Fifteen thousand scientists and healthcare professionals from 100 countries (~50 percent from outside the United States) took part in and enjoyed an exciting education and research programme at the American Heart Association (AHA) Scientific Sessions 2012, which took place November 3 to 7 at Los Angeles Convention Center, Los Angeles, CA. Five days were packed with ~5000 presentations of new science, including 4444 abstracts (~50 percent from contributors outside the United States), packaged into 206 oral abstract and 260 poster abstract sessions, and 11 oral abstract sessions with expanded panel discussion. A further 376 sessions were provided by invited lecturers.

Over 9000 abstracts were submitted and 4444 were accepted by 1400 reviewers (49% acceptance rate). Countries submitting the most abstracts were the United States (3573), Japan (2029), Germany (475), Republic of Korea (349), Canada (324), United Kingdom (233), Italy (192), and China (169).

The programme chair, Elliott Antman, MD, FAHA, a senior physician at Brigham and Women’s Hospital, Boston, MA, and associate dean for clinical and translational research at Harvard Medical School, and the programme committee, which included ~90 volunteers and 8 international representatives, ensured that the programme reflected the best of cardiovascular science from around the globe.

“Case Theaters: Learning at the Movies” is a new feature appropriately making its debut at Los Angeles. Six prerecorded cases focused on the technical details of an interventional procedure and facilitated a live interactive discussion and views from expert clinicians about how to care for the patient before, during, and after the procedure.”

An international congress on valvular heart disease ran throughout the meeting with 23 sessions over 5 days on the latest advances in interventional, surgical, and imaging techniques, as well as the continuing problems of acute rheumatic fever and infective endocarditis.

Most of the first day’s programme was dedicated to “Early Career Day,” providing trainees with an opportunity to meet key leaders in their field of interest.

Filtering tools from the AHA Scientific Sessions website and a sophisticated meeting navigation system for mobile devices allowed attendees to customise the agenda to their own requirements and navigate the convention centre. QR codes on every poster and scannable using a smartphone app allowed attendees to view poster information on their device, listen to the author talking about the poster, and initiate online discussions.

In the evenings, the programme continued with dinner and presentations on advances in atrial fibrillation and the management of lipid disorders.

“American Heart Association Scientific Sessions 2012, Los Angeles, CA, November 3 to 7

“A Great Opportunity to Catch Up on the Latest Science and to Keep in Touch With Colleagues from the United States”

Lindy van den Berghe, BMedSci, BM, BS, summarises the highlights of American Heart Association Scientific Sessions 2012 and asks Europeans taking part and attending the event about their experience.
Late-Breaking Clinical Trials Presented at AHA Scientific Sessions 2012

Session I: Practice Implications for Coronary Artery Disease and Venous Thromboembolism

1. Aspirin for the Prevention of Recurrent Venous Thromboembolism After a First Unprovoked Event: Results of the ASPIRE Randomised Controlled Trial
2. A Randomised Trial of Bedside Platelet-Function Monitoring to Adjust Antiplatelet Therapy Versus Standard of Care in Patients Undergoing Drug-Eluting Stent Implantation: The ARCTIC Study
3. First Large-Scale Platelet Function Evaluation in Acute Coronary Syndromes Trial—The TRILOGY ACS Platelet Function Sub-study
4. Results of the Trial to Assess Chelation Therapy
5. Main Results of the Future Revascularisation Evaluation in Patients with Diabetes Mellitus: Optimal of Multivessel Disease (FREEDOM) Trial

Session II: Health Economics and Quality of Life in Contemporary Trials

6. Prospective Evaluation of Outcomes with Stress Perfusion Imaging Versus Stress Wall Motion Imaging During Dobutamine or Exercise Echocardiography
7. Economic Outcomes of Percutaneous Coronary Intervention Performed at Sites With and Without On-Site Cardiac Surgery (CPORT-E)
8. Quality of Life Outcomes in the Trial to Assess Chelation Therapy (TACT)
9. Cost-Effectiveness of PCI with Drug-Eluting Stents Versus Bypass Surgery for Patients with Diabetes and Multivessel Coronary Artery Disease: Results from the FREEDOM Trial

Session III: Treatments for Prevention of Cardiovascular Events: A Population Perspective

