Special Feature: The 7 Cardiovascular Cores and 14 Programming Tracks at the 2011 American Heart Association Scientific Sessions, November 12 to 16

Exciting Cutting Edge Science, New Ideas, and Unique Opportunities to Meet Future Collaborators

Seven colour-coded cardiovascular cores and 14 programming tracks allow easy navigation of the integrated basic, clinical, population, and translation science programme featuring >4000 presentations at the 2011 American Heart Association Scientific Sessions, reports Lindy van den Bergh, BMedSci, BM, BS.

The American Heart Association Scientific Sessions 2011 will be held November 12 to 16 at Orange County Convention Center, Orlando, FL. The comprehensive education and research programme over 5 days comprises >4000 presentations by international leaders in cardiovascular research and practice. The meeting also allows attendees to investigate the latest cardiovascular technology and resources showcased by >300 exhibitors.

From left to right, Johannes Bjørnstad, MD, William Louch, PhD, and Cathrine Husberg, PhD, all from Oslo University Hospital-Ullevål, Oslo, Norway, and Peter Jones, PhD, a lecturer, originally from England and now working at the University of Otago, Dunedin, New Zealand, in the poster hall at the 2009 American Heart Association Scientific Sessions.

Scientific Sessions is a unique forum for the best science in cardiovascular medicine. It will provide >22,000 attendees from >56 countries, of whom >1000 are faculty and >17,000 are professionals with new knowledge and ideas to take back to their institutions to improve and inspire their everyday practice and research. The presence of >300 media and hundreds more reporting from around the world means that research presented at Sessions can achieve immediate global recognition.

The programme communicates the most timely and significant advances in prevention, diagnosis, and treatment of cardiovascular disease from many different perspectives. It includes results from late-breaking science and clinical trials and opportunities to take part in lively case discussions and to discuss the latest updates to guidelines.

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Three recipients of European Society of Hypertension Fellowship Awards describe the research the fellowship funded. Page f94

Funding: International Society for Heart Research, European Section/Servier Research Fellowship
Francesca Rochais, PhD, from Marseilles, France. Page f96
Posters at Scientific Sessions form an essential part of the science at the meeting, providing invaluable learning experiences for attendees and presenters, many of whom are early career members. In the poster hall, attendees can browse the science and discuss posters with presenters. This year, an exclusive online venue allows attendees to view all scientific posters presented at the meeting. In addition, a QR code for each poster presentation can be scanned with a smartphone to view the abstract and hear the author’s pre-recorded discussion of their study.

Special Events Include International Lunch Forums, Meet the Trialist Sessions, and the FunWalk/FunRun

The International Lunch Forums take place on Sunday November 13, 2011, and highlight top researchers from Australia, Brazil, Canada, China, Germany, Greece, Japan, South Korea, Spain, and Turkey. The Meet the Trialists (from the late-breaking clinical trials) sessions are at lunchtime on Monday, Tuesday, and Wednesday, November 14 to 16, 2011. Finally for a bit of exercise, register for the Fun Walk/Fun Run and join thousands of other attendees for this popular annual event at 6.30 AM on Tuesday, November 15.

Circulation: European Perspectives will publish a photofeature after Scientific Sessions titled “Europeans at American Heart Association Scientific Sessions 2011.” Please send any photos for inclusion in this feature together with a caption to lindy@circulationjournal.org.

Lindy van den Berghe is managing editor of Circulation: European Perspectives.

The 7 Cardiovascular Cores Are the Central Cardiovascular Research Themes

Colour-coded cardiovascular cores were introduced in 2009 to aid navigation of the Scientific Sessions programme. Previously, the programme had been divided into basic, clinical, population, and translation science, which are now integrated within each core. The colour coding used for each core in 2009 and 2010 remains the same for 2011, and is used throughout the meeting to help attendees find their way.

Dedicated tracks (see page 93) feature extra invited programming for subspecialty groups and interests. These help attendees plan their own individual programme. For the 2011 Sessions, the number of tracks has been increased to 14, from 9 in 2010, 5 in 2008, and 3 in 2007.

