some good faculty members in recent years and is "in danger of losing its best junior and middle-level researchers in recombinant DNA and hybridoma-based investigation."

The center will have at its disposal $750,000 over the next 5 years from a special endowment. In addition, according to acting director Dale Oxender, up to $250,000 may be available from the university's general fund. Initially, the money will be used to supplement the stipends of graduate students and postdoctoral fellows and to hire two junior faculty members. Eventually, two senior investigators will also be hired.

Like the robotics center, the genetics unit has a state-funded counterpart, the Molecular Biology Institute. Established in Lansing, close to Michigan State University, it will perform contract research and, like the Industrial Technology Institute, it will work closely with the universities. The two institutes are part of Michigan's pitch to attract high-technology industry into the state.

So far, the university's financial woes do not seem to have seriously damaged its prestige. According to the recent ratings of graduate schools published by the National Academy of Sciences, Michigan ranks in the top five universities in social and behavioral sciences and in the top 20 in most other disciplines. The next year or two are likely to be critical, however.

One key element will be the success of the fund-raising campaign. About half the proceeds will be used for endowment to support faculty positions and student aid. The remainder will be used for some long-overdue construction projects such as a new chemistry building, a recital hall, and some health research facilities. (A $260-million university hospital is already under construction with state and private funds.)

Perhaps more critical is what happens at the state level. The newly elected governor, James Blanchard, has proposed yet another cut in appropriations for higher education. More important, however, he has also steered through the legislature a proposal to raise state income taxes in an attempt to bring the budget deficit under control. University officials are fully behind the proposal, and they regard its passage as essential to bring some stability to funding for higher education. Further erosion of support would pose severe problems, says vice president Kennedy. "I don't think we have damaged the core of the institution yet," he says, "but if we continue on this path we will not be the University of Michigan." —COLIN NORMAN

National Science Board Okays Theory Center

The National Science Board has approved continuation of the Institute for Theoretical Physics for a second 5 years of operation. The institute, which is located at the University of California's Santa Barbara campus, began as a 5-year experiment in the fall of 1979 (*Science*, 11 March, p. 1207). Science board approval of the renewal proposal means that the National Science Foundation can issue a new grant that is to commence in 1984. The institute's annual expenditures have been just over $1 million and are not expected to increase greatly.

Walter Kohn, the institute's director, says he is pleased with the decision, especially because the science board voted to continue the center a full year and a half before the first grant expires. Planning the institute's study programs begins 3 years in advance. The science board's decision now to stay the course means "we can maintain our momentum," says Kohn. There had been some concern that doubts within the physics community as to the effectiveness of a centralized theory center with a large proportion of short- to medium-term visitors, which were expressed at the time of the institute's establishment, might resurface and adversely influence the board.

With approval in hand, three other items of the institute's business can proceed. The first is the search for a new director to replace Kohn, who has said he will step down when the institute reaches its fifth birthday. One of the issues to be resolved is whether the next director should come from the Santa Barbara faculty or, as some institute staff prefer, from outside the campus. A prestigious theorist netted in a nationwide search would be a big asset but might also be difficult to lure to Santa Barbara for a long period without the promise of a tenured faculty position.

Access to computers has been a minor frustration for institute scientists. With its continuation assured, the institute can now firm up its previously tentative order for its own mid-sized computer. For tasks requiring number crunching, the institute has completed arrangements to use one of the Los Alamos National Laboratory supercomputers. And negotiations are beginning that may lead to a powerful scientific computer being installed at the institute by the end of this year.

Finally, one provision of the new grant will allow the institute to add a new permanent staff person to go with the three, in addition to Kohn, already hired. A search, probably for an elementary particle physics theorist, will begin promptly, says Kohn.

—ARTHUR L. ROBINSON

Soviets Reject Test Ban Changes

The Soviet Union has spurned an offer from the United States to discuss modifications to the Threshold Test Ban Treaty. The agreement, which was signed by Richard Nixon and Leonid Brezhnev in 1974, is supposed to limit the yield of underground nuclear weapons explosions to 150 kilotons, thereby curbing the development of multimegaton bombs. The treaty has yet to be ratified by the Senate.

In February, the Reagan Administration said that the Soviets might be cheating and that new measures were needed to verify Soviet compliance (*Science*, 18 February, p. 819). Specifically, it proposed to dispatch a team of scientists to Soviet test sites for direct measurement of each blast above 75 kilotons. The Soviets could reciprocate and send their experts to Nevada.

After deliberating for a month, the Soviets said they were unwilling to discuss any changes. "We are very disappointed in the Soviet response," said Alan Romberg, a State Department spokesman. "If they continue to refuse to discuss our concerns, we would be forced to question how genuine their commitment is to effective limitations on nuclear testing."

