



# 19<sup>TH</sup> INTERNATIONAL SYMPOSIUM ON **THROMBOEMBOLISM**

12-13 OCTOBER 2012, THE QUEEN ELIZABETH II CONFERENCE CENTRE, LONDON, UK



**Delegate Book**

**Front cover image:**

The Royal Barge *Gloriana* at the Queen's Diamond Jubilee River Pageant, London 2012.

Dear Colleagues,

Welcome to the 19th International Symposium on Thromboembolism, organised under the auspices of the Thrombosis Research Institute. The symposium continues to bring together global thought leaders to share their expertise and insights in the rapidly developing field of thromboembolism and its prevention and treatment.

As you will see from the enclosed programme, highlights of the meeting include a broad range of in-depth plenary sessions covering the thromboembolic stroke and the challenges of arterial and venous thromboembolism, combined with interactive workshops and 'meet the expert' sessions. These smaller sessions with our distinguished faculty provide a unique opportunity to explore how best innovation in anticoagulation might best be applied to improve clinical outcomes for our patients.

I hope that the excellent scientific programme and the historical surroundings of Westminster will ensure that you enjoy your stay with us in London.

With best wishes,



Professor the Lord Kakkar  
Chair



Providing excellence in research, education, and patient care, and internationally renowned for pioneering, multidisciplinary research, the Thrombosis Research Institute comprises 2 independent charitable foundations based in London, United Kingdom, and Bangalore, India. The Thrombosis Research Institutes are dedicated to the study of thrombosis and related disorders.

The 2 research establishments are united by their shared mission: To provide excellence in thrombosis research, education, and patient care, and to develop new strategies to prevent and treat thrombosis, thereby reducing health care costs and saving millions of lives.

The Thrombosis Research Institute, London, was established in 1989, with the backing of then Prime Minister, Margaret Thatcher. It was created specifically to conduct research in cardiovascular disease (of the heart and blood vessels), a major cause of death and disability throughout the world.

This was followed in 2006 with the founding of the Thrombosis Research Institute in Bangalore, which was officially opened and dedicated to the nation by then president of India, His Excellency Dr A P J Abdul Kalam. This second facility was set up to study the genetics of heart disease, particularly among the South Asian population, many of whom seem to have specific predisposing genetic characteristics, and to develop novel and affordable therapies for disease prevention and treatment.

The 2 institutions, whose combined research activities encompass drug discovery and basic scientific, clinical, and epidemiological studies, are primarily concerned with understanding the disease process, developing novel and affordable therapies, and identifying those most at risk at an early age.

In addition, the London Institute is heavily involved in promoting the adoption of evidence-based methods of prevention and treatment to ensure that knowledge from groundbreaking research quickly informs routine clinical practice and benefits patients as soon as possible.

For more information, please visit the Thrombosis Research Institute's website at **[www.tri-london.ac.uk](http://www.tri-london.ac.uk)**.

# Programme Overview and Learning Objectives

## Programme Overview

The 19th International Symposium on Thromboembolism (IST) will focus on the advances and changes in the field of thromboembolism, while maintaining its commitment to the presentation of evidence-based medicine and helping clinicians translate research into clinical practice. The combination of the various formats at the IST allows attendees to be exposed to new data and allows for the interactivity with colleagues from around the world.

## Learning Objectives

- To provide a comprehensive overview of the state of the art in the treatment of cancer-associated, venous and arterial thromboembolic disease, to broaden the delegates knowledge.
- To evaluate current understanding of cancer-associated, venous and arterial thromboembolic disease to increase delegates awareness of the subject.
- To encourage dissemination of this new information and best practice to delegates through the varied plenary sessions and interactive workshops and meet the expert opportunities.

## Target Audience

Cardiologists, oncologists, surgeons, haematologists, general practitioners, internal medicine specialists, pharmacists, nurses, and other health care professionals involved in the care of patients at risk or with thromboembolic disease.

## Accreditation

This activity has been planned and implemented by Thrombosis Education Ltd. in accordance with all requirements from the Royal College of Physicians (RCP) and the European Accreditation Council for Continuing Medical Education (EACCME).

This event has been accredited by the RCP for a maximum of 8 credits. The RCP activity code number is 76048.

This event has been accredited by the EACCME for a maximum of 8 European CME credits (ECMEC). The EACCME event code is 8281.

## Educational Support

The event is supported by an unrestricted educational grant from Bayer Healthcare Pharmaceuticals, Boehringer Ingelheim, Daiichi Sankyo, and Pfizer.

