European Perspectives in Cardiology

Spotlight: The British Cardiovascular Society

Supporting and Representing All Those Working in Cardiovascular Care and Research in the United Kingdom

Iain Simpson, MD, FRCP, FACC, FESC, president elect of the British Cardiovascular Society and consultant cardiologist at Wessex Regional Cardiac Centre, Southampton, England, describes the society and its work to Judy Ozkan, BA.

The British Cardiovascular Society (BCS) traces its origins to the Scottish pioneer of arrhythmias, Sir James Mackenzie, FRS (1853–1925). The outbreak of hostilities in 1914, however, halted his plans to gather together a group of cardiology-focused physicians, but the aftermath of World War I helped. Many veterans suffered heart problems, and the government appointed a network of cardiac consultants to assess the veterans’ eligibility for war pensions. When the consultants came together in 1921, a de facto specialty group was formed. In 1922, the group met in Oxford and formed the Cardiac Club with 15 members and Sir Mackenzie as an honorary member. By 1936, membership had grown to 32, and the group became the Cardiac Society of Great Britain and Northern Ireland. In the 1930s, the Society launched the British Heart Journal, followed 30 years later by the first edition of Cardiovascular Research.

In 1946, the society changed its name to the British Cardiac Society, women and surgeons were elected for the first time, and members from abroad were accepted. In 1952, Sir John Parkinson was elected president to become the public face of the society at international meetings and conferences. In 1996, the society renamed itself again to the British Cardiovascular Society to encompass cardiovascular issues and better realign itself with the interests and needs of its membership. Membership is now 2140, and includes >90% of UK consultant cardiologists, specialist registrars, and other healthcare professionals and patient groups involved in cardiovascular medicine. The BCS supports and represents all those working in cardiovascular care and research, including >8000 professionals belonging to 17 affiliated organisations involved in cardiovascular medicine and health care (see www.bcs.com).

President elect of the BCS, Iain Simpson, MD, FRCP, FACC, FESC, is a consultant cardiologist at Wessex Regional Cardiac Centre, Southampton, England. From 2008 to 2011, President of the BCS, Professor Keith Fox (see http://circ.ahajournals.org/content/116/11/F67.full.pdf+html). Photographs courtesy of the BCS.

The Mackenzie medal, the BCS’s most prestigious award, is a recent innovation and recognises individuals who have made outstanding contributions to cardiology. The 2011 joint recipients were Professor Kim Fox (left, see http://circ.ahajournals.org/content/119/5/f25.full.pdf+html) and Professor Stuart Cobbe (right, see http://circ.ahajournals.org/content/117/10/f55.full.pdf+html), shown receiving the award from president of the BCS, Professor Keith Fox (see http://circ.ahajournals.org/content/116/11/F67.full.pdf+html). Photographs courtesy of the BCS.

On other pages...

Spotlight: Iain A. Simpson, MD, FRCP, FACC, FESC
Dr Simpson is president elect of the British Cardiovascular Society and a cardiologist at Wessex Regional Cardiac Centre, Southampton, England. Page f45

Funding: The Louis-Jeantet Prize for Medicine
This prize of CHF700,000 is awarded to up to 3 scientists every year to fund medical research in Europe. Over the past 10 years, it has been won by the 4 scientists shown above to fund cardiovascular research. Page f47
he was vice president for education and research for the BCS, and he has been an active member of the BCS for more than a decade. He was involved in its restructuring in the 1990s and believes that the BCS has a crucial role in delivering training to new and established cardiologists in the light of new requirements for relicensing and revalidation in the United Kingdom. He says, “One aim is to make the BCS the voice of cardiology on a national basis. It is divided into various divisions, one of which is a training division, and the vice president of training is targeted as the person who not only advises the society, but also is involved in delivering the cardiology curriculum and strategy for training across the United Kingdom.” Guidelines, clinical pathways, quality indicators, and clinical standards all link in to the future of relicensing and revalidation.

The other 3 main divisions of the BCS are clinical standards, corporate affairs, and education and research. Dr Simpson says, “We have not as a society developed or delivered individual research projects, but we have an academic research committee that advises the society and its members on aspects of research and academia, and we work with the British Heart Foundation, which has a huge research portfolio, so it complements that aspect of our work.” The corporate affairs division looks after the finances and raises income to help with running costs and with its aim to promote excellence in cardiovascular care.

The BCS has a staff of 12. Its annual conference is the biggest cardiovascular conference in the United Kingdom. It also runs other conferences, and it has developed a 5-day review course for trainees with the Mayo Clinic in Rochester, MN. This course was so well received that a similar course has been developed for established cardiologists.

