

This year marks the first IOTA workshop held in conjunction with our regular convention. Grant Moody and his committee for improvement of teaching have worked for several years to bring NACTA and the workshop together. Later, we will hear a report of this venture. Those who labored so long for this workshop should receive the sincere thanks of this entire membership. This IOTA function may well become a part of each conference.

We were asked to form liaison with the Weed Science Society of America at their annual meeting in Atlanta, Georgia. Dr. Harley Foutch represented NACTA and was appointed Liaison between these two organizations.

Personally, I am looking forward to a fine meeting here at this New York Agricultural and Technical College. Gasoline rationing and the many other activities at this time of year threaten to reduce the number of participants. I have a long list of members who have personally written that they are unable to be with us. NACTA has a loyal membership, one that realizes the importance of the improvement of teaching. My greatest regret as my year draws to a close is that even more of those connected with higher education cannot be in attendance. We must find methods to get NACTA's message to all those who should benefit from NACTA.

I would very much like to see State and Regional NACTA organizations move forward at a fast pace this next year. The strength of the national organization should be enhanced by strong state groups dedicated to NACTA principles. Most states have such groups now. Why not affiliate them with NACTA? Does this require a constitutional change? We already have regions within our national structure. Wouldn't regional meetings reach more people? As an example of the problems created by distance, we are not well represented this year from the West Coast. Definitely they should have a regional meeting this year.

Our Journal remains one of our biggest assets; are we using it to the best possible advantage? Let's have state and regional reports on improvement in teaching of agriculture. Why must all states grope separately for solutions to curricular and articulation problems when a common meeting ground is available – the Journal.

Our convention theme this year is Teaching Agriculture – Changing Concepts and New Dimensions. Let's put this theme to work in NACTA. Let's get more active participation by all members. Let's change some concepts and add new dimensions to help NACTA serve as it was intended to serve for all those who teach or are responsible for teaching agriculture in institutions of higher learning.

WHICH WAY TECHNICAL EDUCATION IN AGRICULTURE?¹

Walter J. Brooking

It is a special pleasure for me to be here this afternoon and have an opportunity to play a part in the beginning of your annual conference which this year addresses the general theme of changing concepts and new dimensions.

Major challenges in the fields of agriculture and natural resources are attaining greater visibility to increasing sectors of our population. One major area of concern is the supply and cost of food both here at home and worldwide. This concern is signaled in a number of ways. The recent awareness of cost of food, particularly meat and vegetables, has been the subject of television features, editorials, newspaper articles and considerable treatment by the media as well as being a personal concern to all of us. A major editorial in the Wall Street Journal on March 26th of this year deals with "The Somber World Food Outlook." The Sunday Business and Finance Section of the Washington Post, May 13, 1973, featured an article, "Fear of World Famine Easing, but the United States has Company in Food Mess." These are but two of many current references dealing with the Nation's and world's preoccupation with food supply.

A second major area of concern is that of maximizing the use of our farmland, our forests, ranges, coastlands, and marine resources to optimize their productivity while simultaneously providing the greatest recreational use; all within the context of improving our environment and conserving and improving our natural resources. This becomes more challenging because the steady march of technological development which has served our Nation so well, particularly in the agricultural and related fields, continues to bring about significant changes which reduce the number of persons involved in productive activity. This simultaneously increases the need for better educational preparation for those who serve agricultural production, processing, distribution and related activities.

The genesis and gradual growth of these major concerns are well known to most of you. You have been aware of the millions of acres of prime farmland removed from productivity for urban development, highways, air fields, and other non-agricultural purposes. This requires use of better and more demanding technological practice which will make less arable land more productive to meet the requirements for a booming national and world

population. Similarly, preoccupation with conservation of forest, range, and to some degree coastland and marine resources are well known to you. Perhaps what is significantly different now is that more and more of our people are beginning to be aware of these important matters and how they impact on each individual.

New Awareness Provides New Opportunities

This dawning concern and awareness, considered new by much of the general public, provides completely new dimensions and challenging new opportunities for agricultural schools and agricultural teachers. We as a Nation have tended to be complacent and to take for granted the fact that the American farmer stands preeminent in the entire world for production of food and fiber.

