

laboratories by about an order of magnitude. Currently INEL is again seeking even more funding, \$13.5 million for fiscal year 1991, by direct congressional action and against the specific April 1990 recommendations of the Department of Energy's Health and Environmental Research Advisory Committee (HERAC) (1).

Dorn's letter mentions that the INEL BNCT project has undergone several peer reviews, including the April 1990 review by the HERAC panel (1). The impression may therefore be conveyed that the HERAC review and other outside reviews, such as that of the 1988 National Cancer Institute (NCI) review panel (2), approved the INEL project. In fact, the NCI review panel recommended against approval of the INEL project. The recent HERAC review panel recommended that "Conversion of the reactor (PBF) for medical use should not occur and it should not be maintained in a standby state for medical purposes."

Funding of INEL's BNCT program against peer-review recommendations undermines the important principle that support should be based on objectively determined merit. It is also clear that funding obtained through use of political muscle results in decreased funding for meritorious peer-reviewed projects, since there is not enough funding available for support of all good research. Undermining the effectiveness of our country's science management infrastructure is also a cost of science support determined politically rather than on the basis of merit.

A few comments on the necessary conditions for clinical trials for BNCT are appropriate because Dorn's letter provides a one-dimensional and largely self-serving discussion of the requirements for BNCT therapy. To develop a complex treatment modality, such as BNCT for brain tumors, a number of important capabilities in addition to a good neutron beam must be present. Of critical importance are the first-class credentials of the investigators and the quality of the supporting scientific and medical infrastructures. Also critical is the proximity and participation by a major tertiary medical center with skilled radiation oncologists, neurosurgeons, radiologists, and top expertise in physics support. Finally, neutron beam facilities such as those at the Massachusetts Institute of Technology (MIT) and Brookhaven National Laboratory (BNL) that have been *experimentally* demonstrated—not just calculated (as is the case with INEL's PBF beam)—to be suitable for the irradiation of patients from safety and efficiency considerations, are essential.

The message in Dorn's statements that the epithermal beam, which could be built at the

PBF (for "a few tens of millions") (3) is essential for the development of BNCT and that other currently available neutron beams, such as those at BNL and MIT, are not adequate is incorrect. The capabilities of the existing BNL and MIT therapy beams are adequate for clinical trials based on objective criteria of safety and efficacy. These beams are discussed in the peer-reviewed papers in (4) as well as in other scientific reports.

Ultimately, the judgment concerning the capability of any group to carry out BNCT trials should be made by independent and expert review panels. These decisions should be insulated from parochial interests and from political pressure of any type. Such an approach will ensure the best chance of success for BNCT and the most effective use of public resources.

OTTO K. HARLING

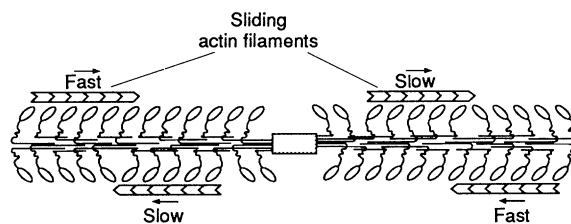
Director, Nuclear Reactor Laboratory,
Massachusetts Institute of Technology,
138 Albany Street, Cambridge, MA 02139

REFERENCES

1. "Review of the Office of Health and Environmental Research Program, Boron Neutron Capture Therapy" (Office of Energy Research, Department of Energy, Washington, DC, 1990).
2. "National Cancer Institute review of Power Burst Facility Boron Neutron Capture Therapy Program, site visit, 9 February 1988" (National Cancer Institute, Bethesda, MD, 1988).
3. Senator J. A. McClure (R-ID), testimony before the Subcommittee on Energy and Water Development, Committee on Appropriations, U.S. House of Representatives, 3 April 1990.
4. *Neutron Beam Design, Development and Performance for Neutron Capture Therapy*, March 29–31 1989; *Proceedings of an International Workshop at the Massachusetts Institute of Technology*, O. K. Harling, J. A. Bernard, R. G. Zamenhof, Eds. (Plenum, New York, in press).

Erratum: In the report "Polarity and velocity of sliding filaments: Control of direction by actin and of speed by myosin" by J. R. Sellers and B. Kachar (27 July, p. 406), figure 4 (p. 407) was incorrectly printed. The correct figure appears below.

Fig. 4. Schematic diagram showing the allowed sliding interactions of the polar actin filaments with the bipolar myosin filament. The arrows indicate the direction of movement. The myosin heads are schematically shown at the ends of their power strokes. The "reverse chevrons" concept for the myosin heads contacting actin moving away from the center of the myosin filament is taken from Reedy *et al.* (10). The crosshatched area represents the bare zone.



Erratum: In the News & Comment article "Bloch leaves NSF in mainstream" (24 Aug., p. 848), the bar graph on the right in the illustration on page 850 was incorrect. The colors blue (representing "research and related activities") and green (representing "centers") were interchanged. Therefore funding for centers indeed accounts for less than 10% of the National Science Foundation's total budget.

Erratum: On the map accompanying the News & Comment article "Eastern Europe: Missing an opportunity" (6 Apr., p. 20), the number of scientists and engineers working in research and development in Poland was incorrectly given. The number of scientists only is 76,000, but more than 160,000 scientists, engineers, and others work in research and development in Poland's universities and industries.

Long-Term Potentiation

I enjoyed Marcia Barinaga's account of the current excitement among neuroscientists studying the phenomenon of long-term potentiation ("The tide of memory, turning," Research News, 29 June, p. 1603), but there is one point on which I would like to set the record straight. Long-term potentiation (LTP) was discovered not, as Barinaga states, in my lab at the National Institute for Medical Research, but by Terje Lømo, working in Per Andersen's lab at the Institute of Neurophysiology, University of Oslo, in Norway. Lømo published a brief account of his discovery in 1966 (1), several years before the first detailed descriptions appeared in 1973 (2). The Oslo lab has continued to make important contributions to LTP and to hippocampal neurophysiology in general, not least by introducing the transverse hippocampal slice preparation used both by Bekkers and Stevens and by Malinow and Tsien for the quantal analysis of LTP described in Barinaga's article.

T. V. P. BLISS

Division of Neurophysiology
and Neuropharmacology,
National Institute for Medical Research,
Mill Hill,
London, NW 7 1AA, United Kingdom

REFERENCES

1. T. Lømo, *Acta Physiol. Scand.* **68** (Suppl. 277), 128 (1966).
2. T. V. P. Bliss and T. Lømo, *J. Physiol.* **232**, 331 (1973); T. V. P. Bliss and A. R. Gardner-Medwin, *ibid.*, p. 357.

Erratum: The affiliation of Richard C. Ogden, the fourth author of the Research Article "De novo design, expression, and characterization of Felix: A four-helix bundle protein of native-like sequence" by M. H. Hecht *et al.* (24 Aug., p. 884) should have read, "Agouron Institute, 505 Coast Boulevard South, La Jolla, CA 92037."

Erratum: The name of the reviewer of *Apprenticeship in Thinking* [Barbara Rogoff (Oxford University Press, New York, 1990)] (10 Aug., p. 684) was incorrectly printed. It should have been James V. Wertsch, not James V. Wertsh.

Erratum: The price of the book *Science and the Navy: The History of the Office of Naval Research* by Harvey Sapolsky, reviewed in the 17 August issue (p. 808) was listed incorrectly. The correct price is \$24.95.