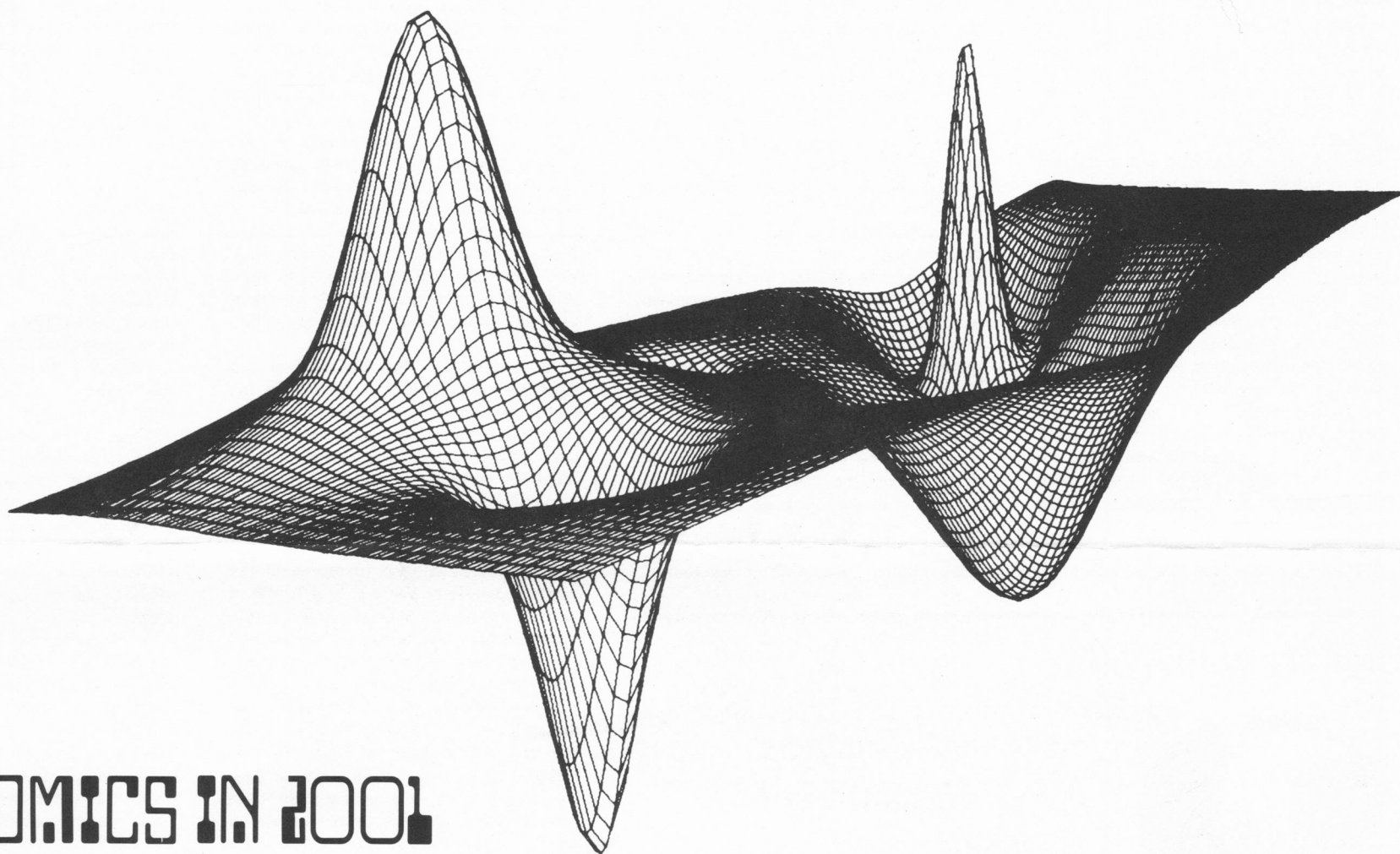


Let's Look Ahead to...

In the fourth article of our current series on life in 2001, some of the chilling aspects of the future of economics, considered in its broadest context, are explored by one of Stony Brook's noted faculty members.

