Letters

Human Genome Project: Who Will Pay?

In Leslie Roberts' article about the human genome project (Research News, 3 Nov., p. 576), James Watson is quoted as saying that the Japanese are not anteing up with what he considers to be a fair share of the costs of the project and that, if they don't help pay, the results would be handed over for free to the Japanese pharmaceutical industry. The logical question is, What about the American pharmaceutical industry? Why is there no effort to have these companies pay for part of the research? For many years now, industry has been riding a gravy train, in which government in effect subsidizes them by paying for university and medical school basic biological research, the commercial benefits of which accrue to industry. Because of the huge costs of the genome project, now is the correct time to ask industry to pay up, not to have the taxpayers take all the risk without any of the commercial benefits.

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HIV, Drugs, and Ecology

Don C. Des Jarlais and Samuel R. Friedman (Perspective, 11 Aug., p. 578) discuss the significance of intravenous drug users (IVDUs) in determining the magnitude of the human immunodeficiency virus (HIV)/AIDS epidemics in Europe and in the United States. IVDUs contribute directly to the number of AIDS cases and also indirectly by infecting their non-IVDU sex partners through sexual transmission and their children through perinatal transmission. The authors mention that cross-national sampling studies of IVDUs are beginning and that such studies are necessary to evaluate the effects of intervention strategies. We agree that such studies are essential, but we wish to stress that sampling studies do not address the question, What is the size of the IVDU community? The future number of AIDS cases cannot be accurately assessed unless the size of the IVDU community can be reasonably estimated.

Ecologists have developed a considerable number of techniques for estimating animal population sizes, and such techniques may be used to estimate the size of the IVDU community. One such technique (mark-recapture) involves capturing, marking, and recapturing (on a second visit) a subject of the study population (*1*). The simplest "mark-recapture" model was used to estimate the number of IVDUs in New York City in 1970 (*1*). This estimate was then extrapolated by regression analysis to provide an estimate of 200,000 IVDUs in 1978 (*2*). The outdated estimate of 200,000 IVDUs is still being used by the Health Department of New York City to calculate the present number of infected IVDUs (*3*). The original estimate was calculated on the basis of data from a pre-1968 cohort and may be extremely inaccurate, due both to the simplicity of the model used and to sampling biases inherent in the data base from which the sample data were derived. The estimation of 200,000 IVDUs by regression analysis is based on indicator variables; the stability and validity of these indicator variables have not yet been established.

It is clearly necessary to sample IVDUs and to quantify their intravenous drug use and their sexual behavior. However, it is also essential to estimate the current population size of the IVDU community, in New York City and elsewhere, in order to prepare adequate public health planning.

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REFERENCES AND NOTES

1. For an IVDU population, names can be used as unique identifiers, and admission lists for certain institutions (for example, hospital emergency rooms) can be regarded as capture data.
2. B. Frank, J. Schmeidler, B. Johnson, D. S. Lipton, *Drug Alcohol Depend.* **3**, 345 (1978).
3. *Estimate of HIV-Infected New Yorkers* (Working Pap., New York City Department of Health, New York, July 1988).

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Space Station

Who can justify the Space Station? The American Geophysical Union has said that it cannot provide a scientific justification. Is any other scientific or engineering society prepared to provide a justification? If the justification is prestige, who's prepared to identify what step the Space Station will make that others will not have already made? It's high time that whoever wants the Space Station provide a justification for the massive resources it will require for decades.

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Transportation Subsidy Policy

Martin Wachs' review (Articles, 30 June, p. 1545) of U.S. transit subsidy policy is an exercise in advocacy; an advocacy that ignores external costs, federal taxation policies, local government land use policies, and hidden public and private subsidies. Like any piece of advocacy, its questions and premises appear to be narrowed.

