



Modesto Maidique, president of Florida International University, unveils plans for a new medical school in Miami.

Medicinal properties

From Florida to California the story is much the same. Local political leaders, noting that there are too few doctors to serve their state's growing population, are arranging to build new medical schools. These, they say, will perform cutting-edge research and generate successful biotechnology companies, as well as training the much-needed doctors.

The projects are planned on the basis that they will do research that attracts funding from the National Institutes of Health (NIH), the main US biomedical-research agency. But the NIH's budget, which was doubled from \$13 billion to \$27 billion by 2003, has since stagnated — raising questions about where the funds will come from.

Critics also argue that there may not be enough qualified students who will want to enrol at the medical schools. The doubters say that there's little likelihood that the new schools will generate clusters of biotech companies and the associated economic benefits promised by their champions. In short, the critics charge, taxpayers in the cities in question have been hoodwinked into backing expensive white elephants that will weaken the states' existing medical schools, leaving medical education and research worse off than they were before.

"This is a very expensive experiment," says Joseph Cortright, a consulting economist in Portland, Oregon, and co-author of *Signs of Life*, an analysis of biotechnology clusters published by the Brookings Institution in Washington DC. "There is no way to determine if it will succeed."

Medical-school campuses, some costing several hundred million dollars, are currently planned or being built in Athens, Georgia; Houston, Texas; three different cities in Florida; Phoenix, Arizona; and Riverside, California. Of the various states pursuing this policy, Florida has proved particularly keen. During his time in office, former governor Jeb Bush championed initiatives that will expend more than \$1 billion on building and equipping biomedical-research institutes in the state (see page 1112).

Class act

In the past decade, the Florida legislature has created three new medical schools — two of them in the past 12 months. Florida International University in Miami and the University of Central Florida in Orlando will each open medical schools that will accept their first classes in 2009.

"Florida is a rapidly growing state, with an increasingly affluent and ageing population that accesses health care frequently," says neuroscientist Terry Hickey, provost at the University of Central Florida. "We are convinced there is a physician shortage; by 2020, that situation will be dire."

Officials at established Florida medical schools are not impressed by the plan, however. Abdul Rao, vice-dean for research at the University of South Florida in Tampa, says existing

institutions and universities are being undercut. "We need continued support for existing medical schools," Rao says.

When researchers receive a grant from an agency such as the NIH, the university to which they are affiliated gets additional funds to cover overheads. But for the past three years, the NIH's total budget for these operational costs has remained flat at \$5.9 billion. That means the new medical schools that come online are simply increasing competition for fixed resources.

Some specialists also take issue with the largest single political selling point for the new schools — the need for more doctors in states with booming populations. Officials at the University of California, Riverside, for instance, argue that the planned \$500-million

medical school set to open in 2012 is needed to help reverse a shortage of doctors in the surrounding area.

This point of view has some sympathizers. Edward Salsberg, a veteran healthcare planner who now directs the Center for Workforce Studies at the Association of American

Medical Colleges in Washington DC, says that the United States needs to increase the number of doctors it trains by 30% by 2020.

But David Goodman, a paediatrician at Dartmouth University in Hanover, New Hampshire, who leads a project that assesses US healthcare needs, takes issue with this. He

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Medical schools under construction on sites such as Lake Nona in Florida (left) may help to produce more doctors to treat Florida's poor.

says that the problem is not how many doctors there are, but how they are distributed. "There has been fantastic spinning of the need for more physicians," he says.

In the United States, a private doctor can practise anywhere and, as a result, more tend to congregate in high-income or desirable communities, leaving some areas underserved. Miami is a prime example, as about three-quarters of its residents live in areas that are medically underserved, according to Goodman's analysis (D. C. Goodman *et al. Health Affairs* 25, 521–531; 2006). But because of its pockets of wealth, he says, Miami actually has far more doctors than some other US cities. It has 40% more per capita than Minneapolis, Minnesota, for example. But on average, people in Miami live shorter lives, are subjected to more treatments and are less happy with their care than patients in Minneapolis, he says.

School of thought

Goodman claims that training yet more doctors will just add to the excess without addressing the needs of the medically underserved. "The free market doesn't work for physician distribution," he says. "You have to have incentives to have physicians practise in needy communities."

History also suggests that when states build medical schools, the resulting graduates won't necessarily practise in the vicinity. Doctors in the United States typically take speciality residencies that last up to six years, and can be anywhere in the country. In 2005, for example, Florida State University in Tallahassee lost half its first medical class to residencies in other states.

And another objective — that of broadening the diversity of communities from which medical students and researchers are drawn — is problematic, too. Public-health specialists all

agree that recruits need to be drawn from disadvantaged communities in order to provide a better service for these groups.

In Florida, the greatest needs are in African-American and Hispanic communities. But among Florida State University's first graduating class of 27, there were only two African-Americans. And among the 50 medical students graduating this spring, only three are African-Americans and three Hispanics.

To fill up places, many medical schools in the states in question already draw students from outside the United States and pay their full tuition and stipend costs. In Florida State University's PhD programme, which began in 2004, half the 21 students are undergraduates from overseas universities. "The number of applicants was very low; kind of pathetic," says microbiologist Myra Hurt, associate dean of research at Florida State University's medical school. "But we are committed to developing a very robust research programme."

Joint venture

In Phoenix, Arizona, a new satellite campus of the University of Arizona College of Medicine, based about 200 kilometres away in Tucson, is taking shape. City leaders hope that the school, which is now recruiting its first class of 24 students, will help to invigorate downtown Phoenix, strengthen biomedical research at Arizona State University (see page 968) and spawn a biotechnology hub.

The Phoenix school will be operated under a partnership between the two state universities. Arizona governments have so far put more than \$130 million into the project, which is projected to cost around \$470 million. In five years' time, the campus hopes to accommodate a total of

450 medical students, nearly 500 PhD students and almost 300 postdoctoral researchers.

"If you want to crack into the top 50 US medical schools, you have to grow," says Phoenix lawyer Gary Stuart, a member of the Arizona Board of Regents. "But the University of Arizona medical school in Tucson couldn't grow, because it is land-, patient- and resource-locked. We wanted to make something bigger, better and faster. The Phoenix campus made sense at every level."

Yet academics at the existing College of Medicine in Tucson view the project with some apprehension. "Everybody has concerns about how they will

pay for this huge effort," says biologist Stuart Williams, who recently resigned his position as chairman of college's bioengineering department to take up a post at the University of Louisville in Kentucky.

Raymond Nagle, a pathologist and former deputy director of Arizona's only federally designated cancer-research centre in Tucson, shakes his head when he hears news reports pledging that the new campus will create a biotechnology industry in Phoenix. "I wish them well; I hope they succeed," he says. "I just haven't seen the evidence they will."

And Joe Panetta, head of the consultancy BIOCOM in San Diego, says it is too late for the areas around the new medical schools to compete with the likes of San Francisco, Boston and Research Triangle in North Carolina. Arizona lacks the venture capital, industrial partners and specialized legal and scientific services. But legislators are optimistic that one day their cities can host all of these services with a brand new medical school at their core. ■

Rex Dalton, *Nature's West Coast* correspondent.

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