 1995)
- Lionel H. Opie, South Africa (Rhodes, Greece; 1998)
- Robert J. Lefkowitz, USA (Winnipeg, Canada; 2001)

In 1995 the AHA joined his name to that of his father in the "Louis N. and Arnold M. Katz Prize"
Dear Reader,

I HAVE BEEN ASKED, most politely, by Tom Ruigrok -- I quote: “I have to break into your quiet existence” -- to write a small letter for HEART NEWS AND VIEWS.

Tom, a very good friend of mine, who is fully aware of the Italian way of life after visiting Italy a number of times, and our love of chatting rather than writing, very kindly offered me a short cut by suggesting that I publish the brief Mission Statement that I presented to the Council in Brisbane.

I will however share this with you on another occasion. I would rather share with you the joys that I have encountered since becoming President.

The first relates to the letter that I received from our President-Elect Roberto Bolli. As you probably know, Roberto was the highly deserving recipient of the 2004 Research Achievement Award. I was personally in the first row to see him presented with this award, and I was in complete awe of his scientific achievements during his career. What a splendid story he told us. His letter continued with his suggestion to donate his US$30,000 prize to a fund earmarked for a new lecture on molecular biology, genetics, genomics or proteomics. This gesture really touched me as it confirmed that Roberto is not only a phenomenal scientist, but he is also a very generous human being. The story does not finish here. There was also the suggestion to name this lecture after Roberto, but he of course refused. This gave me further joy and confirmed that he is such a modest man dedicated to the ISHR, and I am personally very proud that he is the President Elect of our Society. It is reassuring for me to know that he will be able to repair any “damage” that I myself may cause during my Presidency!

The second relates to Piero Anversa. Piero was sitting next to me during the 59th Congress of the Brazilian Society of Cardiology in Rio de Janeiro. Shortly before entering the meeting room, I was told that Piero had won the Research Achievement Award of the American Heart Association and that he will be presented with this prestigious award during their Congress in November. (See also page 10 in this issue, T.R.) Once again, an example of a fantastic scientist who is on our Council highlighting the value of the ISHR.

The third relates to my joy that the World Congress in 2010 will be held in Kyoto. I personally think that this is a unique location, and that Masatsugu Hori and his team will do a great job.

Finally, I would like to express my immense joy that Metin Avkiran is helping me during my Presidency and that Tom will be writing to me every so often for more communications.

I feel that all of the above confirms that with people of such calibre on the Council, the ISHR can only do well.

Ciao from sunny Italy,

Roberto Ferrari
A FEW WEEKS AGO, I received an announcement of a meeting in Germany of a “World Conference on Magic Bullets – Celebrating Paul Ehrlich’s 150th Birthday.” Who was Paul Ehrlich, what were his magic bullets, and what is the significance of Ehrlich’s work for the twenty-first century?

Paul Ehrlich was born in 1854 in Upper Silesia, then Germany. He studied medicine at the Universities of Breslau, Strasbourg, Freiburg, and Leipzig. In 1878 he obtained his doctorate of medicine. He then worked at a medical clinic in Berlin. In 1882 he became titular professor in Berlin and joined Robert Koch, the discoverer of the tubercle bacillus. The rest of his life Ehrlich spent in Frankfurt as director of a scientific institute where he received the Nobel Prize. He died in 1915 from a cerebral vascular accident. Ehrlich was a man obsessed by his work, burning the candle on both ends, but he was also gentle and caring, beloved by his staff and his family. Ehrlich was addicted to Havana cigars. Cigar smokers of today can only envy him; in Ehrlich’s time there was no embargo on imported cigars from Cuba.

As a medical student Ehrlich became fascinated by the use of aniline dyes in the staining of blood and tissues. In his first publication still as a medical student, he described the staining qualities of tissues and cells. Soon afterward in his doctoral thesis, he formulated ideas on the chemical relationship between cells and dyes. Much of his subsequent work originated from these early studies, as he expressed it, “corpora non agunt nisi fixata,” substances do not interact unless fixed (bound).

Ehrlich developed techniques for the staining of blood cells and first identified mast cells and eosinophiles. Later, when working with Robert Koch he perfected the staining of the tubercle bacillus. Koch, who had not been able to demonstrate these bacilli in blood, received a slide in which a blood smear contained numerous tubercle bacilli. Ehrlich discovered that the slide had been superimposed on another which had not been sufficiently cleaned and which contained numerous tubercle bacilli in infected tissue.

