

notes, citing the University of North Carolina, Chapel Hill, the University of Michigan, and even Indiana University as examples. Indeed, plant taxonomist James Rodman, a program officer at the National Science Foundation (NSF), says there is "declining expertise on various taxa—particularly poorly known groups of organisms—resulting in part from shifts of emphasis by academic departments." NSF takes the problem seriously enough that in 1995 it established a special grant competition, overseen by Rodman, entitled PEET—Partnerships for Enhancing Expertise in Taxonomy. Of course, funding is not distributed evenly at NSF either: PEET provides about 20 annual awards of up to \$150,000 each—good money in evolutionary biology, but no jackpot in cell and molecular fields.

The concern for taxa has even reached Berkeley, where the College of Natural Resources' Plant Biology Department recently acquired a new microbiology division, becoming the Department of Plant and Microbial Biology, says Berkeley biologist Robert Tjian. And misgivings similar to NSF's recently halted a plan at the University of Illinois, Urbana-Champaign, to consolidate six biology departments into two—ecology and molecular biology. Led by entomologist and National Academy of Sciences member May Berenbaum, the entomology department vetoed the plan. "We felt our successful formula was going to be sacrificed for some vague, ill-defined organizational principle," says Berenbaum. Their proposed alternative, which is being evaluated this month by two external review committees, splits the differ-

ence between the taxon-oriented and level-oriented models. Plant biology, vertebrate biology, and entomology will be preserved as separate departments but will merge some of their administrative functions in a new School of Integrative Biology, while the remaining departments make up a new School of Molecular, Cellular, and Physiological Biology.

Whatever fences universities erect between departments—or schools—researchers say they need plenty of gates. To facilitate idea exchange and coherent education, departments will need more interdisciplinary and interdepartmental programs, something funding agencies have been encouraging for years, says the University of Colorado's Hanken: "There is no perfect structure—but there are ways of getting around the liabilities."

—Wade Roush

SPACE STATION

Science Slides to Bottom of Schedule

U.S. and Russian officials are bickering over whether the first pieces of the international space station will be launched this year or next. But whatever they decide, don't expect much science to be done on the \$30 billion orbiting laboratory until after the turn of the century. Delays and cost overruns in the program have forced NASA to abandon most of its plans to conduct research on the station until it is nearly complete.

NASA officials delivered this bad news last week to the National Research Council's Space Studies Board (SSB) in the shape of a new plan that would result in a virtual 3-year hiatus in studies of the effects of weightlessness on humans, other animals, and plants, as well as on a variety of fluids and materials. "There will be no community left to do any experiments," warns Mary Jane Osborn, a microbiologist at the University of Connecticut and an SSB member.

NASA originally had encouraged science aboard the station during the early years of construction, between 1998 and 2001. But cost overruns have led the agency instead to borrow nearly half-a-billion dollars designated for the necessary science facilities such as glove boxes and furnaces. That leaves "a very, very thin program," admits NASA's Mark Uhran, who oversees science payloads planned for the station. Uhran said his office lost control of the \$2.1 billion facilities budget after authority was transferred to Johnson Space Center in Houston. But he says he is hoping that the agency could set aside at least one shuttle flight during the station's construction to keep the science program afloat. Even then, however, it is not clear whether there will be enough time—and money—to plan a successful mission, he adds.

Speaking last week before the House Science Committee's space panel, NASA Administrator Dan Goldin painted a bright picture at odds with the fiscal reality. He dodged concerns about the issue raised by several lawmakers, saying "we will not skimp on our commitment" to do good science aboard the station. Other Administration officials say they had little choice but to draw on the \$2.1

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billion scientific facilities fund to build the modules, power arrays, and environmental systems that will make up the station (*Science*, 26 April 1996, p. 478). "It was the only thing we could do," says Steven Isakowitz, a White House budget official.

NASA managers intend to take \$235 million out of the fund in 1998 after tapping \$177 million this year and \$50 million in 1996. Agency managers say they will pay the money back but offer no firm repayment schedule. As a result of these "loans," the majority of station science facilities won't be ready for launch until early in the next century. The U.S. laboratory module is slated to go up at the end of 1998, but only two science-related shuttle flights are planned in 1999 and none in 2000. Even that schedule is an optimistic one: Russian financial woes are expected to cause launch delays of 6 months

to a year, an effect that would ripple through the entire construction schedule (*Science*, 14 February, p. 921).

Members of the academy's space science board attacked NASA's current plan as wasteful and shortsighted. "These communities are going to dissipate," warns Martin Glicksman, a materials scientist at Rensselaer Polytechnic Institute in Troy, New York. And Simon Ostrach, an engineering professor at Cleveland's Case Western Reserve University, says there may be "no meaningful experiments [to conduct] ... when this gorgeous hotel is ready." He adds: "We have built up a world-class community, and now we have to sit for 6 or 7 years and not do anything."

Uhran says that the Russian space station Mir could offer a temporary home for some of the experiments, but other NASA and Russian officials say the aging facility is on its last legs. In the meantime, Uhran's office is drawing up a list of the physical requirements needed to do science aboard the station to aid researchers in making their case to NASA.

They could use the help. So far, researchers have made little headway in winning allies for their cause. Representative George Brown (D-CA), the former head of the science committee and a longtime advocate for space science, expressed concern about the situation at last week's hearing but did not pursue the issue. And House staffers told the academy panel that they have logged few complaints from life and microgravity scientists. "Maybe you have just not been lobbying enough," remarked SSB member Bill Green, a former congressman. Osborn agrees: "I think we have been remiss in not getting more proactive." For the time being, however, science aboard the space station appears likely to remain on NASA's back burner.

—Andrew Lawler