UMKC fungi center keeps up with mushrooming demand

BY TED BELL | CONTRIBUTING WRITER

Walk into a small, nondescript laboratory at the end of an average University of Missouri-Kansas City academic building hallway, and you will walk into ground zero of one of the fastest-growing fields of biological science with intriguing commercial spinoffs.

It's the university's Fungal Genetics Stock Center, a National Science Foundation-financed undertaking that grows, preserves and then ships out about 50 species of fungi to research laboratories and commercial companies throughout the world.

"Our Web site gets 3 million hits a year," said the FGSC's curator, Kevin McCluskey. "People from all over the world look to UMKC for their research material where before they didn't even know that UMKC existed."

That attention is embraced by area life sciences boosters, who are striving to develop the region as a life sciences hub.

"Having the stock center here in the Kansas City area and at UMKC specifically certainly puts us in a position to get much more international exposure and is important to the life sciences initiative as a whole," said Bill Duncan, president of the Kansas City Area Life Sciences Institute Inc.

The fungi in UMKC's stock center are there in large part because small mice and rats inhabit other biological science laboratories. They are research tools because they are easily tested and manipulated for a wide variety of research applications. Neurospora, the genus most commonly found in the UMKC lab, was, for instance, used to discover what genes did.

They also are not really bred in the UMKC lab so much as they are preserved -- slowed down and stored. When they are needed for sale, they are revived and shipped.

"We're sort of a store," McCluskey said.

The center's current director is Michael Plamann, a heavy hitter in the fungal research field who has a separate lab in the building.

McCluskey, who earned a doctorate in botany and plant pathology at Oregon State University, came to UMKC with the Fungal Genetics Stock Center. Because it is so small (less than 1,000 square feet) and much of its equipment, except the big freezers, are low-overhead items, the fungal center is easy to move. Since its founding in 1960 at Dartmouth College, the center has moved to Humboldt State University, (1973-1985) and the University of Kansas Medical Center (1985-2004) before coming to its present site in UMKC's Spencer Chemistry Building in 2004.

The move from KU Medical Center to UMKC came at a auspicious time.

The demand for fungi, and the center's star, neurospora crassa, has surged in recent years for several reasons, both academic and commercial. They include a worldwide functional genomics program to break down neurospora's genes and mutate them. Fungi are more like animals than plants and are very important in studying humans, their foundations and their diseases. Fungi also are crucial for the production of drugs, such as penicillin, and vaccines.

McCluskey said the sale of his lab's fungi accounts for only about $25,000 of the center's $250,000 annual budget. The rest comes from the NSF. He said that about 85 percent of its sales are to academic research labs rather than to commercial companies.

Still, fungi are valuable tools in commercial undertakings such as plant seed development, laundry detergents, food processing and the production of soy sauce. In California, Neogenesis Corp. is using the UMKC fungi for research into the production of a new flu vaccine (it takes six months to make a vaccine with chicken eggs; fungi does it in six weeks).

Neogenesis CEO Dorsey Stuart said the Fungal Genetics Stock Center has assets that most commercial fungi providers can't match.

"I've been in this business in various capacities since 1966, and the center has moved from different locations, but they have been excellent all along," Stuart said. "We have only the highest praise for them. They've been indispensable to us and the academic community."

Ted Bell | Bell is a freelance writer in the Kansas City area.