Presidential Symposium: Bridging Historical and Future Perspectives

The past 50 years have seen major advances and breakthroughs in thrombosis and hematological research. In recognition of the fast-changing nature of the field, the Presidential Symposium on Wednesday looked back at key developments during the last half-century. Congress President Yasuo Ikeda, MD, PhD, invited three distinguished speakers to consider the ways in which historical perspectives might inform, shape and define future directions of research.

Tracing the history of platelet research, Barry S. Coller, MD, of Rockefeller University, US, paid tribute to Italian pathologist Giulio Bizzozero’s seminal work in 1882 and proceeded to highlight landmark studies of the past century. Dr. Coller’s presentation brought to light the way in which in recent decades, a new era of platelet research is being driven by cutting-edge basic research made possible by computational simulations, high-throughput screening, and the advent of ‘omics’ technologies.

Referring to the antiplatelet agent clopidogrel as just one area of research pointing towards future breakthroughs, Dr. Coller noted that some of the key remaining questions include: Can genotyping and/or antiplatelet response monitoring optimize clopidogrel efficacy/safety? Which drug-drug interactions are clinically important with clopidogrel, and which patients are most likely to benefit? Dr. Coller’s research focuses on platelet physiology, with the goal of developing new therapies for thrombosis diseases such as heart attack and stroke. He is one of the

Changes & Corrections in ISTH2011 Final Program

| O-TH-034 | Withdrawn |
| O-TH-035 | Withdrawn |
| O-TH-062 | HIGH-DENSITY LIPOPROTEIN ENHANCES ACTIVATED PROTEIN C CYTOPROTECTIVE SIGNALING ON ENDOTHELIAL CELLS |
| Roger Preston* |
| O-TH-058 | MAST CELL-HEPARIN INCREASES VASCULAR PERMEABILITY IN VIVO BY CONTACT SYSTEM-DRIVEN BRADYKININ FORMATION |
| Thomas Renne* |
| O-TH-074 | FIRST ANALYSIS OF 10-YEAR TREND IN NATIONAL FACTOR CONCENTRATES USAGE IN HEMOPHILIA DATA FROM THE CANADIAN HEMOPHILIA ASSESSMENT AND RESOURCENAGEMENT SYSTEM |
| Anthony Chan* |
| O-TH-137 | Withdrawn |
| P-TH-074 | Withdrawn |
| P-TH-127 | Withdrawn |
| P-TH-159 | ELUCIDATING NOVEL UROKINASE-TYPE PLASMINOGEN ACTIVATOR INHIBITORS |
| Emma L. Smith*(UK), John Spencer, Maryam Abdinejad, Jayakanth Kankanala, Colin W.G. Fishwick, Helen Philippou |
| P-TH-223 | Withdrawn |
| P-TH-336 | Withdrawn |
| P-TH-594 | Withdrawn |
**ESH-ISTH Course in Portugal**

*ESH-ISTH Advanced Course in Thrombosis and Haemostasis* The first ISTH-ESH Training Course will take place 7-10 November 2011, Cascais, Portugal and is designed to provide state-of-the-art training in the biological and clinical aspects of Hemostasis and Thrombosis.

This meeting should be of interest to trainees in hematology or vascular medicine, PhDs wishing to acquire clinical and basic knowledge in the field, or senior hematologists looking for an update.

The meeting will encompass 4 intensive days covering the most salient basic and clinical aspects of Hemostasis and Thrombosis. A faculty of leading scientists with vast experience in education have enthusiastically accepted to take part in this project. Most speakers will deliver lectures in the mornings and early afternoons, and in the late afternoons they will work in close interaction with the participants on exercises relating to the analysis of the laboratory issues discussed during the morning, or on clinical case studies. “Meet the Expert” type free discussions will also be organized and one special evening will be devoted to selected issues of specific interest.

For more information and to register, please visit: http://www.esh.org/agenda11.htm

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**ISTH Reach the World Program – Facts and Interview with Frits Rosendaal**

How was this initiative started and what are its objectives?

