molecular biology may have trouble outside the university in passing the what's-in-it-for-me test.

The solution, says Shadduck, is to keep an eye on the applied side of the research as well. "We shouldn't let the skepticism of some West Texas rancher prevent us from building a bioscience institute", he says. "But we shouldn't ignore his needs, either."

As with other land-grant universities, Texas A&M is becoming increasingly dependent for survival on attracting funding outside its usual agricultural channels. So far, the school is meeting with success. In the past decade, Texas A&M has risen from eighteenth to seventh among US universities in outside funding, including competitive grants. The Agricultural Experiment Station, a state research and development agency on the Texas A&M campus, has seen its revenues from competitive grants almost double in the past five years, while its state and federal funding stayed flat. The secret, says Robert Merrifield, deputy director of the station, is "taking appropriated funding and leveraging the hell out of it. We use the 'hard' money to groom the researchers to get competitive grants."

In the long run, of course, the university's research quality will determines its funding success. And that means recruiting leading researchers, something at which Texas A&M has had limited success. To many non-Texans, Texas remains a cultural backwater full of cattle and people who wear cowboy hats. College Station conforms to the stereotype. Nothing but top-notch science would persuade most researchers to settle in a town where people routinely drive two hours to get to a good restaurant.

Gerald North, director of the university's new climate systems research programme, was persuaded by Texas A&M's facilities to leave NASA's Goddard Space Flight Center in Greenbelt, Maryland. "I couldn't help but be impressed by the bricks and mortar," he says. "I was convinced that they wanted to make this a first-class university. It still isn't, but I came here because I was convinced that it has tremendous potential."

When he wanted a new supercomputer for climate modelling, he went to the board of regents and reminded them that the University of Texas system had one. "It worked like a charm", he says. He got a new Cray Y-MP for the programme, and another piece of bait to dangle before outside researchers.

New state-of-the-art facilities such as the Crop Biotechnology and the Institute of Bioscience and Technology on its Houston campus will also help. "There's a lot of people I couldn't attract to a vet school in College Station, but I can attract them to Houston," says Shadduck.

The rehabilitation of Texas A&M's sleepy past is going to take more than a few shiny research centres, faculty agree. But their presence improves its chances of enjoying an intellectually rich future.

Christopher Anderson

A&M's plunge into biotechnology has everything — except staff

Houston. Robert Wells sits on the second floor of a brand new and nearly empty 11-storey office building with his hands resting lightly on the unblemished surface of a glowing hardwood conference table. The carpet under his feet is unscuffed. Half of the chairs around the table may never have been sat upon. He and his secretary are not yet on a first-name basis.

Wells, a molecular biologist who moved from the University of Alabama School of Medicine to Texas in 1990, is the director of Texas A&M University's newest experiment in biotechnology — the $27-million Institute of Biosciences and Technology (IBT) in Houston. Located in the biomedical capital of the state, the institute hopes to provide a link between agricultural and human biotechnology, something that no other centre in the United States has so far accomplished. And putting an agricultural research laboratory in a medical centre is novel, to say the least.

At the moment, Wells, his office staff and his research team are almost the only residents of the IBT, presiding over eerily quiet floors of state-of-the-art transgenic animal facilities and empty conference rooms. Wells spends his time looking for another 400 scientists and support staff to fill the building, an enviable position to be in at a time when his colleagues around the country are struggling to find money to keep the scientists they have. Nevertheless, attracting leading researchers (and their grants) to Texas is not always easy.

One problem is the location. With the Texas biotechnology industry still in its infancy, it takes a good deal of Texan 'can do' spirit to imagine a San Francisco-like biotechnology phenomenon sprouting in the middle of cattle land. Wells explains to prospective employees that the institute is intended to be part of a new biotechnology industry in Texas, and that the merger of agricultural and human biotechnology builds on the strength of the university research community and the massive Texas Medical Center just down the street.

IBT's research will focus on such subjects as papilloma viruses, molecular parasitology and human and animal genome research. While most private biotechnology funding is going into research on human therapies — where the market is between 10 and 100 times more lucrative than agricultural uses — Wells sees an increased government interest in animal biotechnology. The centre already has two research grants from the US Department of Agriculture, part of what Wells expects will eventually be $13–$15 million in outside research funding a year.

This research, in turn, is intended to generate spin-off and start-up biotechnology companies around the Texas Medical Center. The state already has a growing set of small start-up biotechnology companies (see story on page 626), although nothing like the industry that has sprung up around Stanford and the University of California. But with $1,000 million in new construction (including the IBT) now under way at the medical centre, Texans are hoping that once they build a world-class research centre, the companies and the researchers will come.

By the end of the decade, the Texas Medical Center and its related complexes are expected to employ 50,000 people, a quarter of them involved in basic research. That would be three times larger than the US National Institutes of Health, and one of the biggest biomedical research complexes in the world.

Christopher Anderson

Out, out brief candle...

In March 1989, when the cold fusion sweepstakes began, researchers at Texas A&M University were at the head of the pack. Although results that hinted of excess heat being produced by palladium electrodes in heavy-water electrochemical cells did not stand for long, reports of tritium generation were widely cited as among the most persuasive evidence for some sort of nuclear activity inside palladium electrodes.

The most active proselytizer for the phenomenon was John Bockris, a professor of electrochemistry and longtime friend of Martin Fleischmann, co-inventor with Stanley Pons of the elusive phenomenon. Bockris also had long-standing connections with the Electric Power Research Institute, the research arm of the US electric utility industry, which supplied Texas A&M with funds for cold fusion investigations.

But reports of tritium generation were always sporadic, and during 1990 they subsided under a blizzard of ultimately unproved allegations of deliberate contamination. Some samples of palladium used in the experiments, however, were later found to have contained trace quantities of tritium from the outset.

Claims for cold fusion still pop up from time to time around the world, but not from laboratories in College Station, where neither heat nor tritium has lately been found except in accord with the usual strictures of physics and chemistry.

David Lindley