

DECADES OF DISCOVERY AND A LEGACY OF LOVE

Susumu Ohno's gifts to the world go beyond his great scientific discoveries

When Susumu Ohno, DVM, PhD, DSc, a City of Hope (COH) Ben Horowitz Chair of Distinguished Scientist, set out on a professional track more than 40 years ago, the soft-spoken young scholar had no idea that one day he would be regarded as one of the most outstanding biologists who ever lived. The recipient of numerous awards throughout his illustrious career, Dr. Ohno was honored most recently in 1998 with the inaugural Royal Danish Association of Science Research Prize for his work on how new genes evolved.

He was a modest young man who loved horses, and wanted, simply, to become a veterinarian. His parents had other ideas, namely, that he follow his father's footsteps to a career within the Japanese government. In the end, the young Susumu's passion won out, and he went on to earn a doctorate of veterinary medicine from Tokyo University of Agriculture and Technology in 1949. Ironically, it was during veterinary school that his longing to become a vet took a back seat to what would become his true life's work: the study of genetics. He entered Japan's Hokkaido University and left after earning a doctorate degree in pathology, and a doctorate of science in cytogenetics in 1961.

Dr. Susumu Ohno was on track to change science forever. Within a few years, as a 25-year old UCLA post-doctoral fellow, he joined COH as a research associate in the Department of Experimental Pathology. At the time scientific research at COH was considered to be in its infancy.

Within seven years, however, it had come of age. It was, in great part, Dr. Ohno's striking discovery of the inactive X-chromosome in females that set the wheels in motion. Ohno's Law—the notion that the X-linkage group (the region of the X chromosome that contains genes that have no counterparts on the Y chromosome) is conserved in placental animals such as humans, horses and most common mammals—was beginning to govern the way science viewed genetics. Then his 1970 book, *Evolution by Gene Duplication*, answered a pressing question that no other scientist had ever done: how new genes evolve and change.

But by the mid-1960s, Dr. Ohno was already drawing attention from *Time* magazine, and years later, from *People*, and the scientific journal *Lancet*, among others. Even as he gained fame, Dr. Ohno remained down-to-earth. He often expressed gratitude for the opportunities COH had bestowed upon him, relishing the intellectual freedom he had been given. In fact, he often spoke and wrote



about his fondness for the warm, supportive campus community.

"City of Hope was an isolated paradise," Dr. Ohno said in a 1996 interview about his early years. "I came to City of Hope when Samuel Golter was executive director. He really believed that everyone under the sun is created equal. That's the reason I stayed here."

For the four decades he worked at COH, his intellect and creativity intersected in unique ways. There was the discovery of a possible link between music and the chemistry of genes, and the ongoing research on cancer, genetics and reproduction. A prolific writer, Dr. Ohno documented his findings, which appear in more than 350 scientific journals throughout the world.

But colleagues and friends have also enjoyed Dr. Ohno's chronicles of a more personal nature, mostly about his career at COH. In essays, like the one titled

"Looking Back," he recalls the family-like atmosphere at COH in the 1950s, the camaraderie among staffers and their unwavering belief that every individual possesses unique gifts, which contribute to the common cause. This personal account offers rich insight into COH's origins and the values that continue to shape the organization today.

Dr. Ohno's contributions have made him the recipient of many awards, in addition to the 1998 Royal Danish Association of Science Research Prize. These include the Silver Medal from the Bell Museum of Pathology, University of Minnesota; the Amory Prize for Reproductive Biology from the American Academy of Arts and Sciences; membership in the U.S. National Academy of Science; and lifetime memberships in the Scandinavian Society of Immunology and the Japanese Society of Genetics. Dr. Ohno also has been named to editorial boards for journals in Greece, Denmark, Brazil, Italy, France and the United States. And, in 1992, he was elected as a foreign member of the prestigious Royal Danish Academy of Sciences of Letters, an honor most often bestowed upon by Nobel Prize recipients.

Still, in a way, Dr. Ohno's career has come full circle. Always a lover of horses and an avid horseman, he has become known throughout the world of thoroughbred racing as an expert in the field of the genetics of thoroughbred race horses. He has been sought after by breeders from across the globe for his expertise. Since retiring from COH in 1996, he now has more time to spend with the animals he loves. It makes sense, especially for a man who once wanted to be a veterinarian. ♦

"I consider Dr. Ohno to be one of the world's most creative scientists and the key 'founding father' of the genetics, molecular biology and immunology programs at City of Hope."—Arthur Riggs, PhD, research scientist and chair, Division of Biology

"City of Hope has been favored with the presence of a generous, truly imaginative, extremely industrious, scientific thinker. Dr. Ohno has been an inspiration to our center and all who know him."—John Kovach, MD, executive vice president, Medical and Scientific Affairs

Visitor Center Exhibition Honors Dr. Ohno

A unique exhibition at the Visitor Center offers members of the City of Hope (COH) family the opportunity to learn more about Susumu Ohno, DVM, PhD, DSc, and his work. "This is the first exhibit to give special recognition to prominent staff members who have been internationally recognized," says Associate Director of Archives Joe Broady.

Among the displays will be a full-page reprint from *Time* magazine, which featured an article on Dr. Ohno in 1964. Also on exhibit will be framed pictures of the doctor throughout his career at COH, and a replica of the award that he received from the renowned Royal Danish Academy of Sciences of Letters.

"Dr. Ohno is a man who was known for documenting, with a great deal of care, his thoughts and observations about life, people and the world in general," says Broady. One exhibit features a reproduction of Dr. Ohno's essay, "Looking Back," which offers intimate observations about the changes at the Medical Center from when the doctor first came on board in 1952.

Broady hopes the exhibition will give viewers a richer sense of Dr. Ohno and the magnitude of his contributions to the field of scientific research, and to the world. "For an employee who often reads about major scientific achievements at City of Hope, this exhibit will help put a face to the accomplishment," he says. "Dr. Ohno is not only a great scientific mind, but a person who has a great deal of interest in City of Hope, and the people who work here."

The exhibition will open mid-April in the Visitor Center's South Exhibit Room. ♦