



# European Cardio-Oncology Symposium 2019

Meeting Book

**17-19 October 2019**  
**Barcelona, Spain**

## Welcome

Dear Friends and Colleagues,

We are delighted to welcome you to the European Cardio-Oncology Symposium (ECOS) 2019, which we hope you will find engaging, informative, and rewarding.

Now is an exciting time for the field of cardio-oncology. The scientific community has worked tirelessly to establish cardio-oncology as a thriving subspecialty, as seen in the launch of new cardio-oncology journals and subsections within major medical societies, as well as scientific meetings focused on cardio-oncology research.

The next step for cardio-oncology involves educating the cardiologists, oncologists, nurses and other professionals who manage the cardiovascular concerns of patients with cancer in routine clinical practice. The ECOS 2019 meeting is the first continuing medical education (CME) event in Europe designed to address the unique educational needs of the cardio-oncology care team, including those interested in setting up a cardio-oncology service.

Support for ECOS is widespread, reflecting the importance of our education mission. The ECOS 2019 meeting is endorsed by the European CanCer Organisation and recognised by the European Society of Cardiology, British Cardiovascular Society, European Association of Urology, Spanish Society of Medical Oncology, Polish Cardiac Society and others. On Saturday 19 October, we are pleased to host the Spanish Society of Cardiology (SEC) for the ECOS-SEC 2019 Joint Session, a unique event that celebrates collaborations in cardio-oncology.

We hope that this programme, developed by the ECOS Steering Committee, inspires you with new ideas for your clinical work, fosters a greater appreciation of collaborative approaches in cardio-oncology, and facilitates fruitful discussions with your colleagues as you share experiences in this fast-moving therapeutic area.

We are sure you will find the ECOS 2019 meeting to be an excellent interactive environment for you to deepen your knowledge of managing patients with cancer and exchange ideas with your peers.

We look forward to a productive meeting here in Barcelona.

Kind regards,



**Professor Jeroen Bax**  
ECOS 2019 Chair



**Professor Giuseppe Curigliano**  
Oncology Section Co-Chair



**Dr Juan Carlos Plana**  
Cardiology Section Co-Chair

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## Overview

### ECOS 2019

#### Learning objectives

The ECOS 2019 CME meeting is designed to increase knowledge, improve competence, and enhance confidence among healthcare professionals involved in the prevention, monitoring, and management of cardiovascular disease and/or cardiotoxicity in patients with cancer. At the end of the programme, delegates should be able to:

- Take steps to mitigate the potential cardiovascular side effects of cancer therapies
- Apply the latest guidelines on cardiovascular monitoring in patients with cancer
- Implement strategies to streamline collaboration across cardiology, oncology, and other services to improve cardiovascular care for patients with cancer

#### Continuing medical education



Siyemi Learning is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Siyemi Learning designates the ECOS 2019 live activity for up to 15 *AMA PRA Category 1 Credits™*. Physicians should claim only the credits commensurate with the extent of their participation in the activity.

### ECOS – Spanish Society of Cardiology (SEC) 2019 Joint Session

**SEC19**  
BARCELONA, 17/19 OCTUBRE

EL CONGRESO DE LAS ENFERMEDADES CARDIOVASCULARES DE LA **75** SOCIEDAD ESPAÑOLA DE **CARDIOLOGÍA** 1944-2019

#### Learning objectives

At the end of the programme, delegates should be able to:

- Identify main themes from the ECOS and SEC 2019 meetings
- Discuss the goals and findings from ongoing cardio-oncology registries

#### Continuing medical education



Siyemi Learning is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Siyemi Learning designates the ECOS–SEC 2019 Joint Session live activity for up to 2 *AMA PRA Category 1 Credits™*. Physicians should claim only the credits commensurate with the extent of their participation in the activity.

### For all delegates

#### Claiming your CME certificate

Participants will be able to claim their CME certificate online from the end of the meeting by completing a short feedback and reflection questionnaire online.

The CME credits offered are recognised across Europe and globally. Please check with your local authority to confirm its validity for your purposes.

Please visit [EuroCardio-Onc.org](http://EuroCardio-Onc.org) for further information and updates.

#### Financial disclosures

Financial disclosures of the speakers can be found with their biographies in this book.

Siyemi Learning staff do not have any relevant financial relationships to disclose.

#### Support

This activity is supported by an independent medical educational grant from Novartis.

GE Healthcare provided in-kind support for the pre-conference workshop.

### Endorsements and approvals



**EUROPEAN  
CANCER  
ORGANISATION**

The ECOS 2019 meeting is endorsed by the European CanCer Organisation and recognised by the European Society of Cardiology, British Cardiovascular Society, European Association of Urology, Spanish Society of Medical Oncology, Polish Cardiac Society and others.

**Thursday 17 October**

Pre-conference cardiac ultrasound workshop

**14:00 – 15:00**

Imaging guidelines in cardio-oncology

**Live webcast**

*Thomas Binder, Juan Carlos Plana, Paaladinesh Thavendiranathan*

**15:00 – 16:00**

Use of cardiac ultrasound with focus on speckle tracking echocardiography

*Thomas Binder*

**16:00 – 16:20**

Coffee break

**16:20 – 17:00**

Speckle tracking analysis and clinical diagnosis

*Thomas Binder, Juan Carlos Plana, Paaladinesh Thavendiranathan*

**17:00 – 17:30**

Application of cardiac ultrasound in cardio-oncology patients

*Thomas Binder, Juan Carlos Plana, Paaladinesh Thavendiranathan*

**About the ECOS 2019 programme**

**3 live webcasts**

- Invite colleagues to participate via [EuroCardio-Onc.org](http://EuroCardio-Onc.org) and [#ECOS19](https://twitter.com/ECOS19)

**2 interactive breakout sessions**

- Friday 18 October: select 1 breakout session (breakouts will not be repeated)
- Saturday 19 October: select 2 breakout sessions (each breakout will occur twice)

**Poster session**

- Posters on display Friday 18 October
- ECOS Poster Prize awarded on Saturday 19 October

**ECOS – Spanish Society of Cardiology (SEC) 2019 Joint Session**

- Stay on Saturday 19 October for ECOS and SEC 2019 highlights, plus new findings from ongoing cardio-oncology registries