Computer graphics by Joshua K. Kopp, Brookhaven National Laboratory

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ECONOMICS IN 2001

by **Dr. Robert Lekachman**
Professor of Economics

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An economist, aged 51, can afford to be rash in his guesses about the year 2001. Unless the science of geriatrics picks up more speed than is likely, he will not be around to suffer the embarrassments of mistaken prophecy. In 1971 there are, broadly speaking, two major visions of the future, the managerial and the participatory. For convenience's sake, I shall

take Herman Kahn's formidable tome, *The Year 2000* as a convenient expression of the first tendency.

"There is," avers Kahn, "a basic, long-term, multifold trend toward" a long list of developments among them "increasingly sensate (empirical, this-worldly, secular, humanistic, pragmatic, utilitarian, epicurean or hedonistic) cultures," "meritocratic elites," "increasing affluence," "increasing tempo of change," "urbanization," "accumulation of scientific and technological knowledge," and "institutionalization of change, especially research, development, innovation and diffusion." Kahn promises (or threatens) artificial intelligence, behavior modification, more powerful mood drugs and, possibly, "some direct control of individual thought processes."

My intention is not to make anyone's flesh creep, but to draw some inferences about this style of thought and the future it predicts. Kahn and his followers are, above all, managerial and

manipulative. With striking frequency they emphasize control of human behavior, centralized educational and political programming, monitoring of the emotions and alteration of the personality. Of course writers like Herman Kahn cannot be fairly charged with advocating everything they predict. The matter is more subtle. What they appear to believe is that whatever becomes technically possible will almost surely materialize. If the SST can be built, then it will be built, though every vintage wine in the United States may sour from the sound shocks. If an ABM is technically feasible, it will be deployed even if the prospect of nuclear war is thereby increased. And if an infant's intelligence, sex and emotions can be modified, naturally they will be. And so on.

Managerial types, among whom are to be numbered economists who practice the arcane arts of cost-benefits analysis, operations research and linear

programming, exude confidence that men like themselves will administer the new techniques and thus make the new social choices. The emphasis upon the shaping power of technology is little short of obsessive. For the 19th century's dream of universal enlightenment and permanent peace the Herman Kahns have substituted the nightmare of irresistible technology. Like all plausible speculations about the future, this one is founded upon the extrapolation of identifiable contemporary realities and trends. In the more progressive giant corporations, research and development approximate religious faith. Universities teem with scientists — basic, applied and experimental — more of them alive in 1971 than lived and died in all recorded human history prior to this generation. As Kahn and, for that matter, Joseph Schumpeter 30 years ago, specifically predict, innovation becomes routinized. The machine throbs on of its own accord.

For politics and economics this vision has momentous meaning. Whole ranges of issues become irrelevant, notably old-fashioned ideological debates. In their pursuit of office most European socialist parties have all but discarded nationalization as a sensible radical goal. According to one's preferences and training, ideology is, or used to be, about money and economic power, class and status, color and caste, or some complex mingling of these categories. Marxism and other ideologies of economic determinism focus upon genuine conflicts of interest, real distributions of political and economic power, and quite concrete clashes over income and wealth. As ideologues inspect the universe, structures of ideas are weapons in the bitter, incessant, and usually inconclusive war between the classes.

The ideology masquerading as a non-ideology of management and manipulation perceives no role whatsoever for such old-fashioned notions. For one thing, the managers, experts to a man, will possess (and therefore use) the power to condition the minds and direct the actions of entire populations, presumably in the direction of tractability. For another, insofar as ideology concerns the distribution of materials and services, its very subject will vanish beneath the flood of consumer goods which will be generated by the magnificent technologies of the year 2001. In 1971, food in the United States could readily be made a free good and by 2001 A.D. the list will extend to clothing, travel, even housing and home furnishings. Of course this roseate pros-

of the educated may be the alteration of their children's intelligence according to a prescription which allows the offspring to benefit from still more education than their privileged parents had secured. If Kahn is correct, the political battles of the future in rich countries will center upon the distribution of post-genetic advantages among rival claimants, if, of course, even these science fiction struggles are not stifled by the chemical treatment of personality.

