

**Lawrence Duffy**  
*SENCER Leadership Fellow*

Biosketch

Dr. Duffy received his BS in chemistry from Fordham University in 1969, an MS in organic chemistry from the University of Alaska in 1971 and a PhD. in biochemistry from the University of Alaska in 1977. He served as a lieutenant in the U.S. Navy from 1971-1973. After several years of research at Boston University, the Roche Institute of Molecular Biology, the University of Texas and Harvard Medical School, Dr. Duffy returned to the University of Alaska where he currently serves as Associate Dean in the College of Natural Science and Mathematics.

Since the Exxon Valdez oil spill, Dr. Duffy has broadened his research activity into the area of wildlife and human environmental health. The oil spill focused his attention on the need to develop biomarkers to monitor and assess the health of wildlife populations. These studies demonstrated that chronic exposure could be measured biochemically in mammals not only showing damage to a resource, but also demonstrating recovery of the ecosystem. Biomarkers in human health research led his group back to wildlife and fish, but this time he focused on mercury in humans and the fish Alaskans consume. Dr. Duffy's work on mercury in subsistence food has been used by policy makers on the national level and allows him to involve undergraduate students in research and discuss issues of environmental ethics and justice.

Dr. Duffy is currently working on the question of how the Central Nervous System protects itself from these contaminants, especially considering the extreme environment of the Arctic. His group has observed a significant variation in melatonin levels in Alaskans and has demonstrated that melatonin can reduce free radical damage by amyloid that has major implications for the prevention and treatment of stroke. Current research projects include developing a dog model as a sentinel species for the arctic and a mouse model to determine the effects of mercury and arsenic in neurogenesis.

Dr. Duffy has received the Carol Feist Outstanding Advisor Award, the NIDCD Minority Mentoring Award, the UAF Award for Professional Achievement and the Usibelli Distinguished Research Award. He is a fellow of the Arctic Institute of North America and the American Institute of Chemistry. He also serves as the Executive Secretary of the Arctic Division, American Association for the Advancement of Science.