10. Omega-3 Fatty Acids for the Prevention of Recurrent Symptomatic Atrial Fibrillation: Results of a Double-blind Randomised Clinical Trial (FORWARD)
11. Fish Oil for the Prevention of Post-Operative Atrial Fibrillation: The Omega-3 Fatty Acids for Prevention of Post-Operative Atrial Fibrillation (OPERA) Trial
12. A Randomised Trial of a Multivitamin in the Prevention of Cardiovascular Disease in Men: The Physicians’ Health Study II
13. Use of a Multidrug Pill in Reducing Cardiovascular Events (UMPIRE)

Session IV: Novel Treatments for Managing Lipid Disorders

14. Reduction of LDL-C with PCSK9 Inhibition in Heterozygous Familial Hypercholesterolemia Disorder (RUTHERFORD): Interim Results from a Phase 2, Randomised, Double-Blind, Placebo-Controlled Trial
15. Goal Achievement after Utilising an Anti-PCSK9 Antibody in Statin Intolerant Subjects (GAUSS): Interim Results from a Randomised, Double-Blind, Placebo-Controlled Study
16. Effects of 12 Weeks of Treatment with RN316 (PF-04950615), a Humanised IgG2Δa Monoclonal Antibody Binding Proprotein Convertase Subtilisin Kexin Type 9, in Hypercholesterolemic Subjects on High- and Maximal-Dose Statins
17. Effects of Cholesterol Ester Transfer Protein Inhibitor Dalcetrapib in Patients with Recent Acute Coronary Syndrome

Session V: Cell-Based Therapies for Myocardial Regeneration

18. Results of the Swiss Multicenter Intracoronary Stem Cells Study in Acute Myocardial Infarction (SWISS-AMI) Trial
19. The ALCADIA (Autologous Human Cardiac-derived Stem Cell to Treat Ischemic Cardiomyopathy) Trial
20. The Effect of Timing of Stem Cell Delivery Following Acute Myocardial Infarction: The NHLBI and CCTRN TIME Trial
21. Randomised Comparison of Allogeneic vs Autologous Mesenchymal Stem Cells in Patients with Ischemic Cardiomyopathy
22. Effect of Cardiac Stem Cells in Patients with Ischemic Cardiomyopathy: Interim Results of the SCIPIO Trial up to 2 Years After Therapy

Session VI: Management of Left Ventricular Dysfunction: Devices and Drugs

23. MADIT Randomised Trial to Reduce Inappropriate Therapy (MADIT-RIT)
24. Biventricular versus Right Ventricular Pacing in Patients with Left Ventricular Dysfunction and Atrioventricular Block (BLOCK HF Study)
25. Pilot Trial of Two Levels of Hypothermia in Comatose Survivors from Out-of-Hospital Cardiac Arrest
26. The Relaxin in Acute Heart Failure (RELAX-AHF-1) Trial
27. Cardiorenal Rescue Study in Acute Decompensated Heart Failure: Results of CARRRESS-HF for the Heart Failure Clinical Research Network
Edinburgh, Scotland, who has served as principal investigator on many important epidemiological studies, including the Ankle Brachial Index Collaboration to investigate the use of the ankle brachial index in the prevention of cardiovascular disease. He established the Wolfson Unit in 1990, and, in 1996, he set up the Cochrane Collaborative Review Group on Peripheral Vascular Diseases.

Professor Fowkes says, “I was pleased to receive the award in recognition of the work of colleagues and myself in recent years at the Wolfson Unit for Prevention of Peripheral Vascular Diseases. The meeting was useful and enjoyable, particularly because I was able to meet up with collaborators. Also the AHA has strong councils on peripheral vascular disease and on epidemiology and prevention with dedicated sessions on these topics at the meeting. These were generally interesting with many presenting leading edge research and up-to-date reviews, and they provided the opportunity to catch up with fellow researchers.”

The Lewis A. Conner Memorial Lecture, “Frugal Innovation—the Future of Cardiovascular Medicine,” at the opening session was given by Stephen MacMahon, DSc, PhD, founder and principal director, The George Institute for Global Health, and James Martin Fellow, University of Oxford, Oxford, England. He discussed how the current cardiovascular research and treatment model has failed and how it can change to improve care worldwide.

Late-Breaking Clinical Trials, Clinical Science: Special Reports, and Special Sessions

Highlights of the meeting included 27 major, potentially practice changing, late-breaking clinical trials (see page f134). Many were published simultaneously in high impact journals. They were followed by “Meet the Trialists” sessions offering an opportunity to interact with the trialists.