That such a future is revolting is hardly debatable. How plausible is it? Will the living, as Herman Kahn said of the survivors of nuclear war, envy the dead? Unhappily much in our conduct of daily life supports the managerial vision. Our society, despite recent ecological backfires, does venerate technology and science. Our social organization is increasingly meritocratic and the system's major rewards are distributed primarily to managers and manipulators. The instruments of social and personal control have advanced far beyond the crude brainwashing techniques of the 1950's. I suppose there is no compelling technical reason why hordes of experts should not so administer a society and so program its activities that most individuals are not even aware of how neatly their lives are running the grooves dug for them by their unseen masters. No wonder that Kahn lists the invention of a soma-like drug among the moderately likely innovations of the next 30 years. Phenomena central to the anti-utopias of Aldous Huxley and George Orwell seem quite neutral to scientists like Kahn.

proposition that at work in the world is a ferment of disorder. Everywhere individuals, small groups, community interests and ancient localisms strive to loosen the constraints of existing social controls. Even more strikingly, the most vigorous radicals and the most active innovators are themselves potential or actual members of elites — students, junior faculty and young lawyers and doctors. For a brief moment in 1968 in France the ranks of the enraged united students and factory workers, the latter in open rebellion against communist unions which purported to act in their interests. During the tragically brief Czech spring, a hardened party apparatchik like Alexander Dubcek implausibly became the voice of decentralization, popular initiative and civil freedom.

No doubt the United States is the critical case, as the most technologically advanced of all nations. In our troubled land, who can plausibly claim that rebellion has been quenched, elites have accepted their sweet responsibilities and soothing privileges, and non-elites have been mollified into pharmaceutical acceptance of their appointed roles?

All around us the Alphas and the Epsilons, as well as the Betas and the Gammas simmer in rebellion. Policemen grow long hair and experiment with drugs. Municipal trade unions strike in defiance of court injunctions. Radical young doctors disrupt staid meetings of the American Medical Association. A new style of courtroom advocacy has developed to represent the political militants whom a new breed of activist lawyers willingly adopt as clients. Traditionally meek, underpaid and undervalued, the school teachers of the land now strike, picket and quarrel publicly with boards of education and supervisors. In 1968, a vintage year, the United Federation of Teachers conducted three New York City strikes, each and every one in defiance of a statute which outlaws public employee strikes. Again in New York City, where everything happens first, militant neighborhood groups have wrested partial control of local schools from the board of education. And of course all over the country university students, apprentice members of their society's privileged orders, continue to attack curricula, university policies, defense research, the administration and faculty and, often, each other.

One could extend this list to much greater length. It all goes to prove that almost nobody is willing to accept his current status and situation. Left stimulates right and right infuriates left. Everywhere the forces of disintegration, disorder and decentralization gather strength. From conservatives as from radicals, from followers of George Wallace and militants of SDS, the cry wells up that all establishments are suspect, all power corrupts and oppresses, and the only proper object of political activity is the individual's freedom to act.

The ideologies of the young feature either aspirations to individual self-

fillment via drugs, sex, exotic religion, or radical political action against a radically corrupt society. Activity and process are the point, the first expended in confrontations with military authorities, academic officials and policemen, and the second acted out according to the forms of participatory democracy. The world dimly envisaged over the horizon — Charles Reich's dream of the Third Consciousness — is so decentralized that the organs of social control are attenuated to the verge of disappearance.

No more than the next prophet do I know whether such events and doctrines are a passing sport of rebellion against the monotony of an over-organized society or whether, to the contrary, as the monotony increases so also will the intensity and variety of the rebellions opposed to it. It is at least possible that before personality controls predicted by Herman Kahn can be perfected and actually clamped upon men and women by their governments, the revolt against such poisoned fruits of technology will radically alter the distribution of effort so as to slow and redirect technology's drive and restore it to humane control.

This is a more appealing version of the future. It asserts the persistence of human yearnings for freedom strong and pervasive enough to resent excessive rationalization and successfully to amend the ordered social controls which have accompanied powerful governments, immense corporations, bureaucratic trade unions and impersonal universities. The prophets of amplified social control might pause for a moment on the fact that after a half century of repressive government, Soviet intellectuals still yearn for free expression even at the risk of imprisonment, calumny and exile.

