

**Valter Longo** - Founded on a broad background in biochemistry, cell biology, molecular biology, and specific training in biogerontology research, my ongoing research focuses on the characterization of mechanisms underlying cellular protection and lifespan regulation, the role of proto-oncogenes in promoting age-dependent genomic instability, and the translation of biogerontological findings into clinical applications. I have performed research related to aging in yeast since 1994. Our discoveries and those by others using *drosophila*, *C. elegans*, and mice have pointed to growth hormone/Insulin-like growth factor 1 (IGF-1) signaling as a major regulatory pathway that modulates life span and age-associated diseases/pathologies. In addition to the development of the simple yeast model for age-dependent DNA damage, aging and cancer, we have extend our effort to pre-clinical and clinical studies investigating the role and application of lowered IGF-1 signaling in cancer treatment. My laboratory laid ground work in demonstrating that dietary restriction, such as short-term starvation or low calorie diets which reduce circulating IGF-I, can protect organisms from chemotherapy drugs while simultaneously sensitizing many types of malignant cells. We have also observed similar protective effects of fasting in cancer patients receiving high-dose chemotherapies. In collaboration with the Norris Cancer Center, USC, we have initiated a Phase I clinical trial on the role of fasting on the protection of bladder and lung cancer patients against chemotherapy.