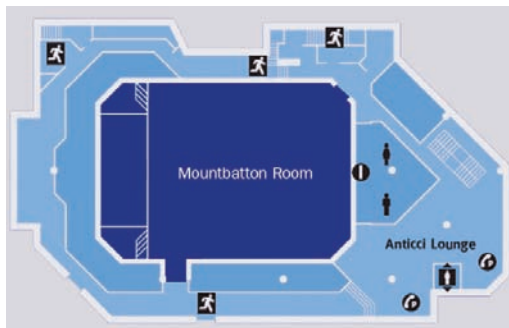
## Level 4



## Level 5



## Level 6









**Day 1**

**Friday 12 October 2012**

- 14.30 – 15.30**      **Registration**
- 15.30 – 15.45**      **Welcome** *Mountbatten Room*  
*Lord Kakkar, UK (Chair)*
- 15.45 – 17.45**      **Plenary Session I: Thromboembolic Stroke**  
*Chairs: F Verheugt, The Netherlands; S Goto, Japan*
- 15.45 – 16.15      Stroke and atrial fibrillation: what is the challenge in 2012?  
*AJ Camm, UK*
- 16.15 – 16.45      Improving clinical outcomes:  
 selecting patients, and implementing innovation  
*C Granger, USA*
- 16.45 – 17.15      Heart valves, ablation, and other clinical challenges  
*S Connolly, Canada*

**Day 2**

**Saturday 13 October 2012**

- 08.30 – 09.30**      **Meet the Expert Sessions** *Breakout Rooms*
- I.    Novel anticoagulant drugs: a personal view *Abbey*  
*C Kessler, USA*
- II.   Secondary prevention of thromboembolic stroke *Rutherford*  
*D Atar, Norway*
- III. Long-term outcome of VTE *Henry Moore*  
 – lessons from The RIETE Registry  
*M Monreal, Spain*
- IV. Preventing the post-thrombotic syndrome *Wesley*  
*P Prandoni, Italy*
- 09.30 – 11.00**      **Plenary Session II: Arterial Thrombosis** *Mountbatten Room*  
*Chairs: JP Bassand, France; S Goldhaber, USA*
- 09.30 – 10.00      Secondary prevention in coronary artery disease:  
 Is there a role for anticoagulation?  
*JP Bassand*
- 10.00 – 10.30      Antiplatelet therapy: where are we, where might we go?  
*F Verheugt*
- 10.30 – 11.00      Inflammation, immunology, and vaccination against  
 atheroma  
*VV Kakkar, UK*
- 11.00 – 11.30**      **Tea** *Mountbatten Lounge*

<b>11.30 – 12.45</b>	<b>Workshops</b>	
	<b>I. Cancer: Understanding the risk of thrombosis in cancer patients</b>	<i>Rutherford</i>
	<i>Chairs: Lord Kakkar; M Levine, Canada</i>	
	Laboratory haemostasis	
	<i>C Kessler</i>	
	Clinical modeling	
	<i>C Francis, USA</i>	
	<b>II. Medical Patients</b>	<i>Abbey</i>
	<i>Chairs: P Prandoni; M Monreal</i>	
	Which medical patients are at risk for VTE?	
	<i>AGG Turpie, Canada</i>	
	Who should receive prophylaxis?	
	<i>S Haas, Germany</i>	
	<b>III. Atrial Fibrillation</b>	<i>Henry Moore</i>
	<i>Chairs: S Goto; J Eikelboom, Canada</i>	
	Can warfarin be used effectively to prevent stroke?	
	<i>S Goto</i>	
	Does the use of risk scores improve clinical outcomes?	
	<i>J Eikelboom</i>	
<b>12.45 – 14.00</b>	<b>Lunch</b>	<i>Mountbatten Lounge</i>
<b>14.00 – 16.00</b>	<b>Plenary Session III: Venous Thromboembolism</b>	<i>Mountbatten Room</i>
	<i>Chairs: Lord Kakkar; M Levine</i>	
14.00 – 14.30	The challenge of biosimilar heparins	
	<i>J Fareed, USA</i>	
14.30 – 15.00	Extending prophylaxis in the acutely ill medical patient	
	<i>S Goldhaber</i>	
15.00 – 15.30	Cancer-associated thrombosis: primary prophylaxis and secondary prevention	
	<i>Lord Kakkar</i>	
15.30 – 16.00	Treatment of venous thromboembolism: which patient – which strategy?	
	<i>H Büller, The Netherlands</i>	
<b>16.00 – 16.30</b>	<b>Tea</b>	<i>Mountbatten Lounge</i>
<b>16.30 – 17.15</b>	<b>Debate: The Current ACCP Guidelines Fail Clinicians and Patients</b>	
	<i>Chair: Lord Kakkar</i>	
	<b>For:</b> AGG Turpie	
	<b>Against:</b> H Bounameaux, Switzerland	
<b>17.15 – 17.30</b>	<b>Closing Remarks</b>	
	<i>S Haas</i>	





## Sylvia Haas

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*Technical University of Munich, Munich, Germany*

Sylvia Haas, MD, PhD, is currently an emeritus professor of medicine and former director of the Haemostasis and Thrombosis Research Group at the Institute for Experimental Oncology and Therapy Research, Technical University of Munich, Germany.