There is a significant corollary to this hypothesis. In their present state of development, the techniques of social control are not nearly so powerful as their present reputation implies. Some are defective precisely because of their over-commitment to rationality. Take a case from the economics of resource allocation, a topic highly polished by generations of specialists. In Robert McNamara's Pentagon, RAND analysts pioneered in cost-effectiveness analysis. Its major triumphs are Viet Nam and a rising defense budget. Technique as ideology is likely to produce mindless results.

I am not an optimist about the future. It may be that the real alternatives are between Charles Reich's anarchy and Herman Kahn's socially engineered universe. As a personal judgment, I should not care to live under either arrangement. Somewhere between anarchy and excessive social control lies a tolerable society. Since my general pessimism does not extend to predestination, I am prepared to believe that, for a time at least, the possibility will remain open to move toward such a middle place. In that event the survivors of the year 2001 will not envy the dead. □

Will the future bring



increased affluence
greater urbanization
nuclear suicide
more powerful mood drugs
anarchy
thought control
personality alteration
artificial intelligence

pect is limited to the affluent West. At its current rate of growth, it will take Indonesia 593 years to attain the per capita income of 1965 Americans. Even China, though assisted by the thought of Chairman Mao, will require a century to reach that level.

In the rich countries, hierarchy, still more in the future than in the present, will correlate with education. In the Brave New World one of the privileges

Is such a society inevitable? Are the combined battalions of the technocrats and the social scientists so strong that it is folly to resist and prudence to join? I don't think so, although not all the alternatives are superior. One as obvious as it is uninteresting is that we shall blow ourselves off the planet, either by accident or design.

Several can play the game of trends. There is an alternative case for the

Many University Projects Zero in on Social Ills

Smoke, smog, crime, corruption, race, recession, population, pollution, filth, famine, war, waste.

Increasingly, the pressures of the world have brought pressures on universities to provide alternatives, assistance, amelioration, answers.

At Stony Brook, the teaching, research and service functions of the University have coalesced in a number of projects aimed specifically at alleviating social ills. A sampling of these projects, ranging from highly specialized scientific research to informal student volunteer work, is listed here:

- Improvements in ambulatory patient care, designed to allow better treatment for outpatients and reduce the shortage of hospital bed space, is a current emphasis of the University Hospital and Clinical Services of the Health Sciences Center.

- A study of manpower and equipment deployment of the New York City Department of Sanitation with recommendations for improving efficiency of refuse collection has been completed by researchers in the new graduate program in urban sciences and engineering.

- The effects on marine life of cooling water discharged from electricity generating plants are being studied by scientists at the University's Marine Sciences Research Center, providing information useful in planning future generating plants.

- The University has assigned a professional engineer to coordinate its participation with the Port Jefferson Sewage District, in planning treatment needs in an effort to curb pollution of the Port Jefferson Harbor.

- Brookhaven Town's Housing Conference, co-sponsored by the University, studies present and projected housing needs in the area, which has experienced problems of rapid population growth.

- Retraining of laid-off aerospace workers has been proposed by the University's Economic Research Bureau in cooperation with the Long Island Association and Hofstra University.

- A computer data bank storing information on housing, businesses, transportation, population and other variables is operated by the University's Technical Assistance Office to aid regional planners in their work.

- An Upward Bound program encourages high school students to stay in school.

- Small institutes and educational conferences for area schoolteachers, involving methodology and curriculum development in such subjects as foreign languages, elementary school science, and high school social studies have been held by a variety of campus organizations.

- A child clinic operated by the University's Psychological Center treats children with behavioral problems, working closely with parents, school counselors and teachers.

- Four Cooperative College Centers in Nassau and Suffolk Counties, administered by Stony Brook, provide an avenue for the educationally disadvantaged to go to college.

- Problems facing black youths looking for work have been researched by the Economic Research Bureau in a study seeking to improve the job outlook for young black Long Islanders.

- The Marine Sciences Research Center is compiling information on the effects of large bridges on marine ecology in connection with the State Department of Transportation's studies of a proposed bridge over Long Island Sound.

- The Health Sciences Center is involved in "community outreach" programs, determining community medical needs and helping local authorities plan to meet those needs.