To view the full programme with page turning technology and use an itinerary planner to create your own individualised programme, see scientificsessions.org.

For those who are are unable to attend the meeting and to catch missed sessions or revisit sessions, Sessions OnDemand® provides online access to the sessions anytime, anywhere, often within 24 hours of the original session. This digital video library on a USB drive also allows users to download slide presentations and audio mp3 files and can be purchased from scientificsessions.org.

Early Career Day and Poster Presentations Promote Networking and Mentorship Between Early Career Members and Senior Investigators

Early Career Day, on Saturday November 12, 2011 is an opportunity for early career academic researchers and clinical fellows in training to increase their expertise and explore educational options. It starts with an opening general session followed by 13 sessions covering multiple specialties in the afternoon.

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<td>1</td>
<td>General cardiology</td>
<td>Translating latest evidence into everyday practice</td>
<td>Clinical cardiologists.</td>
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<td>2</td>
<td>Peripheral vascular disease</td>
<td>Diagnosis and imaging, epidemiology and prevention, pathophysiology, intervention, and outcomes for carotid, renal, aortic, and lower extremity disease. A fellow’s workshop offers interdisciplinary core curriculum</td>
<td>All delegates</td>
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<td>3</td>
<td>Surgery</td>
<td>Translational research and innovations in surgery for arrhythmias, congenital heart disease, coronary revascularisation, heart failure, thoracic aortic disease, and valve reconstruction</td>
<td>Cardiovascular surgeons and anaesthesiologists</td>
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<td>4</td>
<td>Basic science</td>
<td>Discoveries and advances in regenerative and stem cell medicine; signaling and transduction pathways; mechanisms of disease in blood vessels and the heart; mechanisms of cardiac hypertrophy, vascular growth, angiogenesis, inflammation, thrombosis, oxidative stress; cardiac dynamics</td>
<td>Scientists investigating the mechanisms of vascular and cardiac diseases</td>
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<td>5</td>
<td>Cardiovascular nursing</td>
<td>Latest research and advances in cardiovascular care and evidenced-based practices, with opportunities for mentoring, networking, collaborating, and socialising</td>
<td>Early career nurses, cardiovascular nurse clinicians, educators, and scientists</td>
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<td>6</td>
<td>Imaging</td>
<td>Evidence-based, novel, cutting-edge techniques and applications, addressing evolving everyday applications for evaluating cardiac, peripheral, and cerebrovascular disease, future imaging applications, including stem cell and molecular peripheral techniques, and new guidelines for evaluating atrial fibrillation and stroke</td>
<td>All subspecialties</td>
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<td>7</td>
<td>Electrophysiology</td>
<td>Bench-to-bedside aspects of basic and clinical electrophysiology, including discussion of mouse models, optical mapping and optogenetics, genetic data, and changing clinical electrophysiology practice, including for atrial fibrillation management</td>
<td>Basic and clinical electrophysiologists</td>
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<td>8</td>
<td>International Congress on Global Cardiovascular Prevention and Health Promotion</td>
<td>Five days of plenary sessions, symposia, seminars, and how-to sessions involving international experts in epidemiology, prevention, medical care, public health, governmental policy, nongovernmental health organisations, and international health organisations that will add to the discussions of the September 2011 United Nations’ High-Level Summit on Non-Communicable Diseases</td>
<td>All subspecialties</td>
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<td>9</td>
<td>Diabetes</td>
<td>Latest scientific advances in preventing and treating the cardiovascular complications of diabetes mellitus</td>
<td>All subspecialties</td>
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<td>10</td>
<td>Quality and outcomes</td>
<td>Optimising outcomes by appropriate use of therapies, highlighting comparative effectiveness, drug and device safety, application of clinical trial data to routine clinical care, and quality improvement</td>
<td>All subspecialties</td>
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<td>11</td>
<td>Acute coronary syndrome</td>
<td>Cutting-edge advances in vascular biology, device development and clinical science</td>
<td>All subspecialties</td>
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<td>12</td>
<td>Interventional cardiology</td>
<td>Latest research and clinical trials, providing opportunities to learn techniques from international experts, and a fellows course with expert topic review and case presentations</td>
<td>Interventional cardiologists</td>
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<td>13</td>
<td>Heart disease in the young</td>
<td>Includes a symposium on the inflammatory response in paediatric heart surgery and how to modify it to improve outcomes, a focus on cardiac fibrosis in congenital heart disease and cardiomyopathies and new interventional and surgical techniques, and a special emphasis for early career clinicians and scientists</td>
<td>Paediatric cardiologists</td>
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<td>14</td>
<td>Resuscitation</td>
<td>A transdisciplinary track on the latest advances for treating cardiopulmonary arrest and life-threatening traumatic injury and including the 2-day Resuscitation Science Symposium</td>
<td>All subspecialties</td>
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These 14 tracks aid navigation of the American Heart Association Scientific Sessions programme when the science falls into multiple cores.
Funding: European Society of Hypertension Fellowships