Professor Haas' scientific focus is on the development of new antithrombotic therapies, laboratory monitoring of anticoagulants, biomarkers, and tumour-associated thrombosis. She is involved in several clinical trials, and in particular trials involving the prevention and treatment of arterial and venous thromboembolism.

Professor Haas is a member of several international professional societies, including the International Society on Thrombosis and Haemostasis and the International Society of Angiology. She is a fellow of the Southern African Society of Thrombosis and Haemostasis, the European Society for Surgical Research, and the German Societies of Surgery, Angiology, and Thrombosis and Haemostasis Research. Professor Haas is also a member of the editorial board for several peer-reviewed journals, including *Current Hematology Reports*, *International Journal of Angiology*, and *Clinical and Applied Thrombosis/Hemostasis*.

Professor Haas holds a medical degree from the University of Freiburg. She began her training in paediatric haematology and oncology at the University of Munich. She continued her training in internal medicine at the Medical School, Technical University of Munich and received full professorship after having established the Haemostasis and Thrombosis Research Group.

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## Lord Ajay K Kakkar

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*University College Hospital, London, United Kingdom*

Professor the Lord Kakkar MBBS, BSc, PhD, FRCS, is professor of surgery, University College London, a consultant surgeon at the University College London Hospitals NHS Foundation Trust, chairman for Clinical Quality, University College London Partners Academic Health Sciences System, and director of the Thrombosis Research Institute, all in London, United Kingdom.

Lord Kakkar completed his medical education at King's College Hospital Medical School, University of London, and was awarded an MBBS in 1988 and a PhD in 1998 from Imperial College London. He was made a fellow of the Royal College of Surgeons of England in 1992.

Lord Kakkar's research interests include the prevention and treatment of venous and arterial thromboembolic disease and cancer-associated thrombosis. His awards include Hunterian Professor, Royal College of Surgeons of England (1996), David Patey Prize, Surgical Research Society of Great Britain and Ireland (1996), Knoll William Harvey Prize, International Society on Thrombosis and Haemostasis (1997), James IV Association of Surgeons Travelling Fellow (2006), and Wellcome Memorial Lecture, Royal Society of Medicine (2009).

Professor the Lord Kakkar was created a life peer in 2010 and sits on the cross benches of the House of Lords.

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## Vijay V Kakkar

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*Thrombosis Research Institute, London, United Kingdom,  
and Thrombosis Research Institute, Bangalore, India*



Vijay V Kakkar, OBE, FRCS, FRCSE, (Hon) DSc, is emeritus professor at the University of London and founder-president of the Thrombosis Research Institute, London, and founder-chair of the Thrombosis Research Institute, Bangalore.

Professor Kakkar graduated from Vikram University, Ujjain, India, in 1960, and qualified as fellow of the Royal College of Surgeons of Edinburgh and England in 1964.

Professor Kakkar has held a number of appointments at King's College, University of London, and has been the recipient of many distinctions and awards, including a Hunterian Professorship from the Royal College of Surgeons of England, visiting professor of Harvard University, honourable fellowship of the Association of Surgeons of India, a lifetime achievement award from the Union of Angiology, an honorary doctor of science from Loyola University of Chicago, and in 2010, he was awarded an Order of the British Empire (OBE). He is a member of a number of professional societies and was a founding member of the British Society of Haemostasis and Thrombosis. His publications include more than 680 original articles, 6 books, and contributions to more than 50 books.

In 1989, Professor Kakkar established the Thrombosis Research Institute as a national resource to provide a multidisciplinary environment dedicated to the study of thrombosis and related disorders.

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### Mark Levine

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*McMaster University, Hamilton, Ontario, Canada*

Mark Levine is chair and professor in the Department of Oncology at McMaster University, Hamilton, Ontario, Canada. He holds the Buffett Taylor chair in breast cancer research at McMaster University. He is a past recipient of the O Harold Warwick Prize (1999) from the National Cancer Institute of Canada.

Dr Levine received his medical degree from McGill University, Montreal, Quebec, Canada, and completed his residency in internal medicine at McMaster University. He completed his training in hematology and oncology at Duke University Medical Center, Durham, North Carolina, United States. In addition, Dr Levine received a master's degree in clinical epidemiology and biostatistics from McMaster University.

In 1982, Dr Levine became both a member of the Faculty of Health Sciences at McMaster University and a medical oncologist at the Hamilton Regional Cancer Centre (now known as the Juravinski Cancer Centre – Hamilton Health Sciences). He was the CEO of the cancer centre between 1992 and 1999. Over the past 29 years, he has been an active researcher in clinical trials and health services research. His focus is in the areas of breast cancer, thromboembolism in malignancy, and functional imaging. A number of the trials he has conducted have impacted on health care in both Canada and internationally. He helped establish the Ontario Clinical Oncology Group (OCOG) in 1982 and is now the group's director. OCOG is an academic group that designs, coordinates, and analyses multicentre trials in cancer. Dr Levine has more than 250 publications in peer-reviewed journals, and he has brought much research funding to McMaster University. He was chairman of Health Canada's Steering Committee on Clinical Practice Guidelines for the Care and Treatment of Breast Cancer. Dr Levine was an associate editor of the *Journal of Clinical Oncology* for 7 years and now is a consultant editor.

