

LETTERS

Neutron Facilities

Arthur L. Robinson (Research News, 4 Sept., p. 1097) comments on the fiscal problems that cloud the future of those who would like to use neutrons to study condensed phase matter in the United States. He compares the stringencies of life in the United States with the prosperity being enjoyed in Europe and, in the process, compares the facilities at the Brookhaven National Laboratory (BNL) with those at the Institut Laue-Langevin (ILL), the main European center.

Contrary to Robinson's implication, access to the biological neutron facilities at BNL is not "restricted" to a resident, in-house group and a limited group of outside collaborators. Anyone who wishes may apply for time. In the past several years, outsiders have used the biological small-angle instrument at BNL, until recently the only one in the country, about 75 percent of the available time. The BNL instrument for neutron crystallography on proteins has been under constant development for several years. This year outsiders will have about 50 percent of its usable time, and the proportion of its time given to outsiders will increase as start-up problems get resolved.

It is true, as Robinson asserts, that compared to the situation in the United States, the community of biological neutron users in Europe is very large and that their work, done primarily at ILL, increasingly dominates the field. Robinson suggests that it is the openness of ILL, contrasted with the elitism in U.S. laboratories, a difference in administrative outlook, which has brought this about. This misses a crucial point, at least as far as biology is concerned. The main biological instrument at ILL (D11) has been about 30 times faster at collecting data than the best instruments available in the United States until recently. Even today, the new Oak Ridge facility and the improved facilities at BNL are still about five times slower than D11 and less flexible to boot. The advantage of the D11 is the kind of reward that the willingness of the Europeans to invest in this area has brought them. At the end of the day such an advantage in speed of data acquisition, in a decently managed environment, has got to translate into more experiments done and larger groups of scientists served. To put it another way, how can the United States hope to build a large community of enthusiastic biological users if the available facilities are sufficient to meet the needs

of only a few? It isn't simply an administrative problem.

The proof of the thesis that there is a connection between facility quality and success lies in the area of neutron crystallography of proteins. The BNL facility is the best in the world at this time. In this very exciting area it is the United States which is leading the way, not the Europeans.

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Polywater on the Highway

The recent review in *Science* by David Eisenberg (4 Sept., p. 1104) of the book *Polywater*, by Felix Franks (MIT Press, Cambridge, Mass., 1981), was still fresh in my mind as I drove west from St. Paul



on Interstate 94. Imagine my surprise to find the establishment shown in the photograph. However a phone call this morning established that the company in question makes cable lubricants, not polywater!

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Oak Ridge Cancer Treatments

As executive director of Oak Ridge Associated Universities (ORAU), I would like to emphasize several basic facts. In response to Eliot Marshall's article "Human guinea pigs at Oak Ridge?" (News and Comment, 4 Sept., p. 1093).

1) Patients were never used as "human guinea pigs" in our cancer research; that is, as unknowing victims of experiments for purposes other than their best interests.

2) Dwayne Sexton, the child discussed in the article in *Mother Jones* magazine, did not receive high levels of

radiation "to test man's tolerance of radiation in space," but in a last-ditch effort to save his life. Chemotherapy and other treatments had failed. The child was dying; his doctors concluded that the high levels of radiation were essentially the only chance to extend his life. In fact, he lived 3.5 years after first entering our clinic with leukemia.

3) It is true that patients did receive experimental treatments with total body irradiation and that some of the data was provided to the National Aeronautics and Space Administration (NASA)—but as part of a retrospective study, not the treatment protocol. This study also examined 3000 patient records from 46 hospitals. Ironically, the Sexton boy's data was probably not given to NASA at all. We find no record of having done so. In fact, ORAU had completed the report to NASA on high-level radiation in 1967—the year before the Sexton boy died. In 1968, the primary interest at NASA was in low-level radiation.

4) The child's parents were properly informed about the treatment—both verbally and in explanations written in lay language and signed by Mr. and Mrs. Sexton. The parents clearly gave ORAU their informed consent.

5) Although ORAU acknowledges that some program reviewers questioned the *research* value of some of the work of the clinic and the quality of the general facilities, the fact is that patient requirements always came before potential data, and good equipment was more important than high-quality buildings per se. We have done the best we could with the available government funds and have made substantial contributions to the development of nuclear medicine over the past 30 years.

Marshall quotes "a spokesman for the medical division at Oak Ridge" (who incidentally is a very competent information professional at the Department of Energy) as denying the thrust of the *Mother Jones* article but challenging few of the facts. To deny the "thrust" is everything: ORAU's primary goal was to help the patient and further the benefit of nuclear medicine, never to experiment in order to learn "how much radiation astronauts could tolerate before becoming sick."

The charges raised by *Mother Jones* were carefully examined on 23 September during hearings in Washington by the House science and technology subcommittee on oversight and investigations. Following the hearings, subcommittee chairman Representative Albert Gore, Jr. (D-Tenn.), stated that the charges had been "essentially refuted."