CVCT WASHINGTON, DC US

Maison Française, French Embassy

21st Global Cardio Vascular Clinical Trialists Workshop

Course Directors:

Faiez ZANNAD, Nancy - FRA, Bertram PITT, Ann Arbor - USA

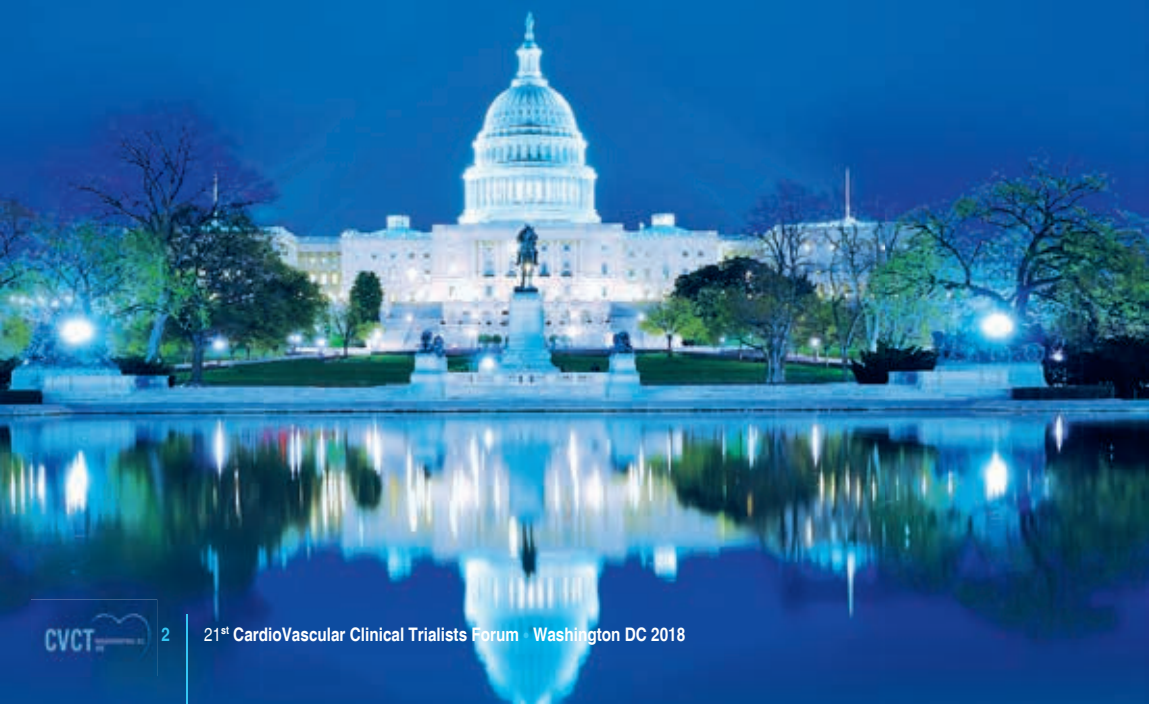
DECEMBER

2018 **SUNDAY 2 - MONDAY 3**

www.globalcvctforum.com

21th Global Cardio Vascular Clinical Trialists Workshop

Summary



CVCT WASHINGTON, DC US

21th CardioVascular
Clinical Trialists Workshop

Introduction

2 December 2018
French Embassy, 4101 Reservoir Rd NW, Washington, DC

Dear participants,

Welcome to the 21st Global CardioVascular Clinical Trialists Workshop, an intimate gathering of international experts at which we discuss crosscutting issues in trial design, implementation and interpretation.

We are delighted to welcome you to our two-day meeting where we foster an international exchange following our three-day Forum sessions. The unique organization of the CVCT Workshop allows for a free and open exchange among cardiovascular trial principal investigators, statisticians, R&D experts and regulators from the major transatlantic agencies.

During our time together we have the opportunity to brainstorm on CV drugs, device and biomarker development and trial design, conduct, ethics, interpretation, approvability and implementation.

We aim to advance the science of controlled clinical trials that will contribute to better clinical care and understanding the problems associated with making decisions about what constitutes relevant information, how to improve clinical trials and how to satisfy regulatory authorities and payers.

Moderators have accepted the critical task to keep time and give each participant a chance to be involved. To assist them, we kindly ask for your full engagement and attendance during the entire two-day Workshop.

Best regards,

Faiez Zannad

Bertram Pitt

General information

VENUE OF THE CONGRESS

French Embassy
4101 Reservoir Rd NW
Washington, DC, 20007
USA

ONSITE CONTACTS

Patrick Wahby & Petra Niehoff

USA: (415) 839-8874

France: +33 6 21 02 74 02

TECHNICAL INFORMATION

To facilitate the progress of the meeting, we ask that you give your presentation to the technician in the meeting room 30 minutes before the session begins (or during the coffee breaks).

LOGISTIC AND TECHNICAL ORGANIZATION

OVERCOME

13 – 15 Rue des Sablons
75116 Paris Cedex, France
Tel: +33 (0)1 41 92 01 20
US Tel: +1 415 839 8874

SCIENTIFIC SECRETARIAT

FAIEZ ZANNAD

Personal Assistant: Stéphanie GROJEAN
EDDH - European Drug Development Hub, Fondation Force
2, Rue du Doyen Jacques Parisot BP7
54500 VANDOEUVRE LES NANCY

DINNER

Sunday, December 2, 2018

6:15 pm - shuttle departure from the French Embassy

Old Ebbitt Gril
675 15th St NW
Washington, DC 20005

Scientific program

SUNDAY, DECEMBER 3, 2017

8.00 – 9.30 AM ▸ **Endpoint adjudication: when does it really matter?**

Moderator: Faiez Zannad (Nancy, FRA)

Speaker: Bridget Kirwan (SOCAR, CHE)
Discussant: Benoit Tyl (Servier, FRA)
Discussants 2 & 3: Norman Stockbridge (FDA, USA); Angeles Alonso (EMA, GBR)

9.30 – 10.40 AM ▸ **Estimands: what are they and why do they matter?**

Moderator: Stuart Pocock (London, GBR)

Speaker: Robert Hemmings (EMA, GBR)
Discussant 1: Janet Wittes (StatCollaborative, USA)
Discussant 2: Frank Rockhold (Durham, USA)

10.40 – 11.00 AM Coffee break

11.00 AM – 12.30 PM ▸ **Determining the right drug dose(s) in pivotal trials: how can we do better?**

Moderator: Janet Wittes (StatCollaborative, USA)