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## Dan Atar

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*Oslo University Hospital, Ullevål University of Oslo, Oslo, Norway*

Dan Atar, MD, 53, is head of cardiology at Oslo University Hospital Ullevål, Oslo, Norway, and holds a full professorship in cardiology at the University of Oslo, Norway, along with a visiting associate professorship at the Johns Hopkins University, Baltimore, Maryland, USA.



Dr Atar trained in Denmark, Switzerland, and the United States before receiving his board certification in Internal Medicine and Cardiology in 1995. His research focuses on myocardial biomarkers, myocardial function, heart failure, and cardiovascular pharmacology. He has written more than 100 articles and book chapters, and he holds the FESC, FACC, and the inaugural FAHA fellowship titles. Dan Atar is the past chairman of the European Society of Cardiology (ESC) Working Group-3 (*Cardiovascular Pharmacology and Drug Therapy*) and an associate editor of the international peer-reviewed journal *Cardiology* (Karger). He was on a number of ESC guideline-writing committees, including the “2010 ESC Guideline on Atrial Fibrillation” and the “2012 ESC Guideline Update on Atrial Fibrillation.” In 2012, Dr Atar was elected as councillor and board member of the ESC.

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### **Jean-Pierre Bassand**

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*University of Franche-Comté, Besançon, France*

Jean-Pierre Bassand is professor of cardiology at the University of Franche-Comté in Besançon, France. His clinical research interests are in the fields of the diagnosis and treatment of venous thromboembolic disease and of coronary artery disease, and more specifically of acute coronary syndromes.

Professor Bassand completed his medical education at the Faculty of Medicine, University of Franche-Comté. He was appointed associate professor of cardiology in 1980 and full professor and chairman of the Department of Cardiology in 1992 at the University of Franche-Comté. He was made a fellow of the European Society of Cardiology (ESC) and of the American College of Cardiology in 1990, and a fellow of the Royal College of Physicians (Glasgow) in 2007. He has served as a member of the board of the ESC for 10 years, and between 2002 and 2004 he served as the society's president. Professor Bassand was awarded the American College of Cardiology Maseri Florio Prize in 2009. He has also authored or co-authored more than 200 manuscripts in peer-reviewed journals, including three ESC guidelines on the management of acute coronary syndromes and pulmonary embolism.

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## Henri Bounameaux

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*University Hospitals of Geneva (HUG) and Faculty of Medicine, Geneva, Switzerland*

Henri Bounameaux is professor of medicine, dean of the Faculty of Medicine of Geneva, and director of the Division of Angiology and Hemostasis at the University Hospitals of Geneva, Switzerland. He is the immediate past-chairman of the Council of the International Society on Thrombosis and Haemostasis (ISTH).



His research interests cover all aspects of venous thromboembolism, from epidemiology and diagnosis to prevention and treatment. He has authored more than 330 papers in peer-reviewed journals, and he acts as a reviewer in many journals in the field of internal and vascular medicine.

Professor Bounameaux was a member of the Scientific and Standardization Committee (SSC) of the ISTH and the president of the Swiss Society of Angiology and of the French-speaking Society of Angiology. He has received several awards including the Karl Rohr Prize of the Swiss Society of Hematology (1991), the Swiss Angiology Prize (1991), the Theodor Naegeli International Thrombosis Award (1995), an investigator recognition award (2003), and a Distinguished Career Award (2009) from the ISTH.

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### Harry Büller

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*Academic Medical Center Amsterdam, The Netherlands*

Harry Büller, MD, is professor of internal medicine, specializing in vascular medicine, at the Academic Medical Center in Amsterdam, The Netherlands.

Professor Büller earned his MD and PhD from the University of Amsterdam. After graduating, he completed his research fellowship in hemostasis and thrombosis in the Departments of Medicine and Clinical Epidemiology and Biostatistics at McMaster University in Hamilton, Ontario, Canada.

Professor Büller has authored and co-authored more than 500 scientific articles concerning topics in his field. He has been co-chairman of the Amsterdam Institute for Cardiovascular Research and is chairman of the Vascular Medicine Working Group. He is a reviewer for *The New England Journal of Medicine*, *The Lancet*, *Archives of Internal Medicine*, and *European Journal of Clinical Investigation*, among others. He is a member of the editorial board of *The Annals of Internal Medicine*.

Professor Büller was chairman of the 2004 CHEST conference on antithrombotic therapy for venous thromboembolic disease: the Seventh American College of Chest Physicians Conference on Antithrombotic and Thrombolytic Therapy. He is the recipient of the Established Investigator Award presented by the Dutch Heart Foundation, and he received the Dutch Society for Vascular Medicine Award in 2005. Since 2008, he has served as Honorary Professor of the Royal Netherlands Academy of Arts and Sciences.