- A High School Equivalency Program at Stony Brook prepares seasonal or migratory agricultural workers and their children for the New York State high school equivalency examination leading to a high school diploma.

- Fieldwork in some undergraduate courses allows students to work in various activities helpful to the community. For instance, Psychology 102 students have investigated architectural barriers facing disabled people in Suffolk County, worked in a local school for children with learning disabilities, and with the Smith Haven Ministries, an interdenominational group in Lake Grove.

- Traffic and parking patterns in Port Jefferson are being studied by graduate students from the urban sciences and engineering program in an effort to improve parking facilities in that community.

- Seminars for area businessmen on management methods, preventing crime in business, hiring minority employees, and curbing industrial pollution are sponsored by the Technical Assistance Office.

- Studies of Long Island Sound and other nearby waters by Marine Sciences Center researchers seek to determine the causes and effects of pollution from solid waste disposal.

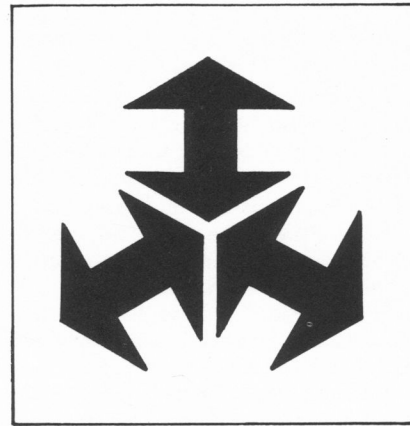
- Tutorial programs administered by the Office of Special Projects match some 130 University students with schoolchildren in Riverhead, Center Moriches, Longwood, Brentwood and Bellport.

- Stony Brook has an Office of Equal Opportunity and an Equal Opportunity Employment Committee to help assure equality of opportunity within the University itself.

- Student volunteer groups visit Kings Park and Central Islip State hospitals, providing therapy, companionship and entertainment for patients.

- Several courses in the Center for Continuing Education offer professional health workers, teachers and social workers training in areas such as drug abuse, clinical social work, problems of poverty and sex education.

- A traveling environmental teach-in staffed by students and faculty is



The relationship between a campus and its surrounding area is a two-way one in which both university and community have much to offer and to share. The stories on this page illustrate several of the ways in which the State University of New York at Stony Brook is demonstrating its concern for Long Island and Long Islanders.

available to civic groups, PTA's and similar organizations. The group can work in space as small as a living room or as large as a high school stage.

- In cooperation with the American Red Cross, Stony Brook operates a swimming program for handicapped youngsters.

- Wider Horizons, a Saturday cultural enrichment program for local youths, is sponsored by the Office of Special Projects. — Bradley Berthold □

University Assists Drug Abuse Programs

Apathy and lack of knowledge about drugs, and more specifically about the underlying factors leading to drug abuse, continue to be major stumbling blocks in dealing with the drug problem in today's society. To help alleviate some of these problems, Stony Brook has become active in several community-oriented programs.

A drug abuse course for Stony Brook faculty members who supervise student teachers was offered this year for the first time. Several authorities on drug abuse provided professors with knowledge to be passed on to student teachers. The faculty taking the course supervise some 600 student teachers who in turn reach about 4000 elementary and secondary school pupils each year.

Organized by the School of Allied Health Professions for the Office of Teacher Preparation, the course included as guest speakers, Dr. Henry Brill, a noted drug authority and director of Pilgrim State Hospital; Dr. Julius Rice, director of narcotics rehabilitation at Kings Park State Hospital; and Suffolk County District Attorney George Aspland, along with Allied Health Professor Stanley Zimering, himself a noted researcher on drug education programs; and Professor Mortimer Kreuter of the Office of Teacher Preparation.

Another course, "Social Health Problems II: Drug Abuse," is offered by the Center for Continuing Education. De-

signed for public school health teachers, nurses, physicians and others close to drug abuse problems, it is an in-depth study of all facets of drug use and abuse. Students in the course learn about the psychosociological and physical aspects of drug abuse and addiction as well as the prevention, treatment and rehabilitation of drug abusers, legal considerations, and the role of existing medical, social and educational institutions in prevention and control of addiction.