**Friday 18 October**

ECOS Day 1

**08:30 – 08:45**

Welcome and introduction

*Jeroen Bax, Juan Carlos Plana*

**08:45 – 09:15**

The ongoing evolution of cardio-oncology

*Daniela Cardinale*

**09:15 – 09:45**

Thrombosis and anticoagulation in cancer patients

*Jecko Thachil*

**09:45 – 10:25**

Debate: Every patient receiving 5FU should have a stress test

*Sebastian Szmit, Mark Westwood*

**10:25 – 10:45**

Coffee break

**10:45 – 12:00**

**BREAKOUT SESSION**

Setting up a cardio-oncology service: the clinic, inpatient cover, and imaging service

*Charlotte Manisty, Juan Carlos Plana, Susan Dent*

Cardiac intervention in the cancer patient: stents, artificial valves, and pericardial effusion

*Juan Lopez-Mattei, Peter MacCallum, Mick Ozkor*

Role of the cardio-oncology nurse: clinical role, research and database role, and role in late effects

*Malcolm Walker, Alison Macklin, Alison Webb*

**12:00 – 12:30**

Breakout feedback panel

*Mark Westwood*

**12:30 – 13:30**

Lunch and poster session

**13:30 – 14:10**

Personalised cardio-oncology: focus on targeted therapies

*Javid Moslehi*

**14:10 – 14:30**

Can exercise therapy change outcomes in cancer patients?

*Ana Barac*

**14:30 – 14:50**

Role of biomarkers: are we any further forward?

*Juan Lopez-Mattei*

**14:50 – 15:30**

Debate: All patients should be monitored for life-long late effects

*Paaladinesh Thavendiranathan, Dan Lenihan*

**15:30 – 16:00**

Coffee break and poster session

**16:00 – 17:00**

Revolutionising cancer care with immunotherapy

**Live webcast**

*Chair: Javid Moslehi*

*Case discussion: Sebastian Szmit, Alison Macklin*

**17:00 – 17:30**

Primary prevention in cardio-oncology: is it ready for prime time?

*Susan Dent*

**17:30 – 18:30**

Networking reception with poster authors (end of poster display)

**Saturday 19 October**  
ECOS Day 2

**08:30 – 08:45**

Welcome

*Jeroen Bax, Juan Carlos Plana*

**08:45 – 09:30**

Definition of cardiotoxicity:  
do we need a rethink?

*Arjun Ghosh*

**09:30 – 10:30**

Cardiac complications of checkpoint  
inhibitor therapy

**Live webcast**

*Chairs: Jeroen Bax, Javid Mostehi*

*Case discussion: Joe-elie Salem, Jecko Thachil,  
Shanthini Cruz*

**10:30 – 10:45**

Coffee break

**10:45 – 12:15**

**MULTIDISCIPLINARY TEAM (MDT)  
BREAKOUT SESSION**

*Cases presented twice: 10:45 - 11:25 and 11:35 - 12:15*

*Delegates attend two from the following:*

MDT case on cardiac function

*Juan Lopez-Mattei, Arjun Ghosh, Ana Barac,  
Jeroen Bax*

MDT case on cardiac rhythm

*Sebastian Szmit, Joe-elie Salem, Jonathan  
Lambert*

MDT case on cardiac ischaemia

*Charlotte Manisty, Mick Ozkor, Nikos Diamantis*

**12:15 – 12:45**

MDT case feedback panel

*Mark Westwood*

**12:45 – 13:15**

Looking ahead:  
cardio-oncology in the next 5 years

*Dan Lenihan*

**13:15 – 13:30**

Closing remarks  
ECOS 2019 Poster Prize

*Jeroen Bax, Juan Carlos Plana*

**13:30**

Meeting close

**Saturday 19 October**  
ECOS-SEC 2019 Joint Session

**15:15 – 15:30**

Welcome and introduction

*Arturo Evangelista, Manuel Anguita, Jeroen Bax*

**15:30 – 15:45**

The ongoing evolution of cardio-oncology

*Susan Dent*

**15:45 – 16:00**

Imaging guidelines in cardio-oncology

*Paaladinesh Thavendiranathan*

**16:00 – 16:15**

ECOS 2019 highlights

*Ana Barac*

**16:15 – 16:30**

Discussion

**16:30 – 16:45**

Cardio-oncology in Spain:  
SEC19 cardio-oncology highlights

*Teresa López-Fernández*

**16:45 – 17:00**

CardioTox registry:  
what have we learned?

*José López-Sendón*

**17:00 – 17:15**

SURVIVE registry

*Dan Lenihan*

**17:15 – 17:30**

Discussion and closing remarks

*Arturo Evangelista, Manuel Anguita, Jeroen Bax*



**SEC19**

BARCELONA, 17/19 OCTUBRE

EL CONGRESO  
DE LAS ENFERMEDADES  
CARDIOVASCULARES DE LA

**75**  
SOCIEDAD  
ESPAÑOLA DE  
CARDIOLOGÍA

1944-2019



**Manuel Anguita, MD, FACC**  
Hospital Universitario Reina Sofía, Córdoba, Spain

Manuel Anguita is a cardiologist at the department of cardiology, Hospital Reina Sofía in Córdoba, Spain, where he has worked since 1987.

Dr Anguita completed his fellowship in cardiology at the Clinica Puerta de Hierro in Madrid, Spain (1982 to 1987) and obtained his Doctor of Medicine at the Universidad Autónoma, Madrid in 1986.

Dr Anguita was vice-president of the Spanish Society of Cardiology (SEC) from 1993 to 1995 and from 2009 to 2011, and is current president of the SEC. He has authored more than 200 scientific publications in peer-reviewed journals.

**FINANCIAL DISCLOSURES**  
None



**Ana Barac, MD, PhD**  
Medstar Health Heart and Vascular Institute, Washington, DC, USA

Ana Barac is an associate professor of medicine and oncology at Georgetown University and director of the MedStar Heart and Vascular Institute's cardio-oncology programme in Washington, USA. Her clinical and research interests focus on the mechanisms, diagnosis and treatment of cardiac complications from cancer therapies.

Dr Barac is internationally recognised for her work on cardiovascular health in patients with cancer. She is the founding and immediate-past chair of the American College of Cardiology (ACC) Cardio-Oncology Council. She serves as the co-director of the ACC's annual live course 'Advancing Cardiovascular Care of the Oncology Patient', and was chair of the Heart House Roundtable 'Cardiovascular Function and Cancer Treatment' in February 2018. Dr Barac is the editorial board member of the Journal of the American College of Cardiology (JACC), and she serves as an associate editor of the new journal JACC: Cardio-Oncology and the Journal of Cardiovascular Translational Research.