Speaker: Milton Packer (Dallas, USA)
Discussant 1: Lothar Roessig (Bayer, USA)
Discussant 2: Robert Temple (FDA, USA)

12.30 – 1.30 PM Lunch

1.30 – 3.00 PM ▸ **When do we need sham controls in device/intervention trials?**

Moderator: Roxana Mehran

Speaker: Darrel Francis (London, GBR)
Discussant 1: Jeffrey Borer (New York, USA)
Discussant 2: Bernard Gersh (Rochester, USA)

3.00 – 4.00 PM ▸ **Should journal reports avoid the regulatory obsession with type 1 error: The value of exploratory findings**

Moderator: John Jarcho (NEJM, USA)

Speaker: Stuart Pocock (London, GBR)
Discussant 1: Robert Golub (JAMA, USA)
Discussant 2: Robert Temple (FDA, USA)

4.00 – 4.20 PM Coffee break

4.20 – 6.00 PM ▸ **How to combat the "fake medical news" and online misinformation**

Moderator: Paul Armstrong (Edmonton, CAN)

Speaker: Larry Husten (Cardiobrief, USA)
Discussant 1: Darrel Francis (London, GBR)
Discussant 2: Milton Packer (Dallas, USA)

6.00 PM Day 1 Adjourn
Transfer and Dinner

MONDAY, DECEMBER 3, 2018

8.30 – 10.00 AM ▸ **Making wiser use of subgroup data in trials: adaptive enrichment/dropping**
Moderator: Bertram Pitt (Ann Arbor, USA)

Speaker: Norman Stockbridge (FDA, USA)
Discussant 1: Janet Wittes (StatCollaborative, USA)
Discussant 2: Beth Davison (Momentum Research, USA)

10.00 – 12.20 AM ☕ **Coffee break**

10.20 – 11.50 AM ▸ **The reality of data sharing: is it really happening?**
Moderator: Stuart Spencer (The Lancet, GBR))

Speaker: Paul Armstrong (Edmonton, CAN)
Discussant 1: Frank Rockhold (Durham, USA)
Discussant 2: John Jarcho (NEJM, USA)

11.50 AM – 1.20 PM ▸ **How do we enhance the use of trial evidence in clinical practice**
Moderator: Carolyn Lam (Singapore, SIN)

Speaker: Yves Rosenberg (NHLBI, USA)
Discussant 1: Stefan Anker (Berlin, GER)
Discussant 2: Ileana Pina (New York, USA)

1.20 PM Lunch and Adjourn

Faculty

Angeles Alonso Garcia (EMA, GBR)

Angeles Alonso Garcia is a Senior Medical Assessor in the Medicines and Healthcare products Regulatory Agency (MHRA) Cardiology Member of the Scientific Advice Working Party (SAWP) of the European Medicines Agency (EMA) Active member of the Scientific Advice Working Party Honorary Consultant in Cardiology, Imperial College Healthcare NHS, United Kingdom, since 2014.

Dr. Alonso graduated from the School of Medicine at the Universidad Autónoma de Madrid (1979) and PhD at the Medical School (1991). She was a staff member of the Department of Cardiology at the Academic Hospital Puerta de Hierro (Madrid), between 1987 and 2013 with several positions: Head of the Coronary Care Unit (1987-2000); Senior Consultant as a Clinical Cardiologist (involved in clinical trials on Heart Failure, Ischaemic Heart Disease and Cardiovascular Prevention) 2000- 2013; member of the Committee for Ethics and Clinical Investigation (2000-2009); General Secretary of the Spanish Society of Cardiology: 2001-2003 and President of the International Relations Department of the Spanish Society of Cardiology and Member of the Editorial Committee of the Spanish Heart Journal.

Stefan Anker (Berlin, GER)

Stefan Anker is *Professor of (Tissue)Homeostasis in Cardiology & Metabolism* (W3) at Charité Berlin (June 2017 to present). He studied medicine at Charité Berlin and completed his clinical training in Germany and the UK. He obtained his Medical Degree from Charité Medical School, Berlin, Germany (1993), and his Ph.D. (1998) at National Heart & Lung Institute of Imperial College London. He was Professor of Cardiology & Cachexia Research (W2) at Charité (2002-2014), and Professor of Innovative Clinical Trials (W3) in Göttingen (2014-2017). Dr. Anker has authored more than 800 original papers, reviews, and editorials that are well cited.

Dr. Anker has won several prizes, including the 2018 Copernicus Prize of German DFG & Polish FNP. He was Vice President of the European Society of Cardiology (2016-2018), serving on the ESC board 2012-2018. Dr. Anker serves in the board of the Heart Failure Association of the ESC since 2006; he was HFA President (2012-14). He is founding Editor-in-Chief of the open access journal ESC Heart Failure.

Paul Armstrong (Edmonton, CAN)

Paul Armstrong is a Distinguished University Professor at the University of Alberta. He serves in a broad range of consultative, editorial, and research leadership roles. He publishes extensively, frequently lectures in national and international academic forums, and plays an active leadership role in the conduct of a number of ongoing cardiovascular clinical trials and data safety monitoring boards. He serves as *an associate editor of Circulation: Heart Failure,* a senior advisory editor for Circulation, guest editor for the *American Heart Journal and JACC Heart Failure*, and is a member of several editorial boards including those of the *American Heart Journal, the European Heart Journal and JAMA Cardiology.* He is internationally recognized for his expertise in acute coronary disease and heart failure and has a particular interest in novel approaches to the design of clinical trials and their interpretation. Dr. Armstrong is the founding Director of the Canadian VIGOUR Centre (*V*irtual Coordinating Centre for *G*lobal Collaborative Cardiovascular *R*esearch). He was the founding President of the Canadian Academy of Health Sciences (CAHS) a Fellow of the Royal Society of Canada and an Officer in the Order of Canada.

