

Programme

Monday, August 23

13.30 – 15.30 Session I: Biophysical approach

Chairs: Martin Guthold / Tatiana Ugarova

13.30 – 14.00 The mechanical properties of native and gamma-crosslinking deficient fibrin fibers

O-01

Carlisle CR,¹ Liu W,¹ Sparks EA,¹ Ariens R,² Standeven K,² Guthold M.¹
¹Department of Physics, Wake Forest University, NC USA, ²Division of Cardiovascular and Diabetes Research, LIGHT Laboratories, University of Leeds, UK

14.00 – 14.20 Kinetic and solution NMR approaches for characterizing interactions involving thrombin, factor XIII activation peptides, and fibrinopeptide B.

O-02

Maurer MC.¹ Jadhav MA,¹ Goldsberry WN,¹ Lucas RC,¹ and Trumbo TA,²
¹Chemistry Department, University of Louisville, Louisville, ²Chemistry and Biochemistry Department, Bloomsburg University, Bloomsburg, USA

14.20 – 14.40 Microrheology of fibrin clots made with fibrinogen $\gamma A/\gamma'$ using magnetic tweezers

O-03

Peter Allan^{1,2}, Shirley Uitte de Willige², Simon Connell¹ and Robert Ariens².
¹Molecular and Nanoscale Physics group, Department of Physics and Astronomy, University of Leeds, Leeds, UK, ²Division of Cardiovascular & Diabetes Research, Section on Mechanisms of Thrombosis, LIGHT laboratories, University of Leeds, Leeds, UK

14.40 – 15.00 Fourier transform mechanical spectroscopy (FTMS) of fibrin gels

O-04

Hawkins K,¹ Lawrence MJ,¹ Curtis DJ,² Badiei N,² Evans PA,^{1,3} and PR Williams,² ¹Swansea University, School of Medicine, Swansea, UK, ²Swansea University, School of Engineering, Swansea, UK; ³ABMU NHS Trust, Swansea, UK

15.00 – 15.20 Increased extensibility of fibrinogen matrices forms the basis for their nonadhesive properties

O-05

Ivan S. Yermolenko^{†¶}, Alexander Fuhrmann[†], Sergei N. Magonov[§], Valeryi K. Lishko[‡], Stanislav P. Oshkadyerov[¶], Robert Ros[†] and Tatiana P. Ugarova[‡].
[‡]Center for Metabolic Biology and [†]Department of Physics, Arizona State University, Tempe, AZ, USA, [§]Agilent Technologies, Chandler, AZ, USA, [¶]Institute for Metal Physics, Kiev, Ukraine

15.20 – 15.50 Tea / Coffee

16.00 – 17.30 Session II : Novel Therapeutics

Chairs George Falus / Holger Jahr

15.50 – 16.10 First clinical experience with Fibrocaps™, a novel, pre-mixed, dry powder fibrin sealant

O-06

Cornelis Verhoef¹, Jan Ohrstrom², Monique van Rij², Linda Zuckerman², Paul A. Frohna², and Robert J. Porte³. ¹Erasmus Medical Centre, Rotterdam, The Netherlands, ²ProFibrix, Leiden, The Netherlands and Seattle, USA, and ³University Medical Centre Groningen, The Netherlands.

- 16.10 – 16.30** **Exploring fibrin knob peptides as an enabling technology for modifying fibrin-based polymer systems**
O-07
S.E. Stabenfeldt, A.S.C. Soon, W.E. Brown, C. Lee and T.H. Barker. Georgia Institute of Technology and Emory University, Atlanta, GA
- 16.30 – 16.50** **An improved role and a new shape for fibrin in second-generation hemostatic sealants.**
O-08
Grant Bochicchio¹, Leonid Medved¹, Maja Nowakowski² and George Falus³.
¹University of Maryland School of Medicine, Baltimore, MD, U.S.A. ²State University of New York Downstate School of Medicine, NY USA ³Biomedica Management Corporation, NY USA
- 16.50 – 17.10** **Anti-adhesive effect of fibrin-bound plasminogen probed by single-cell force spectroscopy**
O-09
Valeryi K. Lishko[†], Ivan S. Yermolenko[†], Robert Ros[‡] and Tatiana P. Ugarova[†].
[†]Center for Metabolic Biology and [‡]Department of Physics, Arizona State University, Tempe, AZ, USA
- 17.10 – 17.30** **Osteogenic hBMSCs in HMW and LMW fibrin gels**
O-10
Holger Jahr¹, Reinilde Scheffer², Olav van der Jagt¹, Harrie Weinans¹ and Moniek de Maat². Depts. of ¹Orthopaedics and ²Hematology, Erasmus Medical Center Rotterdam, The Netherlands.