The Reach-the-World initiative was started many years ago, stemming from the ambition to disseminate knowledge on thrombosis and haemostasis around the globe with a clear focus on the developing world. The last few years, the program has been expanded, and now includes several subprogrammes, such as the educational symposia, fellowships for young researchers and clinicians, visiting professorships, grants to visit the congress, and most recently the Reach-the-World membership.

Where could this program go in the future?

New technology will make it possible to rapidly increase the impact of the program. At the Cairo SSC meeting in 2010 we began to webcast the lectures, which we will continue to do. In 2011, the first modules of an eLearning program on venous thrombosis will be launched, both of which will markedly increase the number of people we can reach. It is our ambition to tie two of our main target groups, i.e. people in the developing world and young investigators and clinicians, together, and make the Reach-the-World program grow into an integrated program, in which we focus on specific areas in the world, have participants in our educational symposia spend some time in another centre in the form of a fellowship, and so form a new generation of leaders in thrombosis and haemostasis throughout the world.

How can members from around

(continued on page 4)

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**Webcasting information**

Webcasts from the ISTH 2011 XXIII Congress are coming soon! The Congress Plenary Lectures, State of the Art Lectures, and the Presidential Symposium will be webcast for the post-meeting use of registered delegates and all ISTH members. The session will be available as a downloadable podcast to computers. You will be able to access the sessions via the “Members Only” section of the ISTH website. Instructions will be directly emailed to all ISTH members and registered delegates in the weeks following the Congress.
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Exhibition Opening Hours
July,25  10:30-18:00
July,26  10:30-18:00
July,27  9:30-14:00
July,28  9:30-16:00

and then Memory
Taking a picture
July,25  11:00-12:00  14:00-15:00  16:00-17:00 (three times)
July,26  11:00-12:00  14:00-15:00  16:00-17:00 (three times)
July,27  11:00-12:00 (once)
July,28  11:00-12:00  14:00-15:00 (two times)

Date of preparation: June, 2011
About Gil White

Dr. Gilbert White was awarded the highest recognition of the Scientific and Standardization Committee of ISTH: The Harold R. Roberts Award for Distinguished Service. It was presented to Dr. White at the Presidential Symposium.

Dr. White began his association with the ISTHs Scientific and Standardization Committee (SSC) in the mid-1980s as a contributor to the work of the Scientific Subcommittee on Factor VIII and Factor IX. He also co-chaired the Platelet Physiology Subcommittee for many years and was elected to the Central Committee (the board) of the SSC in 1993. He continued his active scientific work with the SSC until and throughout his two terms as ISTH Executive Director, from 1999-2009.

Dr. White was an advisor and counselor to the successive Chairmen of the SSC and to the Chairs of the Scientific Subcommittees, and he represented the SSC to many international agencies and organizations. He took an active role in the organization of each SSC Annual Meeting and provided guidance and support to the Local Organizers. He built bridges of scientific collegiality between the SSC, ISTH and the world.

About Harold R Roberts

Dr. Harold R Roberts first became active in the work of the International Committee for the Standardization of the Nomenclature of the Blood Clotting Factors in 1966 and was a charter member of the International Society on Thrombosis and Haemostasis when it was organized in 1970. He served as Secretary General of the Committee from 1978 to 1988 when the Committee merged administratively with the ISTH. He then took the reins of both the Committee and Society as its first Executive Director and led the organization for another eleven years. For more than 20 years, he has been a leader, a mentor, a counselor and scientific diplomat internationally recognized for his fairness, wisdom and unselfish devotion to the Committee and the Society.

About the Harold R Roberts Award

Established in 2005, the ISTH Harold R. Roberts Award recognizes honors meritorious service to the Scientific and Standardization Committee of the ISTH, beyond expectations and over a significant period of time.