Jeffrey S. Borer (New York, USA)

Jeffrey S. Borer, MD, is a Professor of Medicine, Cell Biology, Radiology and Surgery and Adjunct Professor of Public Health at the SUNY Downstate Medical Center, where for several years he was Chief, Division of Cardiology and Chairman, Department of Medicine. He now directs two research institutes. Dr. Borer's BA is from Harvard, MD from Cornell, and he trained at the

Massachusetts General Hospital. He spent 7 years in the Cardiology Branch, NHLBI, and a year at Guy's Hospital (London) as Senior Fullbright Hays Scholar, completing the first clinical demonstration of nitroglycerin's utility in acute MI. Returning to the NIH, he developed stress radionuclide cineangiography, enabling the first non-invasive assessment of cardiac function with exercise. Dr Borer returned to Cornell for 30 years as Gladys and Roland Harriman Professor of Cardiovascular Medicine and Chief, Division of Cardiovascular Pathophysiology (and now is Adjunct Professor of Cardiovascular Medicine in Cardiothoracic Surgery). He performs clinical service, teaching and research, primarily development of prognosticators for regurgitant valve diseases, and assesses the effects of therapeutic heart rate modification. He has been Advisor to the USFDA for 38 years, chaired the CardioRenal Drugs Advisory Committee for three terms and the Circulatory Devices Advisory Panel for one term, was a life sciences Advisor to NASA for 24 years, has served as officer/board member of several national professional societies, has published almost 500 scientific papers and 8 books, is editor-in-chief of the journal, Cardiology, and has received several awards and other recognitions for his work.

William Chong (FDA, USA)

William Chong is the Acting Deputy Director of the Division of Metabolism and Endocrinology Products at the Food and Drug Administration (FDA). He earned his Medical Degree from Temple University and completed his Internal Medicine training at Thomas Jefferson University Hospital in Philadelphia, PA. Dr. Chong went on to complete his fellowship in Endocrinology and Metabolism at the National Institutes of Health before joining the FDA in 2012. During his time at the FDA, Dr. Chong has worked primarily with drug products that alter glucose metabolism and has served as a team leader and Acting Director of the Division of Metabolism and Endocrinology Products

Beth Davison (Momentum Research, USA)

Beth Davison co-founded in 2007 Momentum Research, Inc., a company who through its consulting services aims to ensure the sound evaluation of cardiovascular therapies. She received her graduate training in epidemiology and biostatistics at UNC School of Public Health, and has held positions in the pharmaceutical and CRO industries, academia, and consulting firms. Beth has played a key role in the development of heart failure therapies including rolofylline, serelaxin, and a cardiopoietic stem cell therapy, serving as an Executive Committee member for several trials. Beth's interests include prognostication in acute heart failure, endpoint selection and operational factors in heart failure clinical trials, and the worldwide management of heart failure. She has authored numerous peer-reviewed manuscripts and several editorials and is an Associate Editor of the European Journal of Heart Failure.

Mads Engelmann (Novo Nordisk, DEN)

Mads Engelmann is International Medical Vice President in Novo Nordisk A/S. He is board certified in Cardiology and Internal medicine and serves as a senior cardiovascular (CV) expert to Novo Nordisk responsible for providing strategic CV expert input on complex medical issues arising during preclinical and clinical development including execution of trials, in particular design, conducting and reporting in CV outcomes trials and QT studies. Dr Engelmann is involved in several cardiovascular outcomes studies both on insulin and GLP-1 analogs. Prior to joining Novo Nordisk, Dr Engelmann has held several positions in the pharmaceutical industry with focus on diabetes and cardiovascular complications most recently as responsible for diabetes medical activities in Scandinavia for Eli Lilly and as Global Medical Director responsible for launch and post-launch activities as well as phase 3 and 4 development for Eli Lilly in Europe. He holds a BSc in Chemical Engineering from the Technical University in Denmark and MD and PhD degrees from University of Copenhagen.

Darrel Francis (London, GBR)

Darrel Francis is a Professor of Cardiology at Imperial College London. His motivation in research is to develop and apply reliable (reproducible) clinical measurements and address questions important to patient care using bias-resistant methods. As an Interventional Cardiologist, always careful to tell stable angina patients that their PCI would not prevent heart attacks but would reduce their angina, he set up ORBITA with his colleague Rasha Al-Lamee to simply provide bias-resistant evidence for angina reduction from PCI. They thought it would be a slam-dunk win for PCI – but it wasn't. It was a difficult study, but not for the reasons they expected. In his talk, he will explain the surprising challenges and encourage discussion of whether placebo-controlled trials of procedural interventions are necessary or even ethical.

Bernard Gersh (Rochester, USA)

Bernard Gersh is a Professor of Medicine and Consultant at Mayo Clinic, Honorary Professor of Medicine at UCT, and Adjunct Professor of Medicine at Duke University. He received his MB, ChB, from the University of Cape Town and his PhD from Oxford University as a Rhodes Scholar. He has published 1131 manuscripts and book chapters, is the editor of 15 books, and is on the editorial board of 25 journals. He has received major awards from the ACC, AHA, and in 2103 was designated at the ESC as one of four "legends of modern cardiology". He has also received the Silver Medal of the ESC, the Gold Medal of the ESC in August of 2016, and the Hatter Award from UCT and UCL. Dr. Gersh is the 2015 recipient of the Mayo Clinic Distinguished Alumnus Award. His clinical interests include acute and chronic coronary artery disease, electrophysiology, hypertrophic cardiomyopathy, and valvular heart disease.

Robert Golub (JAMA Cardiology, USA)

Robert M. Golub, MD, is Deputy Editor, JAMA. His roles include oversight of the JAMA scientific content and managing the peer review process; he is also responsible for directing JAMA educational activities. He is Associate Professor of Medicine at the Feinberg School of Medicine at Northwestern University, with academic appointments in the Division of General Internal Medicine and the Department of Preventive Medicine. He served as chair of the Northwestern University Medical School Curriculum Committee. Areas of research are in medical decision making (decision analysis, cost-eff ectiveness analysis, psychology of decision making, and assessing patient preferences). He has served on the Board of Trustees for the Society for Medical Decision Making and as visiting faculty for the Stanford University Faculty Development Program and the University of Buenos Aires Program in Clinical Eff ectiveness. Dr. Golub received his undergraduate degree from Princeton

University, and his MD from Columbia University College of Physicians and Surgeons. He completed his internship and residency at Northwestern University School of Medicine/Northwestern Memorial Hospital, where he also served as chief resident. He is board certified in internal medicine.

Jean-Marc Guettier (Sanofi, FRA)

Jean-Marc Guettier is part of the regulatory oversight of all new antidiabetic drug CV-risk Outcomes Trials (2009-2018), new weight management and dyslipidemia drug outcomes trials (2013-2018).

