

New growing systems studied in UCSC ag program

Almost \$700,000 in private and public funds have been received in the past few months by UC-Santa Cruz in support of an "agro-ecology" program.

The newly coined name refers to an approach to agriculture based on traditional, sometimes centuries-old, methods of growing food, combined with new knowledge of how and why those natural methods work.

Researchers in the program will attempt to learn more about the ecology of natural, organic growing systems and find ways to improve production on a sustainable basis — without heavy dependence on expensive, energy-consuming, or environmentally degrading technologies.

"There have been dramatic increases in food production during the past 30 years, largely due to new crop varieties and such inputs as fertilizers, machinery, water systems, pesticides, and herbicides," says Stephen Gliessman, who will head the program. "And the success of these technological advances is indisputable."

However, he adds, "the focus has been on short-term gain with the ecology of agro-ecosystems being largely ignored. And the adverse consequences of this approach are mounting."

In particular, Gliessman, an assistant professor of plant ecology at UCSC's College 8, cites a heavy dependence on fossil fuels that raises "serious questions about the sustainability of current systems of food production in the United States and their applicability to developing countries."

Initial support for the university's ambitious project, which will be carried out at UCSC's 17-acre experimental farm, came from anonymous gifts totaling \$100,000. Added to that were grants of \$25,000 from the Richard and Rhoda Goldman Fund, \$1,000 from Bernard Petri, and \$250,000 over a four-year period from the Columbia Foundation, all of San Francisco.

An additional \$317,000 was allocated at the end of June from the state's Environmental License Plate Fund.

In speaking for the project before the state Legislature, Assemblyman Sam Farr (D-Carmel) said that "even in an era of declining state revenues and resources, the agro-ecology program at UC-Santa Cruz represents one of the best and most critical long-term investments the university and state can make."

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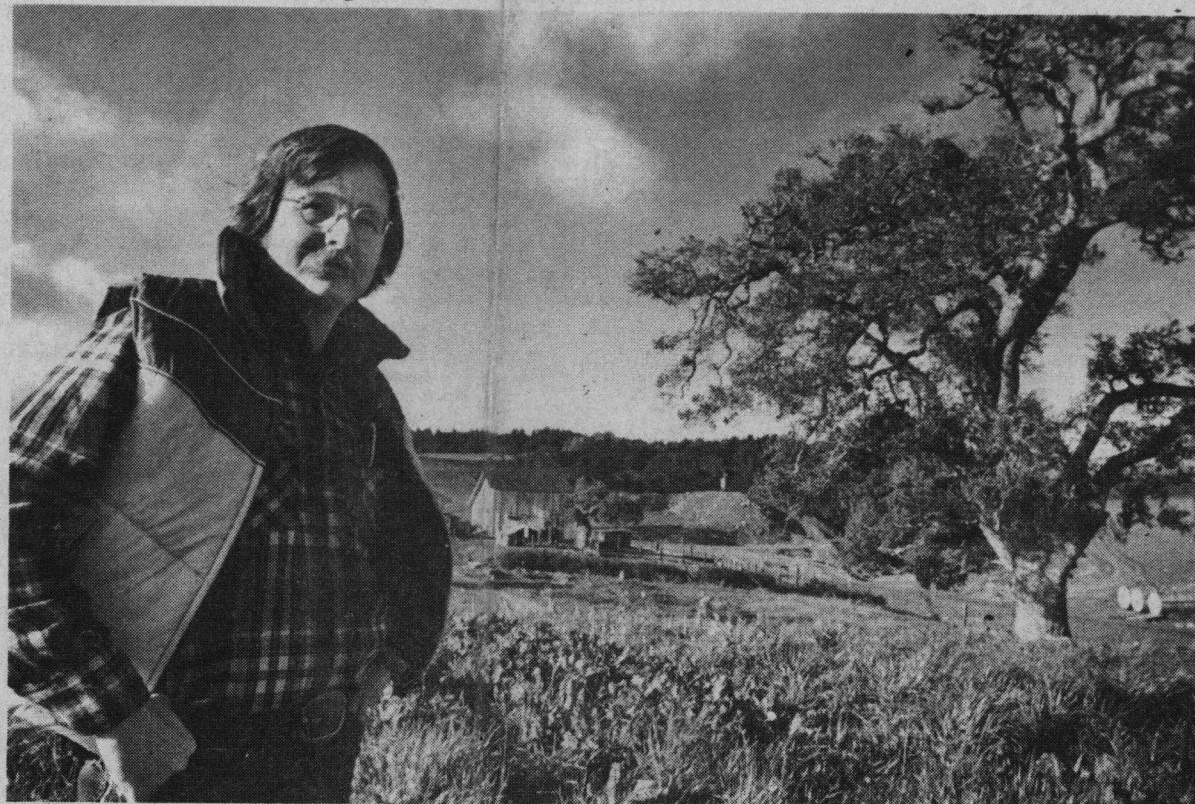


Photo by Kurt Ellison

UCSC's Stephen Gliessman will head a new research program

lyst William Hann noted in his presentation to the lawmakers that "there is currently no mechanism in California for the widespread distribution of information concerning alternative agricultural technologies."

With its new monies, the UC-Santa Cruz program will increase outreach to all levels of the state's agricultural community, from backyard gardeners and small farmers to government agencies and large agricultural corporations.

The project will include training apprentices, designing a curriculum for high school and community college instruction, and building a library and teaching facility. Off-campus field trials will also be part of the work.

Proponents of the program hope it eventually can be developed into a recognized "Center for Agro-ecology."

"The underlying prin-

ciple of our work," Gliessman, "is to understand better the processes found in natural agricultural systems and apply our findings to what has been largely a manipulative system for many years."

Even though manipulation in farming has been successful, Gliessman says, "we are being forced to look at alternatives because of the increased cost of oil to run machinery, move water, and make chemical fertilizers and pesticides, and because of the long-term effects manipulative farming has had on the earth."

Those effects include the creation of "super

bugs," which have developed resistance to ever-stronger pesticides over the last 30 years; a reduction in variety of seed crops; soil erosion; and contamination of natural water systems.

"All of this has led to a decrease in the productivity of land," Gliessman says, "and more expensive techniques that make food more costly."

The UCSC program aims to reverse those trends by studying and sharing information on such topics as:

—Growing mutually beneficial plants together, including plants that produce their own nitrogen and other nutrients, and plants that

shade one another to discourage the growth of weeds.

—Developing the natural ability of plants to ward off invaders.

—Improving the stock and diversity of seeds to withstand diseases that could destroy one-strain plantings.

—Establishing an extensive publications network to share findings and techniques with students, researchers and the agricultural community throughout the state and nation.

For UCSC students, in addition to classroom and lab work, Gliessman said, "there will be opportunities for independent studies, student

internships, and undergraduate and graduate thesis projects." Already UCSC's farm, located on the lower meadow area of the UCSC campus, is the site of many "appropriate technology" projects, such as an aquaculture wastewater treatment system, a new solar greenhouse (the first ever designed with a convective air-flow feature for tempering heat loss), a solar shower and a compost privy.

based on his research into methods used for years by Santa Cruz County families.

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