

Resume and Biographical Information

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My undergraduate degree was granted from UCLA in bacteriology with extensive coursework in wastewater microbiology, analytical, organic and biochemistry

Graduate course work and my subsequent doctoral dissertation was an extension of my undergraduate studies and emphasized molecular biology and biochemistry. My understanding of principles of biology, chemistry and scientific principles matured at that time as was expanded in 3 years of related post-doctoral research at the ICN Nucleic Acid Research Institute and Brown University.

Following graduate and postgraduate studies, I taught for 5 years at Smith College and UCLA in biochemistry and molecular genetics. I developed an ability to communicate scientific principles and to motivate students.

For two years I was Director of Microbiology and Toxicology at a private laboratory that contracted to several industries including food processing, medical and pharmaceutical products manufacturing, consumer product development, and to a limited degree water and wastewater processing.

I was employed by Johnson & Johnson for 16 years in a research and development position. At various times my responsibilities included management of Analytical Chemistry and Physical Analysis of Materials. I became familiar with modern methods of analysis using gas chromatography, high performance liquid chromatography and metals analysis. I also was at times responsible both as a scientist and a manager for toxicology studies relating to biomaterials and pharmaceuticals. It was at this time that I developed expertise in performing studies and understanding issues related to toxicology.

During the past 13 years, I have managed the Environmental Sciences and Ocean Monitoring Laboratory at Orange County Sanitation District. I have participated in several District-wide teams and task forces dealing with various aspects of treatment and management of wastewater. I have also participated in a multi-agency task force that was responsible for development of operational benchmark parameters for environmental laboratories. One of my major responsibilities at OCSO is the review of discharge water quality data and approval of the monthly NPDES Discharge Report. I am knowledgeable of the discharge permit requirements and the analytical methodologies involved in performing

the various tests for permit required wastewater parameters. In January of 2007, I became responsible for the Ocean Monitoring functions at OCSD, which includes a team of 11 scientists and a research vessel. The group is responsible for analysis of potential impacts of the wastewater discharge on receiving water quality, ocean sediments (chemistry and biological), and organisms that live in the ocean (macro-invertebrates and vertebrates).

An area of recent interest and activity has been in water recycling especially as related to the understanding of concentrations and impacts of chemical constituents of emerging concern (CECs or PPCPs, pharmaceutically active compounds and personal care products). This has included a review of relevant information as it relates to potential compliance standards for the OCSD discharge. The laboratory has recently increased its' analytical capability to include low level GC/MS and LC/MS analysis into the low parts per trillion range.