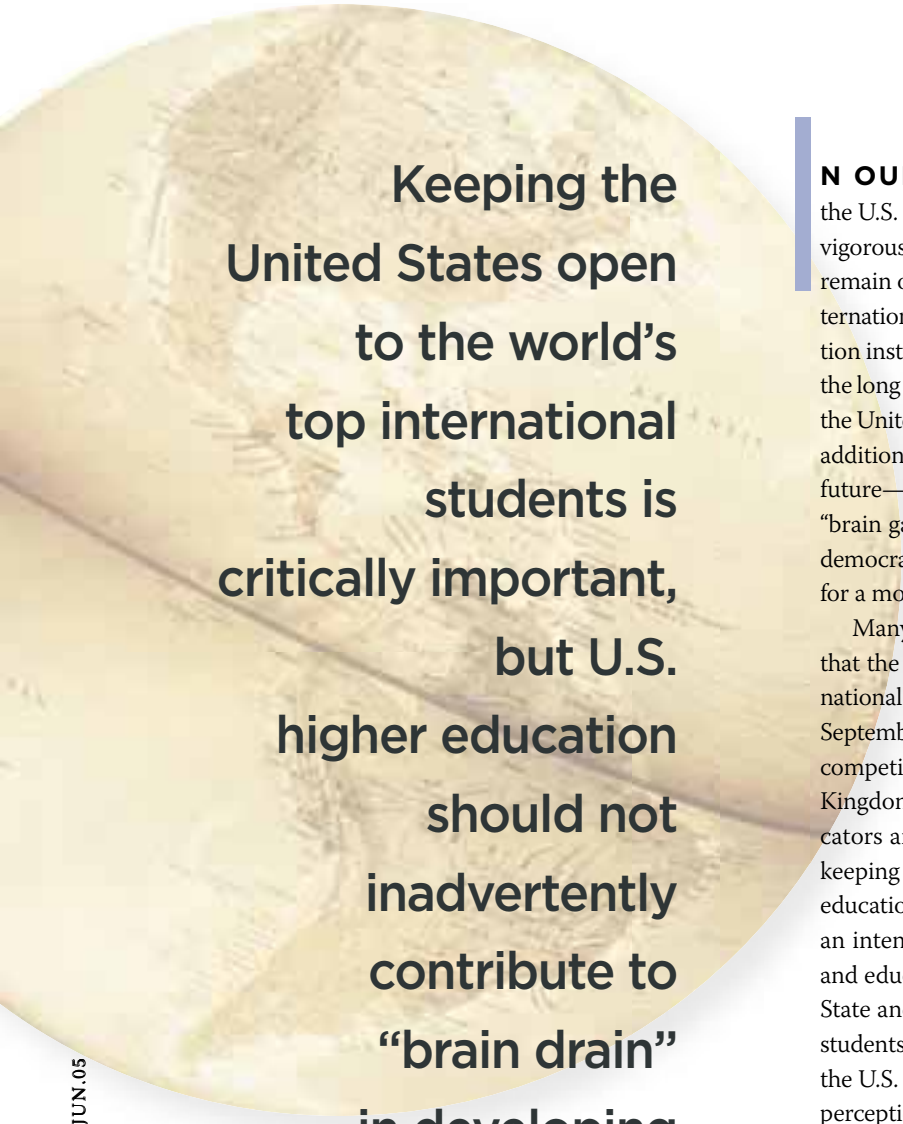
By Joan Dassin

BRAIN GAIN, NOT DRAIN, Fosters



Keeping the United States open to the world's top international students is critically important, but U.S. higher education should not inadvertently contribute to "brain drain" in developing countries.

