DOCUMENTS OF THE GENERAL FACULTY

REPORT OF THE MEMORIAL RESOLUTION COMMITTEE FOR DAVID P. BLOCH

The special committee of the General Faculty to prepare a memorial resolution for David P. Bloch, professor, botany, has filed with the Secretary of the General Faculty the following report.

John R. Durbin, Secretary
The General Faculty

IN MEMORIAM
DAVID P. BLOCH

Professor David P. Bloch died October 23, 1986. For 25 years, David was a productive and revered member of the University community. He excelled both in research and in teaching, which included courses in freshman biology, developmental cell biology, and the biology of cancer.

David was born in Chicago on February 10, 1926, and grew up there. He served in the U.S. Army Air Force in World War II, then completed an undergraduate degree in chemistry at Northwestern in 1948, and a PhD in botany and biochemistry at the University of Wisconsin in 1952. That year he also married Jacqueline deGoumois. They had three children, Peter, Deirdre, and Elizabeth.

David's most enduring and endearing characteristic was the boundless—and infectious—enthusiasm he displayed toward his scientific as well as his social projects. That enthusiasm remained until the end of his life, and was an inspiration to his friends and colleagues. Reflecting this sentiment, an admiring colleague, Harold Kasinsky, wrote this about David's inimitable "style" and his impact on others:

> "Both his colleagues and students enjoyed Professor Bloch's wide ranging ideas and his enthusiasm for science. He encouraged open mindedness in both his freshman classes in cell and molecular biology and graduate course on molecular evolution, where he was a particularly effective teacher. He founded and directed a non-profit Center for the Study of Molecular Evolution to promote further research in this area. For his research activities he was honored with a Guggenheim Fellowship and a Career Development Award from the U.S. Public Health Service."
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> [Taken from pp. 1095-1097 of *Comparative Spermatology, 20 Years After,* B. Baccetti, editor, Raven Press, New York, 1991.]

In his obituary honoring Professor Bloch, Dr. Kasinsky went on to point out that David actively expressed his concern for environmental issues at the local and state levels in Texas by serving on a task force that looked into the feasibility of recycling solid wastes in Austin, and by chairing a committee of the Environmental Quality Board that evaluated the master plan for the city.

David's contributions to his field were noted as significant from very early on in his career. As a postdoctoral fellow at Columbia University, he began cytochemical studies which contributed to an understanding of the role of DNA and histones in spermiogenesis and early development. With Goodman, he modified the Feulgen procedure using trichloroacetic acid rather than hydrochloric acid to hydrolyze DNA. By following Fuelgen staining for DNA he could restain the same cell type with alkaline fast green for histones using the technique developed by Alfert and Geschwind in 1953.

David moved to UCLA in 1955, where he developed sperm basic protein staining techniques using picric acid-eosin Y and picric acid-bromphenol blue. In these methods, picric acid hydrolyzes DNA but retains protamines. This allows the visualization of these small basic proteins in tissues, which is not possible in the alkaline fast

green method where they are removed either by hydrochloric acid or trichloracetic acid. With Hew, he applied these methods to spermiogenesis in the land snail *Helix aspersa* and was able to show a shift from somatic histones to a stable protamine in the spermatid to protamine in the mature sperm. He followed this up with cytochemical studies on sperm basic proteins in the squid *Loligo opalescens* with its protamine, the mussel *Mytilus edulis* with its intermediate sperm proteins, the frog *Rana pipiens* with its somatic-like sperm histones, and the grasshopper *Chortophaga viridifasciata* with its stable protamine. In the first three animals he was also successful in purifying the sperm basic proteins and performing amino acid analyses that showed the validity of his staining methodology. In 1961 Professor Bloch moved from UCLA to the botany department of The University of Texas at Austin, where he remained until he died of cancer in 1986.

David Bloch's research interest ranged widely over many aspects of nucleic acid and histone metabolism in normal and tumor cells. He was especially interested in the flow cytometric analysis of chromatin, and he set up a computerized flow systems facility in Austin, modifying his earlier eosin Y staining for histones to fluorescent measurement by this method. In the latter part of his career, from 1983 until his death, Professor Bloch and his colleagues discovered sequence homologies between transfer RNA and the larger ribosomal RNAs. He convincingly argued that these homologies could reflect a common origin that may be traceable to archaic RNA molecules existing more than 3.5 billion years ago, when RNA self-catalysis was more important than it is now. These findings were published in *Biosystems* and in the *Proceedings of the National Academy of Sciences, USA*, in 1985. A commentary written by the eminent Roger Lewin in *Science* (Vol. 229, p. 1254) highlighted the significance of this work. David's research on the origins of RNA was also included in a British Broadcasting Corporation science documentary entitled "Origins."

Clearly, Professor David Bloch made a very positive impact at The University of Texas as a researcher, as a teacher, and as a concerned citizen of the Austin community. He is dearly missed by his colleagues, family, and friends.

This memorial resolution was prepared by a special committee consisting of Professors Stanley Roux, Irwin Spear, and Hugh Forrest.

Distributed to the Dean of the College of Natural Sciences, the Executive Vice President and Provost, and the President on October 5, 2000. Copies are available on request from the Office of the General Faculty, FAC 22, F9500. This resolution is posted under "Memorials" at: http://www.utexas.edu/faculty/council/.