

Annual Scientific Report 2004-2005

ESC Working Group on Computers in Cardiology (WG15)

Objectives

The objectives of the Working Group remain to promote the use of information technology (IT) as widely as possible within the field of Cardiology. This includes the application of IT in research and routine clinical practice, both inside and outside the hospital environment. A more expanded version of the scope of the working group activities can be found at http://www.escardio.org/bodies/WG/wg15/Aims_and_Activities/

Organization of Sessions at the ESC Annual meeting in Stockholm from September 2nd to September 6st 2005.

The members of the Working Group proposed a number of symposia etc. for consideration for the annual meeting. Ultimately, pressure on time slots dictated that only two such sessions could be accepted. These are as follows:

- **Symposium :** Improvements in patient care by telecardiology. *Sunday, September 4th 8.30-10 a.m.*
- **Symposium :** Multi-slice computed tomography: a quantum leap in coronary imaging. *Sunday, September 4th 11.00-12:30 a.m.*

In addition, one moderated e-poster session and 24 classical e-poster presentations have been organized. These are as follows:

- **Moderated e-poster Session:** Telemedicine.
Also Sunday, September 4th 10:00-11:00 p.m. (!!!)
- **Poster Sessions:** Various e-poster sessions throughout the meeting.

An overview of all computer related presentations can be found at this web site.

Regrettably it remains necessary to report that the Working Group still receives for consideration many abstracts which are labeled as being linked with Computers in Cardiology but which are inappropriately directed to the Working Group for consideration.

Computer Demos at the ESC Meeting in Stockholm.

This year, there will be no computer demo sessions. Last year there was a disappointing number of high quality computer demo abstracts received. In a number of cases the e-poster could serve as a reasonable alternative.

ESC Business

As in the past, the Chairman of the Working Group has participated in the various review processes that have taken place at the Heart House over the past year both in respect of the organisation of the annual congress and in respect of changes to the structure of the Society. A more open form of election of Council Members as well as members of the nominating committee has been instituted at last years Munich meeting. Furthermore the fusion of

some imaging working groups and the Association on Echocardiography has been discussed, including the position of our WG.

Computers in Cardiology Annual Conference

This year the annual Computers in Cardiology conference will be held in Lyon, France from 25th to 28th September, and will be organized by an enthusiastic team under the leadership of the secretary of our WG, Jocelyne Fayn together with Paul Rubel. Working Group 15 has been linked with the Computers in Cardiology organization for many years and again this year the Chairman of WG15 has contributed to the selection of abstracts and the organization of the program in Lyon. Because the Chairmanship of WG15 has changed at the end of the Munich meeting, the new Chairman has become a member of the Computers in Cardiology Board and will attend the annual board meeting in Lyon in September.

Last year the Computers in Cardiology meeting was held in Chicago, from 19th to 22th September 2004. Professor Alan Murray, a member of WG15 who is also editor of the conference proceedings, has kindly prepared the following report on the meeting:

Computers in Cardiology Annual Conference Chicago, USA - September 2004

Computers in Cardiology exists to encourage inter-disciplinary communication among cardiologists and other clinicians, engineers, computer scientists and physical scientists, and physiologists. The annual meeting is the most important meeting of the Computers in Cardiology Working Group of the European Society of Cardiology. The Chair of this Working Group, was Professor Peter Macfarlane, and then transferred to Dr Willem (Pim) Dassen. Pim is on the Board of Directors, and this Board includes world wide representation to ensure Computers in Cardiology is truly international.

In 2004, we met in September in Chicago, USA, where the annual conference was ably chaired by Dr Steven Swiryn from Northwestern University, and assisted by Drs Robert Arzbaecher, Janice Jenkins, Victor Mor-Avi, Kristina Ropella, Alan Sahakian, and by Cathie D'Amico, Susanne Feret and Amanda O'Rourke.

The opening symposium focused on an area of local interest, as well as of much general interest. The organizers chose the topic of "Evaluation and management of atrial fibrillation". This covered clinical mechanisms, ablation techniques, mapping and imaging, magnetic resonance imaging, pacemakers and defibrillators, and stroke prevention. The speakers, Al Waldo, Westby Fisher, Douglas Packer, Elliott McVeigh, Rahul Mehra and Ted Feldman, produced a superb symposium.

The main Computers in Cardiology conference opened the following day with presentations for the Rosanna Degani Young Investigator Award, which was won by X Zhang from the University of Minnesota, Minneapolis and the University of Illinois at Chicago. His paper was "3-dimensional activation sequence reconstruction from body surface potential maps by means of a heart-model-based imaging approach".

This was followed by 26 sessions over the 2½ day period. This might seem a hectic program, but the meeting is very deliberately designed to give

participants time to interact and discuss, especially on the opening day. I can give only a brief outline of the research presented. Rhythm management and atrial fibrillation, as expected, were well featured. Imaging was also strong, with three-dimensional echocardiography, cardiac MRI and vascular ultrasound. Topics from previous challenges featured, including sleep apnea. There were also sessions on modeling, myocardial perfusion, LV function, blood pressure, heart rate variability, as well as current advances in cardiology information systems, telemedicine and innovative technology. The Computers in Cardiology Challenge which started only four years previously is now seen as an important part of the proceedings. It developed from the first challenge detecting sleep apnea from the ECG alone, followed by detection of patients at risk of atrial fibrillation, simulations of heart rate variability, and detecting ischemic ST changes. This year's challenge was the prediction of the termination of atrial fibrillation. As in previous years, the competition raised lots of excitement, along with calls for further challenges. The data for all challenges are still on 'PhysioNet' (www.physionet.org). Help keep these challenges alive.