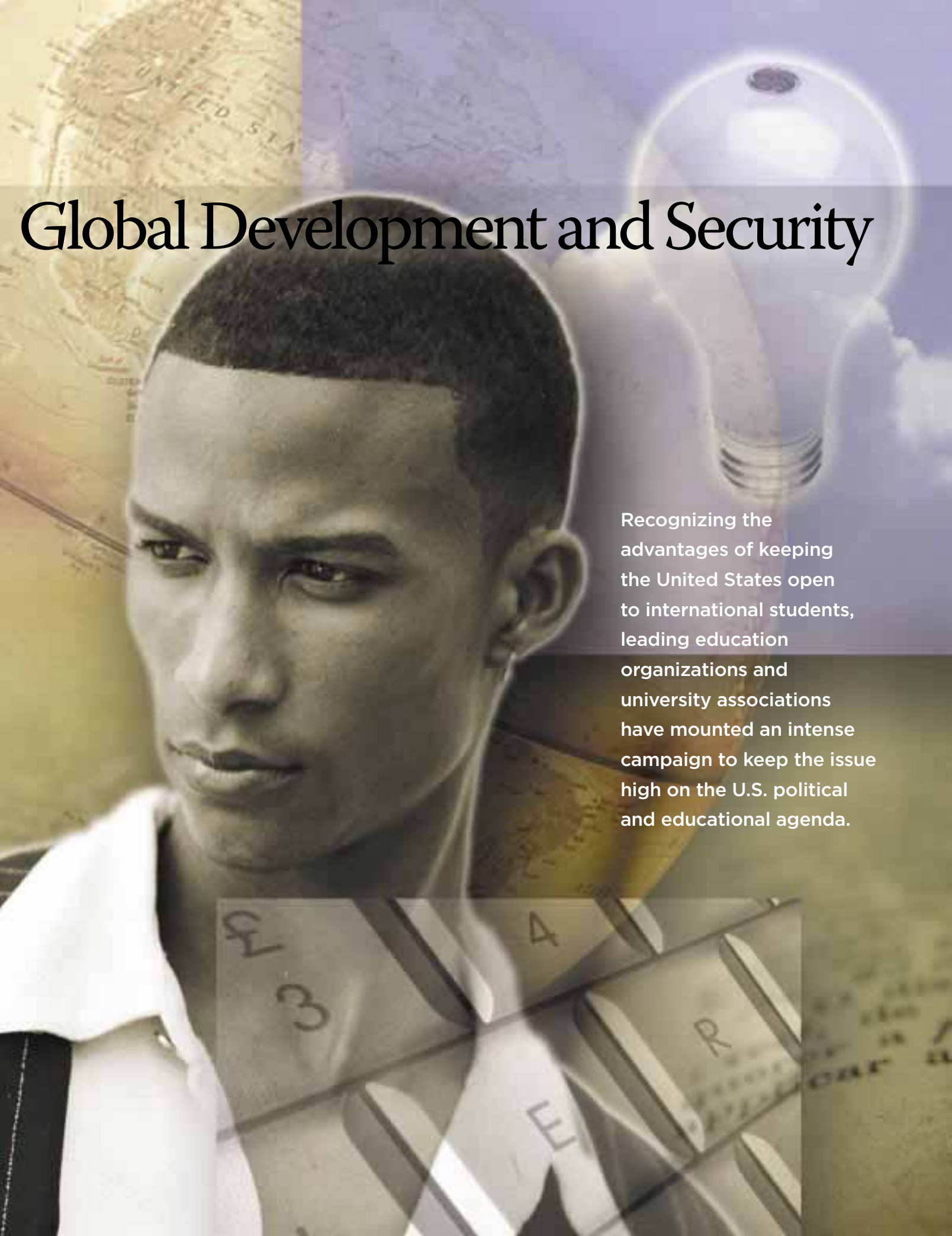
IN OUR POST-SEPTEMBER 11, 2001 WORLD, the U.S. international higher education community has mounted a vigorous and necessary defense of the need of the United States to remain open to the world's top international students. After all, international students make many contributions to U.S. higher education institutions and to the most vital sectors of the economy. Over the long term, they enhance U.S. national security by learning about the United States and coming to appreciate American values. Yet an additional perspective may be even more crucial to our collective future—that U.S. higher education must actively pursue a policy of "brain gain" for developing countries. Such a policy can foster the democratic and economic development that is absolutely necessary for a more secure world.

