

**24<sup>th</sup> EUROPEAN SYMPOSIUM ON ULTRASOUND CONTRAST IMAGING**  
**17-18 JANUARY 2019, Rotterdam, The Netherlands**

**WEDNESDAY, 16 January 2019**

**18.00 – 20.00**      **Registration - Welcome Drinks [1<sup>st</sup> floor, Hilton hotel Rotterdam]**

**THURSDAY, 17 January 2019**

**Oral program**

**08.00 – 09.00**      **Registration**

**09.00 – 09.10**      **Introduction and opening** .....

**09.10 – 10.20**      **(PRE)CLINICAL THERAPY** ..... *Chairpersons: Steve Feinstein and Ayache Bouakaz*

Kullervo Hynynen      Review of the clinical experience with enhancing blood-brain barrier permeability using focused ultrasound and microbubbles .....

John Eisenbrey      Augmenting radiotherapy with ultrasound-sensitive microbubbles .....

Paul Sheeran      Peripheral flow augmentation mediated by microbubble cavitation from a programmable clinical matrix array transducer .....

Richard Benninger      Detecting pancreatic islet immune infiltration in pre-symptomatic type 1 diabetes using sub-micron scale ultrasound contrast agents .....

**10.20 – 10.55**      **Postersessions C and D**

**10.55 – 11.10**      **Coffee**

**11.10 – 12.40**      **THERAPY: Towards clinical use** ..... *Chairpersons: Beat Kaufmann and Folkert ten Cate*

Pintong Huang      A Novel Therapeutic Strategy using Ultrasound Mediated Microbubbles Destruction to Treat Colon Cancer in A Mouse Model .....

Constantin Coussios      Passively Mapped Cavitation-Enhanced Oncological Drug Delivery using Sub-Micron Gas-Stabilizing Solid Particles .....

Jean-Michel Escoffre      Nab-paclitaxel delivery with microbubble-assisted ultrasound in human pancreatic cancer mouse model .....

Twan Lammers      Visualizing and Quantifying Sonoporation-induced Nanocarrier Translocation across the Blood-Brain Barrier .....

John Pacella      Ultrasound-targeted microbubble cavitation with sodium nitrite synergistically enhances nitric oxide production and microvascular perfusion .....

**12.40 – 13.40**      **LUNCH**

**13.40 – 14.10**      **DUTCH HEART FOUNDATION LECTURE** ..... *Chairperson: Annemien van den Bosch*

Wilson Mathias      Clinical Outcome of Patients Treated With Diagnostic Ultrasound Guided High Mechanical Index Impulses To Restore Microvascular Flow in ST segment Elevation Acute Myocardial Infarction .....

**14.10 – 15.40**      **THERAPY: The Basics** ..... *Chairpersons: Olivier Couture and Klazina Kooiman*

Eleanor Stride      A Multi-Bubble Sonoluminescence in Sonodynamic Therapy .....

Christy Holland      Lipid-shelled microbubbles for ultrasound-triggered release of Xenon for neuroprotection .....

Brandon Helfield      Transendothelial perforations and the sphere of influence of single site sonoporation .....

Inés Beekers      Cellular calcium during microbubble-mediated drug delivery revealed with combined confocal microscopy and Brandaris 128 imaging .....

Silke Roovers      Liposome-loaded microbubbles and ultrasound enhance drug delivery in a 3D tumor spheroid .....

**15.40 – 16.10**      **Intermission**

**16.10 – 17.40**      **HIGH FRAME RATE IMAGING** ..... *Chairpersons: Dan Adam and Mike Averkiou*

Olivier Couture      Brain ultrasonography, with and without contrast agents .....

Jason Voorneveld      High-volume-rate 4D echoPIV, in vitro results in a dynamic left ventricular phantom .....

Baptiste Heiles      Volumetric ultrafast Ultrasound Localisation Microscopy in vivo .....