Ehrlich’s scientific career was not without obstacles. As a clinical assistant, a narrow-minded chief opposed his scientific work and Ehrlich had to resign. It was the time when he was diagnosed with tuberculosis, which he was able to overcome. Later, several of his co-workers resigned, because they doubted Ehrlich’s competency and scientific leadership.

Ehrlich’s work for which he received the Nobel Prize began with studies on the plant toxin ricin, a poison which is much in the news today. As he wrote, “the most noteworthy finding that surprised me is the sudden – I might say critical – appearance of immunity on the sixth day.” His demonstrations that protective immunity is not limited to bacterial toxins, that high titers of antiserum can be obtained by starting with low initial amounts of antigen, that actively induced immunity is long-lasting and has a sudden onset, had a remarkable impact on immunology. Ehrlich worked on the protective action of maternal milk and established that the presence of antibodies explains the immunity against some infectious diseases during the first year of life. Soon afterwards, Ehrlich began to standardize toxins and anti-toxins, leading him to the quantification of diphtheria anti-toxin production. Ehrlich viewed the antigen-antibody interaction as specific, depending on the chemical joining of two complimentary structures.

When I went to medical school, I learned about Ehrlich’s side-chain theory of antibody formation. He pictured the interaction as a chemical process involving stereo-chemical structures that fit together as lock and key. The cell has receptors, in the form of side-chains, that are to become antibodies. As he expressed it: “one may therefore rightly assume that these toxophile protoplasmic groups (receptrors) in reality serve normal functions in the animal organisms and that they only incidentally and by pure chance possess the capacity to anchor themselves to this or to that toxin.”

At that time the cause of syphilis, treponema pallidum, was discovered and Ehrlich set about to treat syphilis by chemotherapeutic agents. He considered these substances as magic bullets, aiming only at the pernicious invaders of the organism. Ehrlich already had prepared a large number of derivatives of arsanilic acid and its reduction products. In 1907 he tested the 606th preparation, which had been put aside because it was thought to be ineffective. Hata from Japan, working with Ehrlich, found that this preparation was highly effective in the treatment of syphilis infected animals. In 1910 the clinical
SEVENTY-TWO-YEAR-OLD Clara Jones awoke this beautiful spring day in May without a worry. She was thankful for her good health that had kept her from doctor’s door all these many years. As she drew back the curtains to the bedroom window, she marveled at the bright sunshine and the daffodils now abloom in her yard. She and husband Al looked forward to yet another 2-mile walk along the Katy Trail. This had become their daily custom over the past several months now that winter’s cold and ice had disappeared.

As she gazed aimlessly out the window, Clara suddenly experienced an oppressive heaviness in the middle of her chest; it prompted her to clutch at her sternum. The discomfort radiated into her neck and down the inside of her left arm. Soon thereafter she became nauseated and diaphoretic. Sitting on their bed in hopes of relief, she called to Al, busy in the kitchen preparing breakfast. Her retrosternal discomfort was only worsening. Clara’s ashen appearance and obvious state of discomfort frightened Al. He insisted they proceed immediately to the nearby University Hospital emergency room (ER). He was certain Clara was seriously ill and needed evaluation.

Upon their arrival at the ER, Dr Lois Burton introduced herself to Clara and quickly gathered the aforementioned historical information. She then promptly obtained Clara’s vital signs: BP 100/80; heart rate 96 bpm; respirations 16/min; she noted her diaphoretic state. Physical examination was unremarkable except for neck vein distention. As Lois was attaching limb and chest leads for obtaining an ECG, she recalled similar patients she had seen during her training in internal medicine. Clara’s presentation had the “ring” of an acute myocardial infarction (MI), which was confirmed and identified specifically as an acute inferior infarction by ST segment elevation in ECG leads II, III and aVF. There was no evidence of arrhythmia. Lois instructed Nurse Collins to notify cardiologist Davis about Mrs Jones and her acute MI and the likely need for urgent revascularization.

