

state & society

Paxton to head new NSF Division of Materials Research

With the National Science Foundation putting increasing emphasis on applied research (along with its increasing responsibility for basic research), it is no surprise that this month it has established a Division of Materials Research within its Research Directorate. The new division is to be headed by Harold Paxton, formerly head of the department of metallurgy and materials science at Carnegie-Mellon University. Paxton, a metallurgist, describes himself as "a moderately respectable blacksmith."

Howard Etzel, formerly program director for solid-state and low-temperature physics in the Physics Section (within the Division of Physics and Mathematics), is to be deputy director of the new division.

The new division will have an initial budget in fiscal year 1972 of between \$20 and \$25 million, according to physicist Edward C. Creutz, who as NSF assistant director for research heads the Research Directorate. Creutz said they are still discussing the exact amount to be transferred from other parts of the directorate.

One definite component of the new division will be the Interdisciplinary Laboratories, formerly supported by the Advanced Research Projects Agency. In addition to the \$12.8 million budgeted by NSF, the 12 IDL's also receive support from other agencies. The number of IDL's (in the future to be known as "materials-research laboratories") may well grow over the next few years, Creutz said, because it is easier for NSF's small staff to handle bigger chunks of science.

A fairly major fraction of solid-state physics now supported by the Physics Section would move to the Materials Research Division, but not everything that is being done, Creutz said. Some projects now in the chemistry section will be transferred, but the quantity is also uncertain. A big component of the division will be engineering materials. The total for physics, chemistry and engineering will amount to \$10 or \$12 million.

Some members of the physics community have reacted negatively to the reorganization, Creutz admitted, fear-

ing that the agency is tending to change its character.

"We're adding to our character but not at all deemphasizing our role as a Federal supporter of basic science," he said. NSF should have a spectrum of scientific activity, ranging from basic research to the new problem-focused program, Research Applied to National Needs, whose budget is \$50-\$60 million in fiscal year 1972.

Retiring Director William D. McElroy has said that support of applied research should never exceed something like 20% of the total budget. Because the Foundation budget has traditionally been and continues to be about 40% for basic research, that means that roughly one-third of NSF research money might go for problem-oriented research, Creutz said.

Some critics fear that more money for materials research means less money for high-energy physics, for example. Creutz says that each of these areas is considered separately from the point of view of what is happening in the science, what new ideas are ready to be tried out, and what is the overall effect on the progress of the NSF in accomplishing its

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Harold Paxton, who heads the new Division of Materials Research at NSF comments: "The rather pugilistic pose is not to be interpreted as a threat to knock a gem of wisdom into unwilling listeners."

Mansfield aide discusses amendment impact

The impact of the Mansfield amendment is still widely felt, despite its subsequent watering down in the Defense Department's fiscal year 1971 appropriations act. In fact, the military procurement authorization bill for fiscal year 1972, which was passed by the House in mid-June, contains no restriction on relevance to DOD's military mission. What shape the final appropriations bill will take is still unknown.

We recently chatted with Charles Ferris, chief counsel of the Democratic Policy Committee, and as such, one of Senator Mike Mansfield's key advisers. Ferris, who took a bachelor's degree in physics at Boston College and did research at Sperry for a year before going to law school, is proud of the effects of the Mansfield amendment. Mans-

field's intention, Ferris said, was to stimulate an examination of all of our science policy. "We felt the scientific community had exposed itself to charges that it had prostituted itself by taking DOD money while simultaneously claiming that none of the research had any relation to the Defense Department and that the Congress had exposed itself to charges that it was not sufficiently mature, because it failed to recognize that basic research should be supported for its own sake, not just when it was being requested under a veil of national security."

DOD's influence had become entirely too pervasive, Ferris went on. The Pentagon argues that it has to keep in touch with the frontiers of science by the sponsorship of basic research, he



FERRIS

said, but "\$300 million per year is a hell of a big communication link."

Although section 203 had no legal impact on other mission-oriented agencies, relevance is being used as the standard for implementing general budget cuts, and Mansfield is being used as the scapegoat, he complained.

