

*Editorial*

## A tribute to Robert Bilott and one of the major toxicological discoveries: “Dark Waters” and the poison truth behind the Teflon nightmare

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Welcome to the III 1H-TOXRUN INTERNATIONAL CONGRESS, 2024, entitled “No Boundaries for Toxicology: One Health, One Society, One Planet: The Big Challenges of the 21<sup>st</sup> Century”. We intend this event will provide an enjoyable and successful environment for professionals working in Toxicology and all biomedical- and environmental-related areas to debate technical-scientific updates and share experiences and reflections.

Year after year, we are much convinced that One Health and Toxicology were made to be together. The Editorial of this 1H-TOXRUN International Congress aims to pay tribute to Robert Bilott and the poison truth behind a toxic chemical, perfluorooctanoic acid (PFOA), also known as C8 (Bilott, 2019). His discovery is perhaps one of the most recent proofs that Toxicology has a major impact on our lives and on society, safeguarding human and animal health, protecting the environment, and ensuring the safety of products and workplaces. In other words, it serves as a foundation for evidence-based decision-making in public health, industry, and regulatory agencies. What is odd is that it was a lawyer who uncovered one of the most tragic Toxicology scandals of the last 60 years. Since I can remember, we have been formatted by several advertising campaigns for the benefits of anti-adherent frying pans to prevent food from sticking during cooking. However, PFOA, used in the manufacturing process of many non-stick coatings, was never a major health problem of discussion. Everything began when Wilbur Tennant, a farmer from Parkersburg (West Virginia, USA), reported that his cows were dying. He believed that the DuPont® chemical company was responsible. Later, it was evident that PFOA, a synthetic chemical developed by the company as a key ingredient in the production of Teflon (i.e., a non-stick coating used in cookware and other products), was the major cause. In the decade of 1960, DuPont® began using PFOA at its plant in Parkersburg in the manufacturing process for Teflon. Very soon, several studies, promoted by the company, have linked its exposure to various health problems, including kidney and testicular cancer, birth defects, and other serious illnesses. Robert Bilott’s work as an environmental attorney brought significant public attention to environmental contamination and corporate accountability. He filed a federal lawsuit against DuPont® on behalf of Tennant and other thousands of affected residents. As the case progressed, Robert Bilott uncovered evidence that DuPont® had been aware of the health risks associated with C8 for decades but had concealed this information. Already in 2024, the court approved a historic \$1.18 billion settlement with Dupont regarding per- and polyfluoroalkyl substance (PFAS) contamination in America’s public water systems. But this is probably only the beginning since much higher compensations are expected, exceeding the \$12.5 billion settlement with 3M, another company producing PFOA. Of note, 3M announced it will exit PFAS production by 2025, but “forever chemicals” like PFOA will be among us for generations. The case prompted increased scrutiny of C8 by regulatory agencies, leading to stricter regulations on its use and exposure limits. Robert Bilott’s work on the C8 case was depicted in

the 2019 film “Dark Waters”, starring Mark Ruffalo as Bilott. The case remains a landmark example of environmental litigation and corporate accountability, and the movie deserves to be seen with the hope that we can learn from history to not repeat such kind of tragedies. The circumstances are disturbing since the toxicity of this “forever chemical” was completely covered and protected by other interests. According to a 2007 study from the USA Centers for Disease Control and Prevention, C8 is in the blood of 99.7% of Americans (Calafat et al., 2007). As a Toxicologist, this comes, to me, as a big shock and offers an additional motivation for the 1H-TOXRUN to continue its major mission. Indeed, this reality demonstrates that 1H-TOXRUN has a big challenge for the future, joining human, animal, and environmental health together with forensic implications.

This year’s Congress is under the theme “THE BIG CHALLENGES OF THE 21<sup>st</sup> CENTURY”. I am thankful to the prestigious personalities who accepted our invitations to share their knowledge and research in the four sessions set under the One Health umbrella.

A particularly relevant moment will be the presentation of Poster and Oral Communications on different topics of Toxicology and related areas. We intend to bring attention to the interdisciplinary perspective of modern Toxicology and disseminate advanced and novel knowledge focused on safety and health risks, on prevention and mitigation of damages from social- and environment-related pressures on health and wellbeing, and on promoting awareness and initiatives to build resilient communities and a circular economy.

I would like to acknowledge the Organizing and Scientific Committees for their outstanding collaboration and commitment to organizing this scientific congress. Thank you to all our sponsors and partners for their support and contributions to the success of the III 1H-TOXRUN International Congress. Namely, 6 grants from the Study Group for Food- and Water-borne Infections (EFWISG) of the European Society of Clinical Microbiology and Infectious Diseases (ESCMID) were received and granted to 6 students. Awards for best oral and poster communications and honorable mentions will be granted by the peer-reviewed scientific journal *Water Emerging Contaminants & Nanoplastics*, and CESPU Formação, respectively. My last words go to the *Scientific Letters* editorial staff for their fruitful collaboration in preparing the book of abstracts.

On May 8<sup>th</sup> and 9<sup>th</sup>, 2025, we will be hosting the IV 1H-TOXRUN INTERNATIONAL CONGRESS, with the aim of bringing together Toxicology and One Health to create a societal impact. All authors with relevant work and sharing the same spirit of this holistic One Health vision for Toxicology will be welcome. We expect that, following the interdisciplinary background of different professionals, we can put this congress as the major world platform for this toxicological vision.

I wish you a pleasant congress,

Cordial greetings

Ricardo Jorge Dinis-Oliveira

*President of the Organizing Committee*

### Further Reading

1. Bilott R. *Exposure: poisoned water, corporate greed, and one lawyer's twenty-year battle against DuPont*. New York: Atria Books, 2019.
2. Calafat AM, Wong LY, Kuklennyk Z, Reidy JA and Needham LL. Polyfluoroalkyl chemicals in the U.S. population: data from the National Health and Nutrition Examination Survey (NHANES) 2003-2004 and comparisons with NHANES 1999-2000. *Environ Health Perspect* 115:1596-1602, 2007.



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