Lois requested Nurse Shaw provide Clara with a sublingual nitroglycerin tablet in the hopes of alleviating her discomfort; she reminded herself there was always morphine sulfate if needed. ECG leads were attached to the bedside monitor for surveillance of arrhythmias. Within minutes of receiving nitroglycerin and while Lois was drawing blood for serum enzyme determination, Clara complained of severe light-headedness. Nurse Shaw reported that Clara’s blood pressure had fallen to a palpable systolic pressure of 70 mmHg and Lois noted there was partial loss of consciousness. Lois wondered, could this be a brady- or tachyarrhythmia or a vasovagal episode? The ECG monitor showed a sinus tachycardia of 110 bpm. Lois quickly placed the patient in the reverse Trendelenburg position (feet up, head down); she then attached ECG chest leads over the right precordium.

What is your hypothesis about the patient’s current clinical status?

What did Lois hope to find with the second ECG?

Why did Clara become hypotensive after nitroglycerin?

What would you do and why?

Clara is hypotensive and her shock-like state followed nitroglycerin administration in the setting of an acute inferior MI.

Right precordial ECG leads are used to detect the presence of right ventricular infarction as expressed by ST segment elevation in right-sided leads V₅ and V₆.

Right ventricular (RV) infarction may accompany an acute inferior infarction of the left ventricle (LV) when a thrombus occludes the proximal portion of the right coronary artery (RCA). In sequential order, tissues supplied by the RCA include: the sinoatrial (SA) node; the RV; the atrioventricular (AV) node; and the inferior surface of the left ventricle (LV). The suspicion of RV infarction is high given the presence of neck vein distention in a previously healthy person and the sensitivity of her blood pressure to nitroglycerin. In knowing tissues subtended by the RCA, the potential for arrhythmias related to ischemia of the SA and AV nodes is recognized and dictates the selection or avoidance of a given pharmacologic agent.

Effective contraction of the infarcted RV determines LV filling and, in turn, LV

(continued on page 6)
stroke volume, which determines cardiac output and arterial pressure. Following RV infarction and the accompanying reduction in its contractility, RV stroke volume is dependent on the Frank-Starling mechanism (length-dependent property of cardiac muscle) and myocardial contractility (a biochemical property of cardiac muscle independent of muscle length or the load it faces during shortening, or afterload). Venodilatation with reduced venous return is associated with nitroglycerin administration. This will lessen RV filling and reduce RV stroke volume leading to inadequate LV filling and arterial hypotension. A chronotropic response is essential in this setting of reduced RV stroke volume. An increment in heart rate can preserve RV output/minute and thereby maintain LV filling and blood pressure. A β₁ adrenergic receptor antagonist would slow SA node discharge and heart rate. It therefore would be contraindicated in this setting.

Administration of intravenous saline to increase RV filling (or preload) will raise cardiac muscle fiber length to increase RV stroke volume. This intervention alone may restore Clara’s reduced blood pressure. It may be necessary to combine the infusion of saline with intravenous dobutamine, a synthetic catecholamine with β₁ adrenergic receptor agonistic properties. Dobutamine would raise myocardial contractility and thereby both RV and LV stroke volume.

Lois registered a deep sigh of relief when Clara’s blood pressure and systemic perfusion quickly returned to normal based solely on intravenous saline and the waning effects of short-acting nitroglycerin. She was also thankful for not having mindlessly given a beta blocker when Clara first presented to the ER with an acute MI. Practicing medicine by algorithms derived from large population-based clinical trials and euphemistically termed evidence-based medicine, can prove detrimental to the individual patient. Cardiologist Davis had arrived to examine Clara. A stable clinical state would allow Clara to now be transported to the cardiac catheterization laboratory, where revascularization would be promptly undertaken: its intent, to restore coronary blood flow to ischemic tissues. Less than one hour had passed since the onset of Clara’s chest pain and prior to her having primary angioplasty with stent placement at the site of the culprit atherosclerotic lesion, where thrombus formation had appeared. Indeed, as Lois knew all too well, in this setting, “time is muscle.”

Karl T. Weber, M.D.

References:


Richard J. Bing, M.D.
Escaping the “worse than usual” British summer to spend a few weeks in the beautiful sunshine state of Queensland, all in the name of “work”, was never going to be disappointing! Brisbane, the lively and cosmopolitan cultural centre, with its very own man-made beach in the heart of the city, accommodated the XVIII World Congress of the International Society for Heart Research, held in conjunction with the 52nd Annual Scientific Meeting of the Cardiac Society of Australia and New Zealand. Indeed, as expected, both the meeting and the location exceeded our expectations.

Science . . .

