Proposed Constitutional Amendment

A proposed amendment to the AAAS Constitution will be considered by the AAAS Council at its 15 February 1993 meeting. The Council now has the authority and responsibility to elect Fellows but no matching authority to revoke Fellow status. At its meeting on 4 December 1992, the Committee on Council Affairs endorsed the following amendment proposal:

> *To consider, on a proposal by the Committee on Council Affairs, the revocation of Fellow status of an individual who has been so elected from among the members of the Association.*

This provision would amend Article VII, Section 1, of the Constitution enumerating the duties of the Council. It would be added as a new provision (i); current provision (i) would be relettered (j); and current provision (j) would be relettered (k).

This information about the proposed amendment is published in accordance with the Association's Constitution. Article IX calls for publication of any proposed amendment at least 30 days prior to the Council meeting at which it will be considered. If the Council approves the amendment, it will be submitted to the AAAS membership for mail ratification during the 1993 general election.

Mark S. Frankel
AAAS Scientific Freedom, Responsibility and Law Program

The Future of Agricultural Research

We enthusiastically support Philip H. Abelson's call for substantially increased funding for basic agricultural research (Editorial, 28 Aug., p. 1187). However, he neglects the government's critical role as gatekeeper; some federal regulatory policies are serious impediments to progress in the agricultural sciences. A subsequent editorial by Charles Arntzen, "Regulation of transgenic plants" (4 Sept., p. 1327), points out that research on genetically engineered plants is now subject to delays and extensive assessments that result from perceptions of public concern and not from scientific evidence of risk. When government's research and regulatory policies conflict, the public loses twice—their investment in the U.S. research enterprise is thwarted, and they pick up the tab for unnecessary regulatory reviews (*1*).

Twenty years after publicly funded research gave us the tools for recombinant DNA research, the time has come for the U.S. Department of Agriculture (USDA) and the Environmental Protection Agency to write regulations about products rather than the research methods used to create them (*2*). Governmental oversight is essential to protect human and environmental health, but agencies should follow the lead of the Food and Drug Administration in crafting reasonable, unambiguous policies (*3*) that focus on identifiable product risks and not on the researcher's bench. A recent USDA proposal (*4*) is a positive step.

Roger Beachy
Division of Plant Biology, Scripps Research Institute, La Jolla, CA 92093
Susanne L. Huttner
Systemwide Biotechnology, Research and Education Program, University of California, Los Angeles, CA 90024–1570
Anne K. Vidaver
Department of Plant Pathology, University of Nebraska, Lincoln, NE 68583

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In his editorial of 28 August, Abelson argues that the United States must devote a

larger share of its creative talent to basic agricultural research if it is to increase its favorable balance of trade in agricultural products, and he urges expansion of the USDA competitive grants program. I disagree, because it is notoriously hard to predict what benefits will come from basic research, when they will come, or who the beneficiaries will be. For example, basic research in the United States may have led to the transistor, but it is the Japanese who build the television sets and the transistor radios that now dominate the U.S. market.

To the extent that agricultural research has given U.S. farmers a competitive edge, it has overwhelmingly been applied research that has made the difference (for example, the development and testing of crop cultivars highly adapted to the particular climatic, edaphic, and plant pathological environments of major agricultural areas of the United States) rather than basic research.

Over the past 20 years, both the U.S. Department of Agriculture and the state agricultural experiment stations have decreased support for applied agricultural research in order to increase support for basic biological research that may or may not someday have agricultural relevance. An example is the relentless replacement of retiring plant breeders by biotechnologists and molecular biologists at land-grant universities throughout the country. Some valid arguments can be made for this change, but increasing the competitive advantage of U.S. farmers is not one of them.

Paul Lyrene
Department of Horticultural Sciences,
University of Florida,
Gainesville, FL 32611

During the past decade, a vigorous debate about sustainability (*1*) has challenged the basic assumptions of the scientific and economic approaches to agriculture that have been dominant since the 1950s. Those arguing for more sustainable approaches have stressed that research and policy must include consideration of the social, environmental, natural resource, and health costs of modern agriculture (*2*).

While Abelson mentions the increasing importance of regional and global factors, he cites only economic pressures; he does not consider the urgent need to integrate research on agriculture, forestry, and fisheries at both national and regional scales in order to protect not only crop and tree germ plasm but biodiversity more generally (*3*).

In light of the Rio Earth Summit (the United Nations Conference on Environment and Development, held in June 1992 in Rio de Janeiro, Brazil), we should move away from the current research goal of increasing agricultural production to that of developing food systems that are environmentally sound and that can deliver food equitably over the decades and centuries (*4*). We should also move away from the "trickle-down" assumption that basic research in the natural sciences will increase production and quality, which in turn will solve our agricultural and trade problems.

Research should be promoted that brings together natural scientists, social scientists, and humanists to address the issue of sustainability. Yet, despite much lip service, USDA funding for research on sustainability, narrowly defined to natural science research, has received a low priority (*5*).

Kenneth A. Dahlberg
Department of Political Science,
Western Michigan University,
Kalamazoo, MI 49008

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5. Established in 1988, the USDA "Low Input, Sustainable Agriculture" (LISA) Program (now SARE) began with an appropriation of $3.9 million. Funding has been held constant the past 2 years at $6,725,000, even though $40 million was authorized in the 1990 Farm Bill. Current funding is less than 1% of the USDA agricultural research budget.

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Antibiotic Resistance

A point in Harold C. Neu's excellent article "The crisis in antibiotic resistance" (21 Aug., p. 1064) should be clarified with regard to resistance to tetracycline. First, the mechanism of resistance mediated by TetM is not efflux (*1*), as Neu states. Second, there are no data to support the idea that, in addition to efflux, resistance could be due to ribosomal protein alteration. Rather, investigators have pointed out the similarity of the sequence