Dr Barac has a background in basic science research on signalling pathways and was a visiting research fellow at the National Institutes of Health. In 2013, she was awarded a KL2 Scholar Award from the Georgetown-Howard Universities Center for Clinical and Translational Science for investigation of cardiac function in female BRCA-mutation carriers who were treated with anthracyclines. She served as the cardiology principal investigator for the SAFE-HEaRt trial, an investigator-initiated study that investigates safety of HER2 targeted therapies in patients with HER2 positive breast cancer and reduced cardiac function.

Dr Barac is a diplomate in cardiovascular disease and has advanced training in cardiac imaging, echocardiography and cardiac MRI.

**FINANCIAL DISCLOSURES**  
Honorarium: BMS.



**Jeroen Bax, MD, PhD**  
Leiden University Medical Center, Leiden, the Netherlands

Jeroen Bax is director of both non-invasive imaging and the echo-lab at the Leiden University Medical Center in Leiden, the Netherlands. Professor Bax is also the European Society of Cardiology (ESC) immediate past president (2018 to 2020).

His main interests include clinical cardiology, heart failure, cardiac resynchronisation therapy and the application of all different imaging modalities to these clinical fields. Professor Bax has authored numerous papers and holds several positions in national and international scientific organisations, as well as serving on the editorial board of many different journals.

**FINANCIAL DISCLOSURES**  
None



**Thomas Binder, MD, FESC**  
Medical University of Vienna, Vienna, Austria

Thomas Binder is director of the echocardiography laboratory at the Medical University of Vienna in Vienna, Austria. His main focus is echocardiography.

Professor Binder studied medicine at the Medical University in Vienna where he was also trained in internal medicine and cardiology. Research activities and clinical work brought him to the Huntington Memorial Research Institute in Pasadena, California and Loma Linda Medical Center, California in the USA. In 2009, Professor Binder founded the online platform [123sonography.com](http://123sonography.com), which teaches diagnostic ultrasound to a global community.

Professor Binder has served on numerous national and international boards and is strongly engaged in all areas of clinical cardiology. He has conducted and lectured at over 100 national and international echocardiography courses, and is tutor for the Austrian-American Foundation.

He has published numerous peer-reviewed articles in national and international journals, is author of the Echo Fact Book and a contributor to several other textbooks covering echocardiography.

**FINANCIAL DISCLOSURES**  
None



**Daniela Cardinale, MD, PhD**  
European Institute of Oncology, Milan, Italy

Daniela Cardinale is director of the cardioncology unit at the European Institute of Oncology in Milan, Italy, where she has been working since 1994.

Dr Cardinale graduated from the University of Milan in 1987 and specialised in cardiology (Milan, 1992). Dr Cardinale worked at the operative unit of intensive cardiac care of the Centro Cardiologico Monzino from 1987 to 1990, and the cardiology division of S Raffaele Hospital of Milan from 1990 to 1994. In 2009, she obtained her PhD in cardiovascular physiopathology from the University of Milan.

Her professional experience and investigational interests focus on prevention, early detection, monitoring and treatment of cardiotoxicity; screening of cardiotoxicity in patients with cardiac disease; and malignant pericardial effusion evaluation and intrapericardial treatment. Dr Cardinale has been the vice-president of the International CardioOncology Society (ICOS) since 2009, and is a fellow of the European Society of Cardiology (ESC).

**FINANCIAL DISCLOSURES**  
None

Dr Cardinale is a member of the ECOS 2019 Steering Committee and has been involved in the planning and development of the programme and materials.



**Shanthini Cruz, BSc, MBBS, PhD**  
St Bartholomews Hospital, London, UK

Shanthini Cruz is a medical oncologist specialising in melanoma and gynae-oncology at St Bartholomew's Hospitals in London, UK.

After gaining a BSc in immunology and MBBS from Imperial College, she went on to pursue her medical career in Cambridge and London. As a postgraduate, she was awarded a Cancer Research UK Fellowship and attained a PhD from Barts Cancer Institute, London.

Her research interests include the role of the immune system in cancer, immunotherapies and management of their toxicities. She has published research articles on novel management of immunotherapy toxicity and developed local consensus guidelines on immune-related adverse events in oncology patients.

Dr Cruz is involved in several clinical trials within Barts Health Trust, and as such, she works within a wide multidisciplinary team setting. Dr Cruz also leads the local education programme teaching acute medical specialties how to recognise and treat patients with acute complications of cancer treatments, including immunotherapies.

**FINANCIAL DISCLOSURES**  
Travel grant: Tesaro.

**Giuseppe Curigliano, MD, PhD**  
European Institute of Oncology, Milan, Italy

Giuseppe Curigliano is associate professor of medical oncology at the University of Milan and head of the division of early drug development at European Institute of Oncology in Milan, Italy. Professor Curigliano is a clinician and researcher specialising in early drug development for patients with solid tumours with a special commitment on breast cancer.

Professor Curigliano has been a member of the European Society for Medical Oncology (ESMO) Breast Cancer Faculty since 2001 and is currently the faculty coordinator. Since 2011, he has served on the Scientific Committee for the St Gallen Conference, and was the scientific chair in St Gallen 2017. Professor Curigliano has been an editorial board member for Annals of Oncology since 2014, and serves as co-editor in chief of The Breast and of Cancer Treatment Reviews, associate editor of the European Journal of Cancer and editor of the Journal of Clinical Oncology. He is also a member of the European School of Oncology (ESO) Faculty Committee.

Professor Curigliano serves ESMO as a council member and chair of the Nomination Committee. Since 2016, he has also been a member of the ESMO Women for Oncology Committee, ESMO Membership Committee, ESMO Press and Media Affairs Committee, and the ESMO Global Policy Committee. Professor Curigliano served as the scientific chair of the IMPAKT meeting in Brussels in 2014 and as the breast cancer (metastatic) track chair of the ESMO 2014 meeting in Madrid. He was co-chair for the first ESMO Breast Cancer Congress in 2019.

Professor Curigliano was awarded the first ESO Umberto Veronesi Award in Vienna and the Fellowship of the European Academy of Cancer Sciences (EACS) in Paris in 2017. He has contributed to over 290 peer-reviewed publications.

**Susan F Dent, MD, FRCPC**  
Duke Cancer Institute, Durham, NC, USA

Susan F Dent is a professor of medicine and medical oncologist at the Duke Cancer Institute in Durham, USA.

