which gathers images of use to both civilian and military analysts. (The radar is capable of penetrating cloud cover, vegetation, and even the earth's surface to a depth of 1 meter in certain areas, making it an obvious intelligence asset as well as a valuable research tool.) Despite their dual use, all of these projects have been financially underwritten by NASA without any DOD assistance.

Other NASA expenditures, such as that for a photographic experiment on board the thirteenth shuttle mission, solely benefit the Pentagon, the GAO has concluded. The experiment was conducted with a huge, high-resolution stereographic camera, constructed at NASA expense, at the Pentagon's explicit request, and the resulting negatives were carefully inspected prior to their release to ensure that no sensitive information would be disclosed. The Pentagon also got a free ride on the fourth shuttle mission, when a package of military instruments and experiments was flown at NASA expense along with a variety of civilian experiments. Even now, NASA is spending roughly $350 million in ostensibly civilian funds for new, lighter booster rockets, needed so that the shuttle can lift unusually heavy military—not civilian—satellites.

NASA tolerates these financial shenanigans partly because it wants the Pentagon's continuing political support for the shuttle program. But an additional reason that strong public protests have never been made is that NASA's top management has long been seeded with military personnel. Three of the agency's directors and at least two of its deputy directors had worked for the Pentagon or one of its major contractors prior to their appointment. The first shuttle program manager, Myron Malkin, had previously worked as a director of Air Force missile programs. The third manager, James Abrahamson, was a lieutenant general in the Air Force. Even the shuttle's astronaut corps has been dominated by military personnel. Fully 45 percent of those who have flown to date were active duty military officers, paid by the Defense Department, on extended loan to the shuttle program, while another 8 percent were retired military officers. Gary Payton, the payload specialist on the forthcoming shuttle mission, is an active duty officer, like all of his colleagues on the flight, and 24 additional military payload specialists are now being trained by the Air Force.

Detailed knowledge of these factors has prompted a few candid insiders to acknowledge that the military long ago assumed a dominant role in the shuttle program. Hans Mark, who served as a Secretary of Air Force prior to his appointment as NASA's deputy administrator, told an aeronautics conference several years ago that "NASA is in fact a minor user and not the driver [of the shuttle]. That's not something the NASA folks like to hear, but it is true."

Seen in this perspective, the forthcoming all-military shuttle mission is not a break from the past but a continuation of previous practices. It represents not the militarization of space but a public symbol of the military's substantial existing presence there.—**R. JEFFREY SMITH**

Young Plans Management Reforms at FDA

The new FDA commissioner is also concentrating on learning the ways of Washington

Six months ago, the Reagan Administration appointed Frank E. Young, dean of the University of Rochester medical school, to be commissioner of the Food and Drug Administration (FDA), which has broad authority over the nation's food, drugs, cosmetics, and medical devices. The choice was surprising because Young was not among the initial contenders for the post. In the several months he has been FDA chief, Young has impressed many with his enthusiasm for the job. Like previous commissioners, he had virtually no experience in Washington, but he is introducing himself widely around town and is also beginning to set some long-term goals for FDA.

When the Reagan Administration last year went looking for a new commissioner to succeed cardiologist Arthur Hull Hayes, Jr., it first courted two women scientists in academia. The action was widely interpreted as an effort to close the gender gap as the presidential elections drew near. In the meantime, Washington heavyweights were pressing the Administration simply to name acting commissioner Mark Novitch, a Democrat, to the post. Even the Pharmaceutical Manufacturers Association lobbied for Novitch, a widely respected veteran of the agency.

Young is not the least bit bothered that he was not the Administration's first choice for the job. "I like these kinds of challenges," said the stocky, 53-year-old commissioner in a recent interview. "I'm learning the process and it's different. I love to learn."

That is certainly borne out by his career. A native of upstate New York, Young received his medical degree from State University of New York at Syracuse and a doctorate in pathology from Case Western Reserve. His subsequent research focused on microbiology and the genetics of *Bacillus subtilis*. He was a faculty member for 14 years at the University of Rochester where he became dean of the medical school in 1979. Two years later, he was appointed vice president of the university's health affairs, a post that extended his administrative responsibilities to the university hospital and the nursing school. According to Rochester University treasurer LeRoy Thompson, the hospital was in the red when Young was appointed, but was in the black when he left because the billing and computer system were revamped under his initiative. It is widely rumored that when Young was asked to head FDA a university review committee was about to oust him as dean because of purported dissatisfaction with his management style. Young said, "I was not operating on that assumption when I took this job." Young is a member of the Institute of Medicine and served briefly on the recombinant DNA advisory committee at the National Institutes of Health (NIH). "He comes to the job with considerable assets," says Donald Kennedy, Stanford University president and a former FDA commissioner.

He has divided his time at FDA among three main areas: reviewing the management of the $400-million agency, introducing himself to a multitude of groups in Washington, and developing a policy statement on the agency's role in regulating biotechnology products. He is making an unusually concerted effort to meet

with many groups outside the agency and, everywhere he goes, Young asks how FDA can be improved. He often forwards a list of questions to a group before they meet. So far he has spoken with 50 outside groups. He has met several times with representatives of the Pharmaceutical Manufacturers Association and also regularly talks with the association's frequent opponent, Sidney Wolfe, who is director of the Health Research Group founded by Ralph Nader. At FDA as well, he has blanketed mid- and high-level management with questionnaires.