ISTH Reach the World Advanced Fellowship Program

The Advanced Fellowship program is targeted to Fellows from underprivileged countries. The objective is to promote knowledge and expertise in one or all of the following areas: Medical care, laboratory methods, research related to thrombosis and Hemostasis. The Fellowships are administered by the ISTH Education and Outreach Committee. Selection of recipients is a rolling process with new awardees being chosen in January and June of each year. More information can be found on the ISTH website. Next deadline for applications: January 1 2012

At its 2010 meeting in Cairo, the ISTH Council decided to broaden its Reach-the-World program by making membership more accessible for clinicians, researchers and educators in the developing world. The main purpose of this new facet of the program is to remove financial hurdles for involvement in the ISTH community, of which access to the JTH is one of the most important. The current Reach-the-World program assists individuals from the developing world to visit ISTH’s annual meetings (Congress and SSC meeting). The same criteria will be used for the RtW membership of the ISTH.

Membership is open to researchers, educators and clinicians from the developing world. These are defined as those countries designated as developing’ by the classification of the World Bank. The membership fee for these members is reduced to $ 35 USD. For applicants who attach a letter indicating their financial need this fee may be waived. Members in this category receive the ISTH e-Newsletter, may vote in Society matters, serve on Committees and enjoy members-only access to the website. Reach the World Members receive an online-only subscription to the Society’s official journal.

There are only two differences with the regular membership: RtW members will not receive the paper copy of the Journal, and will not receive the discount for members for Congress registration. For the latter, however, they remain eligible for RtW grants for meetings, which include a travel grant and waiving of the registration fee. Those who are interested may apply through the ISTH website and can tick the box for RtW membership.
THINGS ARE CHANGING IN ORAL ANTICOAGULATION

Join us at the Boehringer Ingelheim booth in Hall 1, stands 33-43.
Preview of Plenary Lectures

**TODAY at 9:45 am - 10:30 am: Main Hall**

**Molecular Mechanism of Inside-out Integrin Regulation**

Dr. Mark H. Ginsberg, from the Department of Medicine, University of California in San Diego, will deliver his lecture entitled “Molecular mechanism of inside-out integrin regulation”. His main focus will be on the activities of integrin adhesion receptors, and he will present in this lecture research on recent progress in understanding with regard to the membrane environment of integrin, where its operation of the inside-out signaling mode can be regulated.

Dr. Ginsberg was appointed to in 2004 and currently holds the rank of Distinguished Professor of Medicine, and leads the Physician Scientist Training Program there. Prior to that he was a Professor in the Departments of Vascular and Cell Biology at the Scripps Research Institute. Dr. ginsberg is well known for his many contributions to the discovery of integrins, analysis of their ligand binding functions and elucidation of their signaling properties. Dr. Ginsberg has held memberships with academic societies including the American Society for Clinical Investigation, Association of American Physicians, and the American Society for Cell Biology. Dr. Ginsberg is a Fellow of the American Association for the Advancement of Science. He served as the president of the North American Vascular Biology Organization in 2008 and has served on the council of the International Society for Thrombosis and Haemostasis (ISTH). He is also a recipient of numerous honors and awards including the Investigator Recognition and Distinguished Career Awards of the ISTH. He has an extensive medical bibliography to date of 270 original articles.

**Kenneth M. Brinkhous (1908-2000)** was one of the 16 original members of a committee organized in 1954 as the International Committee for the Standardization of the Nomenclature of the Blood Clotting Factors. The nomenclature of the blood clotting factors that were being discovered was complex and the committee was formed to bring order to the process. In 1969, this committee expanded into the ISTH with 173 members. Dr. Brinkhous was elected as one of the founding board members of the ISTH, and he served as the Secretary General for the first 12 years of the Society’s existence. He received the Society’s highest honor, the Robert Grant Medal, in 1985 for his outstanding accomplishments and service. His research, for which he received many awards nationally and internationally, focused on blood coagulation mechanisms. Among his many discoveries were the isolation of factor VIII, the development of the first plasma concentrates of factor VIII, the separation of factor VIII and von Willebrand factor, the establishment of hemophilia A, hemophilia B, and von Willebrand animal models and some of the initial attempts at gene transfer in hemophilia. The lecture in Dr. Brinkhous’ name was established in 2007. Previous lecturers were Ian Peake and Evan Sadler.

