

*At a meeting of the FACULTY OF ARTS AND SCIENCES on April 20, 2004,  
the following tribute to the life and service of the late Arthur L. Loeb  
was spread upon the permanent records of the Faculty.*

## **ARTHUR L. LOEB**

BORN: July 13, 1923

DIED: July 19, 2002

Arthur L. Loeb was born in Amsterdam and educated at the renowned Barlaeus Gymnasium there. In May 1940 the Nazi invasion cut his studies short, and with his family he escaped on the last ship to England. He was not yet seventeen years old. In Philadelphia, where the family eventually settled, he enrolled as an undergraduate at the University of Pennsylvania to study chemistry. By the age of twenty he was a graduate student at Harvard, receiving a master's degree in physics in 1946 and a Ph.D. in physical chemistry in 1949.

As a child, Arthur had been fascinated by the patterns that emerged when the Dutch tiles that his grandfather collected were arrayed on surfaces. He was similarly intrigued by the symmetrical layout of his primary school. For his own pleasure he worked at devising schedules in which every sports team in a league would play every other, using, as he said, "a minimum of Sundays."

As a young scientist, he built upon these childhood interests. Shortly after completing his Ph.D., he consulted at MIT on a problem of thermal measurement, proposing as a solution the choice of an ellipsoidal shape for the ceramic containing vessel. Later, as a member of MIT's electrical engineering faculty, he designed a set of blocks to aid in representing the difficult-to-visualize structure of certain crystals. To perform the massive calculations required by his research on the optical properties of thin metal films, he was allowed rare access to the Navy's Whirlwind computer, leading him to devise a primitive version of computer graphics. During his years at MIT, which included a stint at the University of Utrecht's van 't Hoff Laboratory, he pursued research in colloid and surface science and co-authored a book on the subject as well as a second book on wave mechanics.

Around 1960 Arthur's work with computers alerted him to the need to devise a language for the storage, communication and retrieval of spatial concepts and patterns. In 1963 when the Carpenter Center for the Visual Arts opened its doors with a mission to reach out across departmental boundaries, Arthur, a scientist with an interest in design and the arts, appeared an ideal collaborator. He was invited to give lectures in studio classes and in 1965-66 joined

with Duncan Stuart in preparing an exhibition entitled “Symmetry and Transformations.”

In the early sixties Arthur met the Dutch artist M. C. Escher, who became a lifelong friend, and Buckminster Fuller, who had explored on the macro level shapes and structures that Arthur, as a physical chemist and crystallographer, had explored on the level of molecules. Arthur contributed an important section to Fuller’s magnum opus, *Synergetics: The Geometry of Thinking*, and wrote two books of his own on the subject: *Space Structures, Their Harmony and Counterpoint* and *Color and Symmetry*. On the strength of his record as a senior scientist at Kennecott Copper, his publications, and his numerous contributions to the young Department of Visual and Environmental Studies, he was made its Honorary Associate in 1970 and in this capacity offered a Freshman Seminar on “Structure in Art and Science.”

Indeed, science, consuming as it was, accounted for only a part of Arthur’s interests. As a graduate student, he resumed the piano lessons he had begun as a child, and joined the Harvard Glee Club. When the war ended, a Dutch friend gave him a recorder that the family had left behind in Amsterdam, sparking a lifelong interest in Renaissance music. Arthur took up not only the recorder but the viola da gamba and harpsichord, and when he sang, it was not just early music. He gave song recitals and was the baritone soloist at Old North Church, as well as a member of the King’s Chapel choir and founder of the Collegium Iosquinum, an ensemble devoted to early music.

From the patterns and symmetries of music and chemistry, it was a short step to those of dance. Arthur performed with the Cambridge Court Dancers and, as a result of his interest in Scottish country dancing, taught two house courses on dance history and published a book of twenty-one dances for the Harvard Scottish Country Dancers.

In 1956 Arthur married Charlotte Aarts, who was trained as a lawyer and shared Arthur’s passion for music. He and Lotje joined in performing music and dance, served as co-masters of Dudley house from 1982 to 1988, and collaborated on the translation of two books about the De Stijl movement. It was an enduring and loving marriage.

From 1975 Arthur was Senior Lecturer on Visual and Environmental Studies, a department he helped shape and which he served as Head Tutor and Curator of the Teaching Collection. In departmental dialogues his was a voice of painstaking fairness, unfailingly sensitive to students’ needs and feelings. In his 29 years at Harvard, Arthur developed nine courses. The topics ranged from “Synergetics: The Structure of Ordered Space,” which treated the mathematical and geometrical principles underlying the structure of natural phenomena, to “Burgundy, the Rise and Fall of the Middle Realm,” a seminar on art, architecture, literature and music in the Burgundian Netherlands during the late Middle Ages. As a founding member and long-time chairman of the committee to nominate the Erasmus Lecturers, Arthur arranged for many Dutch and Flemish scholars—from historians

to musicians—to spend a semester teaching at Harvard.

Arthur was a born, generous teacher, capable of not only informing but inspiring his students. For him teaching was a high calling. His classes were characterized by the immense depth of his knowledge about spatial concepts and patterns, introduced in accessible ways through models and images, and reinforced by precise terms and equations.

Arthur's aim in his pedagogy, as in his professional life, was the joining of the realms of science and art. Among his courses was a Freshman Seminar whose title posed a question: "Can Renaissance Man Survive in a Competitive Culture?" For the answer one need look no further than the seminar's leader.

Respectfully submitted,

Nicolaas Bloembergen  
Amy Edmondson  
Eduard Sekler  
Frans Spaepen  
Alfred Guzzetti, Chair