Program IABR Breath Summit 2018

Location: Crowne Plaza, Maastricht, The Netherlands

Day 1: Sunday, June 17th, 2018

Ancilliary room
14:00 - 16:00  Meet the Editorial Board of JBR - chairs Joachim Pleil and Antigoni Messaritaki

15:00 - 19:00  Registration (Lobby)

Ceramique rooms
16:15 - 16:20  Welcoming words on behalf of the local organizing committee (Frederik-Jan van Schooten)
16:20 - 16:30  Announcement of the 2018 Anton Amann Award recipient (Marieann Högman)
16:30 - 17:15  Plenary lecture by the 2018 Anton Amann Award recipient

17:15 - 19:30  Opening reception (Hors d'oeuvres and Hosted Bar)
Day 2: Monday, June 18th, 2018

08:00 - 17:00 Registration (Lobby)

Ceramique rooms
Plenary session - chaired by Frederik-Jan van Schooten

09:00 - 09:20 Opening of the meeting by Frederik-Jan van Schooten, summit chair
Welcome by Martin Paul, President Maastricht University
Welcome by Marieann Högman, IABR chair

09:20 - 09:55 Jochen Schubert - Which steps have to be taken to get breath research into clinic practice?

09:55 - 10:30 Drupad Trivedi - Small molecules, big promises: the future of personalised medicine

10:30 - 11:00 Coffee Break

11:00 – 12:30 Standardized practices - breath sampling and analysis
Chair: Jonathan Beauchamp + Wolfram Miekisch

11:00 - 11:30 Ben Henderson and Dahlia Salman: Peppermint - a Benchmarking Protocol

11:30 - 11:50 Ilaria Belluomo: A quality control strategy for breath collection in thermal desorption tubes

11:50 - 12:10 Marc van der Schee: validation of a methodology for evaluating longitudinal change of VOCs in breath

12:10 - 12:30 Sean Harshman: The characterization of a standardized breath sampling device for off-line TD-GC-MS analysis

Bordeaux rooms
Bacterial studies: in vitro and in vivo
Chair: Olaf Holz + Jane Hill

11:00 - 11:30 Matthias Frank: Characterization of VOCs Emitted from Pathogenic Bacteria Using SPME-GC-MS: Towards Non-Invasive Breath Diagnostics for Biosecurity

11:30 - 11:50 Günter Becher: Screening for clinically relevant bacterial infections by single-breath test with IMS


12:10 - 12:30 Olaf Holz: Changes of breath VOCs in healthy volunteer subjects following segmental and inhalation challenge with endotoxin

12:30 – 13.30 Lunch break (Pommard + Macon hall)

Ceramique rooms
Clinical studies - lung diseases
Chair: Marieann Högman + Agnes Boots

13:30 - 15:00 Marieann Högman: Higher alveolar nitric oxide in COPD subjects with lower oxygen saturation

14:00 - 14:20 Rianne de Vries: exhaled breath analysis for prediction of response to anti-PD1 therapy in patients with NSCLC

14:20 - 14:40 Agnes Boots: Exhaled air analysis in discriminating interstitial lung diseases

14:40 - 15:00 Marcus Wolff: Photoacoustic analyzer for lung cancer biomarkers

Bordeaux rooms
Analytical platforms: gases and mass spectrometry
Chair: Renato Zenobi + Veronika Ruszanyi

13:30 - 15:00 Renato Zenobi: Comparison of the analytical performance of SESI-MS, SIFT-MS and PTR-MS for real-time analysis of exhaled breath and biomarker identification

14:00 - 14:20 Tommaso Lomonaco: Determination of carbonyl compounds in exhaled breath by on-sorbent derivatization coupled with thermal desorption and gas chromatography-tandem mass spectrometry

14:20 - 14:40 Leila Hagemann: Combining Fourier Transform Infrared Spectroscopy and Differential Mobility Spectrometry for Advanced Vapor Phase Analysis

14:40 - 15:00 Tomasz Ligor: Application of hyphenated chromatographic techniques (GC/MS, GCxGC TOF MS) for identification of VOC in biological samples - method optimization
### 15:00 - 15:30 Coffee Break

**Ceramique rooms**

15:30 - 17:00  
Clinical phenotyping - stable isotopes

**Chair:** Anil Modak + Makoto Sawano

- **15:30 - 16:00**  
  Anil Modak: Companion Diagnostic (CDx) for personalizing psychiatric medications

- **16:00 - 16:20**  
  Oliver Gould: GC-MS quantification of key odour causing volatile compounds in stool using $^{13}$C-labelled compounds