Europeans presenting late-breaking clinical trials were: Gilles Montalescot, MD, PhD, professor of cardiology, Pitie-Salpetriere Hospital, Paris, France (the ARTIC study); Alejandro Macchia, MD, Consorzio Mario Negri Sud, Santa Maria Imbaro, Italy (the FORWARD trial); Roberto Marchioli, MD, FAHA, MPH, Lab of Clinical Epidemiology of Cardiovascular Disease, Consorzio Mario Negri Sud, Santa Maria Imbaro, Chieti, Italy (the OPERA trial); Simon Thom, MD, professor of cardiovascular medicine and pharmacology, Imperial College London, England (UMPIRE); Daniel Sürder MD, Cardiology FMH, senior attendant, Fondazione Cardiocentro Ticino, Lugano, Switzerland (SWISS-AMI); Marco Metra, MD, associate professor of cardiology and director, Cardiology, University and Civil Hospital, Piazza Spedali Civili 1, Brescia, Italy (RELAX-AHF); and Esteban Lopez-de-Sa, MD, head of the Cardiac Critical Care Unit and Clinical Cardiology, La Paz University Hospital, Madrid, Spain (Pilot Trial of 2 Levels of Hypothermia in Comatose Survivors from Out-of-Hospital Cardiac Arrest).

Dr Sürder says, “It was my first invitation to present at the AHA late-breaking trials session. I was impressed by the impact it had. I was contacted by several media to give interviews, share my slides, give a comment, or send my headshot. In fact, my first 2 days at the AHA meeting consisted of taking part in one interview after another. As for the science, I was impressed by the number of negative trials presented during the meeting. It becomes harder and harder to improve if you are already good.”

A further 19 studies were presented at 4 “Clinical Science: Special Reports” sessions, and 16 special sessions included one titled “Caring for Patients with Cardiovascular Disease: A Vision of the Future,” with a presentation from Stefanie Dimmeler, PhD, director, Institute of Cardiovascular Regeneration, Center for Molecular Medicine, University of Frankfurt, Frankfurt, Germany (see http://circ.ahajournals.org/content/120/17/f97). Professor Dimmeler also moderated the late-breaking clinical trials session “Cell-Based Therapies for Myocardial Regeneration.”

International Forums

Ten 70-minute international forums took place for countries other than the United States making significant contributions to the meeting through original scientific reports. They included forums for Germany, the Netherlands, and the United Kingdom from Europe. Each featured 5 abstract presentations, a lecture, and a panel discussion moderated by AHA leaders with a variety of guests.

Arthur Wilde, MD, PhD, FAHA, FESC, head, Department of Clinical and Experimental Cardiology, University of Amsterdam, Amsterdam, the Netherlands (see http://circ.ahajournals.org/cgi/reprint/125/12/f67), gave the featured...
presentation at the Netherlands international forum. He says, “AHA Scientific Sessions provided, as usual, a rich source of up-to-date scientific information and a great opportunity to meet colleagues from all over the world. Scientific networks are built here and can be maintained by these yearly meetings. Personally, I was involved in the Sunday session emphasising cardiovascular research from the Netherlands, which included my own 20-minute talk on cardiovascular genetics.”

**Poster and Oral Abstracts**

AHA Scientific Sessions are categorised into the 7 cardiovascular cores shown below. Each is subdivided into basic, translational, clinical, and population science, and 15 programming tracks allow attendees to focus on specific areas of interest. For each core, 1 poster of the hundreds presented was selected as the poster winner. Of the 7 poster winners this year, 3 were from Europe.

Laurent Fauchier, MD, professor, Service de Cardiologie, Centre Hospitalier Universitaire Trousseau, Tours, France, was the core 4 poster winner. When asked what he found most interesting at Sessions, he comments, “In MADIT-RIT, very simple programming prevented most inappropriate implantable cardioverter defibrillator (ICD) therapy due mainly to antitachycardia pacing and significantly decreased mortality. This will probably help development of subcutaneous ICDs with no component placed within the heart. Work by Dr Karami demonstrated that piezoelectric energy harvesters can continuously power pacemakers, and we may dream of decreased size and increased longevity of implanted electrical devices.”

