

Program IABR Breath Summit 2018

Location: Crowne Plaza, Maastricht, The Netherlands

Day 1: Sunday, June 17th, 2018

Ancillary 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

Ceramique rooms

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

11:00 – 12:30 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
Günther Becher: Screening for
clinically relevant bacterial
infections by single-breath test
with IMS

11:50 - 12:10 Amy Smart: Sniffing Out
Resistance - Rapid Identification of
Urinary Tract Infection-Causing
Bacteria and their Antibiotic
Susceptibility Using Volatile
Metabolite Profiles

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

13:30 - 15:00 Clinical studies - lung diseases

Chair: Marieann Högman + Agnes Boots

13:30 - 14:00 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

13:30 - 15:00 Analytical platforms: gases
and mass spectrometry

Chair: Renato Zenobi + Veronika Ruzsanyi

13:30 - 14:00 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 ¹³C-labelled compounds

16:20 - 16:40 Makoto Sawano: a novel ¹³C-breath test indicates predictor of impaired glucose absorption after gastric surgery

16:40 - 17:00 Chuji Wang: Cavity Ringdown Breath Analyzer for CO₂ 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

Ceramique 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

Ceramique 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)

Ceramique rooms

13:30 – 15:00 Clinical studies - intensive care and infections

Chair: Stephen Fowler + Lieuwe Bos

13:30 - 14:00 Lieuwe 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 GCxGC-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 Ruzsanyi: Tracking humans based on their emitted volatiles

14:00 - 14:20 Florian Schmidt: Extended eCO analysis in clinical studies: healthy-population baseline and wood smoke exposure

14:20 - 14:40 Charlotte Pauwels: 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 Rațiu: 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

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| <ul style="list-style-type: none">• 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 | <ul style="list-style-type: none">- Jonathan Beauchamp & Wolfram Miekisch- Cristina Davis- Joachim Pleil- Jane Hill- Anil Modak- Norman Ratcliffe- Petra Reinhold- Michael Davis |
| <p>No representative</p> <ul style="list-style-type: none">• Human exposome and toxicity studies• Perioperative and critical care• Oral metabolome• Real-time spectrometry and spectroscopy• Clinical applications of breath testing | <p>Apologized</p> <ul style="list-style-type: none">- 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

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| 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

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| 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

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| 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..... |