merely poison international relations and the climate of cooperation."

This expression of views, obviously directed at the U.S.-dominated 62-nation INTELSAT consortium for space communications, provided a nice backdrop for a subsequent Soviet proposal to set up a worldwide satellite communications system, INTERSPUTNIK, to be run "on democratic principles." The Soviets were pressed to tell when, how, and so forth, but had little else to say, except that it should be done.

And so the conference went, amidst currents of East-West antagonisms, commercial nonsense, and the eagerness of the poor nations both to benefit from the big powers' skills in space and also to be free of their domination.

Perhaps the most touching event in the proceedings took place when a delegate from a small nation told how his laboratory successfully pieced together a receiver for ESSA's weather pictures. "We get very good pictures," he said, "but what should we do with them? When I asked my government for some money to build additional equipment, they wouldn't give it to me." Someone then raised the question of whether some source of funds, perhaps the UN, might not be established for such circumstances. But no one had any pleasing answer, least of all the representatives from NASA, where the space applications budget is currently $96 million out of a total budget exceeding $4 billion.

There was much talk about employing satellites for surveying earth resources, crop inspection, and other purposes of clearcut economic significance, but as Academy President Seitz pointed out in a panel discussion, "What we need is money for initial experiments. And then we have to think on a ten-year time scale, provided we get the money."

What are you doing that can help us now? That, in one form or another, was often asked by representatives of several of the developing nations. NASA could proudly point to weather, communication and navigation systems, but remarkable as these may be, it was not clear that they have much relevance for the misfortunes of the world's poor. In fact, one got the impression that there really wasn't much to be said in answer to that question. Considering the plight of the people whom some of these delegates represented, one could only gasp at a NASA paper on "Contributions of Space Technology to Solutions of Medical Problems," wherein was told the story of how a micrometeoroid sensor was adapted for the purpose of measuring chick embryo heartbeat.

Then there was a paper by Homer E. Newell, Associate Administrator of NASA, whose sensors for silver linings were especially well tuned. Newell, who long presided over NASA's space science program while it was repeatedly raped to provide funds for the lunar landing program, said that one great virtue of space applications was that they created a broad understanding of the importance of basic research. If space applications do "no more than establish an appreciation, once and for all, of the practical values of basic research, that in itself will be a supremely valuable intellectual effort."

To top that, Franz Joseph himself would have had to come into the Hofberg and proclaim the rebirth of the Empire.—D. S. GREENBERG

Federal City College: Trying To Be "Relevant"

Five blocks from the Capitol, in a drab, block-long three-story former government office building, faculty, administrators, and staff of the new Federal City College (FCC) are preparing for the college's opening on 9 September. Less than 2 years ago, they began to build a college, which, by all tests, seems desperately needed by the Washington community.

For years, the proportion of graduates of Washington's public high school who have gone on to college has been low—usually less than 35 percent. When dropouts are considered—and about one quarter of the 8000 or so students entering in the ninth grade drop out before graduation—that percentage is significantly lowered. One main factor has been the lack of quality public higher education in the District of Columbia. D.C. Teachers College (DCTC), until now the only public institution in Washington, has been woefully inadequate, and recently has run into accreditation problems. Eventually it will be taken over by FCC. But aside from DCTC, there has been no place for many Washington high school graduates to go. Local private universities and the public institutions in neighboring states have entrance requirements that are too stiff or costs that are too high for most D.C. students —over 90 percent of whom are black and most of whom are poor. Finally, in 1966, at the urging of Senator Wayne Morse and others (Morse is called by some the "Father of Federal City College"), Congress established FCC and the Washington Technical Institute.

FCC, therefore, is a unique form of public education. Other big-city colleges have begun to concentrate on serving their communities and on dealing with the special problems of black Americans, as FCC plans to do, but FCC alone was established and is funded by Congress. As FCC President Frank Farner puts it, "The members of Congress who decide on our budget are not going to get any votes from the people whose lives they're affecting with their decisions."

To get its money, FCC goes through a maze of eight review bodies. First, the budget request is examined by the D.C. Board of Higher Education, the governing body of FCC, whose members are appointed by the District government. Then the request goes through the D.C. budget machinery and the entire congressional authorization and appropriations process.

FCC, for its first year, has an operating budget of $4.3 million, and its request was cut only once along the line—some 6 percent by the Senate Committee on the District of Columbia. FCC administrators were even able to get a supplementary appropriation to take care of additional students, when applications went way above expectations late this spring. A truer test of the attitude of Congress should come, though, when next year's budget is

submitted. It will contain the first requests for construction on the permanent site of the college, to be in Mount Vernon Square, in a borderline area between the ghetto and business districts of Washington. According to FCC vice-president for finance and administration Morris Kandle, construction will cost as much as $40 million over 3 or 4 years. If funds allow, another branch will be built in the Fort Lincoln "new town" in the Northeast ghetto.

