ological and developmental milestones) that had been conducted in Iraq. Contrary to the Iraqi predictions, no adverse effects of methylmercury were detected.

The long-standing World Health Organization (WHO) guideline for a safe concentration of methylmercury intake is equivalent to a concentration in hair of 5 parts per million (ppm). The EPA Rfd would reduce this concentration by a factor of 4. The findings in the Seychelles study, where average hair concentrations were close to 7 ppm extending up to 26 ppm, support the long-standing WHO guideline.

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Egeland and Middaugh's Policy Forum discusses a timely topic for U. S. public health. I agree with their view that the RfD alone should not play a major role in risk assessment, because even Japan permits an RfD of 0.43 microgram per kilogram per day with a safety limit of 0.3 ppm based on an average fish consumption rate of 108.5 grams per day.

However, people in Alaska and Hawaii eat more fish on a daily basis compared to inhabitants of other states (*1*). Fish eaten by Alaskans is not so contaminated as that in 37 states which issued the fish consumption advisory because of mercury contamination. Therefore, Alaska's situation is exceptional. There is far more mercury contamination in other parts of the United States. First, the EPA indicated that fish in only 2% of the EPA-designated 370 sites in the United States exceeded the Food and Drug Administration's (FDA's) action level of 1 ppm (*1*). However, South Carolina alone has fish in 13 rivers exceeding the FDA action levels (*2*).

Second, although data from Seychelles islanders and Faroe islanders are valuable, it is too early to conclude what the effects of low-level methylmercury is on fetuses at this stage. Residents along the Shiranui Sea, of which Minamata Bay is a part, consumed fish (300 grams per day) containing relatively low levels of mercury (0.11 ppm) over a long period of time (at least 16 years) and developed Chronic Minamata Disease (CMD) symptoms later in their lives (3).

Last, it is estimated that 10,000 people in Japan are still suffering from delayed symptoms of CMD 41 years after the Minamata incident in Japan (*4*). CMD can not be explained by traditional dose-response or accumulation theories of metal poisoning (*4*, *5*). I believe that it is time for U.S. public health officials to revisit the Minamata issue.

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Frog Deformities

Jocelyn Kaiser's article about the recent National Institute of Environmental Health Sciences "deformed frogs" workshop (News & Comment, 19 Dec., p. 2051) is the most accurate summary of this perplexing phenomenon I have yet read. However, a couple of points require clarification. First, a great deal of unnecessary confusion has been generated by the tendency to lump all amphibian deformities together. For example, cohorts of froglets with supernumerary limbs present a very different suite of characteristics than older metamorphosed frogs with missing limbs or limb parts, suggesting different causes, and most laboratory-induced deformities have shown little or no similarity to those seen in nature. Another point concerns whether deformities are on the rise or the scale of the problem has been overblown. An analysis of reports of deformities compiled by the North American Reporting Center for Amphibian Malformations (*1*) suggests the latter. Approximately half of the recent reports of deformed amphibians in the United States and Canada are from a single study (my own) of one site in California, published in 1990 (*2*)! More than half of the remaining deformed specimens are from intensive searches in Minnesota over the last 2 years. Furthermore, many recent reports may be questionable, for example, sightings of frogs with "retained tails."

Finally, numerous Web pages on de-

formed frogs have fueled widespread controversy and alarm in the media from the very beginning, effectively performing an end-run around scientific research. I agree with David Wake (director of the Museum of Vertebrate Zoology at the University of California, Berkeley) that sorting this out could be a scientific nightmare.

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Royalties or Research Funds?

The University of California's recently reported maneuvering to deny to faculty the 50% of royalties from corporations due them according to university policy on licensing fees for inventions is deeply disturbing. (Jocelyn Kaiser, "Inventors' court victory worries universities," ScienceScope, 19 Dec., p. 2045).Understandably, university administrators and their legal staff wish to maximize the amount of discretionary funds available to them from all sources and may well take extraordinary steps to do so. But to justify such attempts on the grounds that "[t]he university has to be able to ... assure the corporate sponsor that the money will go for research and not royalties," as stated by an attorney for the University of California, is the height of hypocrisy. Such "research funds" are managed by university administrators who have broad discreionary powers regarding disbursement. By using these funds for certain types of designated research, they may well be able to free up other funds already targeted for such purposes and divert them to other uses. But in so doing, the university may not be fulfilling its obligations to its own faculty inherent in its policies.

If corporate sponsors do not wish to have royalties paid to the inventors of the technology they wish to license, the university can advise them to seek an alternative technology elsewhere from a source that does not recognize the rights of inventors.

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Drugs for the Third World

The News article by Nigel Williams (5 Dec., p. 1704) about the failure of drug companies to collaborate in an effort to develop drugs for the diseases of the Third World does not surprise me. What I find amazing is that no one has come forward with a really innovative approach to this problem. Felix Lobo, former director of pharmaceuticals at the Spanish Ministry of Health, made the following suggestion: Foster an agreement between the health authorities of the major markets (the United States, Europe, and Japan) whereby any pharmaceutical company that develops a drug for a tropical disease is automatically given an *x*-year extension of the patent life of one of its "Western" drugs marketed thereafter. This plan might bring some results.

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Nuclear Research at Duke

In the News & Comment article "Physicist sues Duke over control of lab" by Eliot