IABR Newsletter June, 2025

Notes from your Chair, Dr. Jane Hill

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Your IABR Board

Current Chair: Dr. Jane E. Hill
Incoming Chair: Dr. Simona M. Cristescu
Outgoing Chair: Dr. Cristina E. Davis
Secretary: Dr. Y Lan Pham
Treasurer: Dr. Veronika Ruzsanyi
Exec. Director: Marco Freek, LL.M.

Current IABR Board Activities

We meet quarterly. The last meeting was held online in May, 2025. At this meeting the primary topics discussed were (1) preparations for the upcoming Breath Summit in Austria, (2) website updates, (3) IABR awards. Our next meeting, in July, will focus on the same topics as well as any voting issues we will be bringing to the membership in Austria.

Award and Election Nominations Due

Anton Amman Award nominations are due **June 13**. This year, the award is for life-time achievement. The awardee will have demonstrated a track record of sustained, long-term dedication to the field of breath research. The awardee will have made a substantial contribution to advancing breath science and/or related technologies. The awardee will have a history of both service to the IABR as well as the nurturing of trainees and/or newcomers to the field. Nominations are invited from any member of the IABR. Nominations must include a rationale outlining the nominee's key contributions, including significant publications or patents. The rationale should be no longer than 1 page (500 words). Self-nominations are accepted. Please email nominations to marco.freek@i-med.ac.at

Chair-Elect nominations are due **August 31**. If you would like to apply as a candidate for the position of the new IABR Chair Elect, or if you wish to nominate another IABR member, please contact election@iabr.at.

Breath Summit 2025 in Innsbruck, Austria

https://www.uibk.ac.at/en/congress/breath-summit-2025/

"It's coming home" 2025 marks the 20th anniversary of the founding of the International Association of Breath Research, which took place at Schönbrunn Palace, Vienna, Austria on the 30th May 2005. Therefore, it is appropriate that the next Breath Summit will return to Austria.

The conference will take place in Innsbruck within the Centre for Chemistry and Biomedicine, University of Innsbruck, Innrain 80-82, from the **14-19 September 2025**. The Summit will be hosted by the Institute for Breath Research, which was established by Anton Amman and Marco Freek in 2008 and which formally became part of the University of Innsbruck in 2014.

Situated in the Alps, the medieval city of Innsbruck offers the beauty of a spectacular mountainous environment combined with a vibrant and safe University City that consists of many cultural events, theatres, world-class museums, sporting facilities, street cafes, and a diverse restaurant scene. Whether for sightseeing, shopping, clubbing, strolling, hiking, biking, climbing, or simply resting - the Innsbruck region provides an ideal and beautiful setting for the 2025 Breath Summit.

I look forward to welcoming you to Innsbruck in September 2025.

Chris A. Mayhew
Director of the Institute for Breath Research
On behalf of the 2025 Breath Summit Organising Committee

Spotlight on: Dr. Flore Hervé @ University of California, Davis

Contributed by Dr. Flore Hervé

Who am I?

Highly motivated inventor, developing new technologies and methods in both my daily life and the lab. I constantly challenge myself to push boundaries even when resources may be limited.

How did you get into volatilomics research?

During my PhD, I studied at the Prism Laboratory in the University of Lille in France, where I was first introduced to volatilomics and was able to get direct exposure to the tremendous possibilities related to non-invasive diagnostics.

My program gave me the opportunity to work on an analytical method that coupled ambient ionization with mass spectrometry (MS) called low-temperature plasma - MS which enabled real time analysis. This source of ionization was not commercially available, which meant I had to design configurations so it could pair with MS analysis. This experience presented failures that were eventually followed by success and increased my knowledge and skills in novel device/method development. The extreme versatility of this source allowed for analysis of solid, liquid, or gaseous samples, which led to me being able to analyze pharmaceuticals, fruit, wine, beer, saliva, urine, breath, and tears. (Yes, tears! They are as valuable as any other potential bio-specimen). With a focus on breast cancer research, I used sweat, urine, saliva, and tears for model diagnosis. I still look back on this work with satisfaction, as it established skills and a work ethic that still helps my current scientific work thrive.

What do you like about research?

