

THE JAMES F. CROW LECTURES

We invite you to join us in paying tribute to this distinguished scholar, teacher, citizen, and music-maker by supporting the James F. Crow Professorship in Genetics. This endowment will provide permanent support for a faculty member who has established an international reputation in genetics. Funded totally with private support, this professorship will honor Professor Crow by sustaining outstanding research in the field to which he has devoted his remarkable talents. Gifts may be made to the Crow Professorship and sent to the UW Foundation, PO Box 8869, Madison, WI 53708-8860.

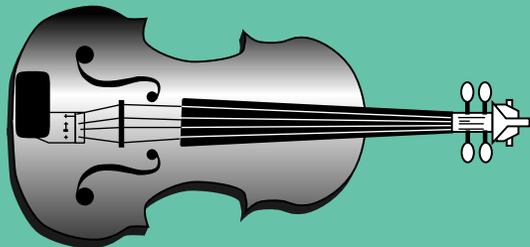
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The James F. Crow Lectures are sponsored by the UW Medical School / Howard Hughes Medical Institute Funding, the Laboratory of Genetics, and the Crow Lectureship Fund.

Dr. Oliver Smithies

Excellence Professor of Pathology and
Laboratory Medicine
University of North Carolina at Chapel Hill

From Starch Gels
to Gene Targeting
as the Crow Flies



Friday, April 24, 3:30 PM
in 125 Biochemistry

Oliver Smithies



Oliver Smithies was born on July 23, 1925, in Halifax, England. He attended Oxford University and received a Bachelor of Arts Degree in Physiology with First Class Honors in 1946.

In 1951, he obtained his

M.A. and D.Phil. degrees in Biochemistry from Oxford. Smithies was a postdoctoral fellow in physical chemistry at the University of Wisconsin-Madison and a research assistant and associate at Connaught Medical Research Laboratory, University of Toronto, Canada. In 1960, Smithies joined the faculty of the University of Wisconsin-Madison in the Departments of Genetics and Medical Genetics, where he became the Leon J. Cole Professor and subsequently the Hilldale Professor of Genetics and Medical Genetics. He joined the faculty of the University of North

Carolina at Chapel Hill as Excellence Professor of Pathology in 1988.

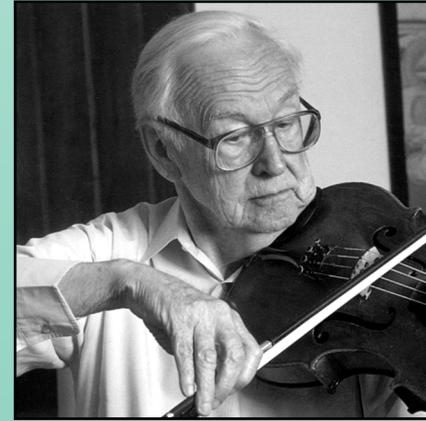
Early in his career, Smithies developed new methods for detecting genetics variation in proteins and originated starch gel as a supporting medium for the electrophoretic analysis of proteins and enzymes. This led to discoveries of protein polymorphisms and significant work on the heredity of important blood proteins - including haptoglobins, transferrins, and gamma globulins. This resulted in early recognition by the American Society of Human Genetics, who conferred upon him its William Allen Memorial Award in 1964.

Smithies continued his work on protein polymorphisms and the origins of antibody diversity. His many important contributions to genetics have been recognized by his colleagues: in 1971, he was elected as a Member of the National Academy of Sciences; in 1975, he served as President of the Genetics Society of America; and in 1978, he became a Member of the American Academy of Arts and Sciences.

He is one of only three people to twice receive the Gairdner Foundation International Award. This honor was awarded to Smithies in 1990 "for the discovery, development and application of gel electrophoresis methods that allow the separation and identification of specific proteins and nucleic acids," and in 1993 "for pioneering work in the use of homologous recombination to generate targeted mutations in the mouse."

In recognition of his distinguished career, the University of Chicago conferred upon him the Honorary Doctor of Science Degree in 1991. The citation states, "innovator of concepts and technology in the fields of protein biochemistry, immunogenetics, molecular evolution and molecular biology, who has generated ideas and tools and used them to arrive at solutions to important biological problems

James Crow



Crow was born on January 18, 1916 in Phoenixville, Pennsylvania, and grew up in Wichita, Kansas. His father was a member of the faculty of Friends University, where Jim received his BA degree in 1937.

He attended the University of Texas at Austin, completing the PhD in 1941 under J.T. Patterson and Wilson Stone. From Texas, Crow went to Dartmouth College where, during the war, he taught just about every biology course in the curriculum as well as mathematics to Naval officers. He rapidly gained fame as a successful and gifted teacher. A chance encounter with Joshua Lederberg at a scientific meeting led to Jim's move to the University of Wisconsin in 1948.

Since arriving in Madison, Professor Crow consistently maintained one of the heaviest teaching loads of any professor in the biological sciences and is recognized as one of the finest teachers in the University. His Genetics Notes was the foundation of introductory genetics courses around the world. Crow also wrote, in collaboration with Motoo Kimura, the classic textbook in population

genetics, *An Introduction to Population Genetics Theory*. Jim received the John Bascom Professorship in 1965, the College of Agricultural and Life Sciences teaching award in 1972, a Senior Distinguished Research Professorship in 1984, the all-campus Distinguished Teaching Award in 1985, and the CALS Distinguished Service Award in 1995. At the time of his retirement in 1986, Professor Crow was Professor of Genetics, Professor of Zoology, and Professor of Medical Genetics. He served as Chair of Medical Genetics from 1958-1963 and twice served as Chair of the Laboratory of Genetics (1965-71 and 1975-77). He was also Acting Dean of the Medical School from 1963 to 1965.

Professor Crow's list of over 200 publications gives some indication of the breadth and depth of his research contributions. His early experimental works was on interspecific hybridization in *Drosophila mulleri* group, and on the genetics of DDT resistance in *Drosophila*. One of his major interests has been in the theory and estimation of genetic loads. Crow and his group pioneered work on the impact of minor mutations on the total fitness of populations. Several very large scale experiments were also devoted to the important question of heterozygous effects of spontaneous and induced mutations, both lethal and detrimental. Seminal studies of non-Mendelian heredity in *Drosophila*, such as the Segregation Distorter system of meiotic drive and hybrid dysgenesis and transposable elements in *Drosophila* have been carried out under his supervision. Not all of Professor Crow's experimental work has involved *Drosophila*, however; bees, wasps, turtles, and leaf miners have each graced his laboratory. Professor Crow's theoretical contributions span the field of population genetics. They include works on effective population number, genetic load, random drift, the effects of assortative mating,