From 19.00 **Congress Dinner**

Tuesday, August 24

Session III: Fibrinogen heterogeneity

Chairs: Stephen Brennan / Nobuo Okumura

- 9.00 – 9.15** **Hereditary fibrinogen A α -chain amyloidosis – diagnosis, pathogenesis, treatment and outcome**
O-11
Julian D. Gillmore, Helen J. Lachmann, Dorota Rowczenio, Janet A. Gilbertson, Ashutosh Wechalekar, Mark B. Pepys and Philip N. Hawkins. National Amyloidosis Centre, Centre for Amyloidosis and Acute Phase Proteins, Division of Medicine, UCL Medical School, Royal Free Hospital, London
- 9.15 – 9.30** **The effect of fibrinogen γ variants on wound healing**
O-12
Elim Y.L. Cheung¹, Ester M. Weijers³, Miao Tong², Ehsan Shokrollahi¹, Johan W. van Neck², Frank W. Leebeek¹, Pieter Koolwijk³ and Moniek P.M. de Maat¹.
¹Departments of Hematology and ²Plastic & Reconstructive Surgery, Erasmus University Medical Center, Rotterdam and ³Institute for Cardiovascular Research, Department for Physiology, VU University Medical Center, Amsterdam, The Netherlands
- 9.30 – 9.45** **Fibrinogen mutation, posttranslational modification and hepatitis**
O-13
Stephen O Brennan¹, Ryan Davis¹ Jocelyn Oliver¹ Katryn N. Furuya². ¹Molecular Pathology, Canterbury Health Laboratories, Christchurch, New Zealand, ²Pediatric Gastroenterology, Al duPont Hospital for Children, Wilmington, DE, USA.

- 9.45 – 10.00** **Fibrinogen gamma²/total fibrinogen ratio is increased in the acute but not in the subacute phase of ischemic stroke, and is associated with unfavorable outcome**
O-14
E.G. van den Herik, E.Y. Cheung, M.H. den Hertog, L.M.L. de Lau, F.W. Leebeek, D.W.J. Dippel, P.J. Koudstaal, M.P.M de Maat. Erasmus MC University Medical Center, Rotterdam, The Netherlands
- 10.00 – 10.15** **Two novel compound heterozygous variant fibrinogenemia, hypofibrinogenemic Matsumoto IX and afibrinogenemic Kurashiki II**
O-15
Nobuo Okumura, Fumiko Terasawa. Department of Biomedical Laboratory Sciences, School of Health Sciences, Shinshu University, Matsumoto, Japan
- 10.15 – 10.30** **Recombinant production of variants of Human Fibrinogen in PER.C6 cells.**
O-16
Jos Grimbergen, Bram Bout, Maureen de Jong, Linda Huisman, Miranda Weggeman, Rene van Ommen, Jaap Koopman. ProFibrix BV, Leiden, The Netherlands

10.30 – 11.00 **Tea / Coffee**

11.00 – 12.40 **Session IV : Fibrin structure + fibrinogen regulation**

Chairs: John Weisel / Susan Lord

- 11.00 – 11.20** **Visualization and identification of the structures formed during early stages of fibrin polymerization**
O-17
Irina N. Chernysh, Chandrasekaran Nagaswami, John W. Weisel. Department of Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA USA
- 11.20 – 11.40** **Exploring the function of the α C region with a human/chicken hybrid fibrinogen**
O-18
Lifang Ping \ddagger , Nathan E. Hudson*, Michael R. Falvo*, and Susan T. Lord \ddagger . \ddagger Department of Pathology and Laboratory Medicine, *Department of Physics and Astronomy, University of North Carolina at Chapel Hill, Chapel Hill, USA
- 11.40 – 12.00** **A novel liver enhancer in the fibrinogen gene cluster**
O-19
Alexandre Fort¹, Richard J. Fish¹, Catia Attanasio², Axel Visel^{2,3} and Marguerite Neerman-Arbez^{1,4}. ¹Department of Genetic Medicine and Development, University of Geneva Faculty of Medicine, Geneva, Switzerland. ²Genomics Division, Lawrence Berkeley National Laboratory, Berkeley, CA, USA. ³US Department of Energy Joint Genome Institute, Walnut Creek, CA, USA. and ⁴Division of Angiology and Hemostasis, University Hospital, Geneva, Switzerland
- 12.00 – 12.20** **Strain stiffening of individual fibers strengthens fibrin networks**
O-20
Nathan E. Hudson*, Olamide Olusesi*, E. Timothy O'Brien*, Richard Superfine*, Susan T. Lord \ddagger , and Michael R. Falvo*. *Department of Physics and Astronomy, \ddagger Department of Pathology and Laboratory Medicine, University of North Carolina at Chapel Hill, Chapel Hill, USA
- 12.20 – 12.40** **Differential methylation of CpGs across the Fibrinogen gene cluster correlated with fibrinogen expression**
O-21
Silja Vorjohann¹, Richard J. Fish¹ and Marguerite Neerman-Arbez^{1,2}. ¹Department of Genetic Medicine and Development, University of Geneva Medical Centre, Geneva, Switzerland. ²Division of Angiology and Hemostasis, University Hospitals of Geneva, Switzerland

