



**Roald Hoffmann**

**Science Talent Search Finalist 1955**  
**Nobel Prize in Chemistry 1981**  
**National Medal of Science 1983**

Roald Hoffmann, one of the country's most honored scientists, survived the Nazi occupation of Poland hidden with his mother in the attic of a schoolhouse. After losing most of his family in the war, he came to the U.S. in 1949 and quickly learned English, his sixth language. He credits his success in part to the "great teachers" he had at Stuyvesant High School in New York City, a specialized science, math and technology school that boasts 95 Science Talent Search finalists to date. Hoffman's project for the 1955 Science Talent Search was based on particle physics – identifying elementary particles in cosmic rays from tracks left in photographic emulsion. The most memorable part of his week in Washington, D.C. as a finalist was meeting President Eisenhower. "That meant a lot to me because I had come from wartime Europe ... from the countries that Eisenhower freed."

Participating in Science Talent Search led to a summer job at the National Bureau of Statistics and introduced Hoffman for the first time to real scientific research. Subsequent visits to the National Institute of Health convinced him he didn't have to be a doctor to do medical research. "This gave me enough courage to tell my parents I didn't want to be a doctor!" He entered Columbia University as a pre-med student, but switched his major to chemistry. After graduate work at Harvard, Hoffman joined Cornell University in 1965 where he is currently the Frank H. T. Rhodes Professor of Humane Letters as well as a professor of chemistry.

His research has extended from the electronic structure of stable and unstable molecules, to exploring the structure and reactivity of inorganic and organometallic molecules, to extended solid state structures and the design of novel conducting systems. Hoffmann won the Nobel Prize for Chemistry in 1981 (with Kenichi Fukui) for the development of mathematical theories that became milestones in understanding the course of chemical reactions, including co-authorship of the Woodward-Hoffman Rule, which demonstrates how the conservation of orbital symmetry influences the course of molecular reactions.

Among his numerous professional honors are the National Medal of Science, 25 honorary degrees, and awards in three specific subfields of chemistry from the American Chemical Society. But one of the contributions of which he is most proud is his teaching, primarily to undergraduates. Teaching, he says, has helped him become a better researcher.

In addition to his career as teacher, researcher and author of numerous technical papers, Hoffman has published four poetry collections, two books about chemistry for general audiences, and a play, "Oxygen" with Carl Djerassi, which recently concluded a run in London's West End. He urges students to expose themselves to more than just science courses. "You have your chance in college to broaden your horizons. ... You will not get that chance later in life. Let the world of the humanities and the arts come to you. ... There are important questions in this world that are not soluble by science."