Providing up to €100 000 for 2 Years of Research and Training in Hypertension-Related Fields

Three recipients of European Society of Hypertension Fellowship Awards describe their experiences in applying for European Society of Hypertension funding and carrying out the subsequent research to Jennifer Taylor, BSc, MSc, MPhil.

The European Society of Hypertension provides 2-year research fellowships for research and training in hypertension-related fields. Awards are a maximum of €50 000 per year and can be used at an institute, university, or academic centre in Europe. Applicants must have a medical degree or higher degree in science and have research aptitude or clinical experience in hypertension. Applicants do not have to be members of the European Society of Hypertension, but their supervisor during the fellowship must be a member.

Applications should include an abstract of the proposed investigation, the training opportunities and objectives, background of the project, original hypothesis, experimental design of the proposed investigation, expected value of results, expected value to the applicant’s career and a list of references relevant to the proposed project. A new requirement for 2011 is a description of the applicant’s career aspirations and intentions. Curriculum vitae of the prospective fellow and supervisor should also be included. A financial breakdown of the requested support (including salary, reagents, materials, animals, etc.) is required and ethical approval must be obtained for all investigations in humans.

Funding a PhD project titled “Cardiovascular Risk Prediction with Markers of Subclinical Organ Damage”

Thomas Sehestedt, MD, PhD, a senior resident in the Department of Cardiology, Gentofte University Hospital, Copenhagen, Denmark, received a European Society of Hypertension fellowship for €100 000 in 2008 to fund his PhD project titled “Cardiovascular Risk Prediction with Markers of Subclinical Organ Damage.” He investigated the incremental predictive value of markers of subclinical organ damage occurring before established cardiovascular disease such as urine albumin-creatinine ratio, a marker of endothelial dysfunction; carotid atherosclerotic plaques, a marker of atherosclerosis; carotid to femoral pulse wave velocity, a marker of arterial stiffness; and left ventricular mass index, a marker of myocardial hypertrophy. Identifying subjects with this damage could theoretically be a way to identify high-risk subjects eligible for primary cardiovascular disease prevention.

Dr Sehestedt analysed data from a large Danish cohort of ≥2000 healthy subjects from the general population with ≥13 years of follow-up. At baseline, traditional risk factors as well as the markers of subclinical organ damage were measured. Cardiovascular events were recorded in national registers.

All 4 markers of subclinical organ damage (urine albumin-creatinine ratio, carotid atherosclerotic plaques, pulse wave velocity, and left ventricular mass index) were independently associated with cardiovascular risk adjusted for traditional risk factors.1 Measuring these markers in subjects with intermediate risk and allocating subjects with subclinical damage to a higher risk category increased the sensitivity of risk charts such as the Systemic Coronary Risk Evaluation.2 “However, the prize was an even larger increase in the number eligible for primary prevention and a reduction in specificity,” says Dr Sehestedt. The most efficient use of markers of subclinical organ damage would be to only investigate subjects at intermediate risk, such as subjects with a Systemic Coronary Risk Evaluation between 1% and 5% or with high normal blood pressure (ie, systolic blood pressure 130–139 mm Hg, diastolic blood pressure 85–89 mm Hg).