Many U.S. educators and policymakers have taken for granted that the United States would always attract the world's best international students. But strict new visa regulations imposed after the September 2001 terrorist attacks, rising tuition costs, and increased competition from other destination countries, such as the United Kingdom and Australia, have raised serious concern among educators and business leaders alike. Recognizing the advantages of keeping the United States open to international students, leading education organizations and university associations have mounted an intense campaign to keep the issue high on the U.S. political and educational agenda, working closely with the Departments of State and Homeland Security to improve visa policies for visiting students and scholars. They have pledged to maintain pressure on the U.S. government and other agencies to reverse the widespread perception that the United States no longer welcomes international students. While long-term trends are hard to predict, the consensus is that the overall 2.4 percent decline in international student enrollment from 2002/03 to 2003/04 is not as severe as many had feared, despite worrisome decreases in enrollments in some scientific and technical fields and from top sending countries such as China and India (IIE 2004a and NAFSA 2004b).

One specific concern is that fewer U.S.-trained international graduates will be available to staff U.S. laboratories, research centers, and computer science departments. Microsoft Chairman Bill Gates recently warned that a "35 percent drop in Asians coming to

BONOTOM STUDIO

Global Development and Security



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our computer science departments is a very bad thing for a very key area" (Larsen 2005).

Another concern is the potential loss of considerable financial benefits to the U.S. economy: according to Department of Commerce data, in 2003/04 international students contributed some $13 billion dollars to the U.S. economy in tuition expenses and related costs (IIE 2004b). And in the political arena, it would be counterproductive if in the presumed interest of national security we were to diminish the effectiveness of some of the most important tools of "soft power"—educational exchange programs such as Fulbright, which enable international students to appreciate U.S. constitutional values and often become the best U.S. "ambassadors" abroad. Harvard President Larry Summers warns that the United States would lose "incalculable benefits" if foreign leaders were educated in other countries (Larsen 2005).

These are important arguments to keep the United States open to international students. But a related issue, which may have even more serious economic and political consequences for the United States and the rest of the world, must also be addressed. Does U.S. "brain gain"—which U.S. educators and business leaders are so avidly protecting by defending the nation's ability to attract and retain foreign students—inadvertently contribute to the "brain drain" experienced by some sending countries, particularly those in the developing world? This question, even more than winning the enduring friendship of foreign students who study in the United States, is a matter of pressing national security.

Without their most highly educated people to lead economic and social development at home, the world's poorest countries are trapped in unending cycles of deprivation. The lack of education, healthcare, and economic opportunity perpetuate these same conditions for future generations. At the same time, a society's collective inability to foster positive change often leads to violence and extremism, which may be justified as the legitimate expressions of many different political and religious ideologies. These ideologies provide incentives for terrorists to attack their own people as well as perceived enemies beyond their borders. In the long term, helping international students contribute to the development of their home countries, to creating societies with greater opportunities and broader access to them, may be the greatest contribution U.S. higher education can make to a safer world.

Brain Drain or Brain Circulation?

First coined by the British Royal Society in the early 1960s to describe the migration of scientists and technology experts from Britain to the United States and Canada in the 1950s and early 1960s (Cervantes 2002), the term "brain drain" came to be associated with a "one-way, definitive, and permanent migration of skilled people from developing to industrial countries." The topic was extensively discussed and analyzed in the 1960s and 1970s, but interest in the theme waned in the 1980s due to economic recession and a lack of creative solutions to the problem. With the advent of the IT revolution and the knowledge-based, global economy, the complex winner-loser calculus of "brain drain" has once again emerged as a central issue for both industrialized and developing countries (Meyer 2003).

Two major aspects of the problem deserve deeper discussion. First, some analysts argue that a paradigm shift has occurred, from "brain drain" to "brain circulation." New forms of communication and transportation, a new global role for nongovernmental organizations, and the rise of multinational corporations, among other characteristics of globalization, have mitigated the effects of outmigration among highly skilled professionals. For example, skilled professionals may physically return from time to time to their home countries, set up international networks and organizations that include home-country colleagues, and maintain regular contact through frequent and inexpensive electronic communications. Even work in a single economic sector or industry may create temporary, rather than long-term, professional opportunities in many countries, as global production seeks the best economic returns. All these trends suggest that "brain circulation" is an intrinsic feature of today's global economy.