The meeting was held over four days in the Brisbane Convention and Exhibition Centre and was very well organised with a diverse range of lectures, emphasising the spectacular increase in cardiovascular research. The opening address, the Keith Reimer Distinguished Lecture by John Solaro on “Sarcomeric Proteins as a Center of Multiplex Functions in Signaling and Mechano-Transduction in the Myocardium”, set the scene for what was to be thoroughly enjoyable, informative, and thought provoking four days.

More than 200 lectures were presented over the course of the meeting, providing plenty of variety to satisfy the participants. The sessions most relevant to my field of research, “Metabolic Dysfunction in the Diabetic Heart” [with lectures by David Severson (Canada), John Chatham (USA), Gary Lopaschuk (Canada), Ger van der Vusse (The Netherlands) and Kieran Clarke (UK)], and in particular “Metabolism in Hypertrophic Remodelling of the Stressed Myocardium” [with lectures by Anne-Marie Seymour (UK), Mike Allard (Canada), Dale Abel (USA), Martin Young (USA) and Bill Stanley (USA)] were both excellent and extremely well attended. Most of the
symposia were held in small lecture rooms, encouraging full participation of the audience in the post-lecture discussions.

The Research Achievement Award was presented to Prof. Roberto Bolli, and his fascinating lecture on the “Use of Gene Therapy for Cardioprotection” provided us with a brief glimpse of the future of cardiovascular research and therapy. Over the four days we were spoiled with a range of Landmark Lectures from distinguished speakers, including Profs. Piero Anversa (The Damaged Heart), Eric Olson (The Cellular Circuitry of Cardiac Hypertrophy), and Roberto Ferrari (From Bedside to Bench: How the Unexpected Results of Clinical Trials Have Influenced Basic Research). I particularly enjoyed the lecture on the final day by Prof. Arnold Katz, accredited with the Peter Harris Distinguished Scientist Award, on “Basic Science and the Cardiac Patient: Lessons from the Past, Promise for the Future”.

With over 100 posters, three poster sessions were organised during two-hour long lunch breaks, allowing us ample time to satisfy our appetites for science and food simultaneously. A total of 12 prizes were awarded for four promising young scientists, were selected as Finalists for the Richard Bing Young Investigator Award: Robert Bell, UK (Pivotal Role of gp91 Phox-Containing NADPH Oxidase in Early Ischemic Preconditioning), Fabien Brette, UK (Transient Opening of the Mitochondrial Permeability Transition Pore Mediates Preconditioning-Induced Protection), and Cecilia Hurtado, Canada (Adenovirally Delivered siRNA Strongly Inhibits Na+-Ca2+ Exchanger Expression but does not Prevent Contraction of Neonatal Cardiomyocytes). As usual, the quality of work presented was very high and the prize was awarded to Robert Bell from London (UK).

... and Relaxation

For those whose bodies and brains were exhausted after traveling and a full day of symposia, discussions, and poster presentations to both novice and “veteran” researchers.

Robert Bell (King’s College, London, UK), the winner of the Richard Bing Young Investigator Award, is celebrating his victory with his colleagues Michael Shattock (right) and Ajay Shah (left).
day of lectures, a therapeutic trip to the Lone Pine Koala Sanctuary was organised on the second day, to cuddle a Koala, feed the Kangaroos and relax amongst the numerous inhabitants of the sanctuary.

Many of those attending the meeting, like myself, took the opportunity to travel north towards Cairns and Port Douglas and south to Sydney, both before and after the conference. With spectacular choices ranging from snorkelling and diving in the Great Barrier Reef, sailing in the Whitsunday Islands, whale watching in Hervey Bay, to scaling the glorious sights of Sydney and watching an opera at the famous Sydney Opera House, there was something there for everyone. So whether you were escaping the Great British summer or the great Californian summer, I doubt anyone was left disappointed with this trip.

So many thanks to Lindsay Brown, Lea Delbridge, Salvatore Pepe and colleagues for organising a superb meeting. On a personal note, as a newcomer to the basic science meetings, I was struck by the many long term friendships and collaborations that have resulted from these meetings, and I was particularly impressed with the encouragement and support offered by the experienced and distinguished scientists to the trainees and future scientists.

