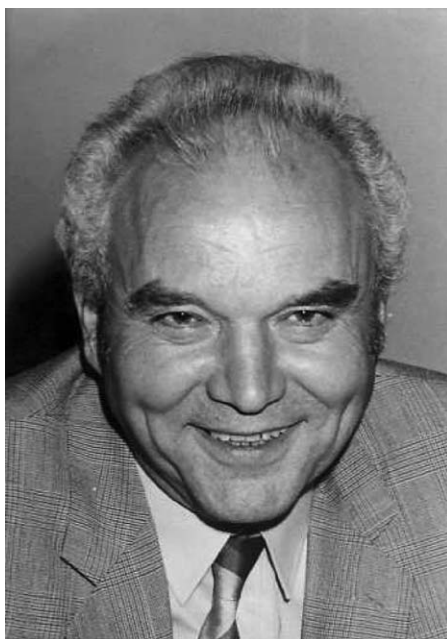


In Memoriam

Memorial for Udo H. Ehling (1928–2010)



Udo H. Ehling

Udo Ehling passed away on August 8, 2010, 3 weeks before his 82nd birthday. With him, a pillar in mammalian germ cell mutagenesis has left us. He had a fantastic personality, was a kind mentor for many of us, a real leader in the field, and a perfect gentleman.

Udo Ehling was born in Zehdenick, Mark Brandenburg, Germany, where he attended school until he was drafted as a marine helper in 1944 and began an apprenticeship as forester in 1945. Under false accusations, he was arrested a month after the Second World War ended and confined in various war prisoner camps for 3 years. After his release from the Bautzen prison, he continued his high school education in Zehdenick. In 1949, he started to study Biology at the Free University in Berlin and received his Diploma in 1954. From 1955 to 1962, he was a Research Assistant at the “Max-Planck-Institut für vergleichende Erbbiologie und Erbpathologie” with Hans Nachtsheim. He finished his doctoral thesis on hereditary cataracts in the rabbit in 1957. Also in 1957, he and several colleagues sent a petition to the Berlin Senate in which they emphasised the need for financial support to study the effects of radiation on mammals

and man. He consequently pursued this line of research throughout his scientific career and is truly the founder of mammalian mutagenesis in Germany. He married Heidede Beran, his loving and supportive wife throughout his life, in 1957.

In 1959, he received a US Public Health Fellowship to study and work at the Biology Division of the Oak Ridge National Laboratory (ORNL), TN, with William L. and Liane B. Russell. After 2 years, he accepted the position as the head of the Laboratory of Genetics in the Institute of Radiation Research, Neuherberg, Germany, which later became the Gesellschaft für Strahlen- und Umweltforschung (GSF) and is now called Helmholtz Research Center Munich. He went back to ORNL in 1963 for another 5 years to continue his research on radiation and chemical mutagenesis in mice. In 1964, he became an

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honorary citizen of Tennessee. In 1968, he accepted the directorship of the Department of Genetics, which later became the Institute of Mammalian Genetics, at the GSF where he stayed until his retirement in 1993. Through his research work of 27 years, the GSF became an internationally recognized centre for mammalian germ cell mutagenesis along with ORNL and the MRC at Harwell. Based on his experience at ORNL and with the vision of "big biology" for his future mutagenesis experiments, he conceived the plans for the new GSF animal facility which was opened in 1974, at that time the largest and most advanced specific pathogen-free mouse house in Europe if not worldwide.

Udo Ehling's main goal was to protect the human genome and future generations from adverse effects of ionizing radiation and mutagenic chemicals by determining genetic hazard and quantifying genetic risk [Ehling, 1991]. Based on the studies of radiation-induced heritable skeletal anomalies and dominant cataracts of the eye, he developed the concept of a direct estimate of genetic risk for humans, which was adopted by the United Nations Scientific Committees on the Effects of Atomic Radiation (UNSCEAR) in Vienna. After the Chernobyl fallout, he estimated the expected new genetic diseases in the human population based on the results of his mouse experiments [Ehling, 1987]. The results of the genetic studies on children of the survivors of Hiroshima and Nagasaki were well in line with the predictions from his model of risk calculation [Ehling, 1991]. The methodologies of radiation genetic risk estimates were critical in the Sellafield trial before the Royal Court of Justice in 1993 in London [Wakeford and Tawn, 1994].

To sample a wider part of the genome and to compare mutation frequencies to recessive and dominant alleles, he combined the mouse specific locus test with genetic endpoints (cataracts and enzyme activity) to what he called the multiple endpoint approach [Ehling et al., 1985]. Thus, in an efficient experimental protocol, data were recovered for both an indirect and direct method to estimate the genetic risk due to mutagenic exposure in humans. Starting with radiation mutagenesis, he soon extended his studies to chemical mutagens and discovered that they exerted their mutagenic effects on different stages of male germ cell development even when their chemical structure was very similar [Ehling et al., 1972]. He determined the specific spermatogenic response for many chemotherapeutic agents and calculated the genetic risk for cancer patients to father a child with a genetic disease [Ehling, 1989]. For his unique and basic research, he received the Annual Award of the European Environmental Mutagen Society (EEMS) in 1988 and of the "Deutsche Gesellschaft für Umwelt Mutationsforschung" (GUM) in 1994. Furthermore, he

was awarded the Gregor Mendel Medal by the Mendelianum in Brunn in 1990.

Udo Ehling was very active in organizing support for mutation research. He founded and headed the "ad hoc Ausschuss für Chemogenetik" of the German Ministry of Education and Research (1972–1977) and his research was funded by the Environmental Programme of the Commission of the European Communities (DG XII) from 1973 to his retirement. He was always eager in accepting responsibility to promote the field. In 1970, he organized the foundation meeting for the EEMS in Neuherberg, and he became treasurer of the newly founded society for 5 years, and from 1981 to 1983 he was President of EEMS. From 1977 to 1979, he was President of GUM. His committee memberships included the Restricted Expert Group of Radiation Genetics of the OECD Nuclear Energy Agency in Paris (1972–1975), the German delegation to UNSCEAR (1974–1999), the "Deutsche Strahlenschutzkommission" (SSK, 1974–1977), the International Commission on Radiological Protection (ICRP, Task Group on Genetically Determined Ill Health, 1976–1977), the International Commission for Protection Against Environmental Mutagens and Carcinogens (ICPEMC, 1979–1985).

He published his research results and derived conclusions in over 200 articles and book chapters. Naturally, he worked as a Reviewer and on Editorial Boards for all journals related to his own field. He taught human genetics and mutagenesis as an Adjunct Professor at the Technical University of Munich from 1969 to 1993.

Udo Ehling was a frequently invited key note speaker at national and international conferences. He was keen to travel the world, logged all the mileage covered and took detailed notes on every trip. As a great connoisseur, he knew the best restaurants wherever he visited. He collected Pop Art, and took every opportunity to visit museums and art exhibitions. He also loved literature and had a special liking for Johann Wolfgang von Goethe and Gottfried Benn. After retiring, Udo and Heidede Ehling moved to Berlin, where he wrote his memoir, and about his traumatic internment in the Russian prison camps. His memory will live on in his wife, two sons, their wives, and his 4-year-old grandson. He will be missed by his friends and colleagues all over the world and we, his former coworkers, will always appreciate the supportive professional and personal influence he had on our lives.

Ilse-Dore Adler

Jack Favor

Helmholtz Zentrum Muenchen

Ingolstaedter Landstr

Neuherberg, Germany

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