Dr Dent attended McMaster University Medical School in Hamilton, Canada and completed her residency training in internal medicine and medical oncology at the Ottawa Hospital, University of Ottawa, in Ontario, Canada. She subsequently completed a postgraduate research fellowship in clinical trials at the Canadian Cancer Trials Group (CCTG) in Kingston, Ontario, and was appointed as a staff medical oncologist at the Northwestern Ontario Cancer Center in Thunder Bay.

In 2001, Dr Dent returned to Ottawa where she specialised in the treatment of breast cancer. Dr Dent established a multidisciplinary cardio-oncology clinic in 2008 alongside her cardiology colleagues in Ottawa; the first of its kind in Canada. In 2011, she founded the Canadian Cardiac Oncology Network (CONN), a not-for-profit organisation devoted to optimisation of cancer care for patients without compromising cardiovascular health



**FINANCIAL DISCLOSURES**

**Speaker:** BMS, Celltrion, Daiichi Sankyo, Foundation Medicine, Lilly, Nanostring, Novartis, Pfizer, Roche, Samsung, Seattle Genetics.  
**Consultancy:** Nanostring, Roche, Seattle Genetics.  
**Advisory Board:** Celltrion, Daiichi Sankyo, Foundation Medicine, Lilly, Pfizer, Roche, Samsung.

Professor Curigliano is a member of the ECOS 2019 Steering Committee and has been involved in the planning and development of the programme and materials.



**FINANCIAL DISCLOSURES**

Advisory Board: Novartis.

([www.cardiaconcolgy.ca](http://www.cardiaconcolgy.ca)). Dr Dent launched the Global Cardio-Oncology Summit (GCOS) in 2015, an annual meeting which now attracts oncologists, cardiologists and allied healthcare providers from more than 23 countries.

Dr Dent is recognised as a global leader in cardio-oncology. She has travelled extensively around the world sharing her knowledge and expertise on the potential impact of cancer treatment on cardiovascular health. She has published extensively in the area and has co-authored a number of position statements and clinical practice guidelines. She continues to work and build relationships with global organisations interested in cardio-oncology, including: European Society of Cardiology (ESC), American College of Cardiology (ACC) and the American Society of Clinical Oncology (ASCO). Dr Dent currently serves as an executive officer of the International Cardio-Oncology Society (ICOS).

In September 2018, Dr Dent accepted a staff position in medical oncology at Duke University, where she will continue her efforts in promoting clinical care, education and research in cardio-oncology.



**Nikos Diamantis**, MD, MRCP, PhD  
St Bartholomew's Hospital, London, UK

Nikos Diamantis is a medical oncologist specialising in gastrointestinal oncology at St Bartholomew's Hospital in London, UK. Dr Diamantis has clinical leadership responsibilities for acute oncology and cancer of unknown primary services for Barts Health NHS Trust.

Dr Diamantis trained at the National and Kapodistrian University of Athens in Athens, Greece and at Imperial College Healthcare Hospitals and the Royal Marsden Hospital in the UK, where he completed his clinical research fellowship through a nationally awarded scholarship.

FINANCIAL DISCLOSURES  
None



**Arturo Evangelista**, MD, FESC  
Vall D' Hebron Research Institute, Barcelona, Spain

Arturo Evangelista is the co-coordinator of the research department at Vall D' Hebron Research Institute in Barcelona, Spain. At the Hospital Universitari Vall d' Hebron in Barcelona, Dr Evangelista was head of the imaging department of servei de cardiologia (echocardiography, MRI, CT/PET) (2006 to 2018), and director of the aortic diseases unit and family heart diseases unit. He has worked at the servei de cardiologia since 1988, and was also director of the marfan unit from 2008 to 2018.

Dr Evangelista completed his licenciature in medicine at the Universidad Autonoma de Barcelona, Barcelona in 1977, and became a specialist in cardiology in 1982. He completed his Doctor of Medicine at the Universidad Autonoma de Barcelona in 1992, and was awarded Professor Honoris Causae by the Universidad de Cordoba, Argentina in 2011.

Dr Evangelista has been a fellow of the Spanish Society of Cardiology (SEC) since 1996 and is the current SEC vice-president (2015 to 2020). He was president of the SEC Working Group of Echocardiography (1997 to 2000),

FINANCIAL DISCLOSURES  
None

president of the SEC Working Group of Aortic Diseases (2003 to 2007), Coordinator of Programme 3 (Valvular Heart Diseases and Aortic Diseases) Red de Investigación Cooperativa of the Instituto de Salud Carlos III (RIC), Ministerio de Sanidad y Consumo de España (2007 to 2016), and board member for both the European Society of Cardiology (ESC) Working Group on Valvular Heart Disease (2014 to 2017) and ESC Working Group of Aortic Diseases (2014 to 2018).

He has published 260 articles in journals, including: 2 New England Journal of Medicine (first author), 1 Journal of the American Medical Association, 15 Circulation (first author in 3 and senior in 2), 10 Journal of the American College of Cardiology (first author in 4 and senior in 1), 7 European Heart Journal (first author in 3), 7 Heart (first or senior). Dr Evangelista is co-author of 4 ESC guidelines and 8 recommendations of the European Association of Cardiovascular Imaging (EACVI) and American Society of Echocardiography (ASE). He also has 920 communications in national and international congresses. In addition, Dr Evangelista is an editorial board member for 5 international journals with 30 IF quartile, and editor of 7 books, 38 book chapters and 9 CD roms.

**Arjun K Ghosh**, MBBS, MRCP (UK), MRCP (Card), MSc, PhD, FHEA, FACC  
Barts Heart Centre, London, UK

Arjun Ghosh is a consultant cardiologist at Barts Heart Centre (BHC), St Bartholomew's Hospital, and at University College London Hospital (UCLH) in London, UK. He is also an honorary senior clinical lecturer at University College London (UCL) and Queen Mary University of London (QMUL).

Dr Ghosh is the first cardiologist in the UK to be appointed specifically in cardio-oncology, and he helped establish cardio-oncology services at both BHC and UCLH. An average of 40 patients a week are seen using a one-stop approach with investigations at the same time as clinic review. Alongside the clinical service, cardio-oncology research (basic science, clinical trials and imaging-based research) is undertaken at both sites and there is a thriving educational component to the service with international fellows.