Federal City College, as President Farner puts it, seeks to "provide for the needs of the community." It serves the most basic need by providing higher education at minimum cost ($75 a year for D.C. residents) to as many Washington holders of the high school diploma or its equivalent as it can handle. Close to 7000 students submitted applications this year, before the admissions office stopped accepting them. As originally planned, FCC would take 1600 full- and part-time students; with the additional money, it has taken about 650 more. In keeping with a policy of open admissions, those accepted were selected on a lottery basis, and FCC officials—primarily Farner and admissions director Luther McManus—have made efforts to place those FCC couldn't accept in other colleges around the country.

Next year McManus expects a significant increase in applicants, and Farner will probably request funds to take care of almost 5500 students. Eventually, when the permanent site or sites are completed—and the target is now to have the Mount Vernon site finished in time for the graduation of the first class in June 1972—FCC hopes to be able to take all D.C. high school graduates who wish to attend.

Congress recently made FCC a land-grant college, which means, according to FCC's dean of community education Eugene Wiegman, that "we have marching orders from Congress to work in the community." Exactly what form this involvement in the community will take is still uncertain, although survey meeings with community leaders have been going on all summer.

"I'm interested in the college's doing educational work only not advocacy," President Farner told *Science*. "I think we might, for instance, have people here teach others how to design a park, but we shouldn't actually build the park ourselves." Plans are to have FCC conduct adult education classes, sponsor institutes and workshops, and provide advisers to the community on any number of topics. The college will employ students and others from the community whenever possible, and will continually be looking for ways to work with and for the community.

FCC will award an associate of arts degree for its 2-year program, to which, college officials hope that any graduate of Washington's high schools will ultimately be able to be admitted. Students who want higher degrees—and FCC will offer both bachelor's and master's degrees when students reach those levels —will have to satisfy some sort of matriculation requirements, as yet undetermined. After 1 year, the college will become a formal candidate for accreditation. Farner, who is closely following all the rules for accreditation, says that the school cannot be accredited until this fall's incoming class has graduated in June of 1972.

For its first-year students—and over 90 percent of those admitted will be freshmen—the faculty will offer 11 so-called core courses. There will also be a small number of business courses, and various advanced courses of a more specialized nature for the transfer students. The core courses, which will be the heart of FCC's first-year curriculum, will be interdisciplinary, within three broad areas—social sciences, natural sciences, and humanities.

The five social science core courses all deal with one or more aspects of the urban environment. Most of them will include a good deal of fieldwork in the surrounding community, both to study the institutions and possibly to assist in changing them. Individual projects will be encouraged. There will be seminars in most of these courses to analyze and go over some of the problems that are studied firsthand in the "Laboratory" of Washington or brought up in the reading. A team of four or five professors—usually a sociologist, an economist, a political scientist, and maybe a psychologist or historian (although history is officially classed in the humanities at FCC)—will conduct these classes.

In all of the core courses, in all three fields, the emphasis will be on student participation and on discussion-type teaching. The traditional lectures in the humanities and social science courses will be replaced, as much as possible and desired, by movies, debates, discussions, and other types of "happenings," as they are termed at FCC. And always, the students will participate to the fullest in leading discussions, in proposing problems to be studied,

NEWS IN BRIEF

● **ESTUARINE STUDY BILL:** A bill providing for a study of the nation's estuaries to determine unspoiled areas to be purchased for inclusion in a National Estuary System was approved by Congress last month. The measure, introduced by Representative John Dingell (D–Mich.) and Senator Abraham Ribicoff (D–Conn.), will emphasize conservation of the nation's shoreline areas and will include an investigation of Great Lakes estuaries. The bill provides a total of $500,000 for the survey and requires that the Interior Department submit by 1970 recommendations to Congress for the purchase of national and state estuarine areas.

● **FDA ANTIBIOTICS BAN**: The Food and Drug Administration (FDA) has proposed curtailing the use of oral antibiotics, such as streptomycin and penicillin, in animals up to 5 days before they are marketed. Food additive amendments to the federal Food, Drug, and Cosmetic Act require proof of safety of antibiotic residues or the lapse of sufficient time for them to be eliminated from animals' bodies before marketing. The proposal, aimed chiefly at drugs used in treating diseases of the respiratory and digestive systems, would affect marketable swine, calves, turkeys, and chickens. The FDA proposal, which is expected to become a regulation this fall, would be enforced by the FDA and the meat inspection division of the Department of Agriculture. It follows an April FDA proposal to restrict certain injectable food additives and drugs in animals.

● **ANTI-HAIL AA**: A U.S. government-university consortium is testing a Russian technique to suppress hail. The Soviet method is to fire antiaircraft shells containing silver iodide directly into hail centers of storm clouds to prevent water droplets from coalescing into large, harmful hailstones. Soviet scientists report that in experiments this technique has reduced hail damage to crops by 80 percent. The new tactics will be tried in Colorado as part of a research program sponsored by the National Science Foundation and funded this year at $600,000. The National Center for Atmospheric Research, the Environmental Science Services Administration, and Colorado State University are participating.

and in relating personal experience.