Andrew Hamer (Amgen, USA)

Andrew Hamer is an Executive Medical Director in Global Development at Amgen Inc, and Lead for Repatha. Prior

to Joining Amgen, Andrew was VP of Medical Affairs at Capricor Therapeutics, a small biotech company, from November 2013 to August 2015. He had a twenty-year career as a cardiologist and clinical researcher. These activities led to his stewardship in numerous national healthcare quality improvement roles including chairing the Cardiac Society 2008-2009, National Cardiac Surgery Network 2009-2011 and New Zealand Cardiac Network 2011-2013. Andrew is a clinical researcher having been the principal investigator in clinical trials in acute coronary syndrome, heart failure, hypertension, cholesterol disorders, atrial fibrillation, and diabetes. He received his education at Cathedral Grammar and Christ's College, Christ Church, and his MBChB from the University of Otago Medical School, Dunedin, New Zealand. His pre-fellowship training was at Wellington Hospital, University College & Middlesex Hospitals, and Princess Margaret Hospital. Andrew was Prof. Harvey White's Clinical Research Fellow, Green Lane Hospital, Auckland for two years, prior to a post Fellowship year in Cardiology at The Deaconess Hospital, Harvard Medical School, Boston, MA, 1995-1996.

Robert Hemmings (EMA, GBR)

Robert Hemmings has been with the MHRA for 18 years and heads the group of medical statisticians and pharmacokineticists. Most of Rob's time is dedicated to work on behalf of the scientific committees that are hosted at the European Medicines Agency.

He is a member of the European Medicines Agency Committee for Medicinal Products for Human Use (CHMP), 'co-opted' for expertise in clinical trial methodology. In addition, he is also the chair of the CHMP's Scientific Advice Working Party (SAWP), a multi-disciplinary group providing scientific advice and protocol assistance to drug developers to facilitate access of medicinal products to patients by optimizing research and development and reducing uncertainties in regulatory outcomes. Robert has a broad interest in all aspects of clinical trial design, statistical methodology and drug development.

Adrian Hernandez (Durham, USA)

Adrian Hernandez is a cardiologist with extensive experience in clinical research ranging from clinical trials to health services policy research. Since 2017, he has been the Vice Dean for Clinical Research at the Duke University School of Medicine. Previously, he was a Faculty Associate Director of Duke Clinical Research and Director of Health Services and Outcomes Research at the Duke Clinical Research Institute. He is the Coordinating Center Principal Investigator for multiple networks and clinical trials such as the NHLBI's Heart Failure Research Network, PCORI's National Patient-Centered Clinical Research Network (PCORnet) and NIH's Health System Collaboratory. He has served as the Steering Committee Chair or Principal Investigator of multiple large studies in the field of cardiovascular medicine and diabetes. Dr. Hernandez has over 450 published articles in high-tier journals including the New England Journal of Medicine, Journal of the American Medical Association, and Lancet. He is an elected member of the American Society of Clinical Investigation and Association of American Physicians.

Larry Husten (Cardiobrief, USA)

Larry Husten is a veteran medical journalist who writes the CardioBrief blog, which appears on CardioBrief.Org and MedPage Today. Prior to starting CardioBrief early in 2009 he was the editor of TheHeart.Org, from its inception in 1999 until December 2008. Following the purchase of TheHeart.Org by WebMD in 2005 he also served as the editorial director of WebMD professional news, encompassing TheHeart.Org and Medscape Medical News. From January 2010 until June 2015 he was a consulting editor and news director at CardioExchange, an online cardiology community published by the New England Journal of Medicine.

Before helping to start TheHeart.Org he was a freelance medical journalist who wrote for the Lancet, the New York Times, Discover, and many other medical and computer publications. In 1994-1995 he

was a Knight Science Journalism Fellow at MIT. He has a PHD in English from the State University of New York at Buffalo and drove a taxicab in New York City before falling into a career in medical journalism.

Elaine Hylek (Boston, USA)

Elaine M. Hylek is a Professor of Medicine at Boston University School of Medicine. She received her Medical Degree from the University of Pittsburgh School Of Medicine and a Masters in Public Health (quantitative methods) from Harvard University School of Public Health. She completed her residency training in internal medicine at Massachusetts General Hospital and Harvard Medical School in Boston, Massachusetts. Her research areas include arterial (stroke) and venous thrombosis, anticoagulant therapies, and atrial fibrillation. She has served as PI on several NIH R01 grants, served on the Executive Steering Committees for international clinical trials and national registries, Event Adjudication Committees, and Data Safety Monitoring Boards. She has also served as the Late Breaking Clinical Trial Discussant for multiple international trials in the field of thrombosis. Dr. Hylek is a Section Editor for Thrombosis and Haemostasis, a member of the International Society of Thrombosis and Haemostasis Executive Committee for World Thrombosis Day, and the Director of the Thrombosis and Anticoagulation Service at Boston Medical Center. She is extensively published and designated a *U.S. News Top Doctor* and voted *Best Doctors in America* for the past decade.

Alar Irs (EMA, EST)

Alar Irs is Chief Medical Officer at the Estonian Medicines Agency where he has worked in different roles in clinical assessment of medicines for 20 years. He is a member of the Committee for Human Medicines (CHMP) at the European Medicines Agency since 2004 and a member of the Cardiovascular Working Party of the CHMP. He is a practicing interventional and acute cardiologist and has been a lecturer in clinical pharmacology at the University of Tartu teaching clinical pharmacology, pharmacotherapy, pharmacoepidemiology and pharmacoeconomics to the students plus post-graduates and in CME.

His current interests in addition to the work of a medicines regulator and teaching cardiologist are supporting academic clinical research and quality in pharmacotherapy.

John Jarcho (NEJM, USA)

John Jarcho attended Harvard College and the University of Utah School of Medicine. He completed housestaff training in internal medicine and a fellowship in cardiology, both at Brigham and Women's Hospital in Boston, where he subsequently joined the medical staff. In the late 1980's, Dr. Jarcho participated in research studies in molecular genetics leading to the first identification of a gene mutation causing hypertrophic cardiomyopathy. Subsequently he became a member of the advanced heart disease service at the Brigham, managing patients with heart failure as well as heart transplant recipients and those supported with ventricular assist devices. He was appointed medical co-director of the cardiac transplant service in 1995. In 2005 Dr. Jarcho became a deputy editor at the New England Journal of Medicine, which now accounts for the majority of his professional time. He is also assistant professor of medicine at Harvard Medical School and an associate physician in the cardiovascular division at Brigham and Women's Hospital.

