

Obituary: Steven Bruce Levery (1949–2014)

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Sen-itiroh Hakomori

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Steven Bruce Levery was born in New York City, and received his BA (1971) and MS (1976) in chemistry from Northeastern University in Boston, and his PhD from the University of Washington with Sen-itiroh Hakomori (1993). After his early student years in Boston, Steve and his wife decided without further plans to move West and drove with all their belongings in a small car to Seattle. One day, in 1980, Steve showed up at the Fred Hutchinson Cancer Research Center in Seattle and asked Hakomori if he needed a chemist. Steve was immediately put in charge of an old GC-MS and

slowly built the mass spectrometry and later NMR capabilities of this laboratory, becoming an essential member of the Hakomori team for almost 15 years. During this period Steve entered the U.W. PhD program and inevitably produced what may well be the longest PhD thesis ever (had to be bound in three binders) based on over 30 original publications on structural characterization of glycolipids—it took 10 years but Steve was always meticulous and careful!

During the Hakomori years at Fred Hutch and later The Biomembrane Institute, Steve authored a large number of papers on cancer glycolipids discovering the complexity of the Le^x/Le^a glycolipids and their sialylated derivatives as well as Le^y and hybrid-type glycolipids. Steve also identified a large number of ABH blood group glycolipids and was instrumental in discovery of the repetitive blood group A series of glycolipids. As well, Steve's expertise was essential for identifying the epitopes of important antibodies such as SSEA1/3, MBr-1, and 43–9 F, and his work in characterizing cancer glycolipids was foundational for development of the many monoclonal antibodies developed in the Hakomori laboratory such as the AH21, FH1-9, and HH1-14 series.

In 1995/96 Steve had a brief encounter with industry at Perkin-Elmer-Applied Biosystems, before becoming technical director at the NIH Resource Center for Biomedical Complex Carbohydrates, at Complex Carbohydrate Research Center (CCRC), University of Georgia. At CCRC Steve continued his structural work on glycoconjugates and generously used his expertise collaborating with numerous scientists around the world. During these years he developed a particular interest in parasite and fungal glycoconjugates. In 2002, Steve moved on to become associate professor at the University of New Hampshire, and in 2008 he moved from the U.S. to the University of Copenhagen to set up a mass spectrometry facility for glycoproteomics. In Copenhagen, Steve was essential in building a new strategy for O-glycoproteomics using genetically engineered cell lines with simplified glycosylation

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capacities, SimpleCells, and his work expanded the knowledge of the mucin-type and O-Man O-glycoproteomes many-fold. Together with his colleague Sergey Vakhrushev, he further developed a quantitative O-glycoproteomics strategy, which is being implemented in analysis of the function of isoenzymes using differential glycoproteomics - work that he was about to see the fruit of just before his untimely passing.

Steve had other interests than science, and poetry was one. He published several poems and short stories in quality literary journals. One poem, published in the Boston Literary Magazine, in particular comes to our attention:

“Advice”

Try using a little imagination, my father said to me on his deathbed. Dad, ever the charming visitor, was taking off for the last time. His words reached me slowly, as

though broadcast from a far-off country. At seven I had no ideas about death. I could imagine life without him, but couldn't picture where he was going. Years later, he appeared to me in a dream and described the room he was staying in down to the last stick of furniture, but failed to mention the address. I'll send you a postcard, he said, which would have been nice.

Just prior to his passing, Steve was contemplating retiring in Seattle to be close to his daughter Siegy, and it is incredibly sad that he missed this part of his life.

However, those of us who had the pleasure to work with Steve will remember him for his great expertise and true curiosity in science. Steve was a great friend, and he is missed by all of us. He touched many lives in the glycocommunity and he will be remembered for his excellence and drive in science as well as in his personal life.