**TODAY at 1:30 pm - 2:15 pm: Main Hall**

**Serpin Structure, Function and Dysfunction**

Dr. James Huntington will present the Wright-Schulte Memorial Lecture and discuss serpins that function as serine protease inhibitors. He will review serpin structure, the general mechanism of protease inhibition, and how serpin activity can be modulated by cofactors. Conformational change is critical for the serpins’ function, but makes them susceptible to mutations that eventually lead to deficiency and disease. Dr. Huntington will also discuss the mechanisms involved in the role that serpins play in haemostasis and fibrinolysis.

Dr. Huntington is presently Professor of Molecular Haemostasis at the University of Cambridge in the UK. He has a Ph.D in Biochemistry from Vanderbilt University and holds a Medical Research Council Senior Non Clinical Fellowship. He has also received various prestigious awards like the 26th Annual Jeanette Piperno Memorial Award in 2007. Apart from the MRC, his research is also supported by the Welcome Trust and the British Heart Foundation. He often lectures at international meetings like FASEB Conferences on Proteases in Hemostasis & Vascular Biology, ISTH meetings and Serpin Symposiums, and has published and co-published a huge array of books and articles on the results of his research in the field of the structural mechanisms for the inhibition of thrombosis, including his work on serpins and other related factors.

Irving S. Wright (1901-1997) and Arthur Schulte were honored by a gift to the Society in 1976, establishing the Wright-Schulte lecture. This lecture commemorates Mr. Arthur Schulte, a successful merchant and philanthropist who was the first American patient to receive heparin therapy and his physician, Irving S. Wright, MD. Dr. Wright’s contributions to the field of thrombosis and haemostasis are legendary. He was the driving force in the establishment and success of the International Committee on the Nomenclature of the Blood Clotting Factors (now known as the Scientific and Standardization Committee of the ISTH) and served as its Chairman during its formative years (1954-1963). He spearheaded and directed the first major trial sponsored by the American Heart Association on oral anticoagulation in acute myocardial infection. He was the dominant figure from the mid-1940s to the mid-1960s in drawing attention in the United States and beyond to the importance of the thrombosis problem and the need to foster and expand research on this subject. As a result of his motivating influence and organizational abilities, the ISTH was founded in 1969. Past Wright-Schulte Memorial Lectures have been Helge Stormorken, V.V. Kakkar, Oscar Rainoff, Marc Verstraete, Bjarne Østerud, Nubuo N. Aoki, H. Coen Hemker, Yale Nemerson, Robin W. Carrell, P.M. Mannucci, David Ginsburg, and Richard O. Hynes.
Benefits of membership in ISTH include:

- An international network of over 3,000 members in more than 80 countries
- Priority registration and discounted fees for ISTH meetings and congresses
- Complimentary print subscription for regular members and online subscription for all membership categories to ISTH’s *Journal of Thrombosis and Haemostasis*
- Access to the ISTH members-only online resources, including educational materials, e-learning and membership directory
- Exclusive access and/or reduced fees for other educational activities, programs and publications
- The quarterly ISTH Newsletter and regular e-updates
- The right to nominate, elect and serve on ISTH committees

The International Society on Thrombosis and Haemostasis is the leading worldwide organization dedicated to the advancement of the understanding, prevention, diagnosis and treatment of thrombotic and bleeding disorders.

ISTH provides a forum for discussion, encourages research and fosters the dissemination and exchange of ideas through scientific meetings and publications, education initiatives, research activities, expert committees and standardization of nomenclature and methods.
We hope to see you at the Pfizer Exhibit Booth #36 today and wish you a safe onward journey.
The World Federation of Hemophilia (WFH) and the International Society on Thrombosis and Haemostasis (ISTH) have signed a memorandum of understanding yesterday to formalize collaboration and coordination of activities between the two organizations. The WFH and the ISTH value the important role each organization provides in promoting research, providing educational materials/activities, and developing health care programs for governments, health professionals, patients, and families.