Veena Reddy, MBBS
Hull, UK

Newly appointed fellows of the ISHR

Metin Avkiran, London, UK
Joan H. Brown, La Jolla, CA, USA
Dirk Brutsaert, Antwerp, Belgium
Peter F. Carmeliet, Leuven, Belgium
Sigmundur Gudbjarnason, Reykjavik, Iceland

Gerd Hasenfuss, Goettingen, Germany
Masayasu Hiraoka, Tokyo, Japan
Keitaro Hashimoto, Yamanashi, Japan
Ryozo Nagai, Tokyo, Japan
Bohuslav Ostadal, Prague, Czech Republic
Takayuki Ozawa, Shizuoka, Japan

Grant Pierce, Winnipeg, Canada
Allen M. Samarel, Maywood, IL, USA
Arnold Schwartz, Cincinnati, OH, USA
Nobuakira Takeda, Tokyo, Japan
Paul M. Vanhoutte, Courbevoie, France
Dr Anversa receives the 2004 Research Achievement Award of the American Heart Association

The ISHR is proud to announce that Dr Piero Anversa, member of the International Council of our Society, has been selected as the recipient of the 2004 Research Achievement Award of the America Heart Association, one of the most prestigious honors for a cardiovascular scientist. This is a well-deserved (and overdue) recognition of Dr Anversa’s extraordinary contributions to our understanding of cardiac disease. For 20 years, Dr Anversa has fought courageously against thebias and the recalcitrance of the molecular establishment, and has finally demonstrated that the establishment’s long-standing dogma that the heart is a post-mitotic organ is false – one of the major advances in cardiovascular medicine in the past century. His scientific accomplishments can be categorized into three major areas: (i) the identification of apoptotic myocyte death, (ii) the demonstration of myocyte regeneration, and (iii) the use of stem cells to repair the injured heart.

With regard to myocyte death, Dr Anversa was the first to demonstrate cardiac myocyte loss as a function of age in animals and humans. He was also the first to demonstrate that heart failure in humans is associated with myocyte apoptosis and necrosis, a paradigm that is now widely accepted. The concept that apoptotic cell death is associated with, and contributes to, the evolution of heart failure is a major advance in our understanding of this syndrome, not only because it illuminates the pathophysiology underlying the progressive functional deterioration, but also because it identifies a potential therapeutic target to halt the progression of heart failure. In a series of elegant studies, Dr Anversa identified the renin angiotensin system and the IGF-1 receptor system as critical signaling mechanisms that control the survival of cardiac myocytes, another finding with important conceptual and therapeutic reverberations.

Dr Anversa demonstrated that the dogma that the heart is a post-mitotic organ is false

With regard to myocyte regeneration, Dr Anversa’s work has radically changed established views that were deeply entrenched in the scientific community. Over the last 17 years, he has published numerous papers which have challenged the dogma that the heart is a post-mitotic organ and that the number of parenchymal cells is defined at birth. This has been one of the most important paradigm shifts in cardiac biology. He was the first to demonstrate that myocyte proliferation occurs in the adult heart in vivo during pressure overload hypertrophy and aging. Concurrently, he proposed that myocytes divide in the failing human heart. These studies stimulated the search for a growth factor-receptor system implicated in cell multiplication, leading to the discovery that overexpression of IGF1 in cardiac myocytes of transgenic mice induces proliferation of myocytes. A few years later, Dr Anversa provided unequivocal documentation of myocyte cytokinesis in humans during end-stage cardiac failure and after acute myocardial infarction. The high myocyte mitotic index found in surviving myocardium implied that myocyte replication is a major component of ventricular modeling in the infarcted heart and, most likely, other cardiac diseases. Having discovered that the heart is not a post-mitotic organ, Dr Anversa investigated the origin of the proliferating myocytes. In a unique study in which male patients received a heart from a female donor, he demonstrated the presence of Y-chromosome-labeled myocytes in the transplanted heart, thereby unequivocally docu-

The heart contains a population of resident stem cells that are capable of regenerating myocytes and vessels

menting regeneration of cardiac myocytes in humans. That finding, coupled with the identification of primitive cells in the residual atrial portion of the recipient, raised the possibility that the heart contains a pool of primitive cells that can reconstitute the damaged myocardium. This work led to his recent landmark discovery that the heart does indeed contain a population of resident stem cells that are capable of regenerating myocytes and vessels following acute infarction or other types of injury.