Bridget Kirwan (SOCAR, CHE)

Bridget Kirwan serves as Chief Executive Officer and Chief Scientific Officer of SOCAR Research. Dr. Kirwan is a seasoned senior executive with more than 20 years of international CRO experience within the biomedical and medical device sector. She is a recognised leader in the area of clinical research. Dr. Kirwan is skilled at building dedicated operational teams which perform accurately and efficiently to surpass client expectations. A recognised expert

in her field, Dr. Kirwan has worked with many leading pharmaceutical, biotech and medical device companies. Dr. Kirwan is highly regarded in academic circles. She holds teaching posts at several of Europe's leading universities; and she is a regular featured speaker within the industry at numerous international conferences and meetings. Dr. Kirwan is the author of many scientific articles which have been published in leading U.S. and European journals. She holds a Master's degree and PhD in Clinical Epidemiology from the Erasmus University, Rotterdam.

Carolyn Lam (Singapore, SIN)

Carolyn Lam is a Senior Consultant of the National Heart Centre, Singapore, Professor of Duke-NUS Cardiovascular Academic Clinical Program, and Chairperson of the Asia Pacific Association of Women's Cardiovascular Disease. She graduated from the Faculty of Medicine, National University of Singapore, completed advanced specialty training in Cardiology in Singapore, and pursued her Research Fellowship at the Cardiorenal Laboratory, Heart Failure Fellowship at the Division of Cardiovascular Diseases, and Advanced Cardiology and Master of Biomedical Sciences at Mayo Clinic, Rochester, MN. She further obtained training in clinical and genetic epidemiology at the Framingham Heart Study in Boston, MA before returning to Singapore in 2010 on the National Medical Research Council's Clinician Scientist Award.

Dr Lam started the first Heart Failure with Preserved Ejection Fraction Programme and Women's Heart Health Clinic in Singapore, was awarded the L'Oreal Women In Science Award (2012) for her work in women's cardiovascular disease. She is the Programme Lead of the Asian network for Translational Research and Cardiovascular Trials and principal investigator of an ongoing nation-wide heart failure study in Singapore (SHOP study), a multinational Asian study of heart failure across 11 Asian countries (ASIAN-HF study).

Roxana Mehran (New York, USA)

Roxana Mehran, is a Professor of Medicine, Cardiology and Professor of Population Health Science and Policy at the Icahn School of Medicine at Mount Sinai. As Director of Interventional Cardiovascular Research and Clinical Trials at Mount Sinai, she has developed a globally-respected data and clinical coordination center. A prolific researcher and author, she has served as principal investigator for numerous large global studies, developed risk scores for bleeding and acute kidney injury, and authored >800 peer-reviewed articles. Dr. Mehran has received numerous prestigious awards, the 2017 Bernadine Healy Leadership in Women's CV Disease Award, and this May, the 2018 Wenger Award for Excellence in Medical Leadership. She co-founded the Academic Research Consortium (ARC) and SCAI Women in Innovation (SCAI-WIN), and a founding physician of the Cardiovascular Research Foundation, where she is currently Chief Scientific Officer. Prior to her position at Mount Sinai, Dr. Mehran held appointments at Columbia University Medical Center and Washington Hospital Center. She completed internal medicine training at University of Connecticut and fellowships in cardiovascular disease and interventional cardiology at Mount Sinai Medical Center.

Robert Mentz (Durham, USA)

Robert Mentz is an Assistant Professor of Medicine at Duke University and is the Director of the Duke University Cooperative Cardiovascular Society. He completed Internal Medicine training at Brigham and Women's Hospital and Cardiology Fellowship at Duke University Hospital and the Duke Clinical Research Institute with advanced training in heart failure and clinical research methods. He received formal training in clinical pharmacology as part of the DCRI's Clinical Pharmacology training program. Robert spends his clinical time at Duke University Hospital assisting with the care of heart failure, cardiac transplant and ventricular assist device patients. He is the clinical lead for the international EXSCEL trial (exenatide in diabetic

patients with cardiovascular disease) and the HEART-FID trial (ferric carboxymaltose for iron deficiency in heart failure). He is the lead co-investigator on the NHLBI-funded TRANSFORM-HF trial – a pragmatic trial of diuretic strategies in HF. He is involved with the NHLBI's Heart Failure Research Network as a site Principal Investigator. He is an active member of the Heart Failure Society of America's Advocacy Committee and the American Heart Association's Heart Failure Committee.

Brian Mittman (Kaiser Permanente, USA)

Brian S. Mittman is a Senior Scientist at Kaiser Permanente's Department of Research and Evaluation with additional affiliations at the US Department of Veterans Affairs, University of Southern California, and University of California at Los Angeles (UCLA), where he co-leads the UCLA Clinical and Translational Science Institute (CTSI) Implementation and Improvement Science Initiative. Dr. Mittman led the planning committee that launched the journal Implementation Science and served as co-editor in chief from 2005-2012. He was a founding member of the U.S. Institute of Medicine (IoM) Forum on the Science of Quality Improvement and Implementation and chaired the NIH Special Emphasis Panel (grant review committee) on Dissemination and Implementation Research in Health in 2007 and 2010. He directed VA's Quality Enhancement Research Initiative (QUERI) from 2002-2004. He serves on the Methodology Committee for the Patient-Centered Outcomes Research Institute (PCORI), the NIH NHLBI Board of External Experts, and advisory boards for numerous US and non-US research programs.

Milton Packer (Dallas, USA)

Milton Packer is the Distinguished Scholar in Cardiovascular Science at the Baylor University Medical Center in Dallas. He has been the principal investigator of 20 multicenter trials that have evaluated novel interventions for the treatment of acute and chronic heart failure. He has served frequently as a member of government advisory committees, study sections, task forces or Data and Safety Monitoring Boards for the NIH. He served as a member of the Cardiac and Renal Drugs Advisory Committee to the US Food and Drug Administration from 1986-1992 and then as its Chair from 1997-2001, and he continues to serve on various FDA advisory committees. Dr. Packer was President of the Heart Failure Society of America from 2000-2002 and has served on numerous guidelines and standards committees for the American Heart Association and American College of Cardiology. He has received many teaching awards and has mentored dozens of young clinical investigators, many of whom have become leaders in basic and clinical research.