Furthermore, a selection of 2 of urine albumin-creatinine ratio, pulse wave velocity, and plaques provided similar results as using all 4 markers. Dr Sehestedt says, “The implementation of these markers in clinical practice would require a marker to be easy, cheap, with risk free measurement, and the recommended primary prevention should be equally cheap, free of side effects, and efficient.” He adds that the application process “was simple and not time consuming and the fellowship provided unique support to ensure time for my research.”

“A Fantastic Opportunity Towards Establishing an Independent Line of Research and a Career in Academic Cardiovascular Medicine”

Markus P. Schneider, MD, clinical senior lecturer at the British Heart Foundation Glasgow Cardiovascular Research Centre, Institute of Cardiovascular and Medical Sciences, College of Medical, Veterinary, and Life Sciences,
Dr Schneider.

University of Glasgow, Glasgow, Scotland, qualified MD in 2000 from the University of Erlangen-Nuremberg, Germany, for a study on vascular function in patients with pre-eclampsia and the HELLP syndrome. His mentor was Professor Roland E Schmieder, MD. Dr Schneider then completed clinical training in general internal medicine (2008) and nephrology (2009) at the University of Erlangen-Nuremberg.

Alongside his clinical training, Dr Schneider was involved in clinical studies investigating the mechanisms and therapeutic aspects of endothelial dysfunction. Between 2004 and 2006, he had a research fellowship sponsored by the Deutsche Forschungsgemeinschaft (German Research Foundation) to study the role of the endothelin system in renal mechanisms of blood pressure control with Professor David M. Pollock, PhD, at the Medical College of Georgia in Augusta, GA. ¹

In 2008, Dr Schneider applied for a European Society of Hypertension research fellowship. “The application process was straightforward, and notification of the outcome was quick, ie, within only a few months,” he says. After receiving a letter informing him of a positive outcome, the fellowship was formally awarded in June 2008 at the 18th meeting of the European Society of Hypertension in Berlin, Germany. The total amount of the award was €100,000 for 2 years to be used on salary and consumables.

Dr Schneider’s project focused on the role of inflammation for endothelial function, and more specifically, on the role of Fcγ receptors, which are widely expressed on immune effector cells but are also expressed on a variety of nonimmune cell types, including endothelial cells. Recently, C-reactive protein has been described as a novel ligand of Fcγ receptors.

Testing whether Fcγ receptors play a role in modulating the function of the endothelium involved studying a gene polymorphism substituting arginine (R) for histidine (H) at position 131, which has previously been shown to alter binding of CRP to human monocytes. Endothelial function was determined in 78 hypercholesterolemic subjects with forearm plethysmography.

Carriers of the R allele had significantly impaired endothelium-dependent responses compared with carriers of the H allele. This is consistent with the previously observed reduced binding of CRP to human monocytes in carriers of the R allele. Current studies are aimed at elucidating the precise mechanism(s) mediating the impairment of endothelial function in carriers of the R allele.

“The ESH fellowship is a fantastic opportunity towards establishing an independent line of research, and a career in academic cardiovascular medicine,” says Dr Schneider. “The amount of funding is generous and the application process is straightforward and quick.”

Funding a Cardiovascular Excellence Network for Investigating the Diverse Methods for Measuring Blood Pressure

José A. García-Donaire, MD, PhD, a nephrologist in the Hypertension Unit, Hospital 12 de Octubre, Madrid, Spain, requested and received €100,000 from the European Society of Hypertension over 2 years for salaries and expenses (travel dissemination and exchange of investigators) to collaborate in the establishment of a cardiovascular excellence network for gathering knowledge on the diverse methods for measuring blood pressure.