In the area of therapeutic cardiac regeneration, Dr Anversa has demonstrated, for the first time, that direct

(continued on page 15)
Satellite Meeting on Aging Heart & Vessels
(August 3-5, 2004; Melbourne, Australia)

Worldwide, populations are aging and cardiovascular disease is a major burden on health care and social welfare systems. A more detailed understanding of how the heart and blood vessels age and the impact of disease in aging is essential in the treatment and health care management of the growing aging population. “Aging Heart & Vessels: Current Understanding, New Research and the Challenge of Reducing the Health Care Impact of Age-Related Cardiovascular Disease” was the focus of the satellite meeting envisioned and convened by Salvatore Pepe, (Australasian Section President, 2004-2007).

This multidisciplinary meeting was held at the Alfred Hospital and Baker Heart Research Institute in Melbourne. This part of Australia was in mid-winter, while tropical Brisbane was having its dry season! Eighty participants from China, Denmark, England, Germany, Italy, Japan, New Zealand, Romania, The Netherlands, USA, and Australia, provided an intimate yet dynamic environment for discussion on cardiovascular aging. Gary Andrews set the epidemiological scene with “The Epidemic of Aging & Impact of Cardiovascular Health Care”, followed by Edward Lakatta with “Intervening on Cardiovascular Aging in Health to Beat Cardiovascular Disease”. Symposia covered a wide-range of pertinent topics and included: Vascular Function; Clinical Care Realities; Remodelling: Genes to Proteins -Expression, Function and Targets; Cardioprotection & Signal Transduction; Adaptation, Hypertrophy & Dysfunction in Heart Failure - Therapeutic Targets; Omega-3 PUFA & Survival; At the Heart of Cells - Mitochondria. Invited speakers also included Roberto Ferrari, Alberto Avolio, Paolo Bernardi, Kenneth Boheler, Marc Budge, Fabio Di Lisa, Xiao-Jun Du, Jay Edelberg, Masao Endoh, Murray Esler, Paul Goldspink, John Headrick, Jonathan Kalman, Zeinab Khalil, David Kass, Edward Lesniesky, Peter McLennan, Brian O’Rourke, Michael O’Rourke, Franklin Rosenfeldt, Douglas Seals, Erik Berg Schmidt, Hari Sharma, Andreas Simm, Steven Sollott, Gordon Stokes, Jennifer Van Eyk, Robert Widdop, and Rui-Ping Xiao. The excellent quality of the presentations and interest they provoked was reflected in the hearty discussions following the talks. Enthusiastic discussion continued at the poster session, with the focus on promoting trainees and postgraduate students. The prize for Best Poster Presentation was awarded to Emma Jones (PhD student, Department of Pharmacology, Monash University) for her presentation of: “Angiotensin AT1 Receptor Contributions to Cardiovascular Remodelling of Aged SHR during Chronic AT1 Receptor Blockade”.

The meeting was interspersed with various social functions to also allow for informal discussion and relaxation from jet lag! Half a day was devoted to a much-anticipated excursion inland to the Yarra Valley renowned for its rural beauty, wineries, forests and mountains. A private tour of one of the most scenic Yarra Valley wineries, Domaine Chandon, included a wine tasting lunch. Next stop was a guided tour of Healesville Native Wildlife Park featuring more than 200 species of Australian wildlife. Despite some mid-winter rain, the group juggled umbrellas and cameras and still caught some memorable sights. The conference dinner, held at the historic Ormond Hall built in the mid 19th century, was a beautiful setting for relaxed dinner and conversation. On behalf of all delegates, I thank Salvatore Pepe for his tireless work in bringing a large number of ISHR’s eminent specialists together to discuss cardiovascular aging—a topic that has been somewhat overlooked but now urgently requires more intense research effort as populations of developed nations become elderly.

Helen Kiriazis, Ph.D.
Melbourne, Australia

Delegates taste aged wine with lunch during a break from “Aging Heart & Vessels” at Domaine Chandon near Melbourne.
The Latin American Section of the ISHR held its XIII Meeting, which was organized together with the Satellite Meeting of the 2004 World Congress of the ISHR and with the Congress of the Northeast Section of the Argentinean Federation of Cardiology, at Iguazú Falls in Argentina. The aim of the organizing committee was to offer to basic scientists, clinical cardiologists, fellows, interns and students a meeting of the highest possible scientific quality and to encourage discussion in an attempt to unravel the unsolved mysteries of the failing heart.