Ileana Piña (New York, USA)

Ileana L. Piña, MD, MPH is a Professor of Medicine, Epidemiology & Population Health at the Albert Einstein College of Medicine in the Bronx, NY. Dr. Piña also serves as advisor/consultant to the Food and Drug Administrations' (FDA) Center for Devices and Radiological Health and their section of Epidemiology. Dr. Piña earned her undergraduate degree in Chemistry from the University of Miami in Florida. She completed her medical degree and cardiology fellowship at the University of Miami School of Medicine, an internal medicine residency at the University of South Florida Tampa, where she was Chief Resident, and fulfilled a surgery internship at the University of Miami Hospitals and Clinics. She earned a master's degree in public health from Case Western Reserve University School of Medicine in Cleveland, OH. Dr. Piña's research interests include transition of care in heart failure patients, and the role of natriuretic peptide-guided management for patients hospitalized for heart failure, biomarkers of myocardial stress and fibrosis in chronic heart failure, and the clinical implications of chronic heart failure phenotypes. She is the author/co-author of more than 100 publications.

Bertram Pitt (Ann Arbor, USA)

Bertram Pitt is a professor of medicine emeritus at the University of Michigan, School of Medicine.

He obtained his Medical Degree from the University of Basel in Switzerland in 1959. He completed a fellowship in cardiology at the Johns Hopkins University School of Medicine and remained on the faculty until 1977, when he left to direct the division of cardiology at the University of Michigan.

He has been chairman or co-chairman of a number of clinical trials in cardiology such as SOLVD; ELITE I and II; Prevent; Rales and Ephesus. He is currently chairman of the steering committee of the NHLBI TOPCAT trial examining the effect of spironolactone in patients with HF and preserved LV systolic function; co-chairman of the Emphasis-HF trial examining the role of eplerenone in patients with NYHA Class II HF; chairman of Break- DHF, co-chairman of STOP-CKD; co-chairman of Exceed, co-chairman of Escape-SHF and Escape-DH F; chairman of a study evaluating the role of an aldostereone synthase inhibitor in patients with HF and is a member of the executive committee of the Accomplish trial. In addition, he serves as the chairman of the DSMB for the NHLBI HF-Action trial and has over 500 articles in peer reviewed journals.

Dr. Pitt has been a member of a number of medical organizations and has served as an advisor to the clinical trials branch of the NHLBI and a member of the FDA cardio-renal advisory board. He has been awarded the James B. Herrick Award by the Council of Clinical Cardiology of the American Heart Association and has been elected to the Society of Scholars of the Johns Hopkins University.

Stuart Pocock (London, GBR)

Stuart Pocock is Professor of Medical Statistics at the London School of Hygiene and Tropical Medicine.

His primary research interest concerns clinical trials, both as regards methodological developments and applied collaboration in major trials. His particular methodologic interests include: standards for the statistical reporting of trials and epidemiological studies, the statistical ethical and organisational principles for data monitoring including early stopping guidelines, the presentation of time-to-event (survival) data, the pros and cons of equivalence trials, and problems of multiplicity in trial reporting eg subgroup analyses, multiple outcomes and covariate adjustment.

Professor Pocock runs a statistical centre for the design, onduct, analysis and reporting of major clinical trials, especially in cardiovascular diseases. He is also a consultant statistician for a wider range of clinical trials in which expert statistical advice is needed, and serves as a statistical member of many trial data monitoring and steering committees. He collaborates internationally especially with the Cardiovascular Research Foundation in New York and the New England Research Institutes in Boston. He is a frequent lecturer on a variety of clinical trial issues.

Frank Rockhold (Durham, USA)

Frank is a Professor of Biostatistics and Bioinformatics at Duke University Medical Center (Scholars at Duke), Affiliate Professor of Biostatistics at Virginia Commonwealth University, and Managing Partner of HunterRockhold, Inc. His 40+-year career includes senior research positions at Lilly, Merck, and GlaxoSmithKline, where he retired as Chief Safety Officer and Senior Vice President of Global Clinical Safety and Pharmacovigilance. He has also held faculty appointments at six universities. Dr. Rockhold served for 9 years on the board of directors of the non-profit CDISC, most recently as Chairman, and is past president of the Society for Clinical Trials. He is a past member of the PCORI Clinical Trials Advisory Panel and is currently on the boards of the Frontier Science and Technology Research Foundation, Datavant, and an advisor to EMA.

Dr. Rockhold has diverse research interests and consulting experience in industry and academia including clinical trials design, data monitoring, benefit/risk, and most recently, safety and pharmacovigilance and has been a leader in the scientific community in promoting data disclosure and transparency in clinical research. Frank is widely published in major scientific journals across a wide variety of research topics.

Lothar Roessig (Bayer, GER)

Lothar Roessig received his MD form the Hannover Medical School, Germany. He is board certified in Cardiology and in Internal Medicine, and Lecturer in Medicine at the Goethe University of Frankfurt,

Germany. As senior cardiologist and member of the faculty at the University Hospital Frankfurt he participated as clinical investigator in numerous cardiovascular trials until 2007 when he moved into clinical research industry. Since

October 2009 he is appointed at Bayer as Global Clinical Leader in heart failure development.

Yves Rosenberg (NHLBI, USA)

Yves Rosenberg is Chief of the Atherothrombosis and Coronary Artery Disease Branch at the National Heart, Lung, and Blood Institute, a part of the United States National Institutes of Health (Bethesda, Maryland). Dr. Rosenberg obtained his Medical Degree from the University of Lyon, France, and is Board certified in Preventive Medicine. He also has an MPH from the Johns Hopkins School of Hygiene & Public Health. Dr. Rosenberg's main research interests are the design and conduct of large multicenter phase III clinical trials, especially trials of treatment strategies, comparative effectiveness and pragmatic trials. As a Program Director at NHLBI for over 20 years he has led and participated in the development, conduct, analysis and reporting of more than a dozen major international clinical trials, the results of which have usually been incorporated in clinical guidelines and are influencing today's practice of cardiovascular medicine in the United States and all over the world.