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## John Camm

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*St George's University of London, London,  
United Kingdom*



John Camm graduated from Guy's Hospital, London, and pursued a career in Cardiology at St Bartholomew's Hospital. In 1986 he moved to the British Heart Foundation Chair of Clinical Cardiology at St George's University of London. Professor Camm is chairman of the Department of Cardiovascular Sciences and the Division of Cardiological Sciences and is past chairman of the Department of Medicine at St. George's University of London.

Professor Camm is particularly interested in clinical cardiac electrophysiology, cardiac arrhythmias, and implantable devices for rhythm control. He is a former trustee of the North American Society of Pacing and Electrophysiology, a former chairman of the Joint Cardiology Committee (Royal College of Physicians), and he is the past president of the British Cardiac Society. He is past chairman of the European Society of Cardiology Working Group on Cardiac Arrhythmias, past president of the British Pacing & Electrophysiology Group, and a past council member of the Royal College of Physicians. Professor Camm is currently a trustee of the American College of Cardiology, a council member of the European Heart Rhythm Association and the World Society of Arrhythmias, editor of the *European Society of Cardiology Textbook of Cardiovascular Medicine*, editor-in-chief of the *European Journal of Pacing and Electrophysiology*, editor-in-chief of *Clinical Cardiology*, and chairman of the NICE Guideline Group for Acute Coronary Syndromes and the European Society of Cardiology Guidelines on the Management of Atrial Fibrillation. He is also president of the Arrhythmia Alliance and founder of the Atrial Fibrillation Association, charitable organisations established to provide care for patients with cardiac rhythm disturbances.

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### Stuart Connolly

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*McMaster University, Hamilton, Ontario, Canada*

Stuart Connolly, MD, is a professor of medicine at McMaster University, Ontario, Canada, and a cardiac electrophysiologist at Hamilton Health Sciences, Ontario, Canada. Dr Connolly holds a masters degree from Fordham University, New York, USA, and an MD from McGill University, Montreal, Canada. He received his specialist training in cardiology at the University of Toronto, Ontario, Canada, and at Stanford University, Stanford, California, USA.

Dr Connolly became a faculty member at McMaster University in 1983 and was awarded a full professorship in 1994. As well as being an active clinical cardiologist, Dr Connolly has been the director of the Division of Cardiology since 2005. He was also appointed as the inaugural holder of the Salim Yusuf Chair in Cardiology at McMaster University.

Dr Connolly has published more than 220 scientific articles in the field and is currently a member of the editorial boards for a number of prominent cardiology journals, including *Heart*, the *American Heart Journal*, and the *Journal of Pacing and Electrophysiology*.

Dr Connolly's main research interests are focused on the evaluation of treatments for heart rhythm disorders. His academic career has been largely devoted to the design and execution of controlled clinical trials in this area.

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## John Eikelboom

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*McMaster University Hamilton, Ontario, Canada*

John Eikelboom, MBBS, MSc, FRCPC, is associate professor in the Department of Medicine of McMaster University in Hamilton, and haematologist in the Thrombosis Service, Hamilton General Hospital, Ontario, Canada. He completed his training in internal medicine and haematology in Perth, Australia, in 1998 and subsequently undertook a fellowship in thrombosis medicine and clinical research methodology at McMaster University. He returned to McMaster in 2005 to take up a Tier II Canada Research Chair in Cardiovascular Medicine.



Dr Eikelboom is a member of the editorial boards of *Thrombosis and Haemostasis* and the *Canadian Journal of Cardiology*, and he serves on the advisory board for the *Journal of Thrombosis and Haemostasis*. He has also authored or co-authored more than 250 articles in peer-reviewed journals. His current research, supported by the Canadian Institutes for Health Research, the Heart and Stroke Foundation, and the National Health and Medical Research Council of Australia, focuses on the efficacy and safety of antithrombotic therapies, the prognostic importance of bleeding and transfusion, and the mechanisms of variable response to antiplatelet drugs.

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### Jawed Fareed

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*Loyola University Medical Center, Chicago, Illinois, USA*

Dr Jaweed Fareed is a professor of pathology and pharmacology and director of the Hemostasis and Thrombosis Research Laboratories at Loyola University Medical Center, Maywood, Illinois. Dr Fareed received his initial graduate training at the University of London, England and at the University of Guelph in Ontario, Canada. His doctorate degree was completed at Loyola University Chicago in the areas of Pharmacology and Experimental Therapeutics in 1976 and is currently pursuing research, teaching and service activities. In June 1996, Dr Fareed received the degree of doctor honoris causa from the University of Bordeaux, France. Dr Fareed's main area of research is in the development of novel anticoagulant drugs including low molecular weight heparins, synthetic anticoagulants, hirudin and tissue factor pathway inhibitor. He has published extensively in the area of hemostasis and thrombosis.