Second, the pattern of "brain circulation" has highly variable effects on both host and home countries. The United States remains the major receiving country for foreign skilled workers. Approximately 40 percent of the foreign-born adult population in the United States has tertiary-level education; 32 percent of all foreign students studying in Organization for Economic Cooperation and Development (OECD) countries come to the United States. And study in the United States is a major route to employment there: in 1999, approximately 25 percent of immigrants granted temporary professional status under H-1B visas had been enrolled in U.S.

universities (Cervantes 2002). Yet because the skilled labor pool in the United States is so large, only 10 percent of the science and technology workforce, for example, is foreign-born. The relative size of scientific communities is also an important factor for the impact in emigrants' home countries. Although China and India have the highest numbers of skilled migrants working in industrialized countries, the loss of far fewer highly trained individuals is proportionally more significant in Africa, where scientific communities are much smaller (Meyer 2003).

Recent evidence shows that the global circulation of researchers and other highly skilled professionals has increased in many directions. For example, Canada loses professionals to the United States but is still a net importer of skilled migrants. Germany and France are aggressively recruiting foreign students, researchers, and IT workers, while the United Kingdom, Australia, and New Zealand have initiated skills-based migration programs. Singapore is seeking highly trained IT workers from Malaysia and China. Korea and Taiwan have enticed many of their own expatriates who left to study and work abroad to return home. And as a strategy both to retain students and encourage their return, China has announced it will develop 100 universities into centers for higher education, academic employment, and research (Cervantes 2002).

Nonetheless, classical "brain drain" in the sense of irreversible loss of skilled professionals is still a reality for many of the world's developing countries, and the African continent is home to the most acute instances. (*See The African Case, p.24–25.*) Despite recent high growth rates and the rise of high-tech industries in India, in 2000 only 1,500 highly educated Indians returned from the United States, out of more than 45,000 who leave the country each year. A recent survey showed that of doctoral candidates from India and China who earned degrees from U.S. universities in 1990–91, 79 percent and 88 percent, respectively, were still working in the United States five years later. (Cervantes 2002). "Brain circulation" occurs in new geographical patterns that include flows within and between developed countries and sectors of Asia's most dynamic economies. Still, roughly one-third of scientists and engineers from developing countries live and work in rich industrialized countries (Meyer 2003).

What's at Stake

Why is this distressing asymmetry of brain drain so relevant to the United States, and what can international educators in the United States do about it? There are several important answers to both questions. On the first point, U.S. leaders, like other members of the world community, in 2000 adopted the United Nations Millennium Declaration. The declaration established eight Millennium Development Goals (MDGs), which form an ambitious agenda for reducing poverty and improving lives of the world's most disadvantaged people by 2015. The goals, each with specific targets, are: eradicate extreme poverty and hunger; achieve universal primary education; promote gender equality and empower women; reduce child mortality; improve maternal health; combat HIV/AIDS, malaria and other diseases; ensure environmental sustainability; and develop a global partnership for development. This year, representatives of the nations of the world will reconvene to review their countries' progress in reaching the MDGs. While some progress has been made, the United Nations Development Program (UNDP) reports that more than 1 billion people still live on less than $1 a day, 113 million children still do not attend school, and women still make up two-thirds of the world's illiterate people (UNDP 2005).

One major reason that progress toward the MDGs has been so slow is that the human resources to create development on the ground are woefully inadequate. A 2004 report estimates that Africa needs an additional 1 million health workers and lacks trained personnel to deliver a range of other social services including education and agricultural extension. Twenty-five million Africans are currently infected with the HIV/AIDS virus, among them, thousands of health workers, teachers, and other trained service providers (Sachs 2005). The pandemic has created an even greater need for long-term attention to human capital development.

