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Fruit flies help researcher explain how cancer begins

By William Erwin

Fruit flies, swatted by housewives and ignored in recent years by researchers, have found a new champion in Dr. Arno Greenleaf.

The Comprehensive Cancer Center biochemist will use the tiny flies to help explain why normal cells develop normally, while cancer cells do not.

The American Cancer Society has awarded Greenleaf a \$130,000 grant for his work. He is an assistant professor of biochemistry.

"People don't understand what controls exist to make a gene decide whether it's going to be active at a particular time or not. If we don't understand how normal genes are expressed, we don't have any basis for comparison with cancer cell genes."

genes are "turned on." All other genes are "turned off."

In cancer cells, genes that should be turned "off" are turned "on" instead, or vice versa, Greenleaf explained.

cell. This messenger RNA, as it is called, then collects the substances a cell needs to function as a liver cell or whatever type it is to be.

The researcher will, in effect, look at the memo passed from a cell's architect to its general contractor.

Greenleaf said he is studying fruit fly cells because they contain only about

5,000 genes. Human cells contain about 500 times that number. The smaller number in fruit fly cells makes the workings of genes much easier to see, the researcher explained.

Bacteria contain fewer genes yet, he said, but bacteria are quite unlike human cells. What Greenleaf learns about fruit fly genes can be carried over into human cell research.

"People don't understand what controls exist to make a gene decide whether it's going to be active at a particular time or not," he said. "If we don't understand how normal genes are expressed, we don't have any basis for comparison with cancer cell genes."



Interviewed in his laboratory, Greenleaf said he will focus on genes in the innermost core of fruit fly (*Drosophila*) cells. Genes act as the architects of all living things, directing one cell to become a liver cell, for instance, and another cell to become a skin cell.

A developing liver cell contains genes for all other types of cells, but only liver

"The regulation of one or more genes is not normal," he said. As a result, cancer cells begin an uncontrolled growth and reproduction that can damage a vital organ beyond repair.

Specifically, the scientist will work with the enzyme, or chemical, that carries a gene's instructions to a messenger in the

Family medicine training project gets \$681,739 HEW grant

The director of education and evaluation of the Family Medicine Program has received a project grant from the Department of Health, Education and Welfare to enhance the teaching, research and administrative skills of family medicine faculty members.

Dr. James A. Bobula, an assistant professor of community and family medicine, said the project was approved for five years, with a first-year budget of \$12,288 and a total support amounting to \$681,739.



DR. BOBULA

Trainees will participate in one or more of four programs to be offered by the Division of Family Medicine. These include a one-year fellowship, a series of one-week workshops over a 10-month period, a single four-day workshop and on-site consultation by Duke family medicine faculty members at the trainee's institution.

Bobula was appointed to the Duke faculty in 1975. He holds M.A. and Ph.D. degrees in speech communication from Ohio State University.

DUPAC plans vigor classes

"Better health is an important reason why people start to exercise and it is an important dividend. But it's not what keeps people returning morning after morning," according to Dr. Andrew G. Wallace, professor and chief of the division of cardiology.

"Rather, it is somehow related to the fact that developing the potential of your body satisfies a basic need not unlike the satisfaction of developing the potential of your brain," he explained.

One opportunity for deriving this satisfaction is the Duke University Preventive Approach to Cardiology (DUPAC) "Planned Vigor" course, beginning in September.

The 10-week course incorporates both group and individualized fitness training for men and women based on aerobic-type exercises. Classes meet three times a week for 45 minutes each.

An orientation meeting will be held in the Biological Sciences Auditorium at 7 p.m., Sunday, Aug. 27. It is extremely



TAKING OFF THE WRAPS — Ort Busse (left), chairman of the Nearly New Shoppe, and Mary Parkerson, president of the Medical School Faculty Wives, cut the ribbon on a really new building. For the story and another photo, see page 3. (Photos by John Becton)

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