Birgit Assmus, MD, Medical Clinic III, Kardiologie, Goethe-Universität Frankfurt, Frankfurt, was the core 5 poster winner. She says, “I felt very honoured by the poster award and the presentation of REPAIR-AMI at the International forum, on behalf of all our supporting co-investigators from Germany. In addition, my exciting presentation of the positive trial results of CELLWAVE investigating target tissue preconditioning by shockwaves on the efficacy of intracoronary application of autologous stem cells in patients with chronic post-infarction heart failure resulted in an inspiring discussion with other researchers.”

Core 6 poster winner was Marieke Fokkema, MD, Department of Cardiology, University Medical Center Groningen, University of Groningen, the Netherlands, and Uppsala Clinical Research Center, Uppsala, Sweden. She says, “The most exciting aspect of AHA Scientific Sessions for me was the opportunity to present my research at the international forum session for the Netherlands. It was interesting to discuss the study with other researchers in the field of interventional cardiology and epidemiology from all over the world, but also inspiring to meet many researchers focusing on topics in basic science.”

Some Europeans who gave oral abstract presentations received coverage in the *Daily News* published each day at Sessions. They were Caroline Veltman, MD, Department of Cardiology, Leiden University Medical Center, Leiden, the Netherlands; Victor Aboyans, MD, PhD, Department of Circulation: European Perspectives

Massimiliano Gnocchi, MD, PhD, head, Lab of Experimental Cardiology for Cell and Molecular Therapy, IRCCS Policlinico San Matteo and University of Pavia, Pavia, Italy, (here with his colleague, Cesare Perotti, MD) presented their pilot study of stem cell therapy in a core 7 poster session.
Circulation: European Perspectives

Cardiology, Dupuytren University Hospital, Limoges, France; Gerhard Diller, MD, PhD, consultant cardiologist, Royal Brompton Hospital London, England; and Mattis F. Ranthe, MD, PhD student, Department of Epidemiology Research, Statens Serum Institut, Copenhagen, Denmark.

Dr Veltman comments, “What I like most about AHA Scientific Sessions is the broad and diverse range of research topics presented, so you can learn all there is in cardiology. It is also a nice opportunity to meet experts within your specific research field and get challenging and motivating feedback on your ongoing research projects.”

“I particularly enjoyed the Nobel Laureate lecture,” says Dr Ranthe. “Louis J. Ignarro told his story of nitric oxide with so much passion. I work with large family studies and risk of disease by family history and I heard a lot of interesting things and got a lot of new ideas from the different sessions on the genetics of cardiovascular disease. The most interesting session I attended was on epidemiology of sudden cardiac death on November 6. It was inspiring, with great talks from Christine Albert, Dan Arking, and Dan Roden among others.”

Experiences of Other Europeans Attending Sessions

Bulent Gorenek, MD, professor of cardiology, Cardiology Department, Eskisehir Osmangazi University, Eskisehir, Turkey, says “It was a great pleasure for me to attend AHA Scientific Sessions 2012. I moderated a session and talked in a session titled “How to Prevent Inappropriate Shocks in Patients with Implantable Cardioverter Defibrillators.”

Cecilia Linde, MD, PhD, professor of cardiology, Department of Cardiology, Karolinska University, Stockholm, Sweden, comments, “I was an invited speaker in a session on controversies in cardiac resynchronisation therapy and my role was to present whether it benefits patients with atrial fibrillation. The conclusion was that there is a need for randomised controlled studies in patients with atrial fibrillation. I also participated in a meeting on the MIRACLE EF study for which I am the principal investigator. I was most impressed by the MADIT RIT and BLOCK HF late-breaking trials. BLOCK HF will have a big impact on device choices in patients with high degree atrioventricular block and will help in preventing heart failure and death.”

Domenico Corrado, MD, PhD, professor of cardiovascular medicine, University of Padua, Padua, Italy, says, “I was invited as faculty to talk in a pro and cons session on preparticipation screening for prevention of sudden death in the athlete. My pro presentation focused on evidence from the long-running Italian experience that preparticipation screening saves lives. The cons highlighted the lack of data on the incidence of sudden death in young people and athletes in the United States and the need for a US national registry. I particularly enjoyed the sessions on genetics and molecular biology of arrhythmogenic cardiomyopathies.”

