Fred Sherman (1932–2013)

Fred Sherman, an internationally famous yeast geneticist passed away on 16 September 2013 at the age of 81. He was born in Minneapolis, Minnesota, USA, in 1932. Sherman enrolled at the University of Minnesota with chemistry major and earned his Bachelor's degree (B A) in 1954. Then he moved to the University of California, Berkeley, for graduate programme in biophysics. Here, he met one of the leading yeast geneticists, Robert K. Mortimer, who introduced Sherman to the beauty of yeast genetics and its power in unveiling complex biological processes. Sherman worked with Mortimer on the induction of ρ^- mitochondrial mutants at elevated temperature in the baker's yeast *Saccharomyces cerevisiae* and earned his Ph D degree in biophysics in 1958. After completing his doctorate, Sherman joined Hershel Roman's laboratory as a postdoctoral fellow at the University of Washington, Seattle. He carried out work on recombination in yeast during his stay in Roman's laboratory. Subsequently, he moved to Laboratorie de Gènètique Physiologique at the Centre National de la Recherche Scientifique (CNRS) in Gif-sur-Yvette, France in 1960. There he worked with well-known geneticist Boris Ephrussi on respiratory deficiency of yeast.

Sherman returned to the USA in 1962 and joined the faculty at University of Rochester. Here he initiated a strong and vibrant research programme on respiratory-deficient yeast mutants and discovered the cytochrome c_1 (*CYC1*) gene and its important mutant *cyc1-1*. Sherman developed a powerful genetic method for screening and detection of *cyc1* mutants and their functional revertants, and the success of this genetic system led to numerous studies on genetics and molecular biology of yeast and other eukaryotes. The nonsense codons TAA and TAG and the initiation codon ATG were determined by Sherman from amino acid alterations of iso-1-cytochrome *c*. The functional assignments of such codons were done for the first time in a eukaryotic organism in Sherman laboratory to establish the rules of translation in eukaryotes. Sherman remained a faculty member of the University of Rochester Medical Center from 1962 to 16 September 2013, the last day of his life. He was chairman of the Department of Biochemistry and Biophysics from 1982 to 1999 (till his retirement). Even after retirement, Sherman was quite active in science and used to serve the scientific community with the same vigour and energy as before.

Sherman was recognized for his enormous contributions in the area of genetics and molecular biology and was elected to the National Academy of Sciences in the United States in 1985. He also received several prestigious awards, including the Wander Memorial Lectureship in 1975, the Arthur Kornberg Research Award in 1999, the George W. Beadle Award and the Lifetime Achievement Award from the Genetic Society of America in 2006. He was also elected as AAAS Fellow in 2006. His outstanding work on yeast genetics got further recognized when Sherman was appointed as chairman of the Genetics Division of the National Academy of Sciences in 2000 and held this position till 2003.

Sherman was one of the fathers of modern yeast genetics. He developed many independent and indigenous methods of yeast genetics and molecular biology and formulated the media composition for the selection of different mutants and their characterization. He was one of the few yeast geneticists who brought *S. cerevisiae* to the forefront of research. He was responsible for training a large number of yeast geneticists and molecular biologists in his laboratory at the University of Rochester and also at the Cold Spring Harbor. Sherman along with Gerald R. Fink ran the Cold-Spring Harbor yeast course for 17 long years (1970–1987) and many well-known scientists were produced through rigorous and thorough training. Though Sherman used to start a lecture with the word 'briefly', his lectures would run for several hours at a stretch. These lectures at Cold Spring Harbor were not only attended by students who had registered for this course, but also by well-known personalities such as Jim Watson, Alfred Hershey, Barbara McClintock, Max Delbruk and many others.

Sherman published more than 250 papers in reputed journals. He served on the editorial board of numerous international journals. Starting from 1962 to 2013, during his long and successful career, Sherman taught a large number of graduate (Ph D) students and also trained many postdoctoral fellows from several countries around the world. Almost all the people trained by Sherman became leaders in their respective fields. Sherman was a serious scientist and never compromised on the quality of the work he pursued. He was also known for his strong sense of humour. In Fink's words 'I never saw Fred Sherman in a sober moment. He was always intoxicated by his own slapstick sense of humor' (in *The Early Days of Yeast Genetics*). Sherman was not only a great scientist, but he was also a superb human being. He used to help the students when they were in trouble. It is indeed difficult to describe a person like Fred Sherman completely. He will be greatly missed by his colleagues throughout the world as well as the entire yeast community. But he has left a legacy – of using, developing and further promoting the more meaningful use of *S. cerevisiae* to understand biology. We, the students and followers of Sherman devote our efforts to work on biological problems using *S. cerevisiae* – the best way we can pay tribute to this legendary scientist.

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