Meanwhile the resources of the National Science Foundation are growing and will have doubled in three years, he noted. In a year or two, the NSF budget might reach \$1 billion, he feels. Such a momentum is already developing. "If NSF demonstrates that it can effectively dispense large funds, and if you change the psychology of the OMB (Office of Management and Budget), Administration and Congress, the research community will be much healthier. There's no one in Congress who has the time to develop a really independent interest in science policy. It's not your

sexiest political issue. If an Administration makes a request, no one around here knows enough or has sufficient time or inclination to contest that judgment."

What of the hardships scientists are experiencing during the transition period? "Change never occurs without difficulties," he said. "We never intended that the research projects *per se* would be transferred. By directly changing sponsorship to civilian agencies, we hoped that the resources would be shifted and that projects would have to meet the criteria of the civilian agency and thus have to be assessed anew." Ferris said that graduate students follow the money, that "maybe we generated too many physicists whose specialties were too narrowly adapted to DOD needs. If we're trying to change the direction, maybe the current mix of scientists should be changed." —GBL

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goals. With the National Accelerator Laboratory and the Los Alamos Meson Physics Facility beginning operation shortly, "we have tremendously strong arguments for putting more money into high-energy physics." More NSF money is going into this field to pick up the work being dropped by other agencies. "That's the crouch for the runner to get ready to go, I believe. But it isn't going to come fast. This is going to be a hard year."

The new materials division will be a mix of pure and applied research, being a combination of engineering and scientifically oriented work. Creutz

has been concerned about the widely held opinion that materials have to be "dirty, grubby things that only forgeshop managers worry about." He feels we must change the attitude that materials work is all automatically applied. The division will concern itself with pure research with no thought of an application. In addition it will deal with applications such as welding and corrosion resistance. "If we can get these thought of as exciting scientific problems, learning what the actual mechanisms are, and get more good scientists to work on them, then we'll have made some progress."

Some physicists are concerned that certain areas of pure solid-state physics will not be supported at all under

the reorganization. Paxton said he guessed that was a reasonable worry, but he believes there are mechanisms in NSF to avoid most such "falling between chairs." "We think we've covered all the corners so that when a proposal comes in, the thing will, by no later than the second stop on somebody's desk, find a home." —GBL

McElroy leaving NSF to become San Diego chancellor

William D. McElroy is resigning as director of the National Science Foundation to become chancellor of the University of California at San Diego. Herbert F. York, formerly Director of Defense Research and Engineering, has been acting chancellor there. McElroy said he would stay on at the Foundation until the completion of the budget process.

Biologist McElroy, who came from Johns Hopkins University, took over at NSF in July, 1969 from long-time director Leland Haworth. Earlier, a storm of controversy had arisen over President Nixon's decision not to appoint Franklin A. Long of Cornell University as director, when he learned of Long's outspoken opposition to the ABM.

Under McElroy, who is known for his good relationship with Congress, the Foundation's budget has risen rapidly while research support has been dwindling in other Federal agencies. Besides its traditional support of basic research, the Foundation is now moving into more concentrated, problem-oriented areas, most notably in its new program, Research Applied to National Needs.

Seaborg replacement at AEC is an economist from OMB

After ten years as chairman of the Atomic Energy Commission, Glenn T. Seaborg has resigned and is returning to his professorship at the University of California in Berkeley. His replacement, James R. Schlesinger, an economist, is Assistant Director of the Office of Management and Budget. To fill the vacancy in the Commission left by physicist Theos J. Thompson, who died in a plane crash (*physics today*, February 1971, page 69), the President named William O. Doub, a lawyer.

The other commissioners are Clarence E. Larson, who has a PhD in biochemistry, James T. Ramey, a lawyer, and Wilfrid E. Johnson, an engineer.

Schlesinger, known as an environmentalist, will be taking over the AEC at a time when the Commission has been criticized for insensitivity to environmental problems. It is also a time when the urgency of the energy crisis in the US has become increasingly apparent.