Dr Fareed has been active in the Academy of Clinical Biochemistry, the Expert Panel on Biologicals for the World Health Organization in Geneva, Switzerland, and the US Pharmacopeia. He is an elected member of the Medical Academy of Erfurt, Germany and currently serves as the president of the International South Asian Society of Atherosclerosis (SASAT). He is active in the educational and scientific activities of professional societies including the International Union of Angiology, American Society of Hematology, International Society of Fibrinolysis and Proteolysis and The American Heart Association. He is a recipient of national and international awards including the Lifetime Achievement Award from the Association of Professional Pathologists India in 2010 and received the Honorary Membership of the IUA in 2012.

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## Charles Francis

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*University of Rochester School of Medicine and Dentistry,  
Rochester, New York, USA*



Dr Charles Francis is professor emeritus of medicine and of pathology and laboratory medicine at the University of Rochester. He obtained his MD degree at the University of Pittsburgh and was then an intern and resident in medicine at the University of North Carolina. He joined the University of Rochester as a fellow in hematology in 1976, and he has remained at that institution where he is the director of the Hemostasis and Thrombosis Program.

Dr Francis has been a recipient of a Clinical Investigator Award from the NHLBI and of an Established Investigator Award from the American Heart Association. He has served on numerous National Institutes of Health Review and Advisory Committees. He is a past-chairman of the Scientific and Standardization Committee of the International Society on Thrombosis and Haemostasis and program chair of the XVIIth International Congress on Hemostasis and Thrombosis. He serves as the editor-in-chief of *Thrombosis Research*. Dr Francis has both clinical and laboratory research interests. His laboratory research has focused on the structure of fibrinogen and fibrin, the mechanisms of fibrinolysis, and the effects of ultrasound on the vasculature. His clinical research has been in the areas of prevention of venous thrombosis and new anticoagulants.

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### Samuel Z Goldhaber

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*Harvard Medical School, Boston, Massachusetts, USA*

Samuel Z Goldhaber, MD, professor of medicine at Harvard Medical School, is a senior staff member of the Cardiovascular Medicine Division at Brigham and Women's Hospital (BWH). He is the director of the BWH Venous Thromboembolism Research Group, medical co-director of the BWH Anticoagulation Management Service, and serves as Principal Investigator of a broad range of randomized clinical trials and observational studies related to the prevention, treatment, and epidemiology of venous thromboembolism and of stroke prevention in atrial fibrillation.

Dr Goldhaber serves as chair of the steering committee of the National Heart, Lung, and Blood Institute (NHLBI)-sponsored ATTRACT Trial of DVT thrombolysis and is a member of the Steering Committee of the NHLBI-sponsored COAG Trial of warfarin dosing with rapid turnaround genetic testing. For his work on prevention of venous thromboembolism, Dr Goldhaber has received a Certificate of Appreciation from the Surgeon General of the United States. He is part of the leadership group of three nonprofit organizations that work on tools and educational material to educate clinicians about stroke prevention in atrial fibrillation: 1) North American Thrombosis Forum ([www.NATFonline.org](http://www.NATFonline.org)), 2) American College of Physicians Foundation ([www.ACPFoundation.org](http://www.ACPFoundation.org)), and 3) Alliance for Aging Research ([www.agingresearch.org](http://www.agingresearch.org)). Dr Goldhaber is president and founding director of the North American Thrombosis Forum. He serves as a section editor for *Circulation* and for *Thrombosis and Haemostasis*. He also has a busy practice of both general cardiology and venous thromboembolism patients.

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## Shinya Goto

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*Tokai University School of Medicine; Institute of Medical Science, Tokyo, Japan*

Shinya Goto, MD, PhD, is currently a professor in the Department of Medicine (Cardiology) at the Tokai University School of Medicine (Isehara), the director and chairman of the Research Center of Metabolic Disease at Tokai University Graduate School of Medicine, and director of the Department of Metabolic System Medicine and the Institute of Medical Science of Tokai, all in Japan.

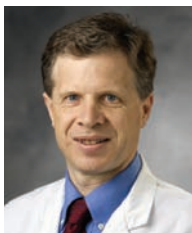


Professor Goto gained his qualification in medicine from the Keio University School of Medicine, Tokyo, Japan in 1986. After completion of his training course in clinical cardiology and cardiology-related biomedical research at the Keio University Graduate School of Medicine, he moved to the Department of Experimental Medicine, the Scripps Research Institute, La Jolla, California, USA, where he completed a post-doctoral fellowship.

Professor Goto's basic research achievements include dissecting the mechanism of platelet thrombus formation, especially under a high shear rate of flow condition. Professor Goto also led many of clinical studies both in Japan and worldwide, including 'Apixaban versus Warfarin in Patients with Atrial Fibrillation' and 'Rivaroxaban in Patients with a Recent Acute Coronary Syndrome.'