Patrick Rossignol (Nancy, FRA)

Patrick Rossignol is professor of Therapeutics, Nephrologist and Vascular medicine specialist, Deputy Director of Nancy Plurithematic Clinical Investigation center (CIC)-Inserm. He has participated/is participating in several EU FP6-7 programs (Ingenious Hypercare: Coord A; Zanchetti; MEDIA: Coord: W. Paulus ; HOMAGE & FIBROTARGETS : Coord F. Zannad , Nancy CIC). He is coordinating a French network of excellence endorsed by F-CRIN (French Clinical research Infrastructure Network, the French affiliate of ECRIN/ERIC: Cardiovascular and Renal Clinical Trialists (INI-CRCT www.inicrct.org) since 2014. He is coordinating the University Hospital "French Government Investment for the Future" Fighting Heart Failure program (2016-2020). He is the PI of the ongoing largest double blind (spironolactone vs. placebo) academic cardiovascular outcome randomized controlled trial in hemodialysis (ALCHEMIST: ClinicalTrials.gov Identifier: NCT01848639) and steering committee member of several international randomized clinical trials. He is a EURECA-m (cardiorenal working group of ERA-EDTA: The European Nephrology Dialysis Transplantation Association) member since its creation in 2009 and got elected as board member (2013-2016) and he is now serving as scientific advisor. Since 2016 is a Heart Failure Association of the European Society of Cardiology "Translational" and "Cardiorenal" board member. He is CardioRenal cofounder.

Dan Schaber (Medtronic, USA)

Dan Schaber PharmD is Vice-President Heart Failure Clinical Research, Medtronic Inc. Dan has more than 30 years of experience in the pharmaceutical and medical device industry and is responsible for providing overall leadership and direction on a worldwide basis for new product approval, new indication approval and post market approval clinical research in heart failure. Dan joined Medtronic in 1987 from the University of Minnesota and Minneapolis Children's Medical Center where he taught respiratory and cardiovascular clinical pharmacology. He has held management positions in the clinical research, product development, regulatory and marketing organizations of Cardiac Rhythm Management in the US and in Europe. Dan is a Bakken Fellow the highest scientific and technical honor bestowed by Medtronic. He has a Doctor of Pharmacy degree from the University of Minnesota and was Pediatric Clinical Pharmacy Fellow at Minneapolis Children's Medical Center.

Stuart Spencer (The Lancer, GBR)

Stuart Spencer joined The Lancet in 1999 and throughout his time there has led the Fast Track team that aims to select, review and publish prestigious

manuscripts within 4 weeks of receipt. Although dealing with all areas of research, he deals with most of the cardiology submissions.

After graduating Stuart moved into research which started at the Brompton Hospital, London, looking at scoliosis in children before moving to the Veterinary School site at Bristol University. He has also had two senior research fellowships at Leuven University, Belgium, and visiting professorships at King's College, London and Hong Kong University, and a doctorate of medicine from Umea University, Sweden. Stuart's research expertise includes such diverse topics as, growth, neuroendocrinology, immunology and fetal development. He also had a Senior Fellowship in bioethics for 5 years. Stuart is also a Trustee of the Scoliosis Association (UK), is on the British Scoliosis Research Fund grants committee and the steering Committee of the Swedish National GP Research School.

Kenneth Stein (Boston Scientific, USA)

Kenneth Stein is Senior Vice President and Chief Medical Officer for Rhythm Management and Global Health Policy at Boston Scientific. Ken is a Phi Beta Kappa graduate of Harvard College (in Economics), and earned his Medical Degree from New York University School of Medicine. He completed his medical internship and residency at The New York-Presbyterian Hospital/Weill Cornell Medical Center, where he also completed his cardiology and cardiac electrophysiology training.

Dr. Stein held the position of Associate Director of Clinical Cardiac Electrophysiology at Weill Cornell Medical Center and Associate Professor of Medicine at Cornell University. He currently oversees the clinical trials, medical safety, and medical education and clinical communications for Boston Scientific's Cardiac Rhythm Management, Electrophysiology and Watchman Left Atrial Appendage Closure businesses as well as leading the corporate Global Health Policy team tasked with shaping the company's policies with respect to global health care delivery and reimbursement.

Dr. Stein serves on the board of the Boston Scientific Political Action Committee and on the Scientific Advisory Board of Optum Labs. Since 2013, he has also served on the board of Childrens HeartLink, a registered 501c(3) nonprofit organization that trains and mentors medical teams in underserved parts of the world to diagnose and treat children with heart disease.

Norman Stockbridge (FDA, USA)

Norman Stockbridge was involved in basic science research prior to joining FDA in 1991. He has served as Director, Division of Cardiovascular and Renal Products in CDER since 2004.

Robert Temple (FDA, USA)

Robert Temple has been Deputy Center Director for Clinical Science at FDA's Center for Drug Evaluation and Research since 2009, participating in the direction of the Center's operations. He is also Acting Deputy Director of the Office of Drug Evaluation I (ODE-I). ODE-I is responsible for the regulation of cardio-renal, neuropharmacologic, and psychopharmacologic drug products. Dr. Temple served as Director, Office of Medical Policy from 1999-2009. The Office of Medical Policy is responsible for regulation of promotion through the Office of Prescription Drug Products (formerly, Division of Drug Marketing, Advertising, and Communication) and for assessing quality of clinical trials. Dr. Temple has a long-standing interest in the design and conduct of clinical trials and has written extensively on this subject, especially on choice of control group in clinical trials, evaluation of active control and non-inferiority trials, trials to evaluate dose-response, and trials using "enrichment" designs.

Ellis F. Unger (FDA, USA)

Ellis F. Unger is the Director, Office of Drug Evaluation-I, Office of New Drugs (OND), Center for Drug Evaluation and Research (CDER), U.S. FDA. His Office oversees the regulation of drugs for cardiovascular, renal, neurological, and psychiatric disorders. Dr. Unger obtained his Medical Degree from the University of Cincinnati, and received post-doctoral training in internal medicine at the Medical College of Virginia. He completed a fellowship in Cardiovascular Diseases at The Johns Hopkins Hospital.

Dr. Unger was a Senior Investigator in the Cardiology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, from 1983 to 1997 where he led efforts in translational science on experimental promotion of angiogenesis. From 1997 to 2003, Dr. Unger served as a Medical Officer, Team Leader, and subsequently Branch Chief in the Center for Biologics Evaluation and Research, FDA. When regulatory authority for therapeutic biologics was transferred from CBER to CDER in 2003, Dr. Unger joined the Division of Cardiovascular and Renal Products in CDER, and became Deputy Director of that Division. Dr. Unger was promoted to Deputy Director, Office of Drug Evaluation-I, in July, 2009, and promoted to Director in July, 2012.