There were over 250 attendees and the format was two days of plenary sessions, lectures, forums, poster sessions and social events. Among attendants there were students from the Faculty of Medicine of the University of La Plata, fellows, interns and trainees from many hospitals and research institutes from Latin America and abroad. Among the International guests were Muthu Periasamy (USA), Héctor Valdivia (USA), John Solaro (USA), Grant Pierce (Canada), Joshua Hare (USA), Pilar Macho (Chile), Otoni Moreira Gomes (Brasil), Homero Rubbo (Uruguay), Steven and Dorothy Vatner (USA), Elizabeth Murphy (USA), Charles Steenbergen (USA), Larry Fliegel (Canada), Morris Karmazyn (Canada) and Roger Hajjar (USA). Forty four posters were presented at the meeting and the abstracts were published in the Journal of Molecular and Cellular Cardiology. The Winners of the “Dr Juan Carlos Fasciolo” prize for the best presentation on basic research were P. Ferrero (Argentina) and G. Sanchez (Chile).

The social events of the meeting were no less enticing. They included a welcome cocktail at the Cataratas Hotel, a closing dinner at an ethnic theme restaurant called the Aripuca and a buffet barbecue at the Fortin Cataratas. The visitors also experienced the many walking trails, boat trips and train rides within the Iguazú National Park.

Dr Cingolani’s Opening Lecture, “Myocardial Stretch: The Two Phases”, and Dr Solaro’s Closing Lecture, “At the Crossroads of Myocardial Signaling: The Role of Z-discs in Intracellular Signaling and Cardiac Function”, were two of the highlights of the meeting. No less spectacular was the good job done by the young investigators in transmitting their enthusiasm for research to students and trainees in the hope of luring them into the fascinating world of science.

The meeting met most of its goals, especially because of the unprecedented presence of scientists from all over Latin America and the large number of international researchers. Additionally, the participation of students, fellows, interns and postdocs made possible the accomplishment of the major objective of the meeting which was to generate a learning environment for young people, with forums for discussion and interaction with senior scientists. Last but not least, this meeting was extremely useful for the development and the international recognition of our Section.

Martín Vila Petroff, Ph.D.
La Plata, Argentina

Delegates gathered after the Closing Ceremony at the ethnic venue 'Aripuca'.
Satellite Meeting on Cellular Injury in Ischaemia (August 13-16, 2004; "Berg en Dal" in the Kruger National Park, South Africa)

A satellite meeting of the XVIII ISHR World Congress (Brisbane, Australia) was held at "Berg en Dal" in the Kruger National Park, South Africa, focussing on new trends and discoveries in cellular injury in ischaemia. The meeting, hosted by the Physiology Department of the University of Stellenbosch, was attended by 112 delegates from across the world.

The scientific sessions were preceded by game drives from 6 to 8 AM and followed by more game watching in the evenings. All delegates saw rhino, elephant, buffalo, zebra, eland, kudu, while some were lucky enough to see leopard or lion. The “Something Africa” theme of the congress dinner led to fashion innovations with three ladies from the Hatter Institute in Cape Town borrowing clothes from locals to wear to the party!

Although most presentations focused on sub-cellular and molecular aspects of myocardial injury in ischemia and heart failure and on cardio-protection, many presenters contextualized their work in terms of bridging the gap between the basic sciences and the clinical situation. The scientific sessions were stimulating and elicited in depth discussions. New friendships and collaborations followed from these discussions.

Highlights of the meeting included reports on (1) a new approach to treating coronary heart disease by inhibiting fatty acid oxidation and stimulating glucose oxidation, (2) the impact and mechanisms of cardiac dilatation, showing that ventricular dilatation precedes systolic and diastolic dysfunction, (3) the role of insulin resistance in the development of dilated cardiomyopathy, (4) the cytochrome P450 monoxygenases as significant factors in the production of reactive oxygen species in ischaemia-reperfusion, (5) intracellular pro-survival signalling pathways in ischaemic preconditioning which, if activated at reperfusion, protect against reperfusion-induced injury, (6) changes in gene expression in hyperlipidaemia, suggesting that hyperlipidaemia may lead to increased mitochondrial damage and contribute to decreased mechanical function, and (7) the possibility that NFkB may represent a novel therapeutic target to reduce myocardial inflammation and the consequent ischaemic injury.

The program and abstracts were published in the October issue of the Cardiovascular Journal of South Africa (www.cvjsa.co.za).