The superlative productive capability of the American agricultural producer was brought about as you well know by first researching and developing technology, and then through agricultural education in the public schools and the U.S. Department of Agriculture's adult instruction and leadership to implement proven technological practice on the farm. Agricultural college graduates who have served as professional agricultural workers in government, in agricultural industries, and as agricultural educators have been the moving force which brought about the scientific developments and changes in agricultural and related technological practice. This resulted in unparalleled productivity.

However, the new challenges and opportunities bring us to the question, "Which way technical education in agriculture?" Clearly, we must continue to do what we have done in the past; namely, continue to carry on the research in the colleges and universities of agriculture, prepare the professional leadership which will serve the public and educate the agricultural producers and related personnel, and to provide teachers who can provide agricultural and related education for those who most appropriately need it at all educational levels. This does not at first seem to indicate great change in the four year colleges and universities or in the concept of high school agricultural and related education. But there are some new requirements.

More and Better Prepared Technicians are Needed

There is the major challenge to prepare more and better technicians and similar specialists to serve the field of agriculture, conservation of natural resources and environmental control in 2-year post secondary programs which usually do not lead to baccalaureate degrees. This post secondary technical area of education needs to be expanded to meet the Nation's more complicated manpower needs in all major occupational fields. It is clear that the performance requirements of the present day agricultural production farmer and the supporting off-farm industries and services personnel require scientific and technical knowledge and skills which cannot be learned in depth in the usual high school program, but can be more efficiently and effectively learned beyond high school in an organized technical preparatory program than on the job.

Agricultural technician programs are not new. There are enough well established and operating exemplary programs to prepare agricultural technicians and related specialists to greatly simplify the problem of increasing the number of better prepared personnel required for the future.

SUNY Agricultural and Technical College, Cobleskill where we are meeting today, has been one of the leading experimenters and developers of effective and relevant two-year post high school agricultural and related technician preparation programs. As you know, they are not alone in the field. The many years of experimentation, development, and evaluation of programs at Cobleskill, the other New York State Agricultural and Technical Colleges, and in several other pioneering institutions in other states have demonstrated the effectiveness and validity of two-year post high school technician education for agricultural and related personnel.

New Curriculums and Growth

The Vocational Education Act of 1963 provided special support for post high school technician and specialist education by designating 15% of Part B Grants to States funds as a set-aside for post secondary programs. The U.S. Office of Education, Division of Vocational and Technical Education undertook to document several important and successful agricultural technology programs. Two-year post high school curriculums were subsequently published in the following fields:

- Agricultural Equipment Technology
- Farm Crop Production Technology
- Grain, Feed, Seed and Farm Supply Technology
- Food Processing Technology
- Forest Technology
- Ornamental Horticulture Technology

All of these are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

A similar guide is in preparation and will be available in a few months for Veterinary Science Technology. Draft copies have been distributed to the Supervisors of Agricultural Education in the State Departments of Education.

Post secondary agricultural preparatory programs supported by the Vocational Education Act of 1963 funds are reported to the Division of Vocational and Technical Education, U.S. Office of Education, and began to show significant growth starting with Fiscal Year 1965. Full-time enrollments were:

1965	2,054
1966	5,987
1967	8,092
1968	11,036
1969	15,816
1970	23,381
1971	28,418
1972	34,924

Considering that three to five years are required to plan, equip, staff and initiate a two-year post secondary program by enrolling and graduating its first class, a growth in enrolled students in agricultural and related technology programs from slightly over 2,000 to nearly 35,000 in seven years is significant. It represents one of the most dynamic growth rates in post secondary occupational education.

Details of this growth were recorded in the series of Directories of Technical Education Curriculums in Agriculture and Natural Resources in the U.S.A. started by Fred Wm. Manley in North Carolina; and continued in the Directories of Post Second-

ary Education in Agriculture, Agribusiness, Natural Resources and Environmental Occupations compiled by Maynard J. Iverson starting in 1970 at the Department of Agricultural Education. The Ohio State University and continued in 1971 and 1972 at the Agricultural Education Section, University of Kentucky. Mr. H. Neville Hunsicker, Program Officer, Agribusiness, Natural Resources and Environmental Education, Division of Vocational and Technical Education, U.S. Office of Education, Washington, D.C., assisted and cooperated with both Mr. Manley and Mr. Iverson in preparation and distribution of these Directories.

Mr. Iverson's Directories indicated that 48 states and Puerto Rico provided agricultural and related technology programs in 1972-73 in 401 separate institutions.