There will be one interdisciplinary core course in the natural sciences. According to Arthur Webb, an FCC biology professor who taught for 17 years at Howard's Medical School, this course will try to be innovative in a somewhat different sort of way. He said in an interview with *Science* that only 8 percent of the incoming class had indicated in a survey that they were not opposed to science, implying that a smaller number were positively interested in it. "The job of this course," he said, "will be to get students interested in science."

Right now, students will not be required to take the natural science course. The official policy is that they will be "strongly advised" to take it, and it will probably be required for completion of the bachelor's degree. It will be taught in 4-week blocks, one each of physics, chemistry, math, and biology. For the first quarter, the unifying theme will be the "human body," chosen, Webb said, for its "relevance." By pursuing a relevant topic, Webb said, he hopes that students will not be driven away from science and will be able to become acquainted with it on somewhat easier terms.

Federal City College will have a skills center, which will offer noncredit classes in reading, as well as in effective thinking and studying. Courses in remedial math are also planned, but will probably not begin in September. "We feared that the D.C. school system had not produced students who could utilize a college education," the center's director, John Coffey, told *Science*. He said that 71 percent of the incoming class had indicated that they would like to make use of the skills center. Here, he said, the emphasis will be on "getting students ready for the classroom." The hope is to "make the students find themselves as students at the skills center before they go to the classroom."

After the first year of core courses, more traditional courses that concentrate on one subject area will be instituted. Students will then be able to take either kind of curriculum.

"We have a real need to try new things here," Farner, a 39-year old former dean of graduate studies at the University of Oregon, said in an interview with *Science*, "but I don't want to let our students down in any way. If a student wants to take business administration or English or philosophy courses, he will be able to." Farner said that he wants FCC graduates to be able to compete favorably with graduates of any other college for future educational or employment opportunities.

There is no doubt that FCC's faculty will be qualified enough to produce "competitive scientists" or "competitive scholars" in any other fields. Faculty members at FCC will be among the better-paid teachers in any public institutions (in the top quarter of the AAUP pay scale), and they were recruited as men who combined academic competence with social consciousness. There are former professors from Ivy League schools—among them English professor Kenneth Lynn from Harvard —and a good number of faculty members from Howard, Berkeley, UCLA, and several of the large midwestern state universities. From all indications it seems to be a good faculty, and an innovative one as well. The problem may come from the lack of preparation on the part of the students.

Student Participation Emphasized

Strong emphasis is being placed from the beginning at FCC on student participation and involvement in everything that affects them. Students have been on committees that have planned curriculum, activities, college facilities, and relations with the community. Farner and the other administrators have tried to make it clear that FCC exists for the students; it is, he and others emphasize, to be "their" college.

However, the incoming students so far have not taken advantage of the possibilities for participation. Meetings that were held at night and on weekends this summer were sparsely attended by students. "After being told what to do for so long," one faculty member said, "it is hard for the students to believe that their opinions and advice are really sought." Most administrators and faculty members feel that once the college has gotten going, however, the students will increasingly become involved.

A somewhat similar situation has confronted the financial aid office. Only some 1 percent of the incoming students have applied for financial aid, John Cogdell, the office's director, told *Science*, as compared to about 10 or 15 percent at most state schools. But he said his office was doing all it could to make students aware of what was available to them. He also said that he and his staff were trying to tell students that college would incur more expenses than just the $75 tuition, and that many of them would need aid to meet the additional cost.

In discussions that he and others have had with students, Cogdell said that many of them thought of scholarship money as being similar to welfare. Others, he said, thought it was all in the form of loans, and that they would therefore have to be in debt. Others told him they would rather work for the extra money, but were not aware of the college's job-finding program for them. But Cogdell said that he was continuing to talk with students, and would keep his office open well into the school year, expecting a big influx of applications for aid during the next few weeks.

Freedom and openness are also stressed at FCC as part of the general "in business to serve the students" approach. Grading will be predominantly pass-fail, library books (the paperbacks, anyway) can be borrowed for as long as the student wants them, and there will be as few requirements, both curricular and otherwise, as possible. The hope is that, with this freedom and involvement, the learning will come in time. Humanities instructor Joseph Brent points out, too, that by offering relevant courses about things that directly involve and affect a predominantly black group of students from an urban environment, the students will become more interested in learning. "After 12 years in the D.C. public school system," Brent says, "many of these kids don't ever want to see a classroom again." Slowly, he feels, they can be brought to realize that education can be relevant to their lives.

There are a multiplicity of challenges facing Federal City College as it seeks to establish itself this fall. It has a Congress problem, and must therefore not present quite as radical an image as some faculty members may wish FCC to have. But FCC also seems to have a kind of student problem, trying to make its curriculum relevant, but in so doing, not teach over the heads of the students. And finally it has a community problem, trying to be involved but also trying to steer clear of political advocacy—a distinction that Farner calls a "hard line to draw." The hope is the FCC will learn to live with its problems, and mold itself into the kind of institution that Washington has long needed.—ANDREW JAMISON