The Task for Rich Nations

Rich nations are under mounting pressure to increase development assistance to Africa and other poor regions of the world. In a speech before the United Nations Security Council, Jan Egeland, the U.N. emergency relief coordinator, said that "while the international community had provided unprecedented assistance to countries ravaged by the Asian tsunamis, it continued to ignore chronic crises of equally catastrophic consequences in Africa" (Hoge 2005). At the influential World Economic Forum recently held in Davos, Switzerland, Bill Gates, rock star Bono, British Prime Minister Tony Blair, presidents Thabo Mbeki of South Africa and Olusegun Obasanjo of Nigeria, and former U.S. president Bill Clinton called for increased aid; renewed efforts to end African conflicts, official corruption, and tyranny; and stepped-up campaigns against AIDS and malaria. The United States, in particular, was challenged to increase its share of aid to "make development possible" (Cowell 2005). Yet not only dollars but also advanced training of committed leaders from the world's poorest countries is urgently needed.

U.S. higher education institutions and U.S. international educators can play a vital role in this effort. First, they can increase recruitment of talented foreign students from underrepresented

The African Case

THE CLASSICAL "BRAIN DRAIN" PROBLEM IS BY FAR MOST ACUTE IN AFRICA. The numbers are deeply troubling, and reflect the continent's post-independence history. In the period between 1960 and 1975, a total of approximately 27,000 well-educated Africans left their homes for developed countries. With successive waves of regime failure and violence and economic collapse often exacerbated by severe structural adjustment programs, the number of skilled emigrants rose to 40,000 per year between 1975 and 1984, reaching 80,000 annually by 1987. Peace accords, democratic opening in some countries, and new economic prospects caused the numbers to level off, with an estimated 20,000 professionals leaving Africa each year since 1990 (Mutume 2003). Overall, it is estimated that at least 30 percent of highly skilled professionals from many African countries have settled in OECD countries.

Emigration patterns vary, but nearly all the African countries have suffered major losses of medical personnel, academics, engineers, and teachers, among other skilled professionals.

Consider the following:

- **30 percent of Ghana and Sierra Leone's highly educated people live abroad (Tettey 2003).**
- **An estimated 60 percent of Ghanaian doctors practice outside the country.**
- **21,000 Nigerian doctors work in the United States.**
- **17 percent of doctors and dentists, 20 percent of**

developing countries. India and China already lead the list of sending countries to the United States, while Thailand and Indonesia rank ninth and tenth, respectively. However, Mexico and Brazil are the only Latin American countries among the top 20, and only two African countries, Kenya and Nigeria, are included (IIE 2004a). This may sound like a recipe for increasing "brain drain," which would be a perverse and unintended outcome. Yet students who are not only academically accomplished but also socially committed leaders in their own countries are much more likely to return home after completing their studies. For such students—especially when they come from disadvantaged communities that suffer disproportionate burdens of poverty and deprivation within developing countries—study abroad is a path to greater social responsibility, not simply individual career advancement. The experience of the Ford Foundation International Fellowships Program (IFP), which supports more than 1,500 fellows from 22 developing countries to pursue advanced degrees worldwide, is confirming this view.

Second, U.S. educators can work with governments and private donors, including sources at home and abroad, to strengthen partnerships with universities and research centers in developing countries. This encourages resource sharing and the formation of two-way collaborative relationships, which benefit both sides in the long run as students trained abroad will have greater incentive to return to stronger institutions at home. Regional institutions that attract students and researchers from particular sub-regions in the developing world—for example, universities in Malaysia, the Philippines and Thailand—should also be strengthened in this way. Many students trained in developed countries might then find employment in their home regions, even if not in their home countries. This would also be a positive outcome and encourage greater regional integration and advancement.

Equally important, U.S. international educators should recognize the continuing dangers of "brain drain" for the world's poorest countries. With this in mind, U.S. higher education institutions can find imaginative ways to connect to and reinforce new efforts to attract professionals (and talented graduates) back to their countries of origin and harness the experience of nationals abroad, the so-called "diaspora option."