Martin Unverdorben (Daiichi Sankyo, USA)

Martin Unverdorben is Professor of Medicine earned his medical and doctoral degrees from the University of Frankfurt/Main, Germany, where he also serves a faculty member. He is the owner of several patents. He publishes animal and clinical research in such areas as cardiovascular and pulmonary medicine, inflammation, biomarkers, catheter-based drug delivery, and is the co-editor of a textbook on cardiac rehabilitation. He is a regular reviewer to international journals and of conference abstracts mainly in cardiovascular, pulmonary, and internal medicine. He has been contributing to international congresses in various roles. Following more than 20 years of clinical practice with board certifi cation in Cardiology, Internal
Medicine, and Sports Medicine, M. Unverdorben joined the medical device and the pharmaceutical industry. Currently, he is responsible for strategizing and executing the global life cycle management program and its publications of Daiichi Sankyo's anticoagulant. He also serves in other strategic roles within Daiichi Sankyo.

Bernard Vasseur (FDA, USA)

Bernard Vasseur has been a cardiothoracic surgeon for 20 years. Early on in his education at the Broussais hospital, he developed an interest in the study of mechanical heart devices. He completed his general surgery residency at the Yale University School of Medicine and his cardiothoracic surgery fellowship at The Cleveland Clinic Foundation. Dr. Vasseur began a clinical practice, first at the University of Medicine and Dentistry of New Jersey and then in private practice in Pennsylvania. He then spent one year in France working as both a senior cardiac surgeon and a percutaneous valve fellow in the department of cardiology at the European Hospital and has witnessed the closing gap between the surgical and medical specialties. This has complemented his lifelong interest in the understanding of cardiac valves. He joined the Office of Device Evaluation at the FDA in 2015.

Ola Vedin (Boehringer Ingelheim, GER)

Ola Vedin is a cardiologist and a researcher/doctor of medicine with a special interest in heart failure. Until recently, he worked as a heart failure specialist at the Uppsala University Hospital with a research affiliation at Uppsala University and Uppsala Clinical Research Center. In addition to Uppsala University he has a certificate of advanced studies on heart failure from Zürich University. His research focus includes epidemiological registry studies and clinical trials with a pragmatic approach. He is currently employed at Boehringer Ingelheim, working as global clinical expert within the cardiometabolic therapeutic area.

Janet Wittes (Washington, USA)

Janet Wittes, PhD is President of Statistics Collaborative, Inc. which she founded in 1990. Previously, she was Chief, Biostatistics Research Branch, National Heart, Lung, & Blood Institute (1983–89). Her 2006 monograph, "Statistical Monitoring of Clinical Trials – A Unified Approach" by Proschan, Lan, and Wittes, deals with sequential trials. Her research has focused on design of randomized clinical trials, capture recapture methods in epidemiology, and sample size recalculation. She has served on a variety of advisory committees and data monitoring committees for government (NHLBI, the VA, NEI, and NCI) and industry. For the FDA, she has been a regular member of the Circulatory Devices Advisory Panel

and has served as an ad hoc member of several other panels.

Currently, she is a regular member of the Gene Therapy Advisory Committee. She was formerly Editor in Chief of Controlled Clinical Trials (1994-98). She received her Ph.D. in Statistics from Harvard University.

Lijing L. Yan (Kushan, CHN)

Lijing L. Yan is the Head of Non-communicable Chronic Diseases (NCDs) Research at the Global Health Research Center since July 2014 and Director of Graduate Studies for the Master of Science in Global Health Program at Duke Kunshan University in China. She has a bachelor's degree in Sociology from Peking University, a Master of Public Health degree in Epidemiology and a doctoral degree in Demography from the University of California, Berkeley.

Her main areas of research are primary care and community-based cardiometabolic disease prevention and control, healthy aging, health innovation and implementation science.

She has led multiple Chinese and international projects and published over 80 peer-reviewed scientific papers some of which in leading medical journals such as JAMA, the Lancet, and Circulation. She is the former secretary general of the China Consortium of Universities for Global Health.

Faiez Zannad (Nancy, FRA)

Faiez Zannad is Professor of Therapeutics at the University of Lorraine, Head of the Division of Heart Failure and Hypertension and Director of the Inserm Clinical Investigation Center at "Institut Lorrain du Coeur et des Vaisseaux", Nancy, France. He is a cardiologist and heart failure (HF) specialist with a PhD in clinical pharmacology (Oxford, UK).

Professor Zannad leads two EU FP7 granted programs: HOMAGE (omics biomarkers for mechanistic phenotyping and prediction of drug response [www.homage-hf.eu]) and FIBROTARGETS (fibrosis as a biotarget [www.fibrotargets.eu]). As the primary investigator, or member, of oversight committees of major clinical trials, he pioneered and/or made significant contributions to evidence-based therapy for HF (mainly mineralocorticoid receptor antagonists [RALES, EPHESUS, EMPHASIS-HF] and beta-blockers [CIBIS]) as well as for major comorbid diseases in HF (such as sleep disordered breathing [SERVE-HF], autonomic nervous dysfunction [NECTAR-HF, BEAT-HF], diabetes [EXAMINE, EMPEROR], hyperkalemia [PEARL-HF], chronic kidney disease [FOSIDIAL, AURORA, ALCHEMIST], and thrombosis [COMMANDER-HF]).

He served as Chairman of the French Society of Hypertension, Chairman of the European Society of Cardiology (ESC) Working Group on pharmacology and drug therapy, and board member of the Heart Failure Association (HFA) of the ESC. He is the founder of, and is currently organizing, the Global CardioVascular Clinical Trialists (CVCT) Forum and Workshop; an annual international think tank gathering, dedicated to the science of clinical trials, with meetings in Paris and Washington DC, and in the Middle East and Asia. Professor Zannad has published more than 600 peer-reviewed papers, and several books and book chapters. He was awarded the 2014 European Society of Hypertension Paul Milliez Award and the 2017 Lifetime Achievement Award from the HFA of the ESC.

Bram Zuckerman (FDA, USA)

Bram Zuckerman is a graduate of the Boston University Medical School.

He completed postgraduate training in internal medicine at Baltimore City Hospital and cardiology at the John's Hopkins program.

Prior to joining the FDA in 1992, he was involved in basic research in emodynamics at the University of Colorado Medical School and practiced noninvasive and invasive cardiology in Denver, Colorado and Northern Virginia. He joined the FDA Division of Cardiovascular Devices (DCD) as a Medical Officer in 1992 and has been actively involved in development and review of clinical trials for many new cardiovascular devices. In May 2001 he was appointed a Deputy Director in DCD.

Then in September 2002 he was appointed to his current position as Director.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