Elie Wollman Biography

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Biography

Elie Wollman is a bacterial geneticist, long affiliated with the Institute Pasteur in Paris. The emergence of bacterial **genetics** as an important research discipline in the 1950s is due in large measure to the work of Wollman. His collaborative research efforts detailing with the nature of the **prophage** and the mechanism of bacterial **chromosome** transfer are of fundamental importance in molecular biology.

Wollman is best known for his fruitful collaborations with Francois Jaçob, beginning in 1954. Together they studied the relationships between the prophage, a **virus** that specifically infects certain **bacteria**, and the genetic material of the target bacterium. A series of experiments led to a definition of the mechanism of bacterial conjugation. In 1954, their experiment with the **bacteriophage** lambda provided evidence that led to the concept of genetic repressor molecules. Another advance occurred in 1957, with their now-classic experiment called the 'interrupted mating procedure. Bacteria with wild-type genes for particular traits were mixed with bacteria whose corresponding genes were defective. After increasing lengths of time, the mating between the bacterial types was stopped. The observations that more of the defective traits were cured with increasing time demonstrated that **gene** transfer begins at a certain point on the chromosome (the origin of transfer) and that transfer is linear. They also provided decisive evidence for the circular nature of the chromosome. This remarkable period of collaboration was described in the 1961 book *Sexuality and the Genetics of Bacteria,* co-authored by Wollman and Jaçob.

Among his honors, Wollman was elected to the National Academy of Sciences in 1991.