Dr. Stephen J. Forman received his Bachelor's degree in philosophy Cum Laude from St. John's College in Annapolis, Maryland. He obtained his medical degree from the University of Southern California in 1974 followed by his residency training at Harbor General-UCLA. He then completed his fellowship training in hematology and medical oncology at University of Southern California and at City of Hope Cancer Center. In 1978 he joined Drs. Karl G. Blume and Ernest Beutler at City of Hope to help develop the bone marrow transplantation program where he began a research laboratory focused on understanding the pathogenesis of CMV infection after transplant. His clinical research studies were focused on improving the efficacy of transplant in curing malignancies of the hematopoietic and lymphoid system, reducing complications, specifically CMV, and reducing the recurrence while extending the potential benefits of transplant to wider populations including older people as well as those with HIV.

In 1987 when Karl Blume went to Stanford Dr. Forman became the Director of the Hematology and Hematopoietic Cell Transplantation Program which has grown to one of the largest transplantation programs in the world, with National Cancer Institute Program Project grant support from 1987-2011. During that time he also chaired the SWOG Transplant Committee. In 2015 he became the Director of the Hematological Malignancies and Stem Cell Transplantation Institute at City of Hope overseeing its scientific vision and coordinating laboratory and clinical research efforts. He is the co-principle investigator of the City of Hope Lymphoma Specialized Programs of Research Excellence (SPORE). Since 2010 he has been the Director of the T Cell Therapeutics Research Laboratory leading a team of laboratory and clinical scientists in translational research developing chimeric antigen receptor engineered T cells for treatment of a wide variety of hematologic malignancies, solid tumors and HIV.

Along with E. Donnall Thomas and Karl G. Blume he edited the first textbook in the field entitled "Thomas' Hematopoietic Cell Transplantation", now in its 5^{th} edition.