“During the meeting, members of my lab were involved in multiple oral presentations,” says Dobromir Dobrev, MD, professor and director, Institute of Pharmacology, Medical Faculty, University of Duisburg-Essen, Essen, Germany. I gave an invited talk about new directions in antiarrhythmic drug therapy for atrial fibrillation in a special session titled “Atrial Fibrillation—2012 and the Future.” As every year, I enjoyed attending high-quality basic and clinical sessions and meeting my international collaborators to discuss joint projects. The discussions were extremely helpful in shaping the next steps of my research.”

Raimund Erbel, MD, professor of medicine and cardiology, Department of Cardiology, West-German Heart Center, University Duisburg-Essen, Essen, Germany, says, “AHA Sessions 2012 provided an excellent programme,
which is more related to basic research than at the American College of Cardiology and European Society of Cardiology meetings. Hot topics were stem cell and tissue engineering, but also clinically relevant late-breaking trials presented important new data on lipidology, arrhythmias, and platelet function tests. We presented new data on transcatheter aortic valve implantation, B-type natriuretic protein, and computed tomography. I also presented a lecture titled “What is the role of CT Imaging?” in the AHA symposium “Imaging of Cardiovascular Risk in the Asymptomatic Patient.”

“AHA 2012 was a memorable event in the heart of Los Angeles occurring between Storm Sandy and the presidential election, with its importance for healthcare development,” says Lars Wallentin, MD, PhD, professor of cardiology and director, Uppsala Clinical Research Center, Uppsala, Sweden. “Coronary artery bypass grafting reentered the arena as the treatment of choice in diabetics with multivessel coronary disease while the use of personal tailoring of platelet inhibition at percutaneous coronary intervention definitely turned out to be a failure. Mutivitamins were shown to be of no use for the prevention of cardiovascular disease while surprisingly chelation treatment and colchicine turned up as dark horses for secondary prevention after myocardial infarction.”

Gaetano Thiene, MD, professor of cardiovascular pathology, Department of Medical Diagnostic Sciences and Special Therapies, University of Padua School of Medicine, Padua, Italy, was impressed by the basic science, mostly the human induced pluripotent stem cells. He says, “The revolutionary technique invented by Dr Shinya Yamanaka, the 2012 Nobel Prize Winner in Medicine and Physiology, allows reprogramming of somatic cells to embryonic stem cells which can then differentiate to several cell phenotypes. This may be a source of cells for autologous myocardial repair and a great opportunity to investigate and manipulate genetically affected cardiomyocytes. The session I took part in dealt with sudden death in the young and screening for sport participation and I acted as an opponent with Dr Ackerman.”

“I really enjoyed AHA 2012,” comments David Garcia-Dorado, MD, PhD, head, Cardiology Department, Hospital Universitari Vall d’Hebron, Institut de Recerca, Universitat Autònoma de Barcelona, Barcelona, Spain. “I mainly followed Track 5. The scientific programme covered the frontiers of knowledge in this area, which included informative symposia on emerging aspects of genetics. I was an invited speaker in a cardiovascular symposium on new roles of mitochondria in arrhythmias and myocardial dysfunction and necrosis, and coauthored several oral and poster presentations. The logistics were very good, and the speaker ready room was particularly friendly.”

For Manuel Mayr MD, PhD, professor of cardiovascular proteomics, King’s College London, London, England, the meeting is a great opportunity to catch up on the latest science and keep in touch with colleagues. He says, “I take particular interest in the programme of the Council of Functional Genomics and Translational Biology. This relatively young council brings together leaders in cardiovascular genetics, proteomics, metabolomics, and translational research. They promote the big omics sciences and foster new ideas and innovative concepts for combining omics disciplines. Such a systems biology approach may advance our understanding of cardiovascular disease processes and accelerate progress towards disease-modifying interventions. I particularly enjoyed their young investigator session and participated in judging the presentations.”

The 20th Anniversary Fun Walk/Fun Run

Third place in the Fun Run went to Xavier Jouven, MD, PhD (left), director, Research Unit INSERM U970, Cardiovascular Epidemiology and Sudden Death, Paris Cardiovascular Research Centre, Paris, France, and cardiologist and electrophysiologist, Hôpital Européen Georges Pompidou, Paris. 274 participants arrived dawn on Tuesday November 6 to take part.

For full results and photos, see http://my.americanheart.org/professional/Sessions/ScientificSessions/Programming/Fun-WalkFun-Run-Scientific-Sessions_UCM_431614_Article.jsp

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