“This partnership is an important step towards achieving our goal of improving and sustaining access to care for people with bleeding disorders around the world through education and research,” says WFH President Mark Skinner. “Our collaboration in these areas will be of tremendous benefit to both organizations, and the populations we serve.”

Both organizations have a common interest in advancing education essential to providing treatment and care. The WFH and ISTH will pursue the following areas of collaboration:

- Conduct educational programs on laboratory diagnosis, management of thrombotic and bleeding disorders and other subjects to enhance the fulfillment of both organizations’ missions;
- Promote and facilitate research in the fields of thrombosis and bleeding disorders;
- Organize joint scientific sessions (or plenaries) during the WFH World Congress and the ISTH Congress on topics of mutual interest and relevance;
- Produce joint educational materials on thrombosis and bleeding disorders including e-learning;
- Collaborate in data sharing projects to improve treatment and advance scientific understanding of bleeding disorders;
- Facilitate access to information on programs of mutual interest to clinicians and scientists. The collaboration of our organizations is in the best interest of patients affected by clotting and bleeding disorders and their caregivers around the world. Working together and complementing each other’s strengths creates a win-win situation and signposts the way professional and patient organizations can and should work together to maximize outcome,” said Professor Henri Bounnameaux, ISTH’s Chair of Council.

For more information on the World Federation of Hemophilia, please visit: www.wfh.org.

Following ISTH Congresses in 2013 in Amsterdam, The Netherlands, 2015 in Toronto, Canada and 2017 in Berlin, Germany, the Society will return to the Asian/Pacific Region fulfilling its important global mission as an international organization.

For more information and to inquire about how to bid for future ISTH Congresses and SSC Meetings, please contact ISTH’s Executive Director, Tom Reiser at the ISTH Headquarters.

Winner of the ISTH SSC 2012 Signed T-Shirt Draw

This year’s Congress participants had the unique opportunity to enter their names for a chance to win an autographed Liverpool Football Club shirt by visiting the ISTH SSC 2012 booth at the entrance of the ISTH 2011 Exhibition.

ISTH Chairman of Council, Dr. Henri Bounnameaux, MD, picked the lucky winner from over 300 entries. The winner is Valerie Bockisch from Sweden.

The lucky draw was organized by Cheng-Hock Toh, President of the 58th Annual SSC Meeting in Liverpool. For more information about the ISTH SSC 2012 Liverpool Meeting, visit www.ssc2012.org
What will be the main features of the ISTH 2013 congress?

The main feature of the 2013 Congress will of course be the science. We will do our best to invite top speakers for the plenary and state-of-the-art lectures, and we hope to receive many excellent abstracts. To achieve this goal, we have established a large scientific programme committee, consisting of experts covering all areas of thrombosis and haemostasis. After the Kyoto meeting, we will also invite international experts for an international advisory board to assist us. We realise that the success of the ISTH, with congresses that become larger and larger, also poses an additional challenge of the attendants not feeling lost in a crowd. So, to enable them to participate to the fullest, we will take care to organize thematic sessions and to broadcast major presentations during the congress. We hope to establish the feel of the Congress Party ever, and we feel it is time to set a new standard.