Dr Simpson says, “I have been involved in the BCS at an executive level for the past 4 years, so I have been able to help shape some of the vision, and for me the society is moving in the right direction. It is coming to grips with crucial aspects of education, revalidation, and training, which are the key focus areas for members. The vision beyond that is how, and if, we engage with a wider audience on a more patient-related basis and how we help to shape the new healthcare environment. One of the biggest challenges we face over the next few years is how the proposed changes to the delivery of health care will affect cardiovascular medicine and the treatment of heart disease in the United Kingdom. The BCS can represent our members and lead discussions on the future of cardiovascular care in the United Kingdom.” He adds, “We have convinced most trained cardiologists in the United Kingdom of the value of the BCS. We have also engaged with trainees to enhance their training and to provide sustained value throughout their professional career. Many other healthcare professionals who come to us as associate members through the various affiliated groups are finding membership invaluable. Many of the issues we have in cardiology around training and clinical standards are relevant to other specialties, and having dialogue, engagement, and even shared projects with noncardiac specialists could be an important future development.”

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Judy Ozkan is a freelance medical journalist.
Clinical teaching in the 3rd year of medical school at the University of Glasgow, Glasgow, Scotland, by cardiologist Ian Hutton, MD, proved inspirational for Iain Simpson, MD, FRCP, FACC, FESC, president elect of the British Cardiovascular Society and consultant cardiologist, Wessex Regional Cardiac Centre, Southampton, England. He says, “That was it for me. Ian Hutton was the most magnificent teacher, and from then on I decided cardiology was what I wanted to do.” As a committed clinician, Dr. Simpson has always focused more on the application and relevance of clinical research to patient care rather than the basic science aspect of it. Early on, in the mid-1980s, he recognised the prospective application of Doppler echocardiography. Together with paediatric consultant Alan Houston, MD, he investigated Doppler echocardiography for his thesis while looking for ways to apply the technique to his daily work in heart valve disease.1,2

“What I Got Out of It Was So Much More Than Research”
In the mid-1980s, Glasgow was relatively advanced in new imaging techniques, but in such a rapidly developing specialty area, Dr Simpson knew he would need to go further afield to develop and expand his research interests. He therefore chose to work with David Sahn, MD, who had just become professor of paediatric cardiology at the University of California, San Diego, CA. He says, “David Sahn was not the most established name in heart echocardiography in the United States at the time, but he was at the forefront of Doppler echocardiography.” After a competitive process, Dr Simpson secured a joint fellowship with paediatric consultant Alan Houston, MD, for his thesis while looking for ways to apply the technique to his daily work in heart valve disease.1,2

The new North Wing Heart Unit, Wessex Regional Cardiac Centre, Southampton, England (see http://circ.ahajournals.org/content/115/7/f25.full.pdf+html). The Centre, staffed by 11 adult cardiologists, 6 congenital heart disease specialists, and 8 cardiac surgeons, is 1 of the largest in the United Kingdom, and it provides care for the population of most of central and southern England. Photograph courtesy of Dr Simpson.

The University of California attracted high-profile researchers and offered opportunities for smooth collaborations. With no clinical duties, the fellowship was Dr Simpson’s best and most productive time in cardiovascular research, and it was also an opportunity to make lifelong connections.

After the fellowship, Dr Simpson refocused his attention on becoming an interventional cardiologist, and he took up a senior registrar job at St. George’s Hospital and the Royal Brompton Hospital, London, England. Halfway through this post, in 1992, an opportunity arose at the Wessex Regional Cardiac Centre in Southampton that fit his ambitions perfectly. At the time, he was 1 of 4 cardiologists at the Centre together with 3 cardiac surgeons. The Centre has since expanded to become one of the largest in the United Kingdom.

Dr Simpson maintains his interest in research through interventional cardiology collaborations and large multicentre, multinational trials. He says, “Wessex is a big regional centre attached to a good university. We have a large patient population, and it is important to use that collaboratively. I set up a large research programme with our medical genetics department and carried out some good collaborative research on genetic markers of atherosclerosis. That has been quite productive. Our main collaborator, geneticist Shu Ye, MD, PhD, has now moved to St. Bartholomew’s Hospital in London, and we will continue to produce research from the cohort.”
President Elect of the British Cardiovascular Society

Dr Simpson has been an active member of the British Cardiovascular Society since the 1990s, when he was involved in its restructuring. He believes that it has a crucial role in delivering training to new and established cardiologists as a result of the new requirements for relicensing and revalidation in the United Kingdom. He served as vice president for education and research from 2008 to 2011, and he is now president elect. He says, “Over the years, many big centres have been able to deliver high-quality care, but access to training has varied. Although the British Cardiovascular Society does not have a mandate to train cardiologists, it is uniquely positioned to provide high-quality education through the membership in conjunction with our affiliated subspecialty groups.”