A number of U.S. scientists have challenged the Administration's allegations of Soviet cheating, claiming instead that U.S. estimates of Soviet test yields are incorrect. Others have said that cheating—if it occurs—is minor and of little strategic significance. A growing number of congressmen

are interested in ratifying the treaty as is, both as a sign of good faith in negotiations and as a first step toward a comprehensive ban on nuclear testing.

President Reagan said at a recent news conference that he is unconcerned about the Soviets' reaction. "It isn't all that important," he said.

—R. JEFFREY SMITH

Financially, AMA Heals Itself

The American Medical Association (AMA), which in the middle 1970's was a financially ailing organization, has recovered and reports itself to be now in robust fiscal health.

In 1974 and 1975 the symptoms were severe. Membership was declining, the association's flagship publication, the *Journal of the American Medical Association (JAMA)* was in distress, and AMA's nine specialty journals were losing $250,000 a year. The association's liquid assets were evaporating and it was borrowing $1 million a month to meet its payroll.

According to the AMA diagnosis, the troubles arose because the association simply slipped into a pattern of spending more than its income. The turnaround is attributed to a move to the discipline of a formal planning process.

Economy measures played an important part. Staff cuts were made in publications and other sectors of the organization. The AMA consumer magazine, *Today's Health*, was sold off and one journal, *Archives of Environmental Health*, was also disposed of. At the same time an effort was made to upgrade the remaining publications and build advertising revenues.

Some changes in organizational orientation were also made. In the 1960's, the AMA developed its own version of the generation gap. Apparently because of the association's conservative stance, medical students and young physicians were not joining the AMA in droves—and the AMA was making no particular effort to attract them.

In the early 1970's, membership categories for both medical students and residents were developed. Special low dues were set and changes made in association rules to involve them in governance. Each of the special categories now has about 28,000 members.

Total membership now stands at some 216,000, with the core of regular members at about 160,000. This represents a recovery to the levels of more than a decade ago after a dip in the late 1970's attributed to a couple of sharp increases in dues. Regular dues are now $315 a year.

A newsletter emanating from the office of AMA executive vice president James H. Sammons notes that the association expects operating revenues of $94 million this year, half of it from nondues income, including $20.5 million in advertising revenues. AMA publications are said to be thriving now, including seven foreign editions of *JAMA*, one of which is for the People's Republic of China.

—JOHN WALSH

Cornell, Three Companies Plight Biotech Troth

Another new university-industry venture in biotechnology will involve Cornell and three corporate partners—Union Carbide, Eastman Kodak, and Corning Glass.

The partnership vehicle will be a new Biotechnology Institute at the university's main campus in Ithaca, New York. Cornell faculty scientists and students will work in concert with company scientists on basic research projects with results freely published.

Following a model now becoming standard in university-industry collaborations, patents arising from research at the institute will be held by the university. The participating companies will have the right of first refusal for nonexclusive licences on products of institute research.

The three companies have each pledged up to $2.5 million annually over the next 6 years. Institute operations are expected to begin next September in existing facilities on the Cornell campus. The university has been designated a biotechnology center by the state of New York and Cornell officials hope that state funding for new facilities for the institute will be forthcoming.

None of the three companies are known for research in biology, but all are research oriented and apparently attracted to the new horizons of biotechnology.—JOHN WALSH

Texas A & M to Direct Deep-Sea Drilling

Deep-sea drilling will be getting not only a new drill ship but also a new group to run the operation. On 31 March, the board of governors of Joint Oceanographic Institutions (JOI), the consortium of academic institutions that manages deep-sea drilling, selected Texas A & M University to direct the scientific operations of the next phase of drilling.

Texas A & M won out over the Scripps Institution of Oceanography, which has been running the drilling operation since its inception in 1968. Ross Heath of Oregon State University, the chairman of the board of JOI, pointed out that two aspects of Texas A & M's proposal influenced the unanimous vote—engineering expertise and commitment.

Texas A & M's commitment is in funding. The university has promised to provide a new building to house the deep-sea core repository. William Merrell, associate dean of geosciences, says that the university also offered "an extremely favorable overhead rate," which is being negotiated with the National Science Foundation (NSF). The university will also fill managerial positions with senior faculty members whose salaries will come in part from state funds. The drilling expertise resides particularly in the Texas Engineering Experiment Station located on campus, and generally in the Texas oil industry.

The first task for the new operating group will be preparing a request for proposals for the services of a drill ship. Funded as before by NSF, the drilling will be performed by an as yet unspecified commercial drill ship that will be far more powerful than the present ship, the *Glomar Challenger* (*Science*, 25 February 1983, p. 942). Heath expects that the request will be out in 2 to 3 months, the ship will be modified in fiscal year 1984, and drilling will begin early in fiscal year 1985.—RICHARD A. KERR