ate student organizations should add intellectual property issues to their agendas.

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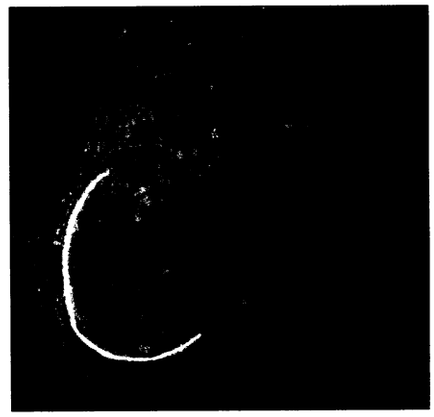
1. L. J. Deftos, *Scientist* (8 June 1998), p. 8.
2. S. H. Patel, *Indiana Law J.* **71**, 481 (1996).
3. S. R. Kulkarni, *Hastings Law J.* **47**, 221 (1998).

Don't Try This at Home

In the Random Samples item "No LSD required" (17 Sept., p. 1845), it is stated that pressing gently against your eyeballs results in phosphenes that "are the result of direct stimulation of the visual cortex." These visual artifacts are actually the result of physical stimulation of the retina, which contains light-detecting photoreceptors, and not of the visual cortex. Visual cortex, which is involved in analyzing visual information collected by the retina, is located several inches away toward the back of the brain. Direct physical stimulation of visual cortex would require a solid blow to the back of the head, which is not an experiment that can be recommended to those trying this at home.



Painting by Andrew Harry in a series called "23 Stages of Flash-Spot Disintegration."

CREDIT: ANDREW HARRY

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Foreign-Born Scientists

In their Policy Forum "Are the foreign born a source of strength for U.S. science?" (*Science*'s Compass, 20 Aug., p. 1213), Sharon G. Levin and Paula E. Stephan present a case to show that "individuals making exceptional contributions to [science and engineering] in the United States are disproportionately drawn from the foreign born." The number of foreign-born scientists in this country has been increasing in recent decades, and according

to the study by Levin and Stephan, they are making important contributions at a rate per capita higher than their American-born counterparts.

I believe the question that most urgently needs to be answered is, What has happened to the supply of talented U.S.-born scientists who in former years populated our graduate school classes, academic faculties, and research laboratories? I do not think direct competition from foreign-born scientists has been a major factor; indeed, one can argue that we should be thankful that foreign-born scientists have been available to fill the gaps left by the absence of U.S.-born scientists. Rather, there seems to be a variety of forces at play tending to keep our own prospective scientists out of careers in basic science. Among them one may suggest better job prospects in nearby fields (for example, computers and biotechnology); long years of training, followed by relatively low salaries and poor job security; and perhaps most important, the message from the federal government that science really is not all that important to the nation any more. In the physical sciences, with which I am most familiar, one can cite the cancellation of the Superconducting Super Collider project in 1993 as a dramatic example. The fact that the university programs supported by the National Science Foundation and the U.S. Department of Energy have faced a chronic budget squeeze over the last three decades has also been extremely damaging in its cumulative effects.

Whatever the causes (and these need to be investigated with the same diligence that Levin and Stephan have brought to their research), the consequences of the flight of U.S.-born scientists from basic science are bound to be severe. A nation that forsakes the quest for the fundamental knowledge that is gained through basic research in favor of more immediate, but ultimately less important, rewards is planting the seeds of its own demise.

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Levin and Stephan state, "[T]he United States has benefited from the educational investments made by other countries, presumably to their detriment." Not only does the other country lose by what is called emerging countries' brain drain to the United States, but when the scientist returns to her or his laboratory after completing the doctoral or postdoctoral studies in a G-8 country (United States, Japan, Germany, Canada, France, England, Italy, and Russia), the individual often seems to experience a type of culture shock.