In the planning stages is a course for Stony Brook undergraduates which is expected to deal with life-style issues, including the relationship of drug use to societal institutions.

In addition to these academic courses, several University people are working closely with community groups interested in prevention of drug abuse. One such group is the Three Village Drug Advisory Council, a local organization of concerned citizens.

The Council has an adult education committee which includes Dr. Scott Rickard, acting vice president for student affairs, Mr. Vincent Liuzzi, assistant to Dr. Rickard, and Mrs. Terry Bardash, a graduate student in the department of English. Last fall, the committee presented a series of five evening seminars at the Nassakeag School in Setauket. The seminars were intended to inform parents in the Three Village area about reasons why young people take drugs, their medical and psychological effects and religious and criminal implications. The parents were organized into small discussion groups after presentations by a panel of experts.

The Three Village Drug Advisory Council also has a community helping services program, which includes another committee coordinated by Mr. Liuzzi. This committee is developing a proposal for possible funding through the New York State Narcotics Addiction and Control Commission, which provides matching funds to community narcotics guidance councils. "Our program is designed not just to provide information about drugs, but as a comprehensive prevention program," says Mr. Liuzzi.

Professor Zimering, in addition to his work with on-campus academic courses, works with various local agencies concerned with drug problems. With District Attorney Aspland he is planning a two-day institute for all Suffolk County clergy, tentatively scheduled for this summer.

The district attorney said he greatly appreciates the help he is getting from Professor Zimering and the University. "To get this type of help, drive and energy from Stony Brook, a school that has had a drug problem, is gratifying. For the University to take a position like this is a very commendable thing."

Another off-campus program, involving cooperation between Stony Brook and the Suffolk County Medical Society, is aimed at educating physicians, nurses and hospital people on drug abuse. Meetings were held at hospitals around Long Island this fall, briefing medical

personnel on three subjects: treatment of acute drug cases, available facilities for drug users, and the social and cultural aspects of drug use.

In these and other ways, Stony Brook is trying to help alleviate the drug problem on Long Island. From formal academic programs to a variety of off-campus activities, University personnel are involving themselves in programs aimed at informing both the general public and professionals about the problems related to drug abuse. □

Interdisciplinary Approach To Education Growing At Stony Brook

The University has approved undergraduate majors in Ibero-American studies and in environmental studies, thus generating the eighth and ninth interdisciplinary programs since Stony Brook's curricular reformation began almost two years ago.

At that time, the Faculty Senate endorsed the interdisciplinary approach as a spur to invigorating the learning process and rallying members of different departments around common areas of interest. When Stony Brook's first four interdisciplinary programs were begun in the fall of 1969, Dr. Sidney Gelber, vice president for liberal studies, called the change revolutionary in the new course-selection options it afforded students.

The revolution is tempered by the strictures of the program-screening curriculum committee of the College of Arts and Sciences, which requires clear-cut program goals and articulated coordination to assure that an interdisciplinary program is more than a melange of courses from different departments. In fact, both environmental studies and Ibero-American studies were several years in the planning and were each subjected to several rounds of consideration by the curriculum committee. They were recently cleared for next fall, however, and the approved plans reflect the desired balance of flexibility and academic coherence.

Ibero-American studies, says program director George Schuyler, is one of more than 200 such college programs in the United States, many begun or hastily expanded after Castro took power in Cuba. Mr. Schuyler, who has worked and studied in Latin America and is now writing his doctoral dissertation on political change in Venezuela, says the Stony Brook program planners hope to avoid flaws found in many other programs: They will attempt to relate Latin America to modern Spain and Portugal, will stress humanistic as well as social-science approaches to the study of Latin American culture and will draw heavily on the work and thought of Ibero-American scholars. Planners will also try to avoid academic isolationism by seeking community participation in as many aspects of the program as possible.

The 30-credit program will require its majoring students to take two year-long core courses. "When fully developed,"

says Mr. Schuyler, "the introductory IAS 121, 122 course will include large lectures and smaller discussion sections, complemented by films, slides and music. IAS 401, 402 will be a multi-disciplinary research seminar in which students will be expected to use Ibero-American sources in the preparation of panel discussions and term papers."

