



Lederberg receiving The National Medal of Science from President George H.W. Bush, 18 October 1989

Joshua Lederberg

Title TBD. Scientific Medley/Conversations on a Twentieth Century Savant

Scientific Medley (Conversations) is the story of a man of science, a twentieth-century savant whom some called a genius, a man with a Faustian thirst for knowledge. This is the story of a man who's Nobel Prize at age thirty three is possibly his least interesting attribute. Far from a household word, the name of Joshua Lederberg sits squarely, though not singularly, at the foundation of molecular genetics. His discovery at age twenty-one that bacteria have a genetic exchange not only debunked the sacred

beliefs of his elders, but more importantly opened the portals for new methods in genetic research – method that redefined scientific exploration in the twentieth and twenty-first centuries.

Science was his playground, science was his religion. But beyond the passion and respect for science, he possessed a nearly insatiable intellectual appetite. With a childlike sense of wonder, he strode through the decades spanning two centuries spreading the seeds of his intellectual curiosity in areas far beyond molecular genetics.

Eager and optimistic about the role that the computer would play in bringing rigor and structure to the biological sciences, Lederberg's work was instrumental in the initial development of Artificial Intelligence systems. Understanding the importance of scientific literature and its accessibility, his vision and encouragement assisted in the development of the Science Citation Index.

Always the savant, he was able to see and project implications that eluded most others. It was that ability that drew him into space exploration as the United States and the Soviet Union began their 1950's space race. Seeing the negative possibilities for biological contamination as well as the positive potential for scientific research, Lederberg pressed the US government to look beyond nationalistic interests and add rigorous scientific component to such explorations as the Mars Viking Lander.

Lederberg saw the broad implications of his work in bacterial genetics – the positive as well as the potentially horrific. His seminal discovery of genetic recombination in bacteria was a lynchpin in the foundation of today's medical advances in such areas as recombinant DNA, gene therapy, and genetic engineering. But his prescient voice called for many years a warning to fellow scientists and government policymakers of potential dangers – many of which came to pass in his lifetime -- such as the use of biological weapons, the risk of antibiotic resistance by bacteria, and the threat of emerging infections.

Laureate, Department Head, University President, trusted advisor to nations and corporations, husband, father, friend, Lederberg was first of all a scientist and always a noble person. Described as a national treasure, Lederberg captured both the admiration

Abstract for proposed Lederberg biography©

and affection of many of his fellow scientists, including author Pramod K. Srivastava. This book serves as both a documentation of that treasure and a travel log of the journeyer during his quest for understanding the essence of this remarkable human.

With the benefit of Lederberg's collaboration and extensive personal conversations prior to his death in February, 2008, the authors have been able to mingle Lederberg's voice with those of his contemporaries to create a book that is a refreshing departure from conventional biography. From the first paragraph, it is clear that the main purpose is less chronology and more insight. While the scientific historian will not walk away unsatisfied from this exceptionally well documented and clearly described account of Lederberg's life and scientific accomplishments, all readers will enjoy this opportunity to view an exceptional life from diverse perspectives, truly a *Scientific Medley* in every sense! (a lively *Conversation* in every way!)