



Obituary

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Obituary: Dr W.J. (Bill) Langston (1951–2020)

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Bill Langston joined the Marine Biological Association (MBA) as a Higher Scientific Officer on 21 November 1977, having previously completed his PhD at the University of London in 1975 and undertaken two years of post-doctoral work at the same university on the uptake and effects of pollutants on marine organisms (e.g. Langston, 1978). He joined the MBA initially to work with the team researching trace metals in estuaries for the Department of the Environment (D of E) and ended up remaining at Citadel Hill for the rest of his career, being an employee of Plymouth Marine Laboratory (PML) between 1988 and 2000, following the merger of parts of the MBA and the Institute of Marine Environmental Research to form PML. He then returned to the MBA as an MBA Associate Fellow until 2020 following re-structuring at PML of which he was an unfortunate and undeserved casualty.

One of the reasons Bill was welcomed as an Associate Fellow at the MBA was that he generated a high volume of commissioned research income due to his established reputation in his field, his hard work and dedication, as well as being an MBA-man through and through. Bill was in high demand from government departments (D of E, Department of Environment Transport and Regions, Ministry of Agriculture Fisheries and Food, Department of Environment, Food and Rural Affairs) and agencies (National Rivers Authority and subsequently the Environment Agency, English Nature) as his research informed many important issues around marine coastal management including human impacts on aquatic ecosystems and development of marine ecosystem health indicators and biomarkers (e.g. Langston, 1986; Langston *et al.*, 2003). Bill's research was very sound science as well as highly societally relevant, informing European and UK policy on environmental pollution.

The research undertaken by Bill meant he was able to achieve that rare balance of being seen as doing 'applied science', of use to policymakers, whilst at the same time establishing a high reputation amongst the international academic scientific community. He published around 135 scientific papers, reports and book chapters and was a world authority on the biology and geochemistry of trace metals and metalloids such as arsenic in the sediments of estuaries and other coastal systems (e.g. Langston, 1980). Bill was initially a member of the internationally outstanding trace metal research group of Geoff Bryan at the MBA and continued Geoff's legacy with distinction after the latter's premature death. Bill was able to capitalize on the local availability of Cornish estuaries significantly contaminated by historical mining for tin, zinc, lead, copper and arsenic to make a major international contribution to the applied research area of coastal trace metal ecotoxicology. Bill was a pioneer in the study of anthropogenic endocrine disruptors in coastal waters and sediments, building on the MBA's work on tributyltin from antifoulants and exploring other disruptors causing intersex (e.g. Langston *et al.*, 2007, 2015). Correspondingly he was in great demand for contract research and consultancy in these areas. He cast his net further with major contributions on the clean-up of the Mersey Estuary and the legacy pollution in the Solent and Southampton Water (e.g. Langston, 1986). He contributed much to a paper on the Mersey that appeared in 2020 (Hawkins *et al.*, 2020).

Bill also collaborated widely including working with scientific colleagues from the Institute of Oceanology in China on studies of metal accumulation and tolerance in gastropods (e.g. Langston & Zhou, 1987). His reputation was that of being a generous research collaborator and a sympathetic supervisor of postgraduates and of undergraduate project students. Bill was also a regular contributor to the *Journal of the Marine Biological Association* both as an author and, from April 2008, an Associate Editor. He was an active member of the Hong Kong University Grants Committee life sciences grant panel. It was particularly poignant that he wrote a review article for the 100th volume of JMBA describing the ecotoxicology of endocrine disruption, which was published just before he passed away (Frost, 2020; Langston, 2020). Despite the pressures on his time he never forgot to contribute to the scientific community of which he was part – it was no surprise that on hearing the news, tributes came in from various organizations in Plymouth but also from colleagues internationally including China.

He will be sadly missed.

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