

In Memoriam: Barry H. Dellinger (1949–2016)

In the past few years the dioxins research community has lost many of its most respected and talented members. In 2013, we said a final farewell to two great pioneers, scientists, and mentors of dioxins research – Professor Frank Karasek and Professor Elmar Altwicker.

Unfortunately, 2016 brought more of this sad news: March 9, 2016 was marked by the passing away of our dear colleague Professor Barry Dellinger, after a prolonged illness.

For many years, Barry was a most vigorous researcher who brought forward many new ideas and solutions to problems concerning the understanding of dioxin formation in combustion systems. He was the first scientist to propose and suggest the *unified* pathway of dioxin formation, which incorporated both precursor models and *de novo synthesis*, a carbon-driven mechanism, into one common scheme.

His activity, experience and knowledge, however, were not restricted to academic studies, as he actively advised the US Environmental Protection Agency and participated in developing emission models and data, as well as their regulation, in particular for co-fired cement kilns and hazardous waste incinerators. He laid the foundation for the *incinerability ranking* of chemical compounds, still used today by US EPA to select appropriate model mixtures for combustion performance tests and estimation of emission factors.

Later, his works increasingly concentrated on particulate pollution and their health hazards; he even discovered the environmentally persistent free radicals, as a novel threat that is potentially responsible for a large majority of the negative health outcomes associated with ambient air particulate exposure.

The list of different panels, advisory groups and bodies that he served on is so long that complete coverage is impossible; this list includes such important institutions as NIEHS, EPA, WHO... His achievements in dioxins research has brought him wide international recognition and many scientific awards, among these the Adel Sarofim Award for Outstanding Professional Achievements (2009) and the American Chemical Society Award for Creative Advances in Environmental Science and Technology (2014). He authored 205 publications with an h-index of 31 and accumulating over 2,000 citations.

Finally, he was a creator and first Director of the LSU Superfund Research Center.

His successes in research relied not only on his great work ethics but also on an excellent educational background. Professor Dellinger graduated from the University of North Carolina. He received his PhD from Florida State University, where he was working, supported by the advice of a famous spectroscopist, Professor Michael Kasha. His combustion studies started later, during his work at Northrop Services, at the University of Dayton Research Institute, and finally at the Louisiana State University.

Professor Dellinger was a great mentor for many students, post-docs and junior scientists. He always readily offered advice and provided scientific support for those who sought it. He had a real passion for education, both in the classroom and in the laboratory. Through his teaching he always emphasised environmentally conscious choices, and explained, even in the smallest everyday routines, how these impact our environment and affect our quality of life and health.

The departure of Barry Dellinger affected me personally since for the past 17 years we have been closely collaborating. From the start of our association, Professor Dellinger was my mentor and teacher, and all combustion knowledge and experimental approaches I have learned derived from him. Over these years, our so close relationship had evolved from mentor-mentee to close-knit colleagues and also good friends.

I will dearly miss our everyday discussions on research, science, environment or life in general. Barry, the dioxins research community, its colleagues, students and friends, all will miss you. Rest in Peace.

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