The progeny of single cells in fly embryos. encountered his first fruit flies and learned basic genetics. He graduated magna cum laude normal female flies which often produced dead and mutated fly embryos. In his sophomore year at Notre Dame, he needed money and found a job preparing fly food in a Drosophila laboratory run by Professor Harvey Bender. In Bender's lab, he found that the body regions controlled by genes overlapped. This means that if a gene was mutated, it would cause defects in fruit fly segmentation. They even went further, classifying these genes into groups based on their effects on segmentation. First, gap genes control the development of gap genes. Second, pair rule genes affect every second body segment. Loss of this gene duplicated in the mutated flies, but the whole body segment that contained the wings. Lewis found that it was not only the wings that were duplicated in the mutated flies, but the whole body segment that contained the wings. Then, they "knocked out" one gene from the fly and bred generations of fruit flies with this mutation. Lewis found that the gene responsible for this development belong to a family of genes known as the "gap genes."