Dr Ghosh is actively involved in developing cardio-oncology guidelines and changing practice through the British Society of Echocardiography (BSE), British Cardio-Oncology Society (BCOS) and the British Cardiovascular Society (BCS). He is the educational lead-elect for the BCOS and a member of the Education and Training Working Group of the American College of Cardiology (ACC) Cardio-Oncology section. Dr Ghosh also runs the UK's only national Cardio-Oncology Study Day.

Outside the interesting world of cardiology's newest subspecialty, Dr Ghosh is involved in cardiovascular magnetic resonance (CMR) and cardio-oncology echocardiography. He has several leadership and management positions at Barts Health NHS Trust, the BCS and the Royal Society of Medicine (RSM).



FINANCIAL DISCLOSURES  
None

Dr Ghosh is a member of the ECOS 2019 Steering Committee and has been involved in the planning and development of the programme and materials.



Following his multiple-award winning PhD in lifecourse cardiology from Imperial College, he remains active in a number of different cardio-oncology and artificial intelligence research projects and has published widely in the area. Dr Ghosh also holds an MSc in medical education from UCL and the Royal College of Physicians (RCP), and he has a number of local and national training and educational roles.



**Jonathan Lambert**, BMedSci, PhD, FRCP, FRCPath  
University College London Hospitals NHS Foundation Trust, London, UK

Jonathan Lambert is a consultant haemato-oncologist at University College Hospital in London and Mount Vernon Cancer Centre in Middlesex, UK.

He undertook postgraduate specialist training in haematology in London and completed a PhD in molecular haematology at the University College London (UCL) Cancer Institute in 2011.

Dr Lambert is the clinical lead for the lymphoma service at Mount Vernon Cancer Centre. He sits on the lymphoma multi-disciplinary panel at University College Hospital London, one of the busiest lymphoma services in Europe, which takes referrals of complex cases from across the UK for chemotherapy, clinical trials, stem cell transplantation and CAR-T therapy.

Dr Lambert's specialist interests include novel therapies in mantle cell lymphoma and promoting recovery following chemotherapy for lymphoma. He serves on various national committees, including the British Society for Haematology (BSH) Haemato-Oncology Task Force, responsible for the development of national guidelines for managing patients with a wide variety of haematological cancers.

**FINANCIAL DISCLOSURES**  
None

**Daniel Lenihan**, MD  
Washington University, St Louis, MO, USA

Daniel Lenihan is a professor and the director of the Cardio-Oncology Center of Excellence at Washington University in St Louis, USA.

Dr Lenihan has been active in cardio-oncology and heart failure for over 20 years. The main focus of his efforts have included haemodynamic assessments, angiogenic growth factor response, novel cardiac biomarkers and optimal methods to prevent or detect heart failure at the earliest stage possible in patients undergoing treatment for cancer.

His current research projects include early phase clinical trials in cardio-oncology, heart failure and amyloidosis. Dr Lenihan is the principal investigator of the PROTECT study looking at cardiac safety in patients undergoing proteasome inhibitor treatment for relapsed multiple myeloma, and the recently completed PREDICT study, a large multicentre prospective study examining the role of cardiac biomarkers for the detection of cardiotoxicity during anthracycline based therapy. In addition, he is intimately involved in the latest treatment trials for cardiac amyloidosis.

Dr Lenihan recently moved to Washington University in St Louis to enhance and expand the Cardio-Oncology Center of Excellence. He is at the forefront of concerted efforts to develop a viable cardio-oncology fellowship training programme, and he continues to foster collaboration among a host of colleagues both regionally, nationally and throughout the world. Dr Lenihan is the current president of the International Cardio-Oncology Society (ICOS), a professional association whose primary goal is to eliminate cardiac disease as a barrier to effective cancer therapy. He is also a deputy editor for the new JACC: CardioOncology journal, from the Journal of the American College of Cardiology (JACC) family of journals.



**FINANCIAL DISCLOSURES:**  
Consultancy: Bayer, BMS, Prothena, Pfizer, Roche.  
Research: Myocardial Solutions.

**Teresa López-Fernández**, MD  
La Paz University Hospital, Madrid, Spain

Teresa López-Fernández is a clinical investigator and consultant cardiologist at La Paz University Hospital in Madrid, Spain. Dr López-Fernández specialises in cardiac imaging (she is board certified in advanced and transesophageal echocardiography by the European Society of Cardiology (ESC)) and cardio-oncology, and currently leads the cardiac imaging unit at La Paz University Hospital.

Dr López-Fernández set up and coordinates the cardio-oncology team at La Paz University Hospital. She is the founder and chair of the Spanish Cardio-Oncology Working Group at the Spanish Society of Cardiology (SEC). Dr López-Fernández is also regularly invited to speak about cardio-oncology at both national and international conferences.

Her current research interests focus on cardiotoxicity diagnosis and preventive strategies. Dr López-Fernández has authored over 100 peer-reviewed publications and book chapters.



**FINANCIAL DISCLOSURES:**  
Speaker's Bureau: Philips.  
Dr López-Fernández is a member of the ECOS 2019 Steering Committee and has been involved in the planning and development of the programme and materials.



**Juan C Lopez-Mattei**, MD, FACC, FASE, FSCCT, FSCMR  
University of Texas MD Anderson Cancer Center, Houston, TX, USA

Juan C Lopez-Mattei is a multimodality imaging cardiologist and associate professor of cardiology and diagnostic imaging at The University of Texas MD Anderson Cancer Center in Houston, USA, where he co-directs the cardiac radiology service (cardiac CT and MRI).

Dr Lopez-Mattei is member of the Journal of Cardiovascular Magnetic Resonance and JACC: CardioOncology editorial boards. He holds multiple leadership positions in different cardiovascular imaging societies, such as the American Society of Echocardiography (ASE), Society of Cardiovascular Magnetic Resonance (SCMR) and Society of Cardiovascular Computed Tomography (SCCT).

Dr Lopez-Mattei has been a speaker in multiple national and international cardiovascular meetings, such as the SCCT, ASE, SCMR, American College of Cardiology (ACC), Society for Cardiovascular Angiography and Interventions (SCAI) and more, and he has over 50 peer-reviewed publications in several topics in cardio-oncology (imaging, interventional and outcomes).

**FINANCIAL DISCLOSURES**  
Honorarium: Arterys.



**José López-Sendón**, MD, PhD  
Hospital Universitario La Paz, IdiPaz Research Institute, Madrid, Spain

José López-Sendón is chief of the cardiology department, Hospital Universitario La Paz and chair of cardiovascular research at the Instituto de Investigación IdiPaz in Madrid, Spain. He is professor of medicine at Universidad Autónoma de Madrid in Madrid.

