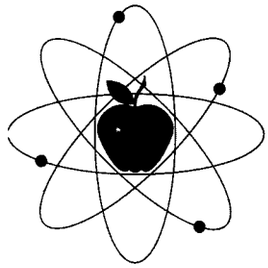
LETTERS

Fruits of learning

Two ways for the National Science Foundation to encourage teaching are proposed. How to "direct scientific and technological enterprises for the benefit of mankind" is discussed. Recent work on immunological tolerance is said to be useful, particularly to "vaccination programs in areas of the world where infectious diseases are a leading cause of perinatal mortality." And genetic analysis might help reveal how the Americas were first populated, as well as suggest how "preventive measures for the deleterious effects of xenobiotics" might be developed.



Promoting Teaching

The News and Comment article by Jeffrey Mervis about the National Science Foundation (NSF) awards for "Research-Learning Links" (28 June, p. 1868) implies that $5 million was being spent to "change the image" of the nation's top research institutions in the eyes of legislators. These $500,000 Recognition Awards for the Integration of Research and Education (RAIRE) will apparently be given to 10 top research universities that have succeeded in encouraging their faculty to teach well—a situation that is "RAIRE" indeed!

It seems doubtful that this image makeover would have any lasting effect at most top universities, whose concept of integrating research and teaching has typically been to excuse their graduate students from research for a few semesters so they can be teaching assistants instead.

It may be better for the NSF to look closely at institutions that already take teaching responsibilities seriously and yet have managed to simultaneously develop admirable research programs on a shoestring budget. At these second-tier universities, the faculty actually teach their own courses, train disadvantaged students in research, and educate the electorate on the need for science funding.

An additional $5 million spent at these institutions would have a substantive effect on the integration of research and teaching, unlike at the "Potemkin villages" being planned for the nation's top universities.

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The article "Report urges NSF to promote teaching" by Jeffrey Mervis (News & Comment, 19 Apr., p. 345) describes how an NSF advisory panel criticized NSF for contributing to the imbalance between research and teaching. Although the report is on target, its recommendations to address the problem by shifting large sums of funds into instruction-oriented activities are neither realistic nor practical.

How about an uncomplicated, cost-free, and nonbureaucratic alternative? Simply require all professors applying for NSF research funding to include with their grant proposals the same student evaluations of their undergraduate classes that their departments and deans use for merits and promotions. By this one step, Melvin George, chair of the advisory panel, would begin to achieve his panel's goal of NSF sending "a message that teaching is important," and, as he anticipates, "universities will start to change their behavior."

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Fears About Illness

It was something of a shock to read the Random Samples of 21 June (p. 1747) and find that my lecture at World Animal Awareness Week ("Disabling science: How negative stereotypes of illness have been used to promote animal experimentation") had been given the headline: "In defense of disease." As a former poster child and person with cerebral palsy, my lecture as a part of the panel on the science and ethics of

vivisection detailed my firsthand experiences as a disability and animal rights advocate. Far from defending disease, my presentation examined how scare tactics that play on people's fears about illness are often used to promote further experimentation on nonhuman animals.

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German Society and German Science

In his editorial of 10 May (p. 791), Hubert Markl criticizes "a vocal part of German society" that has been hostile to nuclear technology and biotechnology, "driving billions of marks worth of high-tech investment abroad." I think these people legitimately struggle to direct scientific and technological enterprises for the benefit of mankind.

At present, science is not being recognized as a benefit. Chernobyl is an ongoing nightmare. The predicted economic benefit of nuclear energy—to make the Sahara green and to change the North Pole into the Riviera—has all but vanished. This was made plain in the early 1990s, when the then British Prime Minister Margaret Thatcher removed nuclear power from the electricity-privatization package in order to make privatization viable.

And what about biotechnology? A prominent achievement of genetic engineering is associated with the junkie aesthetics of injecting cows with growth hormones for increased efficiency in milk production. A major goal is associated with the equally drug-fiendish mentality of making crops resistant to industrial pesticides. Voices like that of Germany's former Liberal Democratic Secretary of State Hans-Dietrich Genscher have endorsed the conciliatory side of biotechnology: that it allows manufacturing of better products by ecologically benign processes. Is this direction of biotechnology politically inopportune? If the controversy in Germany about genetic engineering seems bizarre, that's because it is. Scientists should stay out of it.

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Fetal Immune Response

The recent demonstration—by three different groups using distinct experimental approaches—that immunization during the neonatal period leads to vigorous and protective immune response rather than to tolerance is of major significance for immunologists, but most important, it opens for clinicians new horizons regarding vaccination (Reports, 22 Mar., pp. 1723, 1726, and 1728). These studies, performed with neonatal mice, are in keeping with earlier observations in human studies that maternal vaccination with tetanus toxoid (TT) during the last trimester of gestation induced active in utero immunization of the offspring. The umbilical cord blood of such newborns contained immunoglobulin M (IgM) antibodies against TT (IgM does not cross human placenta), and children born to mothers vaccinated during pregnancy displayed an enhanced anti-TT response to the classical DPT vaccination program (*1*). Given that maternal immunoglobulin G (IgG) crosses the placenta, it was not possible to determine whether in utero immunization led to the production of IgG antibodies. However, immunoglobulin E (IgE) anti-TT antibodies were detected in a significant proportion