Professor Goto has published approximately 120 original peer-reviewed articles, which have appeared in highly respected journals such as *The New England Journal of Medicine*, *the Journal of Clinical Investigation*, *The Lancet*, *JAMA*, and *Circulation*. He is an editor of the *Journal of Atherosclerosis and Thrombosis*, *Thrombosis and Haemostasis*, and *International Review of Thrombosis*.

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### **Christopher B Granger**

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*Duke University Medical Center, Durham, North Carolina, USA*

Christopher Granger, MD, FACC, is professor of medicine in the Division of Cardiology at Duke University and director of the Cardiac Care Unit for the Duke University Medical Center. Dr Granger is a fellow of the American College of Cardiology, the American Heart Association, and the European Society of Cardiology.

Dr Granger is associate editor of the *American Heart Journal* and serves on the editorial board of the *Journal of the American College of Cardiology*. He is a cardiology section author for *Current Medical Diagnosis and Treatment*. He serves on the publication oversight committee of the American Heart Association and is chairman of the Advisory Working Group of the American Heart Association Mission: Lifeline program. He was a member of the 2011 ACC/AHA STEMI Guidelines Committee. He has served on Food and Drug Administration (FDA) advisory committees on an ad hoc basis. He is on the board of external experts of the National Heart, Lung and Blood Institute (NHLBI).

Dr Granger's primary research interest is in the conduct and methodology of large, randomized, clinical trials in heart disease; he has co-authored more than 400 peer-reviewed manuscripts. He currently serves on a number of clinical trial steering committees and data safety monitoring committees. He has coordinated the Duke Clinical Research Institute's activities in many clinical trials that evaluate acute myocardial infarction reperfusion and antithrombotic strategies in acute coronary syndromes and in atrial fibrillation.

Dr Granger is co-chairman of the steering committee of the ARISTOTLE trial assessing an oral factor Xa inhibitor for stroke prevention in atrial fibrillation. In addition, he is co-director of the Reperfusion of Acute MI in Carolina Emergency Departments (RACE) projects in North Carolina, which is a state-wide program to improve the speed of reperfusion care for patients with acute myocardial infarction and cardiac arrest.

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## Craig Kessler

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*Georgetown University Medical Center and the Lombardi Comprehensive Cancer Center, Washington, DC, USA*



Craig M Kessler, MD, received his medical degree from the Tulane University School of Medicine in New Orleans, Louisiana, where he was a member of Alpha Omega Alpha Honor Society. He completed his residency in internal medicine at the Ochsner Foundation Hospital in Louisiana and his fellowship in hematology/oncology at the Johns Hopkins Hospital and University in Baltimore, Maryland.

Dr Kessler then became a full-time faculty member and attending physician in the Section of Special Hematology at the National Institutes of Health in Bethesda, Maryland. In 1982, he joined the Division of Hematology and Oncology at the George Washington University School of Medicine, where he became tenured professor of medicine and chief of the division. He is currently professor of medicine and pathology at the Georgetown University Medical Center and the Lombardi Comprehensive Cancer Center. In addition, Dr Kessler is director of the Division of Coagulation, director of cellular and therapeutic apheresis, director of the Hemophilia and Thrombophilia Comprehensive Treatment Center, and immediate past chief of the Division of Hematology/Oncology.

He is co-editor of *Haemophilia* and *Seminars in Thrombosis and Hemostasis*, and is chair of the Medical and Scientific Advisory Council of the National Hemophilia Foundation. Dr Kessler has been awarded Mastership in the American College of Physicians and has published 4 books and more than 175 peer-reviewed articles.

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### Manuel Monreal

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*Hospital Universitari Germans Trias i Pujol; Universitat Autònoma de Barcelona, Barcelona, Spain*

Manuel Monreal, MD, PhD, was born in Gerona, Spain on April 4, 1952. He is clinical professor of internal medicine at the Facultat de Medicina, Universitat Autònoma in Barcelona—a position he has held since 1984. He has also been the head of section of internal medicine at the Hospital Universitari Germans Trias i Pujol, in Badalona (Barcelona), Spain, since 1983.

Dr Monreal earned his MS at the Facultat de Medicina, Universitat Autònoma de Barcelona. He completed his internship and residency in internal medicine at Hospital Universitari Vall d'Hebrón in Barcelona.

Dr Monreal has authored or co-authored more than 200 articles, book chapters, and abstracts and has presented many lectures and exhibits on the study and treatment of venous thromboembolism, peripheral artery disease, and related topics. His articles have been published in the *Journal of Thrombosis and Haemostasis (J Thromb Haemost)*, *CHEST*, *Circulation*, the *Archives of Internal Medicine*, and *Thrombosis and Haemostasis (Thromb Haemost)*, to name a few. He serves on the editorial board or as a reviewer for *J Thromb Haemost*, *Circulation*, *Thromb Haemost*, the *American Journal of Medicine*, and *Medicina Clinica*, among others.