His main fields of interest are acute coronary syndromes, chronic ischaemic heart disease, heart failure and cardiotoxicity.

Professor López-Sendón has been a board member and councillor of the European Society of Cardiology (ESC), chairman of the Scientific Board of the World Heart Federation (WHF), member of the Board of the Heart Failure Association (HFA) and general secretary of the Spanish Society of Cardiology (SEC).

He actively works in teaching and research programmes with the ESC, the American Heart Association (AHA) and the WHF. He is a foundation fellow of the ESC and a fellow of the American College of Cardiology (ACC).

Professor López-Sendón has been national coordinator of the Euro Heart Survey programme of the ESC, member of the Guideline Committee of the ESC and member of the steering committees of numerous trials in acute coronary syndromes, secondary prevention, heart failure and atrial fibrillation.

He has published over 800 articles in peer-reviewed journals.

**FINANCIAL DISCLOSURES**  
None

**Peter K MacCallum**, MD, FRCP, FRCPath  
Barts Health NHS Trust, London, UK

Peter K MacCallum is a senior lecturer in haematology at Barts and The London School of Medicine and Dentistry, Queen Mary University of London, and a consultant haematologist at St Bartholomew's and the Royal London Hospitals in London, UK where he has led the thrombosis service since 1995. Dr MacCallum is also chief medical officer at the Thrombosis Research Institute in London.

Dr MacCallum runs thrombosis clinics at Barts Health NHS Trust and works closely with colleagues in cardiology, oncology, obstetrics and respiratory medicine, for whom he provides advice on anticoagulants and the management of thrombotic disorders.

He has been principal investigator for trials of direct oral anticoagulants for stroke prevention in atrial fibrillation and in the management of venous thromboembolism. Dr MacCallum is the UK national co-ordinating investigator for the GARFIELD-VTE registry and chief investigator of the ORANGE study examining bleeding outcomes in patients on oral anticoagulants. He is a steering committee member for a number of clinical trials in venous thrombosis prevention, and has served on several NICE committees.

Dr MacCallum co-authored the Royal College of Obstetricians and Gynaecologists (RCOG) guidelines on the prevention of venous thromboembolism during pregnancy, and has published over 60 papers and book chapters on thrombosis and anticoagulation. He is also an examiner for the Royal College of Pathologists (RCPATH).

**Alison Macklin**, RN, BSc (Hons)  
University College London Hospital, London, UK

Alison Macklin is a cardio-oncology clinical research nurse specialist at the Hatter Cardiovascular Institute, University College Hospital (UCH) in London, UK. Ms Macklin works alongside Dr Malcolm Walker and Dr Arjun Ghosh in her exciting new role combining both clinical nurse specialist and research in cardio-oncology.

Ms Macklin qualified as an adult nurse from the University of Surrey in Surrey, UK in 2004, and has a strong clinical background after spending a significant amount of her nursing career within a critical care setting. In 2014, she achieved a first-class BSc Hons degree in critical care nursing. With a keen interest in improving care and advancing practice, Ms Macklin went on to become a research nurse and work on a wide range of internationally recognised studies.

Together with co-ordinating the cardio-oncology service at UCH, Ms Macklin is currently working with the team on a study exploring cardiac protection and remote ischaemic preconditioning in patients undergoing anthracycline-based chemotherapy.



**FINANCIAL DISCLOSURES**  
Honorarium: Bayer.



**FINANCIAL DISCLOSURES**  
None



**Charlotte Manisty**, MBBS, PhD, MRCP

Barts Heart Centre, London, UK

Charlotte Manisty is a senior lecturer at University College London (UCL) and a consultant cardiologist at the Barts Heart Centre and University College Hospitals in London, UK. Dr Manisty specialises in heart failure and cardiac imaging, and set up and currently leads a large and expanding cardio-oncology service at Barts.

**FINANCIAL DISCLOSURES**  
Speakers' Bureau: Pfizer.  
Consultancy: Pfizer.

Dr Manisty is a member of the ECOS 2019 Steering Committee and has been involved in the planning and development of the programme and materials.

Her medical training was undertaken at Oxford University and Imperial College, and she was awarded a Wellcome Trust Fellowship for her PhD in cardiorespiratory physiology in heart failure. Current research interests include optimising imaging and analysis methods for identifying patients at risk of developing cardiotoxicity, with a particular interest in multiple myeloma. Dr Manisty chairs the Society of Cardiac Magnetic Resonance Cardio-Oncology group, and she is regularly invited to speak at both national and international conferences on cardio-oncology.

She receives funding for her work from the British Heart Foundation, Barts Charity and the National Institute for Health Research, and supervises several PhD students. Dr Manisty has authored over 85 publications and book chapters, and is keen to foster further research collaborations with other haematology and oncology groups.



**Javid Moslehi**, MD

Vanderbilt University Medical Center, Nashville, TN, USA

Javid Moslehi is an associate professor of medicine at Vanderbilt School of Medicine in Nashville, USA. Dr Moslehi directs the cardio-oncology programme, a clinical and research programme focused on cardiovascular health of cancer patients.

**FINANCIAL DISCLOSURES:**  
Consultancy: Acceleron, Ariad, BMS, Daiichi Sankyo, Deciphera, Heat Biologics, Incyte, Ipsen, Myokardia, Novartis, Pharmacyclics, Pfizer, Regeneron, Redux Therapeutics, Rgenix, StemCentRx, Takeda/Millennium, Vertex, Verastem.  
Research grants: BMS, Pfizer.  
Shares: Redux Therapeutics.

Dr Moslehi also directs a research laboratory, with general interests that include: mechanisms of cardiovascular toxicities that occur as a result of targeted cancer therapies, adverse effects of tumours on the cardiovascular and metabolic systems, cancers that arise from the heart, and the growing appreciation that common risk factors (including genetic mutations) predispose to both cancer and cardiovascular disease. The Moslehi laboratory uses an integrated approach from molecules, cell-based and animal models, and systems biology towards these goals. The laboratory is well integrated into the Vanderbilt cardio-oncology clinical programme, with the hope that discoveries in the laboratory will translate into clinical practice.

Dr Moslehi graduated from Johns Hopkins University and University of Connecticut School of Medicine. After completing an internal medicine residency at Johns Hopkins Hospital and clinical cardiology fellowship at the Brigham and Women's Hospital and Harvard Medical School, he undertook a basic science postdoctoral fellowship at the Dana-Farber Cancer Institute, focusing on the role of angiogenesis in heart disease. In 2009, he founded the cardio-oncology programme at Brigham and Women's Hospital/Dana-Farber Cancer Institute and Harvard Medical.

