

US immigration moves raise fears over ease of entry for scientists

Washington. University organizations and immigration lawyers are warning that legislation now moving through the US Congress could make it more difficult for foreign scientists and engineers to enter the country. But they disagree about just how difficult.

Their concern has been triggered by a bill introduced into the House of Representatives in June by Lamar Smith (Republican, Texas) that would require some US companies and universities wishing to employ foreign researchers to demonstrate that no American workers are qualified for the job.

Congress is keen to reform the immigration laws during this legislative term, partly in response to public anxiety about illegal immigrants, who compete with American workers and use social services supported by US taxpayers. In addressing such issues, Congress is likely to place new restrictions on legal immigration as well.

Smith's bill, designated H.R.1915, would reduce legal employment-based immigration from its current level of 140,000 a year to 135,000 a year. That alone is not a significant reduction, particularly as fewer than

100,000 such visas are currently granted.

But the bill also changes the categories under which foreigners seeking jobs in the United States can be admitted. In particular, it eliminates the "outstanding researchers" designation whereby high-grade scientists and engineers are exempted from the certification process designed to prove that no US workers are available. Some 1,800 visas were granted under this provision last year.

Legal aliens could escape certification if they have "extraordinary ability in the sciences, arts, education, business, or athletics which has been demonstrated by sustained national or international acclaim". But foreigners with advanced degrees but only "exceptional ability" — and a third tier of "skilled workers and professionals" — would have to follow conventional channels.

Elissa McGovern, a policy analyst with the American Immigration Lawyers Association (AILA), describes the latter as an "elaborate and very long process" that may discourage universities and private companies from hiring foreign researchers. She

also says fewer visas will be available for scientists and engineers, as there will now be in competition in the same category with executives from multinational corporations coming to work in the United States.

But others are less alarmist than AILA, claiming that H.R.1915's category-shifting, while adding some hassle and expense, is unlikely to discourage scientists and engineers coming into the United States.

George Fishman, for example, a staff member on the House immigration subcommittee chaired by Smith, says there is a very high approval rate — more than 90 per cent — for labour certifications. While acknowledging that companies or universities who want to hire non-US researchers may "have more work ahead of them," he believes that in most cases the visas should go through.

John Vaughn of the Association of American Universities (AAU) says that eliminating the 'outstanding researcher' category may pose a problem for universities if the labour certification process becomes so congested that highly-prized faculty members cannot be promised quick entry into the United States. Vaughn says Smith's staff has made it clear he would consider amending the bill to help eliminate this problem.

Smith showed his willingness to bow to university interests last month, when he added an amendment to H.R.1915 that would solve what many believe is a much more serious problem for universities. This was a policy followed by the US Department of Labor (DOL) requiring that foreign researchers, even at postdoctoral level, be paid at industry rates rather than the lower rates normally paid to academic workers.

Acting on a little-publicized ruling by an administrative court earlier this year, the DOL has been cracking down on universities in recent months, insisting that they raise their rates of pay for foreign workers.

But the AAU and other university organizations have asked the DOL to place a moratorium on this practice, arguing that industry and universities represent different kinds of labour market. Smith's amendment to H.R.1915 specifically says that universities would have only to pay rates comparable to those at other universities.

Meanwhile, the Senate is taking its own look at immigration reform. Alan Simpson (Republican, Wyoming), a conservative legislator who has long been an advocate of restricting immigration, now chairs the Senate panel responsible for rewriting the law.

Simpson plans to introduce a bill on legal immigration within the next two weeks that some believe will be more restrictive than the House version. His bill may even set ▶

Soliton wave receives crowd of admirers

London. **Scientists at Heriot-Watt University in Edinburgh, Scotland's capital city, last month took to the water (right) to honour a Victorian civil engineer for a discovery he made 161 years ago.**

John Scott Russell, better known for his successes in ship hull design and the first experimental demonstration of the Doppler effect, is also the first person to have correctly identified a soliton wave, while watching a boat on Edinburgh's Union Canal.

Last month, scientists attending a conference at Heriot-Watt University on nonlinear waves in physics and biology witnessed a reconstruction of that first sighting. The occasion was part of a ceremony to name a new aqueduct after Russell.

A soliton is a nonlinear wave that is able to propagate without spreading out, breaking up or losing strength over distance. It is now the basis of an established method for transporting data through fibre optic cables.

Russell witnessed such a wave while watching a boat being drawn along the



Union Canal by a pair of horses. When the boat stopped, he noticed that water around the vessel surged ahead in the form of a single wave, whose height and speed remained virtually unchanged. Intrigued, Russell pursued the wave on horseback for more than a mile before returning home to reconstruct the event in an experimental tank in his garden.

Until the 1960s, soliton waves were considered a curiosity. But Russell believed he had discovered an important phenomenon, describing the sighting as the happiest day of his life. □

►lower limits on science and engineering professionals coming into the country, or make it more difficult for graduate students to remain in the United States once their education is finished.

Simpson and his staff have been sympathetic to the arguments of young American scientists who complain that a reservoir of foreign graduate students and postdoctoral researchers creates a glut in the market, making it more difficult for US-born scientists to find jobs and keeping salaries down.

Recent reports have supported such argument. David North, a researcher in immigration policy, recently released a study sponsored by the Alfred P. Sloan Foundation called *Soothing the Establishment: The Impact of Foreign-Born Scientists and Engineers on America*. In it he argues that, even though foreign-born researchers are a highly talented group and make a real contribution to US science, their presence in large numbers relieves what he calls the "American Establishment" from spending more resources on recruiting blacks, Hispanics and members of other minority groups.

