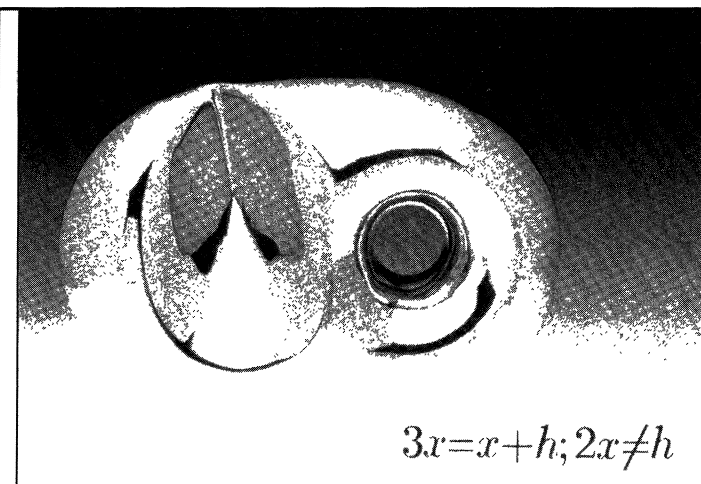


one-step process at odds with the "plain language" of the Atomic Energy Act, which, in the words of the court, calls for "a post-construction, pre-operation finding that a nuclear plant will operate in conformity with the Act." That doesn't necessarily mean the end for licensing reform, since the judge noted that "ultimate responsibility for such reforms ... lies not with the [NRC], but with the Congress."

Soviets Reinvited into Drilling Program

A 4-year, seesaw battle over whether to let the Soviet Union participate in the National Science Foundation-sponsored Ocean Drilling Program apparently ended on 2 November when presidential science adviser D. Allan Bromley formally invited the Soviets to join the program. If they accept, the Soviets will be the 20th country to participate in this international program that studies the earth's oceanic crust.

The invitation is actually the second to be put forth. In February 1987, the United States was set to sign an agreement bringing the Soviets into the program. But literally hours before a delegation was to leave for Moscow, everything was put on hold when Defense Department officials raised last-minute objections. Their concern was that the Soviets would gain access to sensitive underwater



More than just pretty curves. Mathematician-sculptor Helaman Ferguson, a Brigham Young University professor currently at the Supercomputing Research Center in Bowie, Maryland, believes he can communicate the aesthetics of math to the general public via art works that embody mathematical equations. This silicon bronze sculpture, "Torus With Cross Cap," he says, "contains the germ of the fundamental theorem of the topology of surfaces." The sculpture represents the left equation. $3x = x + h$ means that three Möbius strips, when "sewn" together, can be deformed to equal one strip sewn together with a torus. The right equation, $2x \neq h$, looks contradictory. But it's not: it simply means that two Möbius strips sewn together (known as a Klein bottle) is not the same as a torus. An exhibit of Ferguson's work is currently on display at the Mathematical Association of America in Washington, D.C.

technology if they were allowed to participate (*Science*, 8 May 1987, p. 659). After several months of interagency bickering, President Reagan sided with the military, and the Soviets were disinvented.

But oceanographers, unhappy with the snub, worked steadily to reinvite them, and this summer it began to look as if the lobbying would pay off. Bruce Malfait, who handles the drilling program for NSF, says the

new decision to let the Soviets join has been subjected to months of review, and he doesn't expect any last-minute surprises.

The Soviet Union has still not informed NSF whether it will accept ODP membership. Full members pay \$2.75 million per year to support the program, and in exchange get to send two scientists aboard the drilling ship *JOIDES Resolution*.

The Economic Toll of Mental Problems

The annual costs to U.S. society of mental illness and substance abuse reached \$273.3 billion in 1988, according to the latest government estimates.* To be more specific, that's \$129.3 billion for mental illness, \$85.8 billion for alcohol abuse, and \$58.3 billion for drug abuse.

These figures are extrapolated from statistics collected in 1985, the most recent year for which reliable data are available, using inflation and other factors. In addition to costs of treatment (24% of the total), they include those related to lost productivity, law enforcement, crime, traffic accidents, and fires.

But even these numbers almost certainly underestimate the true magnitude of the problem. These are "rock bottom estimates," said Frederick K. Goodwin, administrator of the Alcohol, Drug Abuse, and Mental Health Administration, which released the study on 6 November. The financial impact of the crack epidemic, for example, is not included because it hit after 1985. Furthermore, mental disorders and health effects from addictions are consistently underreported because of insurance problems and the stigma associated with these conditions.

*Economic Costs of Alcohol and Drug Abuse and Mental Illness: 1985, National Clearinghouse for Alcohol and Drug Information, Box 2345, Rockville, MD 20852.

The Ethics of AIDS Care

A poll of 317 physicians shows that "doctors are far less certain about the nature of [AIDS] and the threat it poses than are other segments of our population," reports the November issue of *MD* magazine. The poll found that 64% of respondents now have AIDS patients, but many doctors don't feel they know enough about the disease. Nonetheless, 58% think the danger of AIDS infection to physicians has been understated. There is also considerable division of opinion and uncertainty regarding ethical and privacy issues.

Do physicians have a duty to treat AIDS patients?

Have you been provided with sufficient information from professional and public health organizations to permit optimal treatment of AIDS?

Should we institute quarantine measures for HIV-positive patients in general?

Especially for sociopathic drug abusers?

If HIV-positive patients are unwilling to inform their sex partners, do physicians have any further obligation in the matter?

Does the government?

