



News Release
Arkansas Agricultural Experiment Station
Division of Agriculture – University of Arkansas

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P3 group aims to boost molecular biology research

FAYETTEVILLE, Ark. — Molecular biology with plants has been given a shot in the arm by National Science Foundation funding for what collaborating scientists call the Plant Powered Production (P3) research group on three Arkansas campuses.

The P3 group links research programs in the University of Arkansas System's statewide Division of Agriculture, on the Fayetteville and Little Rock campuses of the U of A, and in the Arkansas Biosciences Institute at Arkansas State University in Jonesboro.

The group was awarded a total of \$5 million over three years by the Arkansas Science and Technology Authority through funding it received in August 2007 from the National Science Foundation's Experimental Program to Stimulate Competitive Research. Project leaders are Ken Korth, a plant pathology professor with the Division of Agriculture based at UA, Fayetteville;

Steve Grace, a biology professor at UA, Little Rock; and Carole Cramer, director of the Arkansas Biosciences Institute at ASU.

Goals are to develop plant molecular biology research infrastructure, develop statewide collaborative work, add new personnel, and make existing faculty more competitive for research funds, Korth said.

For example, Korth said, researchers in Fayetteville will use their expertise in extraction methods of plant compounds and work with researchers in Jonesboro who have developed plant cultures producing resveratrol, the chemical component of red wines that has many benefits to human health.

“Ultimately, we want to understand the ways in which plants can be used to improve human and environmental health,” Korth said. “New frontiers of plant research of antioxidants, antimicrobial agents and targeted gene insertion can be explored in rich detail.”

The P3 project awards seed grants for research projects, including several so far on topics such as extraction of useful products from plant cultures and natural defenses of plants against insects.

Some \$440,320 worth of new instruments, all housed at Fayetteville, will streamline the collection of data; what once took hours is now configured and tallied in seconds, Korth said.

“This equipment is meant to add to total research capacity for scientists at UAF,” Korth said. “It is also meant to be accessible to any researcher with a need, so if anyone is interested in using the equipment they can contact me.”

Four pieces of equipment added this year include:

-- a Storm 540 phosphorimager scanner, equipped with a high-powered laser to detect quantity of fluorescence and radioisotope-labeled DNA, RNA, and proteins;

-- a Nanodrop fluorometer for accurate measurement of fluorescent samples in volumes as low as one microliter;

-- New Brunswick shaker-incubators, equipped with refrigeration, gas ports and photosynthetic lights for controlled growth of bacterial and plant cultures; and

-- a Varian Gas Chromatograph with quadruple-mass spectrometer with MS/MS capability, equipped with an autosampler injection system for liquid, volatile, or solid-phase microextraction injections. This \$200,000 purchase included \$100,000 from a Howard Hughes Medical Institute grant awarded to faculty in the Fulbright College of Arts and Sciences. It is in the Statewide Mass Spectrometry lab in the Chemistry Building, directed by Jack Lay.

News releases and photos are available online at <http://arkansasagnews.uark.edu/392.htm>



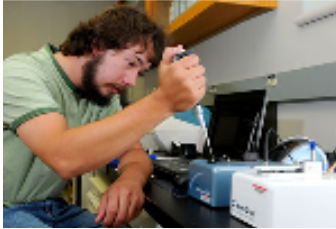
lab equipment04.jpg (color, 200 DPI):

Graduate student Wayra Navia-Giné uses a Storm phosphor imager to scan isotope-labeled fluorescent samples.



lab equipment09.jpg (color, 200 DPI):

Graduate student Lacy Robison uses a New Brunswick shaker-incubator to grow bacterial and plant cultures.



lab equipment15.jpg (color, 200 DPI):

Graduate student Jonathon Smith uses a nanodrop fluorospectrophotometer to measure small amounts of fluorescent samples.