The main objective is to evaluate the impact of such measurements on the progression of target organ damage and development of cardiovascular events. The working hypothesis assumes differences among the diverse blood pressure measurement methods (office, home, ambulatory, and central) and that the results can predict the incidence and progression/regression of target organ damage and the development of cardiovascular events in high-risk patients.

Initial findings are related to the optimal cutoff point to define refractory hypertension according to different levels and a description of the prevalence of white coat-resistant hypertension in a cohort of patients with a diagnosis of resistant hypertension according to office measurements. The value of 2 cutoff ambulatory blood pressure levels to identify this population will be evaluated and the effect of spironolactone in true resistant hypertension on blood pressure levels, security profile, and tolerability will be analysed. “The coordination of a number of physicians to create a medical network is always a challenge and takes much time but the results deserve the effort,” says Dr Garcia-Donaire.

References


Jennifer Taylor is a freelance medical journalist.
Funding: International Society for Heart Research, European Section/Servier Research Fellowship

Helping Fund an Investigation into the Regulation of Cardiac Progenitor Cell Fate

Francesca Rochais, PhD, INSERM CR2 researcher, Developmental Biology Institute of Marseilles-Luminy, Centre National de la Recherche Scientifique UMR6216, Marseilles, France, talks to Jennifer Taylor, BSc, MSc, MPhil.

The International Society for Heart Research, European Section/Servier Research Fellowships support cardiovascular research projects carried out by investigators <35 years of age within a European group.

Francesca Rochais, PhD, INSERM CR2 researcher at the Developmental Biology Institute of Marseilles-Luminy, Centre National de la Recherche Scientifique UMR6216, Marseilles, France, applied for a fellowship in 2008. She was 30 years of age and had just joined the group of Robert Kelly, PhD, and hoped to develop a research project on the regulation of cardiac progenitor cell fate in the mouse embryo. She received the fellowship, which was exactly the kind of support she needed, in September 2008 and it provided 1 year of financial support (€20,000).

Dr Rochais worked on her PhD from 2001 to 2005 with Professor Rodolphe Fischmeister, PhD, at the INSERM U-769 lab in Châtenay-Malabry, France, and studied cAMP signal specificity in adult cardiac myocytes. This research led to an article demonstrating that β-adrenergic cAMP signals are compartmentalised,1 and then an article addressing cAMP signal specificity more directly, which showed that activation of various receptors leads to heterogeneous cAMP signals controlled by distinct phosphodiesterase families.2 In 2005, Dr Rochais joined Professor Stefan Engelhardt, MD, PhD, and his group at the Rudolph Virchow Centre, Würzburg, Germany, for postdoctoral training. There she investigated the impact of β-adrenergic receptor polymorphism using real-time optical recording of β1-adrenergic receptor activation.3 This study provided evidence for the supersensitivity of the common Arg389 variant of the β1-adrenergic receptor towards carvedilol, a β-blocker used in heart failure therapy,” she says.

When Dr Rochais moved to Marseilles, her salary was paid for equipment and consumables for her project and provided for participation in several international meetings. During the project, Dr Rochais worked principally with technical assistants Rachel Stumy and Mathieu Dandonneau and master’s students Vanessa Zepponi and Violaine Ardaine to investigate the regulation of cardiac progenitor cell fate during development.

Dr Rochais and her colleagues identified a role for the basic helix-loop-helix transcriptional repressor Hes1, a key regulator of stem cells in the developing embryo, in the development of cardiac progenitors. They showed that Hes1 is expressed in second heart field cells and is required by regulating progenitor cell proliferation for proper second heart field deployment and development of the cardiac outflow tract. Congenital heart defects occurred in Hes1 mutant mice.4 To apply for the fellowship, Dr Rochais completed an application form, outlined her research project, and provided a curriculum vitae. She says, “The time taken to apply was reasonable, and it took 1½ months to receive the result.”

References


Jennifer Taylor is a freelance medical journalist.

The opinions expressed in Circulation: European Perspectives in Cardiology are not necessarily those of the editors or of the American Heart Association.