Nobel Prize-winning immunologist
Baruj Benacerraf, MD, a member of the
NYU School of Medicine faculty from
1956 to 1968, died on August 2 at age
90. His pioneering experiments to
delineate a group of genes that control
the immune response led to a Nobel
Prize in Physiology or Medicine in 1980.

“I had a long-lasting interest in
immunology and particularly in the
mechanism of hypersensitivity, because
of my experience with asthma as a
child,” he wrote in his 1998 memoir,
From Caracas to Stockholm: A Life in
Medical Science.
Of Sephardic, or Spanish Jewish, ancestry, Dr. Benacerraf was born in 1920 in Venezuela, where his father, from Morocco, and mother, from Algeria, had emigrated. A few years later his family moved to Paris, where he was raised. In 1939, on the eve of World War II, the family fled Europe, eventually settling in New York City. As an undergraduate there at Columbia University, he met his wife, Annette Dreyfus, another Jewish refugee from Paris. She was the niece of molecular biologist Jacques Monod, a 1965 Nobel Prize recipient.

At the close of the war, with a diploma from the Medical College of Virginia in Richmond, the young physician interned at Queens General Hospital and then served as a first lieutenant in the U.S. Army medical corps, stationed in France. Choosing a research fellowship over a clinical residency, Dr. Benacerraf entered the new field of immunology at Columbia University. In 1949 he joined the prestigious Broussais Hospital in Paris, where the first clinically effective antihistamine had just been developed. He subsequently took a leave to learn the family textile business in Caracas, and returned to Venezuela every four to six months to manage the business.

In 1956 Dr. Benacerraf made “the critical decision” to return to New York to begin his career as an academic scientist. The opportunity came after an encounter with NYU School of Medicine’s pathology department chair, Lewis Thomas, MD, whom he met at an international immunology meeting near Paris. The two men “sympathized immediately,” and Dr. Benacerraf began as a junior faculty member in the medical school, where he was appointed assistant professor of pathology. He credits Dr. Thomas with gathering together a “unique community of young immunologists” and fostering a remarkably creative climate over the next 12 years.

An accidental finding led to Dr. Benacerraf’s seminal discovery: In a series of experiments on delayed hypersensitivity, he had injected a group of guinea pigs with a simple antigen, expecting them to launch an antibody response to the immunologic challenge. But only 40 percent of them did.

He “immediately perceived” that the explanation must be genetic, says Fred Kantor, MD, chief of clinical immunology and allergy at Yale School of Medicine, who was then a postdoctoral fellow in Dr. Benacerraf’s NYU lab. Through extensive breeding experiments, they confirmed that a single dominant gene—later found to be part of the histocompatibility complex—controlled the guinea pigs’ immune response to that particular antigen.

“At the time it was thought that the histocompatibility complex was only for (tissue) transplantation,” not viruses, cancer cells, or other foreign proteins, Dr. Kantor says. “Its central role in the immune system wasn’t appreciated.”

Dr. Benacerraf left NYU in 1968 to head the immunology laboratory at the National Institute of Allergy and Infectious Diseases in Bethesda, Maryland. In 1970 he moved to Harvard Medical School, where he chaired the pathology department for the next 20 years; in 1980 he accepted a second appointment to head the Harvard-affiliated Dana-Farber Cancer Institute,
to which he donated his Nobel Prize award. He stepped down in 1991.

Dr. Benacerraf and his wife, Annette, who died of heart failure on June 3, traveled extensively and shared a love of classical music and the arts, says his daughter Beryl Benacerraf, MD, of Harvard Medical School. His daughter, two grandchildren, and a younger brother, Paul, survive him. •