Molecular biology institute

Their research has a big impact, small identity crisis

By Charlene Bell
Of the Emerald

Applied science research, such as engineering, is a bit easier for most people to understand than the research that goes on at the University's Institue of Molecular Biology.

The institute suffers a small identity crisis because people aren't really sure what kind of research goes on, says director Brian Matthews, a biology professor at the University.

The institute is the only one in the Northwest and is among a handful of institutions around the nation that work in molecular biology by combining research in the departments of physics, biology and chemistry.

The institute was founded in 1958 by University biology professors Frank Stahl, Aaron Novick and George Streisinger, in order to bring an interdisciplinary approach to research in the field of molecular biology.

Now, 24 years after its inception, all three still teach at the University and conduct research at the institute. The institute has expanded to include nine other faculty members working with research assistants and post-doctoral students in the labs.

The institute focuses its research to obtain an understanding of how living organisms work and interract among themselves. They begin by studying the organisms at the most basic level.

In the beginning, research grants were used by the intitute's first director, Novick, to study how genetic expression is regulated or controlled in bacteria, while 'pioneer members' Streisinger and Stahl studied mutation and recombination in bacterial viruses.

Since the institute's founding, Stahl, Novick, and Streisinger, have made significant contributions in areas of DNA research.

According to Matthews, the now famous "Meselson-Stahl experiment" of the late 1950's clarified many questions about genetic information transferring hereditary traits from parents to offspring.

Now the institute's members are concerned with the genetic regulation information that cues the body to make hair instead of fingernails in a human being. The work of chemistry professor Peter Von Hippel, and the husband-wife team of biology professors Karen and George Sprague are presently researching this genetic process.

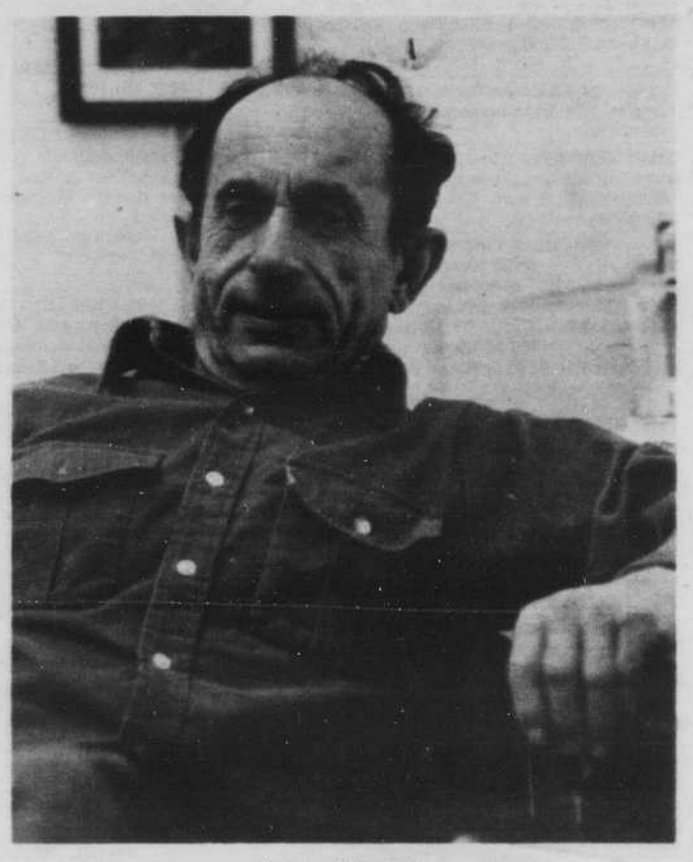
The research is using the desirable functions of one organism and incorporating them into another so a blend of desirable properties is achieved. This idea is being put to use on a small scale in some research labs to produce a strain of bacteria that manufactures insulin. Such a step would eliminate the use of pigs or other animals to obtain insulin for diabetics.

Scientists are also considering the development of a special grain with a bacteria that manufactures its own fertilizer for possible use in agriculture of Third World nations.

A new industry also has evolved from the work of labs like the ones at the University's institute. Genetic engineering, a space-age offshoot of molecular biology, is employing many graduates of molecular biology institutes, as well as producing breakthroughs in areas such as medicine.

Institute members are recruited from across the nation as well as locally if their areas of interest in molecular biology coordinate with research being conducted at the University's institute.

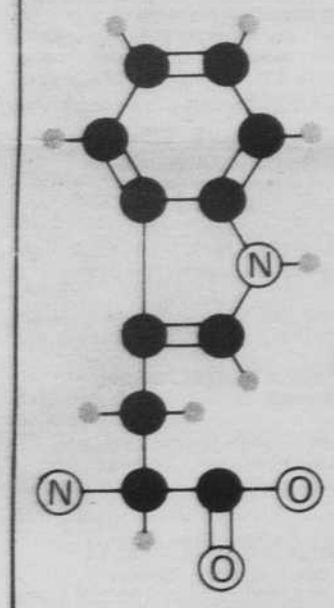
Undergraduate students are employed in work-study positions as lab technicians or secretaries but only graduate students work directly with faculty members on research projects.



Aaron Novick

Graduate students entering the institute spend each term in a different lab. At the end of the year the grad student chooses a lab to continue working in. Matthews says the purpose of this process is two-fold, it gives the grad students an opportunity to learn of research being conducted in all the labs as well as allowing faculty members to meet the students.

The institute operates on an annual budget of $2.8 million. Federal research grants from organizations such as the National Institute of Health and the National Science Foundation provide the research funding, which includes lab supplies, lab technicians' salaries, post-doctoral student fellowships and money for faculty summer salaries.



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