As always in my reports, I end with reference to the Poster Session. This session is one of the most popular at Computers in Cardiology. It has a well-publicized session all to itself, and almost everyone turns up for it. As usual, there was so much discussion that delegates had to be encouraged to leave, when it was well past the official end of the session.

Hopefully you are now interested enough to want to look at the Proceedings. They were published in December 2004, two months after the meeting, and contain 198 manuscripts in 832 pages. The papers are indexed, so you should be able to find them easily. It is published by IEEE (Computers in Cardiology 2004, Vol 31, Catalogue No. 04CH37641, ISBN 0-7803-8927-1). Everyone who came to the conference also received the proceedings on CD.

For those of you who have access to the Web of Knowledge produced by the Institute for Scientific Information, you can find Computers in Cardiology abstracts from 1991, under their Index to Scientific & Technical Publications (ISTP).

I and all other Members of the ESC Working Group hope that we have encouraged you to come to Computers in Cardiology 2005. It is hosted by Hopital Cardiologique de Lyon, and will be held in Lyon, France from 25-28 September 2005, under the chair of Jocelyne Fayn and Paul Rubel. We hope to see you there.

*Alan Murray
Editor, Computers in Cardiology*

www.CinC.org *Computers in Cardiology Home Page*

Other Activities

The Chairman of WG15 was involved in deliberations on the use of E-posters as a mechanism for presenting abstracts at the ESC. The program committee is aware of some disadvantages of this way of presenting results, especially the lack of both an overview at a glance and of informal social contact around the poster board. Again there will be a section of the posters presented in

electronic format this year. Furthermore the moderated e-poster session will be introduced.

Members of WG15 did also contribute to teaching sessions at the conference to illustrate to delegates how electronic posters are assembled as the likelihood is that a higher percentage of posters, possibly 100%, will be presented in this way in future.

Internet Activities

The ESC has always been well organized in respect of the use of the internet for abstract selection etc. The past year has proved to be no exception where all abstracts were distributed for review and subsequent marking using internet based techniques. WG15 continues to have representation on the ESC web committee through its new webmaster Enno van der Velde. The ESC website was totally redesigned recently and is now an extremely comprehensive site.

IHE activities

Our nucleus member Tim Becker is representing the ESC in the IHE-Cardiology Technical Committee. The IHE initiative aims for improved interoperability between digital healthcare systems of different vendors. During the Stockholm meeting a demonstration of the underlying concept can be attended at the IHE booth in exhibition hall C (C01:41) For those not yet familiar with IHE, he wrote a short introduction:

IHE-Cardiology

Integrating the Healthcare Enterprise (IHE) is a joint effort of professional societies and industry to establish interoperability between digital healthcare systems of different vendors and thus improve user workflow and patient care. It was started by the Radiological Society of North America (RSNA), and the Health Information Management System Society (HIMSS) six years ago; since two years the European Society of Cardiology (ESC), the American College of Cardiology (ACC) and vendors of cardiology equipment are working together to extend existing IHE "Integration Profiles" to the cardiology world.

The European Society of Cardiology is member of IHE-Europe and actively supports the IHE-Cardiology Domain. As an official delegate of the ESC Prof. Rüdiger Simon (Kiel, Germany) is member of the IHE-Cardiology Planning Committee. In addition Dr. Tim Becker (Kiel, Germany) is member of the IHE-Cardiology Technical Committee.

In general both committees work via telephone conferences and hold 2-4 face to face meetings per year. Due to the allocation of duties the Technical Committee holds much more meetings than the Planning Committee.

The results of the first year will be demonstrated during the ESC annual convention in Stockholm 2005. On a separate ~ 80m² booth a virtual hospital with a cardiology department will be created. It includes cathlab and echolab as well as administration and ward workplaces. In regular intervals, cardiology and IHE experts guide visitors through the booth, demonstrate the technical solutions in a very practical environment, and answer your questions. The demonstration shows that the patient demographics need to be entered only once instead of 3-5 times, and that all

*patient data keep consistency even in emergency cases or after the correction of simple typing errors in the hospital information system.
In June 2005, the Technical Committees finalized the extension of the Technical Framework for the second year. These profiles are currently in the trial implementation phase and will be tested and demonstrated in 2006.
All technical frameworks are available in the internet at www.ihe.net.*

For more information, see :
www.escardio.org/initiatives/news/scientific/IHE.htm

Membership

The membership of the society has grown slowly during the year until 164. The Chairmanship of the Working Group passed to Dr. Willem Dassen at the end of the Munich meeting.

Financial situation

The working group finances continue to show a healthy balance.

Conclusion

The working group has remained active in the past year and has made a proportionate contribution to the activities of the ESC, in particular the annual ESC meeting, as well as to the annual Computers in Cardiology meeting.

Willem Dassen
Chairman

Martin Höher
Vice Chairman