Mengxing Tang      Towards Real-Time Super-Resolution Imaging: Fast Acoustic Wave Sparsely Activated Localization Microscopy (fast-AWSALM) using Octafluoropropane Nanodroplet .....

Annemien van den Bosch      Left ventricular flow patterns: A new aspect elucidated by high-frame rate echocardiography .....

**18.30 – 22.30**      **EVENING PROGRAM (Incl. Dinner buffet)**

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**07.30 – 08.00 Registration**

**07.30 – 09.00 MODERATED POSTER SESSIONS A and B**

**Oral program**

**09.00 – 10.10 BUBBLE TECHNOLOGY** ..... *Chairpersons: Michel Versluis and Rik Vos*  
Mark Borden A study of radiation force effects in plane-wave transmission mode.....  
Steven Wrenn Influence of Electric Field on Acoustic Spectra of Nested Contrast Agents .....  
Tim Segers Tunable shell stiffness of phospholipid coated monodisperse microbubbles for non-invasive blood pressure measurement  
David Maresca Nonlinear X-Wave Ultrasound Imaging of Acoustic Biomolecules .....

**10.10 – 10.45 Postersessions E and F**

**10.45 – 11.00 Coffee**

**11.00 – 12.30 CLINICAL CONTRAST IMAGING** ..... *Chairpersons: Pintong Huang and Arend Schinkel*  
Steven Feinstein Vascular imaging: Biomarker of systemic atherosclerosis/inflammation.....  
Misun Hwang Quantitative CEUS Parameters for Detection of Neonatal Hypoxic Ischemic Injury .....  
Norbert Lorenz Intravenous CEUS in a pediatric setting - common and rare applications .....  
Rogier Wildeboer Prostate cancer localization based on multiparametric quantification of three-dimensional transrectal  
contrast-enhanced ultrasound.....  
Reinhard Kubale Quantification of Endoleaks in EVAR.....

**12.30 – 13.30 LUNCH**

**13.30 – 15.15 COMPETITION: IMAGE GUIDED THERAPY** ..... *Chairpersons: Eleanor Stride and Nico de Jong*  
Ryan Jones Ultrafast Three-Dimensional Microbubble Imaging Predicts Tissue Damage Following Nonthermal Brain Ablation  
Sophie Morse Single-cycle ultrasound drug delivery and passive acoustic mapping in the brain in vivo .....  
Christophoros Mannaris Predictive Real-Time Monitoring of Cavitation-Enhanced Immunotherapies by Passive Acoustic Mapping .....  
Aditi Bellary Perfusion-Guided Monitoring of Tumor Response to Sonoporation and Prediction of Liposomal Doxorubicin Uptake  
Using Microbubble Contrast Agents.....  
Dingjie Suo Image-guided bubble-enhanced thermal ablation .....  
Alexander Klibanov Image-guided therapy with ultrasound and microbubbles: a tool to monitor in vivo events in real time.....

**15.15 – 15.45 COEUR LECTURE** ..... *Chairperson: Peter Burns*  
Fabian Kiessling The magnificent bubble: More than just air .....