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| 12.40 – 14.30 | Lunch and Poster viewing |
| 14.30 – 16.20 | Session V: Interaction with cells and proteins Chairs: David Lominadze / Leonid Medved |
| 14.30 – 15.00 | Molecular weight fibrinogen variants alter endothelial cell characteristics |
| O-22 | <u>Ester M. Weijers</u> ¹ , Moniek P.M. de Maat ² , Victor W.M. van Hinsbergh ¹ and Pieter Koolwijk ¹ . ¹ Dept. Physiology (ICaR-VU), VU University Medical Center, Amsterdam, The Netherlands, ² Dept. Haematology, Erasmus Medical Center, Rotterdam, The Netherlands |
| 15.00 – 15.20 | Physiological effects of increased fibrinogen content on microcirculation |
| O-23 | David Lominadze. Department of Physiology and Biophysics, University of Louisville, Louisville, KY, USA |
| 15.20 – 15.40 | Recognizing fibrinogen human erythrocyte receptor via an atomic force microscopy approach |
| O-24 | <u>Filomena A. Carvalho</u> ¹ , Simon Connell ² , Gabriel Miltenberger-Miltenyi ^{1,3} , Sónia Vale Pereira ³ , Alice Tavares ⁴ , Robert A.S. Ariëns ⁵ , Nuno C. Santos ¹ . ¹ Instituto de Medicina Molecular, Faculdade de Medicina da Universidade de Lisboa, Lisbon, Portugal. ² School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom. ³ GenoMed Diagnosticos de Medicina Molecular, Lisbon, Portugal. ⁴ Serviço de Imuno-Hemoterapia, Hospital de Santa Maria, Centro Hospitalar Lisboa Norte, Lisbon, Portugal. ⁵ Division of Cardiovascular and Diabetes Research, Leeds Institute for Genetics, Health and Therapeutics, University of Leeds, Leeds, United Kingdom. |
| 15.40 – 16.00 | Anti-inflammatory effect of fibrin-derived fragments |
| O-25 | <u>Leonid Medved</u> , Sergiy Yakovlev, Chunzhang Cao, Yamey Gao, and Li Zhang. Center for Vascular and Inflammatory Diseases, University of Maryland School of Medicine, Baltimore, MD, USA |
| 16.00 – 16.20 | The roles of fibrin(ogen) γC400-411 and RGD sites in the interactions between platelet integrin αIIbβ3 and monomeric fibrin |
| O-26 | Rustem I. Litvinov ¹ , David H. Farrell ² , Joel S. Bennett ¹ , <u>John W. Weisel</u> ¹ . ¹ University of Pennsylvania School of Medicine, Philadelphia, PA, USA, ² Oregon Health & Science University School of Medicine University, Portland, OR, USA |
| 16.20 – 16.45 | Tea / Coffee |
| 16.45 – 17.30 | Session VI: Fibrinogen diagnostics Chairs: Abbas Dehghan / Carl-Erik Demple |
| 16.45 – 17.00 | Genome-wide association studies of circulating fibrinogen levels |
| O-27 | <u>Abbas Dehghan</u> , Jie Huang, Moniek de Maat, Nicholas L. Smith, Jacqueline Witteman, Christopher O'Donnell, on behalf of the CHARGE Consortium Homeostasis Working Group |
| 17.00 – 17.15 | A zebrafish model for human fibrinogen disorders |
| O-28 | <u>Richard J. Fish</u> ¹ , Alexandre Fort ¹ , Corinne di Sanza ¹ , Silja Vorjohann ¹ , Franck Bontems ² , Roland Dosch ³ and Marguerite Neerman-Arbez ^{1,4} . ¹ Dept of Genetic Medicine and Development, University of Geneva Medical Centre, Geneva, ² CALIPHO group, University of Geneva Medical Centre, Geneva, ³ Department of Developmental Biochemistry, University of Göttingen, Germany. ⁴ Service of Angiology and Hemostasis, University Hospitals of Geneva, Switzerland. |

17.15 – 17.30 **Influence of Hydroxyethylstarch dilution on measurement of plasma fibrinogen**
O-29
Carl-Erik Dempfle, Nenad Suvajac. University Medical Centre Mannheim, Department of Medicine, Mannheim, Germany

From 18.00 **Reception at City Hall**

Wednesday, August 25

9.00 **Bus transport to Amsterdam (Krasnapolsky Hotel) for the shared day with the ISFP.**