Dr Simpson is excited by the rapid developments in cardiology. “Stem cell research is going to have an impact on clinical treatment. We are also entering a phase where the ageing population with heart disease and expectations of what can be achieved require more sophisticated monitoring and early detection of disease. It boils down to how you best prevent people from getting to the stage where they have heart disease that is sufficiently advanced to require some sort of interventional treatment,” he says.

In the past, Dr Simpson enjoyed 7 years as an associate editor and then commissioning editor for Heart. He comments, “It was a great way to keep up to date with the latest research and a good discipline for evaluating research quality and relevance. Working as commissioning editor gave me opportunities to approach international experts and ask them to put their research work into context. Roger Hall, MD, PhD, was editor in chief, and we had a fantastic editorial team. Roger was an inspiration and one of the most knowledgeable and enthusiastic cardiologists I have had the pleasure to work with.”

Dr Simpson’s initial enthusiasm for cardiology has never wavered. He explains, “I cannot think of another area of medicine that is quite as exciting, challenging, or valuable given the extent of heart disease globally. Cardiology does not stand still, and the ability to continually improve on established treatments makes it one of the most exciting areas of medicine to be in.”

References


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The Louis-Jeantet Prize for Medicine is awarded to experienced biomedical scientists in Europe to encourage the continuation of projects important to basic or clinical medicine. Up to 3 prizes are awarded each year by the Louis-Jeantet Foundation based in Geneva, Switzerland. Each winner receives CHF700 000 to use over 5 years: CHF600 000 is to finance ongoing research, to improve lab equipment, provide salaries of assistants or technicians, or support other activities that contribute to the progress of the research; CHF100 000 is for the scientist’s personal use. The Scientific Committee of the Louis-Jeantet Foundation may make precise recommendations on how the prize money is to be used (see http://www.jeantet.ch/e/prize/prize.php).

Candidates for the award are active researchers of any nationality in a European country that is a member of the European Council. They must be nominated by a scientist or an institution with detailed knowledge of their work. It is also possible to nominate a research team rather than a single individual. The Foundation encourages the nomination of scientists younger than 50 years of age. Candidates should not be told that they have been nominated. Nominations should include a short description of why the candidate is being nominated, a summary of his or her main scientific achievements and current research activities, 5 experimental research papers, his or her curriculum vitae, and a list of published articles.

Winners of the Louis-Jeantet Prize for Medicine for Cardiovascular Research

2010 Prize to Investigate the Mechanisms of Ventricular Fibrillation
Awarded to Michel Haïssaguerre, MD, professor of cardiology, University of Bordeaux, Bordeaux, France, and director of the Cardiac Arrhythmias Department, Hospital Haut Lévéque, Bordeaux “The objectives are to precisely portray the alterations in the characteristics of electrical substrate necessary for sustenance of ventricular fibrillation responsible for the 350 000 annual cases of arrhythmic sudden death in Europe. Even after autopsy, the cause of death is not determined (called ‘natural death’) in ≈10% to 15% of these cases. This amounts to 40 000 unexplained sudden deaths every year.”

Professor Haïssaguerre discovered the cardiac tissue responsible for initiation of atrial and ventricular fibrillation in humans and received the Louis-Jeantet Prize for Medicine in 2010 to establish an experimental electrophysiology lab with optical mapping and computer simulation facilities. Optical mapping provides the highest spatial and temporal mapping resolution, whereas computer simulation allows manipulation of any of the multiple electrical parameters involved in the genesis of ventricular fibrillation.

The funding is specifically providing for the acquisition of the equipment and scientific expertise to investigate the role of the Purkinje network as a trigger for ventricular fibrillation in normal and abnormal hearts, including the acute ischaemic phase; to characterise the ventricular substrate as a vulnerability factor for sudden arrhythmic death; and to identify noninvasive electrocardiographic markers in risk stratification of sudden arrhythmic death.

The research aims to reveal the mechanisms of formation of focal triggers, including the intrinsic electrical properties of the Purkinje network. The characteristics of substrates required for ventricular fibrillation initiated by such focal discharges will be investigated.

The lab will also engage in evolving specific targets to treat ventricular fibrillation, use novel tools such as noninvasive electrocardio mapping, and carry out repolarisation mapping using specially designed monophasic action potential catheters.

