

# **Dr. Edwin Lightfoot**

**Class of 1943**

**Dr. Lightfoot is a professor emeritus of chemical and biological engineering at the University of Wisconsin. He has received a number of prestigious honors for his work including being awarded the 2004 National Medal of Science, the nation's highest honor for science and technology. He received the honor for his impact on the fields of biochemical and biomedical engineering and for his work on the landmark 1960 textbook "Transport Phenomena." Dr. Lightfoot will tell you that it was his father who sparked his love of chemistry. Together with his dad, Dr. Lightfoot constructed a chemistry lab in the basement of his family's Wauwatosa home. His interest in science continued to grow through his youth, especially with his high school chemistry class and his teacher Milton Sizer. In 1943, Dr. Lightfoot graduated from Wauwatosa High School and went to Cornell University where he received his doctorate in 1951. After leaving Cornell, Dr. Lightfoot began working at pharmaceutical company Chas. Pfizer, where he was granted patents on the production of vitamin B12. Dr. Lightfoot credits his wife, Lila, a chemist, with giving him the critical information needed for his first patent. Dr. Lightfoot left Pfizer in 1953 to join the University of Wisconsin chemical engineering department, fulfilling his desire to teach. Dr. Lightfoot's work has focused on modeling complex systems with an emphasis on mass transfer and chemical reactions. Through his research, he has shown how the body controls insulin levels, how blood oxygenates the body and how to help failing kidneys. As a result of his work, and that of like-minded colleagues, several chemical engineering departments changed their names to 'biochemical engineering' to reflect the incorporation of biology into their curricula. A former student of Dr. Lightfoot's summed up his impact on the field by saying "he is an extraordinary founding father of biochemical engineering."**