- **16:20 - 16:40**  
  Makato Sawano: a novel $^{13}$C-breath test indicates predictor of impaired glucose absorption after gastric surgery

- **16:40 - 17:00**  
  Chuji Wang: Cavity Ringdown Breath Analyzer for CO$_2$ and Its Carbon-13 Isotope

**Bordeaux rooms**

15:30 - 17:00  
Sensors, engineering

**Chair:** Cristina Davis + Andreas Güntner

- **15:30 - 16:00**  
  Andreas Güntner: Monitoring fat burn from with breath acetone sensors

- **16:00 - 16:20**  
  Thomas Chappui: Miniaturization of breath sampling with silicon chip: application to volatile tobacco markers analysis tracking

- **16:20 - 16:40**  
  Yong-Sahm Choe: A standalone breath analyzer for selective detection of exhaled isoprene using a gas separation unit and a semiconductor gas sensor

- **16:40 - 17:00**  
  Zhengjun Zhang: Gas sensing by surface-enhanced Raman scattering

### Outside on stairs

17:00  
**Photo Shoot with the whole group**

### Pommard + Macon hall

17:30 – 19:30  
Poster session and industrial exhibition (with Hors d’oeuvres and Hosted Bar)

*Posters will be on display and industrial booths open during the whole meeting*
Day 3: Tuesday, June 19th, 2018
08:00 - 17:00  Registration (Lobby)

Plenary session – chaired by Agnes Boots

Ceramic rooms
09:00 - 09:35  Joachim Pleil – Medical investigations linked with analytical chemistry: from bed to bench
09:35 - 10:10  Cristina Davis – New insights in sensor technologies: from bench to bed

10:10 - 10:40  Coffee Break

Ceramic rooms
10:40 – 12:10  Clinical studies - digestive tract disorders
Chair: Norman Ratcliffe + Roger Yazbek
10:40 - 11:10  Norman Ratcliffe: A mechanistic study of products from peroxidation of unsaturated fatty acids: an aid to understanding volatile organic compounds from the human body and their application to disease diagnoses
11:10 - 11:30  Georgia Woodfield: Breath testing – preparing for clinical practice
11:30 - 11:50  Kim Hintzen: Evaluation of the potential of exhaled volatile organic compound analysis to diagnose anastomotic leakage following colorectal surgery: a pilot study
11:50 - 12:10  Sophie Doran: Investigation of the effect of physiological factors on breath testing in patients with oesophago-gastric cancer

Bordeaux rooms
10:40 – 12:10  Data handling: Mathematical, Statistical
Chair: Jörg Ingo Baumbach + Agnieszka Smolinska
10:40 - 11:10  Agnieszka Smolinska – multi-omic approaches
11:10 - 11:30  Alexander Apolonskiy – Breath study via mid-infrared spectroscopy: an individual’s island of stability (IOS)
11:30 - 11:50  Waqar Ahmed: Methodological considerations for large-scale breath analysis studies
11:50 - 12:10  Luke Bryant: Assessing the prevalence of volatile organic compounds in exhaled breath based on real-time PTR-ToF-MS data by K-means cluster analysis

12:10 - 13:30  Lunch break (Pommard + Maccon hall)

Ceramic rooms
13:30 – 15.00  Clinical studies - intensive care and infections
Chair: Stephen Fowler + Lieve Bos
13:30 - 14:00  Lieve Bos: Volatile organic compound profiles in outlet air from extracorporeal life-support devices differ from breath profiles in critically ill patients
14:00 - 14:20  Iain White: Breath Analysis in Intensive Care: Proof of Concept for Non-Invasive Diagnosis of Ventilator Associated Pneumonia
14:20 - 14:40  Heather Bean: Investigating metabolic adaptation in P. aeruginosa chronic infections using GC×GC-TOFMS
14:40 - 15:00  Amalia Berna: Breathprinting reveals malaria-associated biomarkers and mosquito attractants

Bordeaux rooms
13:30 – 15.00  Human monitoring: exposome and population
Chair: Phillip Trefz + Michael Davis
13:30 - 14:00  Veronika Ruszanyi: Tracking humans based on their emitted volatiles
14:00 - 14:20  Florian Schmoldt: Extended eCO analysis in clinical studies: healthy-population baseline and wood smoke exposure
14:20 - 14:40  Charlotte Pawels: Concentrations of volatile organic compounds 1,3-butadiene and benzene in headspace of smokers’ blood as biomarker of exposure
14:40 - 15:00  Thomas Goddard: Longitudinal analysis of background room air VOCs in a new hospital