**16.00 – 16.10 DISCUSSION AND CONCLUSIONS**.....

**16.00 – 16.10 CLOSING REMARKS**..... *Nico de Jong*

**16.10 FAREWELL DRINKS**

**ANNOUNCEMENT OF THE WINNERS OF THE COMPETITION AND POSTER PRIZES**

**Organised by:** Nico de Jong, Folkert ten Cate, Rik Vos, Klazina Kooiman, Annemien van den Bosch, Arend Schinkel

**Scientific board:** Mike Averkiou, Mark Borden, Paolo Colonna, Olivier Couture, Beat Kaufmann, Eleanor Stride.

## Poster sessions Thursday

- Thursday 10.25-11.10**      **POSTER SESSION C: NEW DIRECTIONS TECHNOLOGY I** ..... Election by the audience
- C1) Hongjian Chen      [Sequence design for ultrasound imaging of polyvinyl alcohol microbubbles](#) .....
- C2) Isabel Newsome      [Assessment of the Superharmonic Response of Microbubble Contrast Agents for Acoustic Angiography As A Function of Microbubble Parameter](#) .....
- C3) Hugo Robert      [Longitudinal Follow-up Analyses for Quantification of Contrast-Enhanced Ultrasound Imaging](#) .....
- C4) Gonzalo Collado      [Measuring the effect of Radiotherapeutic Radiation on Commercially Available Microbubbles](#) .....
- C5) Matthew Bruce      [Segmentation of stationary microbubbles: the foundation for targeted molecular imaging](#) .....
- C6) John Hossack      [Catheter-based, instrumented, flow focusing microfluidics device for production, counting and sizing of monodisperse microbubbles optimized for sonothrombolysis](#) .....
- C7) Jason Voorneveld      [High frame rate echoPIV reveals the transient flow patterns in heart failure patients](#) .....
- C8) Laura Peralta Pereira / Kirsten Christensen      [Microbubble Contrast Agents for Coherent Multi-Transducer Ultrasound Imaging](#) .....
- C9) Stefan Engelhard      [Contrast-Enhanced Ultrasound for velocimetry in the diseased aorto-iliac tract](#) .....
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- Thursday 10.25-11.10**      **POSTER SESSION D: NEW DIRECTIONS CLINICAL** ..... Election by the audience
- D1) Christophe Mannaerts      [Detection of significant prostate cancer: Contrast-enhanced ultrasound and multiparametric MRI-targeted biopsy in comparison with standard systematic biopsy](#) .....
- D2) Noboru Sasaki      [Ultrasound-mediated intravesical chemotherapy: ex vivo evaluation](#) .....
- D3) Roel Deckers      [Ultrasound-sensitive liposomes for macromolecular drug delivery](#) .....
- D4) Mindaugas Tamošiūnas      [Cytotoxicity evaluation of sonodynamic therapy combined with microbubble contrast agent in vitro](#) .....
- D5) Josanne de Maar      [Bleomycin plus ultrasound and microbubbles to treat feline oral squamous cell carcinoma, as a model for human head and neck cancer, study design of the BUBBLEFISH Trial](#) .....
- D6) Matthew Copping      [Drug delivery across the blood-brain barrier using short 300-kHz pulses of ultrasound and microbubbles](#) .....
- D7) Rahul Misra      [3D tumor spheroid model for in-vivo therapeutic predictions of Sonochemotherapy](#) .....
- D8) Xucai Chen      [STAT3 Decoy Oligonucleotide-carrying Microbubbles with Pulsed Ultrasound for Enhanced Therapeutic Effect in Head and Neck Tumors](#) .....
- D9) Joop Kouijzer      [Targeted microbubbles as a novel therapy for Staphylococcus aureus biofilms on cardiac devices](#) .....
- D10) Charis Rousou      [Therapeutic applications of ultrasound for retinal drug delivery using \*in vitro\* and \*ex vivo\* models](#) .....

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**07.30 – 08.00 Registration**

**Poster sessions Friday**

**07.30 – 09.00**

**MODERATED POSTER SESSION A: BIOLOGY/CLINICAL**..... Moderator: Klazina Kooiman

- A1) Anne Rix Contrast enhanced ultrasound treatment enhances tumor perfusion in breast cancer patients – first results .....
- A2) Yue Song Ultrasonic Induction of Apoptosis of Pancreatic Cancer through Activation of the Mechanosensitive Channel Piezo .
- A3) Ragnhild Haugse Sonoporation efficacy and intracellular mechanisms: Cancer cells vs. healthy cells .....
- A4) Gareth LuTheryn ULTRASOUND RESPONSIVE BIOACTIVE MICROBUBBLES FOR THE ERADICATION OF BIOFILMS .....
- A5) Tiffany Chan Ultrasound-mediated delivery of DNA-coated gold nanoparticles across the blood-brain barrier .....
- A6) Oliver Vince The role of microbubble composition in sonoporation.....
- A7) Filip Istvanic Clinical Translation of Sonoreperfusion Therapy for Treatment of Microvascular Obstruction .....
- A8) Liza Villanueva Ultrasound-mediated antitumor efficacy of liposomal doxorubicin conjugated polymer microbubbles with reduced cardiotoxicity in a mouse model of soft tissue sarcoma .....