Wachs operates from the premise that increased automobile ownership and decentralization of both residences and places of employment are environmental givens; he does not seem to be saying that they are immutable societal trends, but that they are not about to be changed in America. He discounts evidence from Canada, Japan, and Europe that shows government policy to be a more profound influence on land use and transportation choices than are national wealth or access to open space. His most telling example is that the federal investment in transit has only been able to level off the decline in transit ridership, not increase it.

His example shows that a narrow approach to transportation will not work; funding transit but undermining it with massive roadway, tax, and parking subsidies to auto users is not an optimizing approach. Supporting these auto subsidies with auto-oriented zoning regulations is even worse. This has created a "looking-glass" situation in which American governments have had to run faster just to stay in place. In Europe, where auto users are not subsidized, the per capita transit subsidy is lower than in America. European governments provide a far more commodious, frequent, and reliable transit service to their constituents, but they do not have to overcome self-made obstacles.

Wachs dismisses the European and Canadian examples politically. He says that American government is not likely to reorient to an interrelated land-use, taxation, and subsidy policy because of entrenched interests. He is wrong at the local level, and there is hope that he may be wrong at the federal level. More cities are becoming interested in tying parking and other land-use issues to

their transportation policies. San Francisco and Portland were pioneers in the 1970s, and the most recent addition to a lengthening list is Philadelphia, which has adopted San Francisco's explicit "Transit First" policy. Various tax bills at the federal level are also oriented to "leveling the playing field" between transit and autos by extending exemptions to employer-provided subsidies. While this does not represent a comprehensive policy, it is a shift in the right direction.

Urban families are hurt economically by auto domination. The average family transportation expenditure in New York City is 16% of its annual budget; in Los Angeles, without as extensive a transit system, the transportation expenditure eats up 21%. Private employers are hurt as well, since they must provide auto parking subsidies to employees that are far greater than public transit subsidies. Governments also suffer, since many city services are thinly disguised auto services that compete with other governmental functions. Finally, everyone suffers from urban sprawl, suburban congestion, and widespread pollution.

What is most in need of reform is U.S. *transportation* subsidy policy. We cannot hope to have a good transit policy in isolation from the dominant automobile system in which it is imbedded. The reform should be based on land-use policies that encourage travel by transit, elimination of disparity between auto and transit subsidies, and user charges for the external costs of pollution and congestion. With these in place, the transportation system will be far more rationalized; it will look more like those of other industrialized countries. The consequences will be a less costly system, less pollution and congestion, greater energy security for the nation, and a higher standard of living.

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Kelp Production Study

Our recent report "Magnification of secondary production by kelp detritus in coastal marine ecosystems" (14 July, p. 170) omitted an important citation. A paper by K. H. Dunton and D. M. Schell (*1*) was cited twice in the manuscript we submitted, but was accidentally removed during our last revision. Their work on the fate of kelp production in Arctic foodwebs represents an important contribution to our understanding of the role of kelp forests in nearshore ecosystems, and we apologize to them for this error of omission in our final draft.

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REFERENCES

1. K. H. Dunton and D. M. Schell, *Mar. Biol.* **93**, 615 (1987).

Erratum: In the report "The early radiation and relationships of the major arthropod groups" by D. E. G. Briggs and R. A. Fortey (13 Oct., p. 241), the third sentence of the abstract should have read, "Cladistic analysis of characters of Cambrian and living representatives (excluding Uniramia) shows that trilobites and chelicerates are relatively advanced compared with 'crustaceans,' and there are doubts whether the latter constitute a natural group."

Erratum: In paragraph 10 (p. 1324) of Jeremy Cherfas' article "Etienne-Emile Baulieu: In the eye of the storm" (News & Comment, 22 Sept., p. 1323), Gregory Pincus' primary affiliation should have been given as the Worcester Foundation for Experimental Biology.

Erratum: The caption for a series of head scans shown in the News & Comment article "AZT reverses AIDS dementia in children" (6 Oct., p. 21) was in error. The pictures of the brain, obtained by a CAT scan, indicate brain physiology but not metabolism. The latter would be revealed by a PET scan.