Agricultural and related technician programs represented in this recent growth include a variety of kinds of programs — some well known, and some relatively new and emerging. The following list includes most of the established programs:

- * Animal Science Technician
- * Livestock Production Technician
- * Dairy Production Technician
- * Poultry Technician (production)
- * Horseraising Technician
- * Small Laboratory Animal Care and Veterinarian's Assistant Technician
- * Fresh Water Fish Culture Technician
- * Plant Science Technician
- * Farm Crop Production Technician
- * Orchard and Vineyard Technician
- * Soil Reclamation and Conservation Technician
- * Ornamental Horticulture Technician
- * Floriculture Technician
- * Nursery Operation Technician
- * Turf Grass Management Technician
- * Arboriculture Technician
- * Landscape Development Technician
- * Agricultural Business Technician
- * Agricultural Chemicals Technicians
- * Pest Control and Extermination Technician
- * Agricultural Equipment Technician
- * Food Processing Technician
- * Grain, Feed, Seed, and Farm Supply Technician
- * Forest Technician
- * Wildlife and Conservation Technician
- * Park and Recreational Land Management Technician

Most of the foregoing are well developed and proven kinds of technician programs. Most will need to be enlarged and new ones started to provide needed personnel as technology marches on.

New and Emerging Programs

Some are relatively new and emerging: The small laboratory-animal care and veterinarian assistant technology programs serve both the medical research laboratories and pharmaceutical industries which require small animals, and provide trained assistants for veterinarians serving agricultural animal producers or in small animal hospitals. Many more excellent employment opportunities are available for graduates than can be filled by the few currently operating programs. Clearly, there is a growing need for more such programs.

Fresh-water fish culture is already a very large industry in the United States. This aquacultural development provides for greater utilization of streams and lakes (both natural and artificial) to produce food and recreation and can provide attractive business opportunities and employment for a growing number of people in rural areas. More programs should be available to prepare technicians for this growing field.

The fresh water fish culture technician program has a very important counterpart in an area of considerable importance to many states, oceanographic and marine technicians. There are already good programs, but very few of them, as follows:

- * Salt Water Marine Life Technology
- * Ocean Fishing and Fisheries Technology
- * Ocean Aquaculture Technology
- * Estuarine Technology

While there are many elements in common between the fresh water fish culture which includes fin fishes, crustaceans, and possibly shellfish, the potential for development in the salt water and tidewater aquacultural technology field is tremendously broader in its potential scope for National and world food production.

Much scientific research has been done in various phases of oceanographic and marine science but these fields have only recently become important enough to require a growing number of highly skilled technicians. The \$1 billion ocean fishing and related on-shore supply, processing and distributing industry is

the largest employer in the oceanographic and marine science fields. However, the United States ocean fishing industry has yet to apply the modern fishing technology used by other nations. Salt water fisheries research will continue and require specialized technicians. This will lead to commercial growth in salt water aquaculture. Aquaculture has not yet begun to be practiced in the ocean estuaries and along the shores as it must be to provide a significant source of food for our growing population. The modes of thinking and scientific development which will make aquaculture do for the oceans and tidewater areas what agricultural technology did for farm production are the same, and agricultural scientists and related specialists are almost certain to be involved. When real growth comes, and it could be relatively soon, many technicians will be needed.

These technologies can be especially interesting to agricultural schools and teachers even though national governmental leadership in the field has largely been outside of the agricultural area. Excellent descriptions of each of the agricultural, forest and marine technician career objectives are available in the J. G. Ferguson (Doubleday) book, "Career Opportunities for Agricultural, Forestry and Oceanographic Technicians." In addition, the names of the institutions which offer programs in each objective is listed. Howard Sidney was the editor of this important book.

Environmental and Ecological Considerations Relating to Agricultural Education

The agricultural community has always been close to the natural environment as well as to man-made environment affecting activities associated with agricultural production and related services. By the same token they have always been knowledgeable about biological science factors as they control or affect environmental and ecological balances. They therefore have an appreciation of the need for these biological factors to be emphasized in programs to educate people about environmental matters.

A broader understanding is needed that man is himself a living organism sharing the world's resources with all other living things in an interrelated community, where the tolerable limits and balances for survival are precariously narrow and delicate. Much of man's manipulation of his physical environment, both intentional and inadvertent, has been by the application of what he has discovered in the physical science and applied engineering. The agricultural scientist and engineer has also contributed in major ways in manipulating man's environment as it affects agriculture and related matters. It appears that a general acceptance of the idea that a greater awareness of the basic biological equations in our total environmental concerns will be needed to insure both survival of man and the increased advantages of further applications and modern technology.