**07.30 – 09.00**

**MODERATED POSTER SESSION B: TECHNOLOGY** ..... Moderator: Rik Vos

- B1) Kenneth Bader Classification of histotripsy liquefaction in vitro with passive cavitation imaging.....
- B2) Pauline Muleki-Seya Ultrafast radial modulation imaging .....
- B3) Emmanuel Gaud The Bubble Counter: a unique device for the precise control of microfluidically formed monodisperse microbubbles.
- B4) Peiran Chen Blood flow patterns analysis in the left ventricle by dynamic contrast-enhanced ultrasound at low frame rates ....
- B5) Jemma Brown High Dynamic Range Non-linear Ultrasound Imaging.....
- B6) Jorinde Kortebout Repeatability of contrast enhanced ultrasound to measure cerebral blood flow using the middle cerebral artery as a reference .....
- B7) Luzhen Nie Motion Compensation for High Frame-rate Contrast-enhanced Echocardiography using Diverging Waves.....
- B8) Kirsten Christensen / Mengxing Tang 3D Super-Resolution Ultrasound Imaging In Vitro using a 2D Sparse Array .....

**Friday 10.15-11.00**

**POSTER SESSION E: NEW DIRECTIONS UCA**..... Election by the audience

- E1) Ryo Suzuki Development of a long-circulating ultrasound contrast agent .....
- E2) Sophie Heymans Investigation of PCDA-PFB nanodroplets for multimodal imaging and *in vivo* dosimetry of radiation therapy .....
- E3) Amanda Pessoa Microfluidic production of fibrin-targeted polymerized shell microbubbles .....
- E4) Yosra Toumia Graphene Hybrid Contrast Agents for Ultrasound and Multiplexed Photoacoustic Imaging .....
- E5) Andrea Ancona Focused ultrasound induced inertial cavitation by amino-propyl functionalized ZnO nanoparticles .....
- E6) Fabio Domenici Development of a polymeric contrast platforms .....
- E7) Alexandra Kosareva Targeting of vascular cell adhesion molecule 1 with an ultrasound contrast agent bearing Designed Ankyrin Repeat Proteins as targeting ligands .....
- E8) Shashank Sirsi Formulation and Stability of Chemically-Crosslinked Microbubble Clusters: Novel Applications in Imaging and Therapy
- E9) Simone Langeveld Lipid coating structure and acoustic response of ultrasound contrast agents containing cholesterol .....
- E10) Sara Ferri Acoustically-stimulated nanodroplets for bone fracture repair .....

**Friday 10.15-11.00**

**POSTER SESSION F: NEW DIRECTIONS TECHNOLOGY II** ..... Election by the audience

- F1) Gihun Son Level-set based numerical simulation of acoustic droplet vaporization.....
- F2) Elliott Teston Ultrasound precise vaporization threshold microdroplets.....
- F3) Simona Turco Pharmacokinetic analysis of targeted nanobubbles for quantitative assessment of PSMA expression in prostate cancer
- F4) Catherine Pavard Multi-Source Passive Acoustic Source Localisation for Diagnostic and Therapeutic Applications .....
- F5) Cameron Smith Spatiotemporal assessment of the cellular safety of cavitation-based therapies by passive acoustic mapping .....
- F6) Roger Domingo-Roca Microbubble – microvessel interactions and their influence on UmTDD: Simulation study.....
- F7) Sara Keller Real-time Cavitation Therapy Monitoring with a Clinical Scanner.....
- F8) James Bezer Single-bubble-induced elastic deformation of capillary-mimicking hydrogel channels .....
- F9) Michael Calvisi A novel model for an encapsulated microbubble based on transient network theory .....