

journals, especially in mathematics and engineering, as well as boosting the impact of their research outside Pakistan.

Second, human capital matters. One concern raised by the report published in this issue is that the 3,500 candidates for Pakistan's new domestic PhD programmes have had lower qualifications than the candidates going abroad. But that is a situation that should correct itself over time as Pakistan's schools improve. For the time being, the more important point is that Pakistan has opened up the chance of a research degree to many more people than in the past — including those who do not have wealthy families, or access to influential people, or good skills in European languages. Harnessing those reserves of talent is an integral part of any nation's development.

Finally, accountability is essential. This was not a priority for the architects of Pakistan's educational reform, partly because they were working for an autocratic regime, and partly because they were in too much of a hurry. The government seemed to be living on borrowed time, Musharraf's science adviser, Atta-ur-Rahman, has recalled. On the one hand, politicians, judges and lawyers were pressing for a return to democracy; on the other, the influence of the Pakistani Taliban was

increasing. Suicide bombers twice tried to assassinate Musharraf — once by blowing up his motorcade as he returned from making a speech to scientists. If the reformers didn't get their programme in place quickly, they feared they might not get it in place at all.

The result, however, is that the body created to implement the reforms, the Higher Education Commission, has operated with minimal oversight by academics, parliamentarians or anyone else. There has been some waste, although no one has yet accused the commission of egregious abuses of power. But it has exhibited blind spots that an outside influence might have corrected — notably a total lack of investment in the social sciences and policy research, disciplines that encourage the asking of questions that autocratic regimes frequently dislike answering.

This must change. Pakistan is no longer a dictatorship. The elected government, under President Asif Ali Zardari, has expressed cautious support for continuing Musharraf's education reforms. It therefore has an opportunity to build on their successes and correct their shortcomings — starting with an independent review of the commission's performance. ■

US visa nightmares

Barriers faced by foreign scientists seeking entry to the United States do more harm than good.

Over the years, the United States has benefited enormously from its ability to attract the most creative scientific minds from around the globe. Increasingly, however, scientists, postdocs and students are turning elsewhere, frustrated by the barriers to gaining entry that sprang up in the wake of the terrorist attacks of 11 September 2001. In its current incarnation, the US visa application process not only presents a bewildering tangle of directives, prerequisites and requirements, but has also forced some applicants to wait up to a year for their visa to be approved — often for no apparent reason.

It is true that waiting times are improving. In late May, in response to mounting protests from the scientific community and elsewhere, the Department of State, which oversees the processing of student and exchange visas, added staff and resources, and implemented new procedures to cut delays. The department established a 10-day deadline for most applications that require 'administrative processing', a particular security check required when the applicant is from certain nations or does certain work. Among those getting fast-tracked is the Visa Mantis security check, the type that most often affects scientists.

'Routine' approvals should take only a few days, and never longer than a month, the state department says (see page 131). In an effort to pinpoint and resolve other visa-related problems, the department meets regularly with an inter-agency group that includes the Department of Homeland Security, which handles employment and other types of immigration visas. A meeting is scheduled for this week.

But reducing waiting times for visa approvals fixes only one part of an inept and dysfunctional system. Consider, for example, the impenetrable snarl of bureaucratic requirements that an individual must meet before even applying. A list on the state department's website

of required documentation for all students — not just nuclear physicists, or scientists from countries that sponsor terrorism — is an eye-glazing jumble of acronyms, abbreviations and conditions. It shouldn't be this complicated.

Then there are the requirements and conditions of various visas. Almost all applicants must prove that they plan to return to their home country when the visa comes to an end. Those who receive government funding, or whose speciality is on a skills list negotiated by their home country, must return home for two years once the visa expires. Meanwhile, student applicants, as well as postdocs or scientists applying for an exchange visa, must prove that they can cover their expenses.

Employment-visa applicants face their own woes. There is an annual cap of 65,000 such visas for individuals being employed by private- or public-sector companies, plus another 20,000 for individuals with at least a master's degree from a US institution. Applications are accepted each year from 1 April. If the cap is reached before an individual's application is processed, his or her only recourse is to reapply the next year — and risk losing the job.

Capitol Hill staffers say that several legislators are keen to simplify or even throw out many of these rules, but add that the visa troubles are part of a much larger immigration-reform problem. Given the many other issues facing Congress at the moment, from health-care reform to financial reform, action on immigration seems unlikely before next year at the earliest. And even then, months of debate will be required before any new legislation passes — legislation that may or may not address the visa challenges.

So in the meantime, US agencies should act quickly to streamline the application process as far as possible without legislation. All caution should not be abandoned, but at the same time it should not be so difficult for a scientist or student to seek entry to the country for scientific purposes that have no link with terrorism. The United States cannot continue to bar the door to some of the very people it needs most. ■