These environmental considerations bring special challenges to agricultural colleges and teachers. The applied biological sciences in the field of agriculture, forest, and oceanography with all of their ramifications of utilizing, culturing, harvesting and conserving and recreationally enjoying natural resources represent another part of the environmental and ecological employment opportunity for technicians and similar specialists. There is a growing need for specialized conservation, recreation, and law enforcement personnel for shore and salt water areas; with their counterparts, the game wardens, forest and park rangers, and wildlife conservation and recreation related personnel for inland marine, forest, range and grassland areas. Technician programs are beginning to develop in these areas under names describing the function, but not as environmental technologies.

Recycling of agricultural wastes and rotation of crops to restore depleted chemicals from farm crop lands are well utilized scientific methods. Continued research and development of more sophisticated and more specialized processes in all fields of agriculture, however, will require an additional number of specialized technicians to manage the agricultural productive capability of the nation, to provide the food and fiber required, and to provide the maximum utilization of land resources consistent with a healthy and improving environment for the present and

future generations.

Continued progress in the development and use of agricultural chemicals and especially the use of nutrients and growth agents promises important technician occupational opportunities. Production of food by hydroponic and similar methods, and the reclamation of land by soil transplanting are examples of areas where agricultural technician know-how will contribute to productivity as well as conservation of natural resources. These technicians will influence environment and ecology. In most cases they will be specialists in some field related to agriculture rather than being labeled environmental technicians.

There are some exciting new programs in the marine life environmental and ecological fields which grew out of general biological or marine biological developments rather than agriculture. These programs have much in common with agricultural technologies. Knowledge gained from visiting such programs might be quite useful to agricultural college personnel and teachers interested in the preparation of specialized technicians in their own or related fields.

One outstanding example of such a program is the Estuarine Technology program to prepare technicians for employment in the study and control of pollution of rivers, streams and estuaries below high tidewater levels; and the surveying, conserving and protecting or assessing damage to marine life in such waters. This program is offered at Charles County Community College in LaPlata, Maryland and has evolved under the leadership of Professor Belva L. Jensen, Director, Division of Biological Sciences.

In addition to developing the program which has been highly successful in preparing estuarine technicians who find good jobs in their field of specialization, Professor Jensen has promoted a consortium arrangement with the Baltimore Junior Colleges to send their students to Charles County Community College for estuarine technician programs; and Charles County sends their associate degree nursing students and others desiring health technology preparation to Baltimore Junior Colleges. In this way, each Junior College has its own particular specialities and does not duplicate the other's programs.

Professor Jensen and her staff also provide environmental and ecological training programs for elementary and secondary teachers. Still another of their services is to provide the applied marine biology and related instruction to all Maryland marine police and shore patrol personnel, each of whom are required to complete organized instruction in these subjects at Charles County Community College as a part of their preparatory education for employment.

Growth Possible from Existing Programs

Many community colleges, technical institutes, or divisions of four-year colleges which have strong biology departments, a nursing program, or an agricultural program, will find that they already have a part of the staff and facilities required to start programs to meet employment needs in the environmental health, food processing control and inspection, rodent and insect control, and related sanitation fields. Such programs can be a natural outgrowth of the existing capabilities of the institution and are a logical extension into the environmental education field.

It is likely that increasing numbers of well-qualified technicians and specialists in these fields will be needed to respond to the requirements of recent legislation and greater demands for inspection, and testing of water, food, food processing and serving establishments, hospitals, and public and private institutions which house and feed people.

One example of a technician function which is directly related to an agricultural science technology is documented in the Veterinary Science Technology two-year Post High School Curriculum prepared under contract for U.S. Office of Education by SUNY Agricultural and Technical College at Delhi. It includes a meat inspection option which prepares technicians to be meat and poultry inspectors and to fill related governmental regulatory officer positions. (This publication is expected to be avail-

able from the Superintendent of Documents, U.S. Government Printing Office within the next few months).

Among the more subtle and perhaps less understood environmental factors are the effects of increased noise levels and the tensions and other problems which arise from intimate living and crowdedness in our cities, especially when a significant portion of that population has migrated from uncrowded rural areas and must adjust to supporting themselves and living in an urban center.