15:00 - 15:30  Coffee Break
### Ceramique rooms

**15:30 - 17:00** Clinical studies: extrapulmonary diseases

**Chair:** Michael Phillips + Marc van der Schee

15:30 - 16:00 Michael Phillips: Prediction of breath cancer risk with volatile biomarkers in breath

16:00 - 16:20 Fabio De Francesco: Determination of volatile organic compounds in exhaled breath of heart failure patients by needle trap micro-extraction coupled with gas chromatography-tandem mass spectrometry

16:20 - 16:40 Nuwan Dharmawardana: Characterization of breath volatile organic compounds in patients with upper aerodigestive mucosal squamous cell carcinoma

16:40 - 17:00 Valentina Vassilenko: Mental Stress Monitoring through Exhaled Air Analytics: A Pilot Study

#### Bordeaux rooms

**15:30 - 17:00** Headspace analysis: cells and bacteria

**Chair:** Matthias Frank + Ann-Christin Bischoff

15:30 - 16:00 Anne Küntzel: MAP-specific volatile organic compound profile: a comparative analysis of three different in vitro studies

16:00 - 16:20 Ann-Christin Bischoff: Volatile profiling of stem cell proliferation by means of GC-MS

16:20 - 16:40 Abigail Rutter: Detecting lung cancer cell volatiles following the addition of a chemotherapeutic drug using SIFT-MS and cell cloning

16:40 - 17:00 Ileana Ratju: Detection of bacterial markers from different matrices using GC-MS approaches

17:00 - 18:00 Break-outs for Focus Groups organized by the Chairs of the Focus Groups (for IABR members only)

### 19:00 - 24:00 Walking Dinner at Brasserie Tapijn and dancing with music from the Rolling Beatles
Day 4: Wednesday, June 20th, 2018

Ceramique rooms

09:00 – 10:30  Plenary reporting of plans focus groups by its chair (5-10 min per group)
   Chair: Marieann Högman
   - Standardisation
   - Engineering/sensors
   - High-resolution mass spectrometry
   - In vitro metabolome
   - Medical diagnosis based on the use of stable isotopes
   - The human volatilome
   - Veterinary studies and animal models
   - Exhaled breath condensate (EBC) and aerosols
   - Jonathan Beauchamp & Wolfram Miekisch
   - Cristina Davis
   - Joachim Pleil
   - Jane Hill
   - Anil Modak
   - Norman Ratcliffe
   - Petra Reinhold
   - Michael Davis
   No representative
   - Human exposome and toxicity studies
   - Perioperative and critical care
   - Oral metabolome
   - Real-time spectrometry and spectroscopy
   - Clinical applications of breath testing
   - Apologized
   - Michael Madden
   - Nandor Marczin
   - vacancy
   - Patrik Španěl
   - Raed Dweik

10:30 - 11:00 Coffee Break

Ceramique rooms

11:00 – 12:30  Breath analysis from an industrial point of view
   Chair: Jens Herbig + Frederik-Jan van Schooten
   11:00 - 11:30  Jens Herbig: How many compounds do you see in breath?
   11:30 - 11:50  Luca Cappelin: Improved PTR-TOF sensitivities, detection limits and mass resolving power open new scenarios in breath analysis
   11:50 - 12:10  Guillermo Vidal: Re-engineering real-time SESI-HRMS to improve the number of low volatility metabolites detected in breath: bringing real-time breath analysis of low volatility metabolites into pulmonology research.
   12:10 - 12:30  Billie Boyle: Owlstone Medical’s Breath Biopsy technology and capabilities

Bordeaux rooms

11:00 - 12:30  In vivo – animal studies
   Chair: Petra Reinhold + Yoav Broza
   11:00 - 11:30  Petra Reinhold: Continuous real-time breath analysis in ruminants
   11:30 - 11:50  Selina Traxler: VOC breath profile in spontaneously breathing awake pigs during Influenza A virus
   11:50 - 12:10  Yoav Broza: Monitoring progression of lung cancer induced mice by breath analysis
   12:10 - 12:30  Jane Hill: Breath analysis progress: human and animal clinical studies

12:30 – 13:30 Lunch break (Pommard + Macon hall)

Ceramique rooms

Chairs: Frederik-Jan van Schooten and Marco Freek

13:30 – 14:30  Promo Breath Summit 2019
   Poster awards (Chair Jury/Antigoni Messaritaki )
   Summary from IABR chair Marieann Högman/ Editor-in-chief of JBR Joachim Pleil
   Farewell by Marco Freek/Frederik-Jan van Schooten

14:30  Departure and see you at the next IABR meeting in.....