**Mick Ozkor**, MBBS, BSC, FRCP, MD

Barts Heart Centre, London, UK

Mick Ozkor is a specialist in complex coronary treatments and valvular heart interventions at Barts Heart Centre and North Middlesex University Hospital in London, UK. He leads the benchmark programme for transcatheter aortic valve implantation (TAVI) and is clinical director for medicine.

Dr Ozkor qualified from Imperial College School of Medicine, London in 1997. Since then he has worked in several London teaching hospitals, including St Mary's Hospital, The Royal London Hospital, St Bartholomew's Hospital, London Chest Hospital, The Heart Hospital and University College London Hospitals (UCLH).

In 2005, Dr Ozkor took a three-year sabbatical to complete his MD at Emory University in Atlanta, USA. He was awarded a British Cardiovascular Society Research Fellowship to undertake a National Institute of Health-funded translational research study focusing on vascular and endothelial function. His work was recognised at the local level with merit awards and at an international level when he was runner-up for the Young Investigator Award at the American College of Cardiology Conference (ACC) in 2009.

**Juan Carlos Plana**, MD, FACC, FASE  
Baylor St Luke's Medical Center, Houston, TX, USA

Juan Carlos Plana is chief of cardiology, cardiovascular service line at Texas Heart Institute/Baylor St Luke's Medical Center; chief of clinical operations of the section of cardiology, department of medicine at Baylor College of Medicine; director of the Cardio-Oncology Center; and co-director of the Center for Advanced Cardiac Imaging at Baylor St Luke's Medical Center in Houston, USA. He is the Don W. Chapman chair in cardiology and tenured associate professor of medicine. Dr Plana is board certified in cardiology and echocardiography.

Dr Plana earned his medical degree from Pontificia Universidad Javeriana, Santafé de Bogotá in Colombia. His extensive training included internship, residency, chief resident year and fellowship in cardiovascular disease and cardiac imaging (echocardiography and nuclear cardiology) at Baylor College of Medicine. Dr Plana's academic career started at the University of Texas MD Anderson Cancer Center where he served as director of cardiac imaging and medical director of the echocardiography laboratory. In 2010, he was recruited to the Cleveland Clinic, where he opened and served as co-director of the Cardio-Oncology Center. Dr Plana's clinical and research interests include cardio-oncology, valvular heart disease, diseases of the aorta and advanced cardiac imaging.

The major focus of Dr Plana's clinical and scholarly interest is the development and application of novel echocardiographic techniques in the early detection of cardiac dysfunction caused by chemotherapeutic agents. His work has led to 38 reports published in the peer-reviewed literature, as well as 8 invited reviews and book chapters.



**FINANCIAL DISCLOSURES**  
None



**FINANCIAL DISCLOSURES**  
None

Dr Plana is a member of the ECOS 2019 Steering Committee and has been involved in the planning and development of the programme and materials.



**Joe-elie Salem**, MD, PhD  
Sorbonne Université, AP-HP, Paris, France

Joe-elie Salem is an associate professor at Sorbonne Université as executive assistant director of cardio-metabolism at the Clinical Investigation Center Paris Est in Paris, France. Dr Salem is particularly interested in cardiovascular pharmacology, cardio-immunology, heart failure and drug-induced arrhythmias applied to cardio-oncology. His current focus has been creating a cardio-oncology programme at Sorbonne Université and fostering research in this field, in collaboration with Vanderbilt, where he has an adjunct associate professor position.

Dr Salem obtained his cardiovascular MD certification at Paris V and VI, Sorbonne, with additional diplomas in cardiovascular imaging (echocardiography, CT and MRI) and clinical pharmacology over 2003 to 2014. He defended his PhD thesis in cardiovascular clinical pharmacology at Sorbonne. His PhD research, undertaken from 2013 to 2016, focused on the development of new tools to predict deleterious drug effects on cardiac repolarisation (i.e., drug-induced long QT syndrome, 2 patents on this topic). From 2013 to 2017, Dr Salem was assistant professor of pharmacology at the Clinical Investigation Center at Hopitaux de Paris and Pierre and Marie Curie University, Sorbonne. This experience led him to conceive, participate and assist in the coordination of numerous translational research programs and clinical trials, mainly in the field of cardio-metabolism and pharmacology.

From 2017 to 2018, Dr Salem has been a clinical cardio-oncology fellow in cardio-oncology and a postdoctoral fellow in clinical pharmacology at Vanderbilt (Dr J Moslehi and Dr D Roden, Nashville, USA). During this year at Vanderbilt, his first research focus was on cardio-oncology, particularly cardio-immunology and influence of hormonotherapy on arrhythmia risk. His other focus was on precision medicine, notably using DNA linked electronic health record cohorts seeking for genetic variants associated with cardiac arrhythmias.

**Sebastian Szmit**, MD, PhD  
Centre of Postgraduate Medical Education, Warsaw, Poland

Sebastian Szmit is the research coordinator of the cardio-oncology section of the Polish Lymphoma Research Group and president of the onco-cardiology team within the Polish National Oncology Network.

Dr Szmit graduated from the Military Medical Academy in Poland and then worked as an internal medicine doctor in the Military Institute of Medicine from 2003 to 2012, and in the Central Hospital of the Medical University of Warsaw from 2007 to 2012. From 2012, he has been the cardio-oncology consultant and chief of the laboratory of cardio-pulmonary exercise testing in the department of pulmonary circulation, thromboembolic diseases and cardiology, based in the Centre of Postgraduate Medical Education at the European Health Centre, Otwock, Poland. He is the author and lecturer of the specialised course 'Oncology in Cardiology' at the Centre of Postgraduate Medical Education.

**FINANCIAL DISCLOSURES**  
None

**FINANCIAL DISCLOSURES**  
Speakers' Bureau: Angelini, Berlin-Chemie, BMS, Janssen-Cilag, Ibsen, Pfizer, Polpharma, Roche, Teva.

Dr Szmit is a member of the ECOS 2019 Steering Committee and has been

Dr Szmit was appointed executive editor of the Task Force of National Consultants in Cardiology and Clinical Oncology to develop the first two Polish documents: Recommendations of National Team of Cardiologic and Oncologic Supervision on cardiologic safety of patients with breast cancer (in 2010) and lung cancer (in 2012).