Will there be any specific innovations or new aspects introduced at the Congress

The emphasis will lie on having people interact, and to build the programme in such a way, e.g. around hot topics, themes, technical innovations and clinical questions, that this will ensure lively discussions. For instance, every major lecture will be immediately followed by a meet-the-expert session with the presenter. Young investigators will be able to personally meet established researchers and clinicians by ‘speed dating’. The 2013 Congress will be ‘green’, and we will reduce the use of paper, amongst others by introducing electronic poster boards. We will also use other possibilities of modern electronics and media, and when the meeting comes nearer you may expect tweets from me. After the Kyoto meeting the website will be launched, and it may be worthwhile to take a look now and then, at www.isth2013.org. Overall, the Congress will have a light touch, which is symbolized in the logo, which resembles a painting of Mondriaan. Piet Mondriaan (1872-1944) made characteristic paintings consisting of straight bands of primary colours, which symbolise the flower fields in the west of the country during Spring. The logo contains the colour of the national flag, and has the shape of a ship, as a symbol for Dutch naval history and the steady progress of knowledge that the ISTH stands for.

Why should colleagues and peers from the around the world attend?

The biennial ISTH Congress simply is THE place to learn about new discoveries, technological advances and new therapeutics and approaches in clinical management in the field. The SSC meeting, that preceeds the Congress, has a large educational component that is attractive to young and established individuals throughout the world. The ISTH takes its global mission very seriously, and a large number of travel grants will be given to young investigators and individuals from the developing world. There is no better place than an ISTH Congress to present your data and learn from others.

What can you recommend to do and see in Amsterdam and the Netherlands when attending the congress?

The Netherlands is a small country with an excellent public transportation system. If you like art, Amsterdam has the largest collection of Dutch masters and the Van Gogh museum. If you like music or performing arts, there are the Congresgebouw orchestra and the National dance theater. If you like visiting old cities and cathedrals, you can go to Utrecht, Leiden or Delft. If you like history, you can visit the archeological museum in Leiden or the naval museum in Amsterdam. If you like sailing, you could rent a classic ship, with or without a captain, on the central lake (Ijsselmeer) or the sea north of the country (Waddenzee) and sail amidst the seals. If you like medieval castles, you could visit the Muiderslot or Slot Loevenstein. If you like the outdoors, you could visit the national park in the east of the country (Hoge Veluwe) or the Middelharnis or Schiermonnikoog. If you like beaches, we have over 150 kilometers of them. And if you like impressively lively cities, you could visit Rotterdam, which has one of the largest ports in the world. All of these places are within one to two hours by train. Even Antwerp, Brugge and Gent in Belgium are only a few hours away. Of course, you can’t do all of this and participate in the congress, so you would do well to stay a bit longer after the meeting.

“Visit the Exhibition” announcement

ISTH delegates can get their first look on Monday at the ISTH Exhibition. Participants can visit booths to find out more about the latest technology, health care advances and opportunities. Commercial displays of international organizations, sponsor pharmaceutical companies, media publishers and scientific societies will be located in Event Hall and Exhibition Hall 1 & 2.

Exhibition hours
- Monday 10:30-18:00
- Tuesday 10:30-18:00
- Wednesday 09:30-14:00
- Thursday 09:30-16:00
2013
NETHERLANDS

ISTH

XXIV CONGRESS
OF THE INTERNATIONAL
SOCIETY ON THROMBOSIS
AND HAEMOSTASIS

JUNE 29 - JULY 4
Amsterdam, The Netherlands

www.isth2013.org

SEE YOU IN AMSTERDAM
Farewell message from Congress President Interview with Dr. Yasuo Ikeda

What are your thoughts and reflections on hosting the Congress in Kyoto?

I am grateful for the tremendous efforts made by the Scientific Program Committee, who have arranged such an excellent program for ISTH 2011. This year, we selected six Plenary Lectures and I believe each one was superb. In addition, there were a total of 32 State-of-the-Art Lectures and 30 Symposia. I am very much impressed by both the quality of the presentations and the way they were conducted.

What have been some of the highlights of this year’s program?

One of the highlights of this year’s Congress was the Presidential Symposium. I invited three very distinguished scientists to talk about historical perspectives and future directions of research. By considering old and new perspectives in platelet research, coagulation research and fibrinolytic research, my idea was that we could look back at the history of thrombosis and hemostasis in a meaningful way. It is very important to reflect on history; it forms the basis of why we can learn, and how we move forward in our research.