This culture shock of lacking essential reagents, first-world equipment, dependable online access to the Web, and sufficient budget to subscribe to journals, plus scant hope of getting a tenure-track position (*1*)—all because of down-sizing as a result of cuts in the federal or state/provincial budgets—have created for the past 12 years what my colleagues and I call the first-worlder in intellectual decline syndrome (FIDS). The FIDS scientist exhibits all sorts of negative personality traits that are manifested in the desire to return to the G-8 laboratory from which she or he graduated or boycott the system to which she or he has returned. This conflictive behavior usually results in responses from authorities; the scientist may end up with no graduate students to teach or no travel grants with which to attend local or international science events. We have seen FIDS last from just a few months to more than 10 years. However, we have noticed that those who do overcome their FIDS problems are usually those who are the most creative in finding new ways to use the equipment at hand or go back and tease out important insights from previously abandoned lines of research.

It is likely that FIDS does more damage to an emerging country's scientific progress than the loss of those who stay in the United States or other G-8 countries.

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References and Notes

1. China offers to its returning scientists 4- to 5-year contracts and pay-for-performance salaries [*Nature* **394**, 601 (1998)].

Response

Chodos raises the important question concerning what has happened to the supply of talented U.S.-born individuals selecting careers in science. His hypotheses warrant investigation in future research by us or by others. The "weak-message hypothesis" is, at best, field dependent, given the tremendous increase in resources that the federal government has directed in recent years to the National Institutes of Health. Furthermore, many of the foreign-born contributors we studied came to the United States at a time when the federal signal was strong and thus, according to Chodos's logic, should have been attracting talented U.S.-born individuals as well. Yet our re-

sults indicate that the foreign born and foreign educated who entered U.S. science at this time made disproportionate contributions compared with scientists who were born and educated in the United States.

In their letter, Chandler-Burns, Martinez de Guzman, and Guzman point out another possible "cost" to the home country: the culture shock of scientists returning to home laboratories, if they do not stay permanently in the United States. This is an interesting point from the perspective of the home country.

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Documenting Speciation

In the "Evolution" special issue, Virginia Morell's News article (25 June, p. 2106) seems to perpetuate a common misconception, that no one has actually witnessed the birth of a species in the wild. In fact, sympatric speciation involving polyploidy (three or more copies of all the chromosomes) has been well documented in nature in the cases of the evolution of *Spartina anglica*, *Tragopogon mirus*, and *Tragopogon miscellus*. The *Spartina* story is recounted in most general biology texts (*1*). The *Tragopogon* story is particularly well documented with a broad spectrum of evidence ranging from field observations of the initial encounters of the three parent species to comparative morphological, cytogenetic, and molecular genetic evidence confirming the origin of the two new species multiple times (*2*).

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CORRECTIONS AND CLARIFICATIONS

Sabine Steghaus-Kovac's News Focus article "Ethical loophole closing up for stem cell researchers" (1 Oct., p. 31) states in the sixth paragraph that "Surani's team transplanted EG cell nuclei into egg cells." It should have read that the team "transplanted potentially imprint-free primordial germ cell nuclei into enucleated oocytes." This work was published recently by Y. Kato *et al.* [*Development* **126**, 1823 (1999)].

In the report "Water vapor absorption in arthropods by accumulation of myoinositol and glucose" by M. Bayley and M. Holmstrup (17 Sept., p. 1909), the second sentence of the abstract should not have included the words "dry weight." The sentence should have read, "Numerous studies have shown that their survival below 90 percent relative humidity is limited to hours."

In the letter "Effect on the biosphere of elevated atmospheric CO_2" by B. Bolin *et al.* (*Science*'s Compass, 17 Sept., p. 1851), "picograms" should have been "petagrams" in the third and fifth paragraphs.

Jim Muckerheide's letter of 3 September (*Science*'s Compass, p. 1489) incorrectly referred to 1884 as the "year without a summer" after the eruption of Mt. Krakatoa in 1883. The so-called "year without a summer" occurred in 1816 after the eruption of Mt. Tambora in 1815. Adverse weather and crop conditions also were reported to have occurred after the eruption of Mt. Krakatoa.