# Murray Gell-Mann

Physicist, Nobel Laureate (1929 –    )

Gell-Mann was born in New York, attended Columbia Prep, and entered Yale at 15. He earned a bachelor's degree in physics from Yale in 1948, and a Ph.D. in physics from MIT in 1951. He was a postdoctoral research associate in 1951, and a visiting research professor at University of Illinois from 1952 to 1953.

His many accomplishments would intimidate anyone. Gell-Mann formulated the quark model of hadronic resonances, and identified the SU flavor symmetry of the light quarks, extending isospin to include strangeness, which he also discovered. He discovered the V-A theory of chiral neutrinos in collaboration with Richard Feynman. In addition, he created current algebra in the 1960s as a way of extracting predictions from quark models when the fundamental theory was still murky. This, of course, led to model-independent sum rules confirmed by experiment. We can hold him responsible as well for the see-saw theory of neutrino masses that produces masses at the inverse-GUT scale in any theory with a right-handed neutrino, like the SO(10) model.

Gell-Mann married Margaret Dow in 1955 and, a decade after her death, married Marcia Southwick in 1992. He has three children and a stepson.

Gell-Mann became a professor at the University of Chicago before moving to Caltech, where he taught from 1955 until 1993. He is currently the ROBERT ANDREWS MILLIKAN Professor of Theoretical Physics Emeritus at Caltech. In 1984, Gell-Mann co-founded the Santa Fe Institute—a non-profit research institute in New Mexico—to study complex systems and disseminate the notion of a separate interdisciplinary study of complexity theory.

He was awarded a Nobel Prize in physics in 1969 for his discovery of a system for classifying subatomic particles. He later wrote a popular science book entitled *The Quark and the Jaguar: Adventures in the Simple and the Complex*. The title was taken from a line of an Arthur Sze poem: "The world of the quark has everything to do with a jaguar circling in the night."



RÉPUBLIQUE DE GUINÉE
OFFICE DE LA POSTE GUINÉENNE
750F
1969
MURRAY GELL-MANN