I would also mention the Late-Breaking Clinical Trials that appeared towards the end of the Congress. There were some really late-breaking data, and I think the timing was appropriate. Novel antiplatelet agents or antithrombotic agents were discussed and new treatment modalities are going to be developed. The data demonstrates that these novel antithrombotic agents are effective in patients with either venous thrombosis or arterial thrombosis. Introducing these late-breaking sessions at the Congress is a new element, as the ISTH Congress mainly looks at novel findings from basic science. Clinical developments are more often presented in other big meetings such as the American Heart Association or the American Hematology Meeting, but for the biennial ISTH Congress, I thought this year would be the right time.

What are the challenges that lie ahead for the ISTH?

Our final goal is to aim for early diagnosis and effective treatment of patients with thrombosis, as well as the treatment of hematologic disorders such as hemophilia and other bleeding disorders. By discussing the latest findings and sharing knowledge with colleagues from around the world, the clinical outcome should be much improved. For these purposes, we continually need a high quality of basic science research. And from basic to clinical, bench to bedside, and also bedside to bench, developing these types of translational research are important for our Society.

Do you have a farewell message for this year’s delegates?

It has been a great pleasure to host the XXIII Congress of ISTH in Kyoto and I would like to thank all of the delegates for their support. As Council Chairman Dr. Henri Bounenameaux so elegantly noted, a visit to Japan itself at this time is a show of solidarity. Members have contributed not only to the development of high quality science in the field of thrombosis and hemostasis but have also encouraged the Japanese people to move forward in recovery and reconstruction.

Presidential Symposium

first researchers in the early 1980s to apply the then new technology of monoclonal antibodies to the study of blood platelets. "Thrombosis remains a crucial problem in the world," said Dr. Coller. "I think we can feel very proud of the fact that a flurry of new drugs are being developed based on an understanding of platelet physiology."

Hidehiko Saito, MD, of Nagoya Central Hospital, Japan, discussed remarkable advances in our understanding of the mechanisms underlying blood coagulation. Beginning with an overview of the Blood Coagulation Theory by Morawitz in 1904, he presented a timeline for the evolution of coagulation research to the present day, pausing to reflect on famous examples of hemophilia in historical figures including Queen Victoria and Prince Leopold. Dr. Saito highlighted the ways in which DNA technology and gene targeting technology in particular have been transforming our understanding of inherited disorders in recent decades. "DNA technology has allowed greater elucidation of the structure of clotting factors and inhibitors, the molecular basis of inherited disorders, DNA diagnosis of hemophilia and thrombotic tendency, and recombinant clotting factors and natural anticoagulants for replacement therapy," said Dr. Saito.

On future directions of research, Dr. Saito noted the development of a new class of oral anticoagulants for the treatment of thrombotic disorders. He focused on the importance of basic research in the development of improved methods for the diagnosis of thrombosis, and highlighted iPS cell basic research and GWAS studies as key areas that may yield further insights into vascular diseases. Victor J. Marder, MD, of David Geffen School of Medicine at UCLA, US, provided an intriguing example of the way in which the history of thrombolytic research – after more than 50 years – may have come full circle with the re-discovery of plasmin as the preferred therapeutic agent to achieve thrombolysis. Tracing the history of fibrinolysis research, Dr. Marder referred to Tillett and Garner’s influential work in 1933 and reviewed landmark papers on plasmin as a thrombolytic agent. His presentation included a discussion on controversies in the field from the 1960s to the present day.

Hematologists have long held the view that a plasminogen activator (PA) and systemic administration is preferable to local administration of plasmin, due to the fact that the original plasmin product (fibrinolysin) studied in the 1950s was found to be either ineffective or contaminated with PA. Catheters were not widely used for clinical use until the 1980s. However, with new advances in the development of safer, interventional suites for delivering plasmin, catheter delivery for local administration of the agent is increasingly being viewed as the preferred option. Dr. Marder described the recent developments as “a significant step forward in thrombolytic therapy.”