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Delegates enjoyed tea under the trees amongst scientific posters. The setting at Berg en Dal stimulated informal scientific conversations resulting in numerous new collaborations.
Satellite Meeting on Endothelial factors and Coronary disease (August 13-15, 2004; Hong Kong, P.R. of China)

A satellite meeting of the XVIII ISHR World Congress entitled “Endothelial Factors and Coronary Disease: New Understandings and Effects of Natural Products” was held in Asia’s World City, Hong Kong. In addition to fostering discussion on the most recent advances in the role of endothelium in coronary heart disease, the meeting also aimed at promoting the development and understandings on the effects of natural products and botanicals in cardiovascular disease. The meeting was hosted by the Department of Pharmacology of the University of Hong Kong, and was attended by over 100 delegates from around the world.

The satellite meeting was the joint effort of scientists from both local and international institutions. The meeting was held in the newly completed state-of-the-art Faculty of Medicine Building located along a beautiful hillside on the west side of Hong Kong Island, enabling the delegates to enjoy the sunshine and ocean views while participating in comprehensive scientific discussions at the poster session. The 2-day program included plenary lectures, which highlighted the research work of over 30 invited speakers from across the world. These plenary lectures were organized into 5 symposia focusing on (1) Endothelial Function in Cardiovascular Disease and Diabetes, (2) Hormones and Vascular Function, (3) Endothelium-dependent Relaxations: Beyond e-NOS, (4) Effects of Natural Products and Botanicals in Cardiovascular Diseases and (5) Endothelial Function in Coronary Heart Disease. As a special feature, Dr. Paul Vanhoutte also introduced Dr. Hiroaki Shimokawa of Kyushu University to deliver the First Asian Lecture on Vascular Biology entitled, “Role of Rho-Kinase in the Molecular Mechanism for Coronary Artery Spasm”.

In addition to the intensive scientific program, the delegates enjoyed a relaxing time with the exciting social program. The sunshine and coastline of Hong Kong were enjoyed more fully during the sightseeing trip to Stanley, on the south side of Hong Kong Island, which provided participants the opportunity to shop at the famous Stanley Market. To provide delegates with a taste of the culture and heritage of Hong Kong, the banquet dinner was set in the style of the exquisite ancient Chinese imperial palace at the Jumbo Floating Restaurant in Aberdeen. The evening ended with a trip up Victoria Peak on the century old tram to view the spectacular vista of Hong Kong harbor at night.

The success of the meeting may be attributed to both the stimulating scientific sessions and the friendly atmosphere. The meeting provided a venue for making new friends and meeting old ones. We sincerely hope that scientific collaborations arising from the hearty discussions will enhance research efforts in the area of cellular mechanisms of coronary disease and facilitate the application of the results of basic research to clinical issues.

The complete scientific program and photos of the meeting can be viewed at the website: www.ishr-satellite.hku.hk

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Hong Kong, Peoples Republic of China
Dr Anversa Receives the 2004 Research Achievement Award of the AHA

(continued from page 10)

intramyocardial injection of hematopoietic or cardiac stem cells after acute myocardial infarction results in regeneration of functional cardiac tissue, and that a similar outcome can be achieved by administration of cytokines known to mobilize hematopoietic stem cells or cardiac stem cells. These seminal studies have unleashed a tidal wave of investigations into the use of exogenous or endogenous hematopoietic or cardiac stem cells to regenerate dead myocardium, and have had an enormous impact in the scientific community, on both the experimental and clinical levels. Remarkably, these studies have already been translated to patients in several clinical trials.

In summary, Dr Anversa has profoundly changed our understanding of heart failure, ventricular remodeling, myocardial infarction, and myocardial biology in general. The most striking aspect of his work is the pristine novelty of his research, which has challenged existing paradigms rather than expanding them, and in so doing, has led to fundamental conceptual innovation. His demonstration that new cardiac myocytes can be formed in the adult heart has been one of the most important discoveries in cardiovascular medicine over the past several decades. His pioneering studies of stem cells have, more than anyone else’s work, stimulated the burgeoning field of cardiac regeneration and regenerative therapies. Dr Anversa is an exceptional scientist of extraordinary creativity, intellect, innovativeness, and energy. The ISHR congratulates this exceptional scientist not only on his scientific discoveries but also on his perseverance in challenging a recalcitrant (and often arrogant) establishment.

Roberto Bolli, M.D.
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