All this is in preparation for what Young calls an "action plan" to reform the agency, which he hopes to have completed this month. He is impressed with the leadership and staff at FDA, but the surveys have revealed that there is "a lot of sluggishness to the system." Half of the recommendations by agency staff call for improving management.

One of FDA's problems is a disjointed information system, which Young characterizes as a "nonsystem." The agency must handle mountains of data ranging from industry test results to reports of adverse effects of drugs. Up until now, Young says, there has not been a long-range commitment to improve the information system, but he plans now to build a more coherent network.

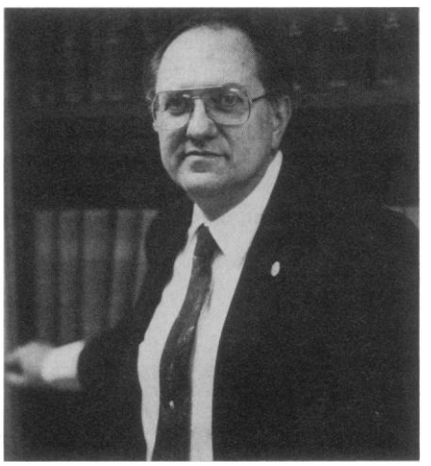
High on Young's list of priorities is an attempt to improve the science at FDA. He wants to institute an internal peer review system of the agency's research, which was budgeted $79 million in fiscal 1984. "Can you imagine NIH without internal peer review?" he asks. FDA should be doing more research as well, although he acknowledges that "FDA will not be an NIH" in terms of the breadth of research.

Young believes that better modeling of risk assessment is needed at FDA and that methods to test the products it regulates can be improved. He has suggested that industry contribute funds to a blind trust that would be used for research. Young said in a prepared statement for a recent meeting of the Food and Drug Law Institute, "The public must trust the fundamental soundness of the science on which we base decisions. This is especially true for highly visible matters such as artificial sweeteners, color additives, and new drug products."

Young has taken strong interest in biotechnology and the agency's role in regulating gene-splicing products. While at Rochester, he secured roughly $1.5 million in annual grants for biotechnology research from companies including Bayer, Cutter, and Miles Laboratories, and Eastman Kodak Company. He was a consultant to Miles in 1983 on biotechnology matters. Since becoming commissioner, he has personally attended meetings of a White House cabinet council, which recently released a report on the regulation of biotechnology.

Many FDA watchers and staff are impressed with Young's zeal for the job and comment that he brings an extra measure of energy to the post. "He goes night and day. He's a whirlwind," says one FDA official. He is outgoing and spirited, according to observers.

He is also straightforward and self-assured, too much so for some people's taste. At one large meeting for lawyers, recalls one participant, he spouted off answers to questions which he should have left unanswered because he was obviously uninformed. "We would have understood," the participant said. "He likes to debate," says one federal scientist who has met with him. Another person, a lawyer, portrays him as "combative." Some are put off by the fact that Young, who joined the Public Health Service commissioned corps when he came to Washington, wears his uniform every Wednesday and, on occasion, has flashed the commissioner's badge to make a point.



Marjorie Sun

Commissioner Frank E. Young

More important, his political naïveté still shows, according to many, including congressional and FDA staff. Representatives from both industry and consumer groups wonder what kind of political clout he can build. It is still a mystery, for example, who nominated Young. Young says he doesn't know either. "It wouldn't have been polite to ask," he said.

To Young's credit, one agency official says, the commissioner is spending quite a bit of time getting to know other government officials higher up in the department, at the Office of Science and Technology Policy and at the Office of Management and Budget. "It's sorely needed," said an agency official. "He's building constituencies, something that hasn't really been done in the past." Young seems to have found favor with Secretary Heckler and is responsible for briefing her on biotechnology matters. In addition, Young has reassured many in FDA and elsewhere by relying heavily on the long experience of deputy commissioner Mark Novitch, who Young calls his chief operating officer. So far, there have not been any major personnel changes. Young has, however, perplexed some in the agency by bringing in an outside consultant named John Norris, a lawyer from Boston. There is some resentment that Norris is not well informed about FDA affairs. Other commissioners have brought in their own advisers, but agency staff point out that Norris is working only part time and that his background is in hospital cost containment, not food and drug law. Young says that Norris worked closely with him in Rochester and has asked him to serve as a scout for potential issues that could cause trouble for the agency and to be "an extension of myself" within FDA.

Young's ability to handle the agency's affairs will be tested soon enough. The coming session of Congress promises to raise several issues:

- Generic drug law. Congress last year passed with strong bipartisan support a law that will substantially increase the number of generic drugs on the market. Legislators will be watching carefully to see that FDA implements the law swiftly and efficiently.
- Medical devices. The approval process of such items as pacemakers and contact lenses has come under increasing criticism by the Office of Technology Assessment and others because of loopholes.
- The Delaney clause. For the past several years, Senator Orrin Hatch (R–Utah) has introduced legislation to relax this law which bans the use in food of any substance—no matter how small the amount—that has been shown to cause cancer in animals.
- Antibiotics in animal feed. FDA has been petitioned to ban penicillin and tetracycline in animal feed because the practice is widely regarded as promoting antibiotic resistance.

It is a full roster of difficult and politically controversial issues. Young leaned forward and said with verve, "Attacking [these problems] is an opportunity. I basically enjoy conflict resolution."

—MARJORIE SUN