Some countries enforce return by requiring professionals to comply with government or private sector service and residency requirements after periods of foreign study. Rather than sanctions, however, incentive packages that encourage professionals to return after completing their degrees are becoming more common. In addition to competitive salaries and the promise of good working conditions, some countries have established national research grants and endowed chairs. Yet because of financial constraints and political pressures in many developing countries, local incentives can be difficult to sustain. Productive partnerships between developed and developing country institutions that allow for the continuing transfer of knowledge and resources may prove to be much more sustainable over the long term.

The so-called "diaspora option" is a promising alternative that has emerged since the early 1990s. The goal is to tap into the knowledge and experience of expatriates—and the resources they enjoy in their adopted countries—for the benefit of the home countries. Some African governments have asked their diplomatic missions abroad to reach out to diaspora populations. An example is the Ghana "Skills Bank," launched by former ambassador Allan Kyerematen in the United States, which seeks to recruit Ghanaian professionals living abroad for limited periods of work in Ghana. The continent's new development framework, known as the New Partnership for Africa's Development, aims to promote collaboration between Africans abroad and those at home.

As part of this new approach, international development orga-

university lecturers, **30 percent** of engineers and **45 percent** of surveyors from Sudan work abroad.

- Almost **60 percent** of Gambian university graduates live elsewhere.
- In the 1980s Zambia had **1,600** doctors; there are now **400**.
- The Southern African Development Community (SADC) reports that at least **10,000** teachers have left SADC countries since 1996. South Africa, in particular, experienced a massive exodus of skilled professionals after the end of apartheid in 1994, as **1-1.6 million** people in skilled, professional, and managerial occupations left for developed countries (Ndulu no date).

These outflows have serious, ultimately incalculable impacts on the migrants' home countries. But even approximate calculations are sobering. Approximately **40 percent** of Africa's private wealth has been sent outside the continent; similarly, the region has exported a large proportion of its most educated people. One estimate calculates that Africa loses nearly **$17.5 billion** annually through the emigration of skilled professionals, yet receives only **$4 billion** annually in development assistance. And these estimates do not include the probable loss to African countries of skilled individuals who remain home but are unable to find adequate employment in their chosen fields-an "internal" brain drain (Ndulu no date).

Seen from the host-country point of view, this staggering loss is a significant gain. While the emigration of technically skilled people has left **20,000** scientists and engineers in Africa serving **600 million** people, 1990 U.S. census data indicate that **95,000** out of **128,000** African immigrants over 25 years old were highly educated. A 1991 survey of African immigrants in the United States found that **77 percent** of respondents had doctoral, medical, or masters degrees, as opposed to the **40 percent** overall rate of tertiary education among immigrants to the United States. All together, more African scientists and engineers are employed in the United States than in Africa (Ndulu no date). **IE**

nizations are calling for greater involvement of trained African experts in local development projects. The UNDP recently created a Transfer of Knowledge through Expatriate Nationals program to increase the number of African experts directly involved in home country development projects. Similarly, the Internet has spawned multiple efforts by diasporic professional communities to connect with local colleagues. An example is the Ghana Cybergroup, which is helping to expand Internet connectivity to Ghanaian universities. The South African Network of Citizens Abroad links professionals abroad with their counterparts at home and involves expatriates in home country development projects. In 2002, 130 heads of technology firms, nonprofit organizations, and UN agencies launched the Digital Diaspora Network Africa (Tettey 2003). One report indicates that there are more than 110 similar initiatives worldwide (Meyer 2002).

The future dynamics of skilled-labor migration will depend on complex economic and political factors, but developed countries in need of high-level professionals should not provide "covert support" for "brain drain" (Mutume 2003). Efforts to reverse "brain drain" will only succeed with the support of the host countries. This does not mean limiting anyone's options for study or work, since forcing talented and accomplished people to stay or return home would be counterproductive. The better alternative is fostering international cooperation through governments, intergovernmental and nongovernmental organizations, and initiatives to ensure that "brain drain" turns into "brain circulation" with benefits for both sending and receiving countries. Keeping the United States open to foreign students-and encouraging U.S. citizens to study abroad-should be part of a global effort to ensure that knowledge and the opportunity to put it to good use are equally and justly shared. **IE**

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