Dr Szmit is a member of the Polish Cardiac Society (PTK) and European Society of Cardiology (ESC). He was an invited reviewer for the 2016 ESC Position Paper on cancer treatments and cardiovascular toxicity, developed under the auspices of the ESC Committee for Practice Guidelines. His additional affiliations include the ESC Council of Cardio-Oncology, Executive Committee of the Global Cardio-Oncology Summit (GCOS), and Scientific Steering Committee and Educational Planning Committee of the European Cardio-Oncology Symposium (ECOS).

**Jecko Thachil**, MD, FRCPath  
Manchester Royal Infirmary, Manchester, UK

Jecko Thachil is a consultant in haemostasis and thrombosis at the Manchester Royal Infirmary in Manchester, UK and honorary senior lecturer at the Liverpool School of Tropical Medicine in Liverpool, UK. Dr Thachil's bleeding disorders work is based in one of the biggest haemophilia centres in the UK. His research focused on the role of platelets interaction with white cells in inflammation and sepsis, and currently in new therapies in haemophilia, anticoagulation in kidney disease and expanding the speciality in low- and middle-income countries.

Dr Thachil has participated in several trials in the area of thrombosis related to cancer, and he is setting up dedicated cancer-associated thrombosis clinics to specifically address this important issue.

Internationally, he has served as the chairman of the Disseminated Intravascular Coagulation Subcommittee of the International Society of Thrombosis and Haemostasis, and was recently identified as one of the top three healthcare professionals in the world in this area (expertscape).

Dr Thachil has published over 250 peer-reviewed papers, served as reviewer for 25 journals and edited the popular books 'Haematology in Critical Care' and 'Handbook of Venous Thromboembolism', as well as writing several book chapters.

involved in the planning and development of the programme and materials.



**FINANCIAL DISCLOSURES**  
Speakers' Bureau: Bayer, Boehringer-Ingelheim, Daichii-Sankyo, Pfizer.



FINANCIAL DISCLOSURES  
None

**Paaladinesh Thavendiranathan**, MD, MSc, FRCPC, FASE  
Peter Munk Cardiac Center, Toronto General Hospital, Toronto, Canada

Paaladinesh Thavendiranathan is a cardiologist at Toronto General Hospital, University of Toronto in Toronto, Canada. He is an associate professor of medicine and a clinician scientist.

Dr Thavendiranathan's training was in advanced cardiovascular imaging, and his current clinical practice involves work with cardiac MRI, CT and echocardiography. He is the director of the Ted Rogers Program in Cardiotoxicity Prevention, which focuses on cardiac toxicity from systemic therapies including cancer therapy.

His research focus is in the use of advanced cardiac imaging techniques for detection and management of cardiac toxicity. He is an international expert in the field of cardio-oncology.



FINANCIAL DISCLOSURES  
None

**J Malcolm Walker**, BSc, MBChB, MD, FRCP  
Hatter Cardiovascular Institute, University College Hospital London, London, UK

J Malcolm Walker trained in cardiology at St Thomas' Hospital London, then Oxford before being appointed as consultant cardiologist at University College Hospital London (UCLH) in London, UK.

In 1990, Dr Walker co-founded the Hatter Cardiovascular Institute (HCI) at UCLH, utilising donations from a Charitable Trust. The Institute moved into a bespoke building in 2006, where clinical service and laboratory cardiovascular research are housed in close physical proximity. The HCI has an international reputation in laboratory and translational research focusing on myocardial protection, and has produced more than 600 publications in the last decade.

Dr Walker was the president of the British Association of Cardiovascular Prevention and Rehabilitation and served on the Council of the British Cardiovascular Society (BCS) between 1999 and 2006.

In recent years he has ceased cardiology interventional practice at UCLH to focus on research, particularly the cardiovascular complications of thalassaemia and the application of novel cMRI sequences. Trials of rapid cMRI protocols have been completed in Thailand, India and Peru with planned further studies in Indonesia and People's Republic of China.

In 2016, Dr Walker helped establish the cardio-oncology service at UCLH. This is an expanding clinical service and research programme serving cancer patients with cardiovascular complications. He has published over 100 articles in major scientific journals and has a Scopus H-index of 36.

Visit Dr Walker's webpage: [www.drmalcolmwalker.co.uk](http://www.drmalcolmwalker.co.uk)



FINANCIAL DISCLOSURES  
None

**Alison Webb**, RN, RSCN, BSc (Hons), MSc  
University College London Hospitals, London, UK

Alison Webb is a clinical nurse specialist in the late effects of childhood cancer at University College London Hospitals (UCLH) in London, UK.

Mrs Webb completed her general nurse training at UCLH and gained a qualification in paediatric nursing in Bristol. Over the course of her career she has worked in a variety of settings, including general paediatrics, paediatric intensive care, and accident and emergency.

In 2003, she moved into the specialist field of endocrinology, initially in a research post, then as a clinical nurse specialist in endocrinology at Addenbrookes Hospital, Cambridge for 10 years. In 2013, Mrs Webb was appointed as specialist nurse in teenage and young adult neuro-endocrine late effects at UCLH. Having gained experience in this field, she joined the adult late effects team in 2016.

Her current role involves the transition of patients from teenage to young adult services following treatment for a range of childhood cancers. Mrs Webb has developed an understanding of the late consequences of treatment and the surveillance required. This has enabled her to introduce a specialist clinic focusing on the late cardiac consequences of childhood cancer treatment.

The 'Virtual Echo Clinic' enables long term cardiology surveillance through arranging periodic echocardiograms followed by a telephone consultation with a specialist nurse, thus enabling a robust monitoring system whilst offering flexibility and reducing the burden of frequent hospital appointments. Mrs Webb recognises the importance of closely liaising with the cardio-oncology team, and there is a clear referral pathway when patients have an abnormal echocardiogram or symptoms of clinical concern.



Electronic versions of all posters are available on the ECOS website ([EuroCardio-Onc.org](http://EuroCardio-Onc.org)), where they will be viewable during the meeting and archived as an ECOS 2019 poster for enduring reference. Printed posters will be displayed on Friday 18 October.

**POSTER REVIEW COMMITTEE**

- Susan F Dent**, Duke Cancer Institute, Durham, NC, USA
- John Aaron Henry**, Oxford University, Oxford, UK
- Daniel Lenihan**, Washington University, St Louis, MO, USA
- Sebastian Szmit**, Centre of Postgraduate Medical Education, Warsaw, Poland

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