Simpson and his staff invited North and several other immigration specialists to his office in Washington late last month for an informal briefing, during which the topic of limiting foreign-born scientists and engineers is said to have come up repeatedly. "I was quite surprised at the intensity of interest in restricting high-skilled immigration," says one participant in the meeting.

But even those seeking increased restrictions admit that the United States must be extremely careful in setting any new policy, as it would not want to cut off the supply of talented engineers and scientists.

Once the debate begins, US postdoctoral researchers keen to keep immigration levels down will be opposed by universities and private companies who want the most talented individuals they can find. And in this arena, says one observer, "all the political clout lines up on the side of the universities".

Tony Reichhardt

Embargo system under siege on Wall St over obesity gene

Washington. A \$100-million royalty deal between Amgen, the California-based biotechnology company, and the Rockefeller University in New York, paid off handsomely last week when Amgen's stock surged by 5 per cent in anticipation of results published in the journal *Science* on the effects of obesity gene products on laboratory mice.

But the way news of the results leaked on Wall Street — sweeping away *Science's* embargo and boosting Amgen's market capitalization by some \$600 million in a day — has raised questions about the status of embargoed information released in advance by journals for use by science journalists.

"There's always a problem when there is unequal access to information," says Teena Lerner of Lehman Brothers, the analyst whose forewarning of three *Science* papers was published in her company's daily client newsletter early on Wednesday, 26 July, triggering the rush on Amgen stock.

Told by reporters that the papers — due for publication on Friday, 28 July — would have to be described in news reports on the share movement, *Science* lifted its embargo on them at 2pm on 26 July. The story led every television news bulletin that night, and its implications have been the talk of this weight-obsessed nation ever since.

In February, Amgen made a down payment of \$20 million, with a promise of up to \$80 million in future royalties, for the exclusive rights to develop products based on Rockefeller's obesity gene work. The agreement followed the announcement by a team of scientists there, led by Jeffrey Friedman and funded by the Howard Hughes Medical Institute, of their successful cloning of an obesity gene (see *Nature* 372, 425; 1994).

The *Science* papers — from groups of scientists at Amgen, Rockefeller and at Hoffman-La Roche at Nutley, New Jersey, respectively — confirmed the effects of injecting a protein product of the gene into mice. Lerner's tip to investors focused not on this result, but on the hype she anticipated would accompany it. "The media's inherent overall interest in obesity and weight loss will likely lead to publicity for these scientific studies on Friday," she told them.

With three research teams involved, and pre-publication information in the hands of 400 science reporters, Lerner defends her action on the grounds that "thousands of people in the United States" knew the papers were coming.

But that knowledge may raise some questions for the Securities and Exchange Commission (SEC), which regulates US stock markets. On Tuesday of last week, any member of the public, for example, could buy 'forward options' to purchase Amgen stock at a later date for 63 cents: on Wednesday, such options were worth \$2.63, and by Thursday, \$4.25.

Insider dealing is by its nature based on stealth, and nothing in the trading record suggests that these options were being bought heavily before Wednesday. An SEC spokesman said that, as a matter of policy, it would not comment on whether an investigation was taking place.

Nan Broadbent, chief of communications at the American Association for the Advancement of Science (AAAS), which publishes *Science*, says that the embargo system would be unaffected by last week's breakdown. "It may be imperfect, but it's the best system we've got," she says.

Colin Macilwain

Developing countries dispute use of figures on climate change impacts

London. An intergovernmental meeting held to finalize a draft document on the social costs of climate change ended in stalemate last week. Representatives from developing countries attending the meeting refused to endorse a suggestion that global warming would cause twice as much economic damage to the industrialized nations as it would to the rest of the world.

Working Group III of the Intergovernmental Panel on Climate Change (IPCC) has been preparing a draft summary for policy-makers of the damage likely to result from a rise in global temperatures after a doubling of carbon dioxide concentrations.

But the drafting ran into controversy when developing nations, led by India, and China, challenged the use of different criteria for measuring damage in countries

of the North and of the South.

The value put on a death in a developed country, for example, was calculated to be 15 times higher than in a less industrialized nation. Such disparities result partly from the conversion of all estimates of loss from national currencies into US dollars. "\$1 in, say, Cambodia is not the same as \$1 in the United States," one delegate remarked.

Also at issue is the value to be placed on the 'abatement costs' of global warming. The IPCC committee had calculated that slowing down global warming could be more expensive than merely paying for the damage caused by a doubling in carbon dioxide concentrations (1.5–2 per cent).

But critics such as Aubrey Mayer of the environmental group Global Commons Institute, based in London, disagree.

Mayer argues that cost-benefit analysis should not be used to assess the damage likely to be caused by global warming. "The difficulties of allowing for risk, or assessing the value of a plant or animal species that becomes extinct, are well known," he says.

Narasimhan Sundaraman, secretary to the IPCC, acknowledges disagreements over putting a value on loss of life. But he adds that industrialized nations' representatives are willing to consider alternative methods of modelling.

At the same time, he points out that developing nations have so far failed to propose a single workable alternative. The IPCC working group will attempt to finalize the policy-makers' summary of its report at its next meeting in Montreal, Canada, in October.

Ehsan Masood