Plenary Lecture
Grand Ballroom Krasnapolski Hotel
Chairs: Désiré Collen / Moniek de Maat

11.15 – 12.00 **Clinical relevance of fibrin structure for coagulation and fibrinolysis**
O3-2
SusanT Lord. UNC-Chapel Hill, Chapel Hill, USA

12.00 – 13.30 **Lunch and Poster Viewing**

13.30 – 15.00 **Symposium: Quality Of Fibrin: Sensitivity To Lysis**
Grand Ballroom Krasnapolski Hotel
Chairs: Nuala Booth / Robert Ariëns

13.30 – 14.00 **Role of fibrin clot structure in susceptibility to lysis**
O4A-1
RAS Ariëns, R Ajjan, KF Standeven, S Uitte de Willige, NJ Mutch, H Philippou. University of Leeds, Leeds, United Kingdom

14.00 – 14.15 **Effects of total fibrinogen and fibrinogen γ' on thrombin generation in plasma**
O4A-2
E Castoldi¹, S Uitte de Willige², RJ Dirven³, RAS Ariëns², J Rosing¹, R Bertina³. ¹Maastricht University, Maastricht, The Netherlands, ²University of Leeds, Leeds, United Kingdom, ³Leiden University, Leiden, The Netherlands

14.15 – 14.30 **Clots formed from γ' -fibrinogen are resistant to lysis because of impaired plasminogen activation by t-PA**
O4A-3
PYS Kim, BA Leslie, AR Stafford, T Vu, JC Fredenburgh, JI Weitz. Thrombosis and Atherosclerosis Research Institute, McMaster University, Hamilton, Canada

14.30 – 14.45 **Hampereed dissolution of fibrin formed under mechanical stress**
O4A-4
K Kolev¹, I Varju¹, L Szabó², R Machovich¹, M Silva³, C Longstaff³. ¹Semmelweis University, Budapest, Hungary, ²Chemical Research Center, Hungarian Academy of Sciences, Budapest, Hungary, ³National Institute for Biological Standards and Control, South Mimms, Potters Bar, United Kingdom

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| 14.45 – 15.00 | Composition of coronary thrombi in acute myocardial infarction |
| O4A-5 | J Silvain ¹ , JP Collet ¹ , C Nagaswami ² , F Beygui ¹ , K Edmondson ² , A Bellemain-Appaix ¹ , A Pena ¹ , O Barthelemy ¹ , G Montalescot ¹ , JW Weisel ² . ¹ INSERM CMR937, Pitié-Salpêtrière Hospital (AP-HP), Université Paris 6, Paris, France, ² University of Pennsylvania School of Medicine, Philadelphia, USA |
| 15.00 – 15.30 | Tea and Coffee |
| 15.30 – 18.00 | Symposium: Massive Hemorrhage In The Intensive Care Grand Ballroom Krasnapolski Hotel Chairs: Frank Leebeek / Hugo ten Cate |
| 15.30 – 15.45 | Introduction: Bleeding and thromboelastography |
| O5A-1 | Hugo ten Cate. Department of Internal Medicine and Cardiovascular Research Institute Maastricht, Maastricht University Medical Center, The Netherlands |
| 15.45 – 16.15 | The clinical problem and trials with fibrinogen |
| O5A-2 | N. Rahe-Meyer. Hannover Medical School, Hannover, Germany |
| 16.15 – 16.30 | The effect of blood plasma substitutes on fibrin structure |
| O5A-3 | C Fenger-Eriksen ¹ , B Sørensen ² . ¹ Aarhus University Hospital, Aarhus, Denmark, ² Haemostasis Research Unit, St. Thomas Hospital, London, United Kingdom |
| 16.30 – 18.00 | Workshop: Case presentations |
| 16.30 – 16.40 | Thrombelastography-based monitoring for massive blood loss in children during elective surgery for craniosynostosis repair, TEG® versus ROTEM® |
| O5A-4 | A Machotta ¹ , J Geerts ² , B Grimminck ² , RL Stigter ² , MJ Poley ³ , MJ Al ³ , IM Appel ² . ¹ Department of Anaesthesiology; ² Department of Paediatric Oncology/Haematology; ³ The institute for Medical Technology Assessment (iMTA), Erasmus MC/ Sophia Children's Hospital, Erasmus University Medical Centre, Rotterdam, The Netherlands |
| 16.40 – 16.50 | Fibrinogen and post-partum hemorrhage: From prediction to treatment |
| O5A-5 | AS Ducloy-Bouthors, C Pilla, A Bauters, B Wibaut, B Jude. Centre Hospitalier Régional et Universitaire, Lille, France |
| 16.50 – 18.00 | Interactive panel discussion on clinical and diagnostic issues |