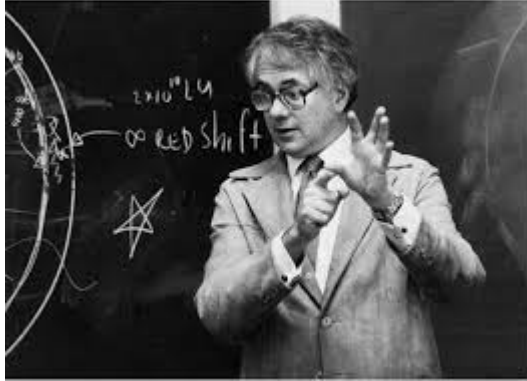


Sheldon Lee Glashow



My parents, Lewis Glashow and Bella née Rubin immigrated to New York City from Bobruisk in the early years of this century. Here they found the freedom and opportunity denied to Jews in Czarist Russia. After years of struggle, my father became a successful plumber, and his family could then enjoy the comforts of the middle class. While my parents never had the time or money to secure university education themselves, they were adamant that their children should. In comfort and in love, we were taught the joys of knowledge and of work well done. I only regret that neither my mother nor my father could live to see the day I would accept the Nobel Prize.

When I was born in Manhattan in 1932, my brothers Samuel and Jules were eighteen and fourteen years old. They chose careers of dentistry and medicine, to my parents' satisfaction. From an early age, I knew I would become a scientist. It may have been my brother Sam's doing. He interested me in the laws of falling bodies when I was ten, and helped my father equip a basement chemistry lab for me when I was fifteen. I became skilled in the synthesis of selenium halides. Never again would I do such dangerous research. Except for the occasional suggestion that I should become a physician and do science in my spare time, my parents always encouraged my scientific inclinations.

Among my chums at the Bronx High School of Science were Gary Feinberg and Steven Weinberg. We spurred one another to learn physics while commuting on the New York subway. Another classmate, Dan Greenberger, taught me calculus in the school lunchroom. High-school mathematics then terminated with solid geometry. At Cornell University, I again had the good fortune to join a talented class. It included the mathematician Daniel Kleitman who was to become my brother-in-law, my old classmate Steven Weinberg, and many others who were to become prominent scientists. Throughout my formal education, I would learn as much from my peers as from my teachers. So it is today among our graduate students.

I came to graduate school at Harvard University in 1954. My thesis supervisor, Julian Schwinger, had about a dozen doctoral students at a time. Getting his ear was as difficult as it was rewarding. I called my thesis "The Vector Meson in Elementary Particle Decays", and it showed an early commitment to an electroweak synthesis. When I completed my work in 1958, Schwinger and I were to write a paper summarizing our thoughts on weak-electromagnetic unification. Alas, one of us lost the first draft of the manuscript, and that was that.

I won an NSF postdoctoral fellowship, and planned to work at the Lebedev Institute in Moscow with I. Tamm, who enthusiastically supported my proposal. I spent the tenure of my fellowship in Copenhagen at the Niels Bohr Institute (and, partly, at CERN), waiting for the Russian visa that was never to come. Perhaps all was for the best, because it was in these years (1958-60) that I discovered the $SU(2) \times U(1)$ structure of the electroweak theory. Interestingly, it was also in Copenhagen that my early work on charm with Bjorken was done. This was during a brief return to Denmark in 1964.

During my stay in Europe, I was “discovered” by Murray Gell-Mann. He presented my ideas on the algebraic structure of weak interactions to the 1960 “Rochester meeting” and brought me to Caltech. Then, he invented the eightfold way, which kept Sidney Coleman and me distracted for several years. How we found various electromagnetic formulae, yet missed the discovery of the Gell-Mann-Okubo formula and of the Cabibbo current is another story.

I became an assistant professor at Stanford University and then spent several years on the faculty of the University of California at Berkeley. During this time, I continued to exploit the phenomenological successes of flavor $SU(3)$ and attempted to understand the departures from exact symmetry as a consequence of spontaneous symmetry breakdown. I returned to Harvard University in 1966 where I have remained except for leaves to CERN, MIT, and the University of Marseilles. Today, I am Eugene Higgins Professor of Physics at Harvard.

In 1969, John Iliopoulos and Luciano Maiani came to Harvard as research fellows. Together, we found the arguments that predicted the existence of charmed hadrons. Much of my later work was done in collaboration with Alvaro de Rujula or Howard Georgi. In early 1974, we predicted that charm would be discovered in neutrino physics or in $e^+ e^-$ annihilation. So it was. With the discovery of the J/Ψ particle, we realized that many diverse strands of research were converging on a single theory of physics. I remember once saying to Howard that if QCD is so good, it should explain the Sigma-Lambda mass splitting. The next day he showed that it did. When we spoke, in 1974, of the unification of all elementary particle forces within a simple gauge group, and of the predicted instability of the proton, we were regarded as mad. How things change!

The wild ideas of yesterday quickly become today’s dogma. This year I have been honored to participate in the inauguration of the Harvard Core Curriculum Program. My students are not, and will never be, scientists. Nonetheless, in my course “From Alchemy to Quarks” they seem to be as fascinated as I am by the strange story of the search for the ultimate constituents of matter.

I was married in 1972 to the former Joan Alexander. We live in a large old house with our four children, who attend the Brookline public schools.

Education

A.B. 1954, Cornell University

A.M. 1955, Harvard University

Ph. D. 1959, Harvard University *Married* 1972 Joan Shirley Alexander

Employment

NSF Post-Doctoral Fellow 1958-60

Caltech Research Fellow 1960-61
Stanford University, Assistant Professor 1961-62
University of California, Berkeley, Associate Professor 1962-66
Harvard University, Professor 1966-1982
CERN, Visiting Scientist 1968
University of Marseilles, Visiting Professor 1970
MIT, Visiting Professor 1974
Brookhaven Laboratory, Consultant 1964
Texas A&M University, Visiting Professor 1982
University of Houston, Affiliated Senior Scientist, 1982-
Boston University, Distinguished Visiting Scientist, 1984-

Member

American Physical Society
Sigma Xi
American Association for the Advancement of Science
American Academy of Arts and Sciences
National Academy of Sciences *Honors*
Westinghouse Science Talent Search Finalist 1950
Alfred P. Sloan Foundation Fellowship 1962-66
Oppenheimer Memorial Medal 1977
George Ledlie Award 1978 *Honorary Degrees* Yeshiva University 1978
University of Aix-Marseille 1982
Adelphi University 1985
Bar-Ilan University 1988
Gustavus Adolphus College 1989