2009 Prize to Investigate Hypoxia Signalling Pathways
Awarded to Peter J. Ratcliffe, MD, FMedSci, FRS, Nuffield Professor of Clinical Medicine, University of Oxford, Oxford, United Kingdom “The funds have enabled the lab to purchase and operate the latest generation mass spectrometry technology to trap potential hydroxylase substrates and to survey the proteome for new sites of hydroxylation. The hope is that such sites might represent new hypoxia signalling pathways. This work is important, not only from the basic biological perspective, but also for clinical translation, because knowledge of the full extent of the biological pathways that might be affected by a drug acting as a hypoxia inducible factor prolyl hydroxylase inhibitor is important in accurately predicting the effects of the drug.”
Professor Ratcliffe’s lab made 2 main discoveries. The first was the recognition that all animal cells possess a similar mechanism of direct oxygen sensing and that the system controls a wide range of processes, such as angiogenesis, energy metabolism, vasomotor, and cell survival and proliferation. Previously it had been believed that the direct sensing of hypoxia was a property of a few specialised cells that operated a limited set of responses, for example the production of erythropoietin by specialised renal cells.

The second main discovery was the elucidation of the way in which oxygen is sensed. This is by oxygen-dependent catalysis of prolyl hydroxylation of specific residues in the key transcription factor, hypoxia inducible factor (HIF), by oxygen-sensing enzymes belonging to the Fe(II) and 2-oxoglutarate dioxygenase superfamily. Prolyl hydroxylation acts as a signal for the degradation of HIF, switching the transcriptional response off in the presence of oxygen. The HIF prolyl hydroxylases have an absolute requirement for molecular oxygen. Their activity is reduced in hypoxia, allowing the HIF transcriptional pathway to become active.

Professor Ratcliffe was awarded the Louis-Jeantet Prize for Medicine in 2009 for research into mechanisms by which cells detect and respond to changes in levels of oxygen. The prize money is being used to address 2 major questions raised by the work.

First, are there other targets of the HIF prolyl hydroxylases (or related enzymes) that mediate other biological responses to hypoxia (ie, do the HIF hydroxylases have substrates other than HIF)?

Second, can the HIF prolyl hydroxylases be manipulated safely to improve the outcome of ischaemic vascular diseases or anaemia? This work is being conducted in collaboration with Professor Christopher Schofield, MA, DPhil, who works in the Department of Chemistry at the University of Oxford.

Professor Ratcliffe comments, “About the application process, one never knows who exactly has made the nomination, but I am grateful nevertheless to those who put the work forward. Hopefully it brings some prominence to the field, helps secure future funding, and brings people into an area of research that still has a lot more potential.”

2006 Prize to Investigate Angiolympogenesis and Lymphangioigenesis
Awarded to Kari Alitalo, MD, PhD, research professor, Finnish Academy of Sciences, Molecular/Cancer Biology Lab, Biomedicum Helsinki, University of Helsinki, Helsinki, Finland

“There was no bureaucracy of any sort involved. Incredibly, the Foundation trusted me and my collaborators in terms of the best use for these funds. I was asked to provide only an informal research plan. I loved it.”

Professor Alitalo used his 2006 Louis-Jeantet Prize for Medicine for vascular endothelial growth factor (VEGF) studies in which his group had new significant and often unexpected preliminary findings not covered by an existing grant and to expand other projects beyond their previous financial boundaries. He says, “Important discoveries included the finding that VEGF receptor 3 regulates angiogenic sprouting and vascular network formation, and the identification of structural features that determine growth factor binding and specificity by VEGF receptors. We also showed that VEGF-B acts as a coronary growth factor in rats.”

Professor Alitalo adds, “Being nominated was a most pleasant surprise. I must say that these days it is the best you can wish for.”

2002 Prize to Investigate Genetic Causes of Diseases of the Renal Glomerular Filter
Awarded to Karl Tryggvason, MD, PhD, professor of medical chemistry, Department of Medical Biochemistry and Biophysics, Karolinska Institute, Stockholm, Sweden

“I had no idea I was being nominated, but I was pleasantly surprised when I was informed about this highly prestigious European prize.”

Professor Tryggvason was awarded the 2002 Louis-Jeantet Prize for Medicine primarily for his work on the elucidation of genetic causes of diseases of the renal glomerular filter.

Professor Tryggvason has used the prize money to support work on an extensive “Systems Biology Approach to the Glomerulus and Its Diseases” project, which focuses on expression profiling analyses (transcriptome/proteome) of isolated mouse and human glomeruli during development and during the progression of various glomerular diseases.

Professor Tryggvason’s group has identified >300 novel gene products that are highly specific for glomeruli but rarely expressed in the rest of the kidney. Discoveries include the discovery of nephrin, a key component of the slit membrane in the glomerular capillary filter.

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