Being able to develop novel techniques is clearly the thing that excites me most about my job. The feeling that you can try to develop anything based on just a thought and some introductory literature to attempt to fill the gaps between the current state of the art and the desired direction for the future is what keeps me motivated and focused on my field. Everything is worth exploring, especially when you disregard artificially imposed limits and boundaries. Of course, this level of thinking does not come without a lot of struggles, but if I can make one difference in the world based on the work I do, it is worth every long day and long night. The most rewarding experience for me in research is having your idea become a patent or a concept that inspires the creation of a start-up endeavor.

What research excites you now?

I am a Postdoctoral Scholar at the University of California, Davis at the Bioinstrumentation and BioMEMS Laboratory. Once again, I was given the opportunity to develop a new method for collection and analysis of a unique bio-specimen. This time, the focus is on the development of a sampling method for volatile organic compounds emanating from human skin. I demonstrated that gently warming the headspace above skin increased VOC recovery and reduced the sampling time and led to a patent application. Working with a team of engineers, I lead the effort to incorporate my device into a portable chemical analysis device that we built from scratch. This was not an easy feat to accomplish given how many different skills are needed: electronics design, mechanical engineering, software and algorithm development, and metabolomic data interpretation had to work together to achieve our goals. This collaborative work finally led to a versatile device, useful for not only the analysis of skin volatiles but also for breath, urine, cultured cells, and more.

What's hot in the literature?

An AI-powered Breath Test for Silicosis!

Contributed by Professor William A. Donald, UNSW Sydney, Australia

Dr. Donald and team at UNSW.
Photo credit, Richard Freeman, UNSW

Occupational exposure to respirable crystalline silica continues to cause devastating lung disease, especially in mining, tunnelling and engineered stone industries. Although preventable, silicosis is often diagnosed too late when lung damage is already permanent.

To address this, our team at UNSW Sydney, in collaboration with Professor Deborah Yates at Holdsworth House Medical Practice, has developed a rapid, noninvasive breath test to detect signs of silicosis. The test uses direct mass spectrometry to analyse volatile organic compounds in exhaled breath and interprets the results using machine learning algorithms. We analysed breath samples from 31 silicosis patients and 60 healthy controls. The test achieved high classification accuracy (over 90 percent) and showed strong agreement with clinical findings, offering a fast screening tool.

Because the method requires only a few breaths into a Tedlar bag and delivers results in minutes using a compact benchtop instrument (less than 2 cubic metres), it is well suited to onsite screening in high-risk workplaces. We are now validating the test at two additional sites and exploring deployment in mobile testing units for regional access.

This work shows how breath analysis and AI has high potential to support faster, more accessible screening for workers at risk of silicosis.

The article can be found here.

From 0 to 20 years! Some IABR History.

Courtesy of Marco Freek.

A dream was realized in 2005 and that was the creation of a professional society focused on all things Breath … the International Association of Breath Research! Much more history will be shared at the upcoming Breath Summit in Innsbruck. To the right you can see Mr. Freek signing the founding document and thus capturing the very first moment of our society's existence. The photo below depicts the former exercise room of the famous Empress Elisabeth, where the IABR founding members had gathered to celebrate the event. Present at the time were Jochen Schubert, Anton Amann, Joachim Pleil, Anil Modak, Andrew Lindstrom, Jun-ichi Koizumi, Norman Ratcliffe, and Joerg-Ingo Baumbach. Not present but also founding members: David Smith, Raed Dweik, Lars Gustafsson, Nandor Marczin, Manfred Mürtz, Terrence Risby, Patrik Spanel and others. *Photo credit, Marco Freek and IABR.*

IABR Terms and Candidate Roles

Position	Term	Election June 2024		Held Until
Past Chair	2Y	Christina Davis	cedavis@ucdavis.edu	9/30/25
Chair	2Y	Jane Hill	jane.hill@ubc.ca	9/30/25
Chair elect	2Y	Simona Cristescu	simona.cristescu@ru.nl	9/30/25
Auditor	2Y	Sean Harshman	sean.harshman.1@us.af.mil	6/15/26
Alternate Auditor	2Y	Renelle Myers	renellemyers@icloud.com	6/15/26
Treasurer	2Y	Veronika Ruzsanyi	Veronika.Ruzsanyi@uibk.ac.at	6/15/26
Secretary	2Y	Y Lan Pham	y.lan.pham@ivv.fraunhofer.de	6/15/26
Election Committee	2Y	Jens Herbig	election@iabr.at	6/15/26
	2Y	Makoto Sawano		
	2Y	Dorota Ruszkiewicz		