These papers, he says, will be directed to broad themes such as agrarian reform, urbanization, nationalism and cultural identity — "those areas of academic inquiry that don't lend themselves to a one-discipline approach."

Another of these areas is the environment. The word strikes different responses in the biologist, engineer, geologist, oceanographer, philosopher, physicist and sociologist. These are some of the specialists already lined up to lecture in the new environmental studies program's broad introductory course, entitled "Man and His Environment."

The focus of the course, says Dr. O. Andrew Collver, associate professor of sociology and director of the program, is on "how population growth and technological progress under existing institutions affect man's environment and its capacity to sustain human life."

The issues raised, says Dr. Collver, are much too broad to be grasped by any one individual or any one discipline. "My hope," says the sociologist who has long been professionally active in problems of population and environment, "is that when students are exposed to widely different perspectives on the same problems, their minds will be opened to the possibilities for creative exchanges between the disciplines." By continuing consultations with both students and lecturers and by coordinated efforts in preparing seminars, projects and examinations, Dr. Collver adds, he seeks to bring together the varied perspectives as cohesively as possible.

Formal interdisciplinary teaching at American universities dates at least to the 1930's, when American studies programs were introduced to convey a broad understanding of American civilization. World War II led to the development of Asian studies programs, and the interdisciplinary approach began steadily to gain advocates. Recent student pressures to make education more relevant to social issues have also reinforced the trend, for the multi-focused approach seems to breathe more reality

Traditional Departments

Anthropology
Art
Biology
Engineering
English
History
Languages
Philosophy
Sociology, etc.

Interdisciplinary Programs

Asian Studies
Black Studies
Comparative Literatures
Elementary Education
Environmental Studies
Ibero-American Studies
Linguistics
Religious Studies
Social Sciences

The new interdisciplinary programs at the right draw upon a mixture of courses from such traditional departments as those on the left. The new programs tend to invigorate the learning process and focus attention on areas of common interest and relevance.

into a subject than does the focus of a single academic department.

Dr. James McKenna, assistant vice president in Dr. Gelber's office, notes that interdisciplinary teaching does not change the substance of what learning is available to a student. "A student who knew what he wanted and knew the procedures for planning the appropriate program could always give himself an interdisciplinary education," Dr. McKenna says. "What formal interdisciplinary programs do is facilitate what was always possible for the few most resourceful students."

For technical reasons the three interdisciplinary programs begun in 1970 — Asian studies, comparative literature and religious studies — do not yet have enrolled majors, but the ones launched the previous year are thriving. Elementary education has 403 majors and social sciences has 182. Black studies, though only listing five majors, does have 270 registrations for 18 courses, and linguistics, besides 17 majors, has 359 students registered for 10 courses.

Though planners of the two newest programs make no enrollment predictions, they see an already established student and faculty interest. In Ibero-American studies, 1034 students were enrolled this year in 38 courses — exclusive of basic language courses — bearing on the subject, and 28 faculty members from seven departments teach pertinent courses. As for the environment, Dr. Collver says campus interest needs no statistical documentation and that, at the least, many hundreds of students are enrolled in science, sociol-

ogy and economics courses bearing on environmental subjects.

While the greatest impact of interdisciplinary education is at the undergraduate level, the impulse is beginning to reach graduate study as well. Dr. Lawrence Slobodkin, for instance, besides being chairman of the new department of ecology and evolution, is chairman of a Ph.D. program in ecology and evolution with faculty from biology and geology. He is also program director for applied ecology and environmental design, a research program involving graduate students and faculty from the biology, economics, engineering and sociology departments.

Moreover, interdisciplinary cooperation, from the beginning, has been a cornerstone of all educational planning for the programs in marine sciences, urban sciences and the Health Sciences Center, for both undergraduate and graduate studies.

A positive aspect of the approach, Dr. McKenna explains, is that it encourages faculty members to look outside their own departments, "which compensates for the tendency, in any large organization, to split into groups that don't communicate with each other."

There is no predicting the outcome of Stony Brook's interdisciplinary movement, says Dr. McKenna, who is on the arts and sciences curriculum committee.

"If the faculty and students keep coming up with new ideas," he says, "the door is always open. Who would have thought a while back that there would be an undergraduate major in environmental studies?" □

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