He is a member of many societies, including the International Society on Thrombosis and Haemostasis and the Mediterranean League against Thromboembolism. He is also a founding member and trustee of the Fundació per el Estudi de la Enfermedad Tromboembólica (FUENTE) and coordinator of the Registro Informatizado de la Enfermedad TromboEmbólica (RIETE) and the Factores de Riesgo y Enfermedad Arterial (FRENA) registries.

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## Paolo Prandoni

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*University of Padua, Padua, Italy*

Paolo Prandoni, PhD, is professor at the Department of Cardiothoracic and Vascular Sciences, Thromboembolism Unit, at the University of Padua in Italy. He trained at the University of Padova from 1971 to 1979 before moving to Holland where he studied for his PhD at the University of Amsterdam in 1992. Professor Prandoni's research and professional experiences cover epidemiology, diagnosis, and management of thromboembolism. Of particular interest are studies addressing the association of cancer with venous thromboembolism.



Professor Prandoni has published more than 300 papers in peer-review journals. His key achievements include the demonstration of the value of real-time compression ultrasonography for the diagnosis of DVT; the confirmation of the risk for subsequent overt cancer in patients with idiopathic VTE; the demonstration that LMWHs are as effective and safe as UFH in the treatment of DVT; the demonstration that LMWHs allow the home treatment of DVT; the description of the natural history of DVT, outlining the particularly high risk of recurrent thromboembolism in cancer patients; the demonstration that both factor V Leiden and G20210A prothrombin variant are independent risk factors for recurrent VTE; the demonstration that residual vein thrombosis is a predictive marker of recurrent thromboembolism; the demonstration that cancer patients with venous thrombosis have a high risk of recurrent thromboembolism while on anticoagulation; the demonstration of an association between atherosclerosis and venous thrombosis; and the demonstration that chronic pulmonary thromboembolic hypertension following an episode of pulmonary embolism is more frequent than commonly thought.

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### Alexander G G Turpie

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*McMaster University and Hamilton Health Sciences,  
Hamilton, Ontario, Canada*

Alexander Turpie, MD, is professor of medicine at McMaster University and an internist on the staff of Hamilton Health Sciences. He received his medical education from the University of Glasgow, Scotland. After completing residencies at the Glasgow Royal Infirmary and Stobhill General Hospital, where he was also a clinical research fellow, he served as a clinic lecturer for the University of East Africa Medical School in Nairobi, Kenya. After returning to the University of Glasgow for additional training in hemostasis and thrombosis, he was appointed MRC Fellow at McMaster University as well as being appointed to the full-time faculty in the Department of Medicine.

Professor Turpie's research interests include new antithrombotic drugs for the management of venous and arterial thrombosis, and anticoagulant therapy in patients with prosthetic heart valves. He has served on numerous professional and university-related committees and is a frequent lecturer at professional meetings worldwide.

Professor Turpie has authored more than 700 published articles, abstracts, book chapters, and books, and he has been a reviewer for many journals, including the *Annals of Internal Medicine*, *Circulation*, *The Lancet*, and *The New England Journal of Medicine*. In addition, he serves on the editorial boards of *Vascular Medicine* and *Heart Drug*.

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## Freek W A Verheugt

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*University Hospital, Nijmegen, and Onze Lieve Vrouwe Gasthuis, Amsterdam, The Netherlands*

Freek W A Verheugt, MD, FESC, FACC, FAHA, is professor of cardiology at the Heart-Lung Centre of the University Medical Centre of Nijmegen and chairman of the Department of Cardiology at Onze Lieve Vrouwe Gasthuis in Amsterdam, The Netherlands.



Professor Verheugt graduated from the University of Amsterdam in 1974 and wrote a thesis on platelet and granulocyte antigens and antibodies. He trained in cardiology at the Thoraxcenter of the Erasmus University in Rotterdam. Professor Verheugt has served as professor at the University of Colorado Health Sciences Center in Denver, Colorado, USA, and at the Free University in Amsterdam. He was president of the Netherlands Society of Cardiology from 1999 to 2001.

Professor Verheugt has published more than 430 papers in peer-reviewed international journals, including *The New England Journal of Medicine*, *The Lancet*, *Circulation*, *Journal of the American College of Cardiology*, and *European Heart Journal*, of which he is an editorial board member. He is an editorial adviser of *The Lancet*, *The New England Journal of Medicine*, and *Circulation*. Professor Verheugt has more than 18,000 citations. His main fields of scientific interest are pharmacological and interventional treatments of acute coronary syndromes and atrial fibrillation.

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Organised under the auspices of the Thrombosis Research Institute, London, United Kingdom  
and supported by unrestricted educational grants from Bayer Healthcare Pharmaceuticals,  
Boehringer Ingelheim, Daiichi Sankyo, and Pfizer.