Ornamental horticulture, a technology which is an agricultural program unique to cities and their suburbs, is a growing technology and field of employment which significantly influences urban environment. The growing awareness of the need for open spaces in cities is bringing into focus the need for ornamental horticultural specialists to beautify and improve urban and suburban land. Centuries of practice of landscape development and beautification have shown that ground which is covered with grass, trees, hedges and flowers is cleaner, more stable, and less likely to be carelessly littered. Certainly it is more pleasant and restful to the eye than unplanted space. The green foliage also contributes to a better balance of carbon dioxide and oxygen in the atmosphere. Recent scientific discoveries show that trees provide at least a partial sound barrier for airport noises and for other sources of loud and disturbing sounds.

Preparation of Instructional Personnel

Very few institutions are providing specific and comprehensive programs to prepare the necessary instructors for 2-year post high school technician programs. Many four-year colleges and universities with schools of agriculture may have facilities and dormitory capability for housing students who may come from all over a state or region, and may have experimental farms and other facilities which would serve excellently to prepare agricultural technicians or similar specialists. Some offer such programs, but many, for policy or other reasons may not provide technician programs in their institution. However, it may well be that these agricultural schools could perform an even greater service to technician education by joining hands with other schools or divisions in their institution to prepare the specialized teachers and department heads required for technician programs.

Two elements of preparation are essential for technical specialty instructors or department heads in technician education programs.

The first element is an understanding of and belief in the philosophy of technical education, those rigorous programs requiring approximately two years to provide a working understanding of the underlying science and theory of the field combined with a practical "do" kind of experience which teaches related essential skills. It is a different philosophy from that of a baccalaureate program, and requires a different combination of theory with practice.

The second element is a thorough and up-to-date understanding of the science and practice which is taught in any particular technical specialty course in a technical program curriculum. It is these courses which make the technology different and unique from any other. They therefore must be taught by persons who are competent in those specialties. If the instructor cannot perform and does not completely understand what his technician students must know and be able to do he cannot be an effective instructor.

If our technician instructors and department heads do not demonstrate both of these elements, our programs are certain to be second or third rate. Thus technician teacher preparation is probably the most urgent need of all at this time.

A new kind of teacher preparation is rapidly emerging which is of great significance. It is the agriculture related teacher education services needed by elementary and middle school teachers to meet the requirements of the "career education" concept. They must be prepared to introduce all of our children to agricultural and related career opportunities so clearly that these careers can be comprehended and evaluated by all students be-

fore they reach high school. If elementary, middle school and early high school teachers really understand agricultural and related careers and can make them realistically clear to all of their students, the result will almost certainly be better prepared students who really are serious about agriculture related careers, and fewer students who wander into the field late and unprepared, only to find that they are in the wrong field. This kind of teacher preparation will be new to many agricultural colleges but will be urgently needed.

Collegiate general education or multidisciplinary teaching of agricultural and related environmental and ecological courses represents a third challenging opportunity in teacher preparation. This kind of preparation may well be initiated for already employed agriculture and related teachers on the staffs of post secondary two-year and four-year institutions, and also to non-agricultural instructors in the physical or biological sciences, or in the social sciences. Any or perhaps all of these instructors may already be, or will likely be, engaged in teaching collegiate environmental or ecological courses. If students who study these courses do not understand how agricultural science and technology affects the environment, our next generation of leaders will not have the comprehensive preparation they will need to effectively cope with the many natural resource conservation and environmental problems which promise to become more complicated with each new technological application.

In summary, the future beckons agricultural schools and teachers to (1) redouble their efforts to prepare more and better technicians in established agricultural and related fields; (2) to become more deeply involved in preparation of technicians and specialists in emerging agricultural, marine, environmental, recreational and resource conservation and utilization technologies; and (3) to provide better prepared and more specialized teachers for technician and specialist programs, for elementary middle school and junior high school agriculture and natural resources career education teachers, and for college staff members teaching courses in environmental and natural resource conservation and control. This route offers abundant challenges and promises of professional fulfillment and rewards for all who make the journey.

PUBLICATIONS — TECHNICAL EDUCATION

*OE-80009A	Electronic Technology (Revised) — A Suggested Two-Year Post-High School Curriculum — \$1.00
*OE-80019	Mechanical Technology — Design and Production — A Suggested Two-Year Post-High School Curriculum — \$.70
*OE-80031	Chemical Technology — A Suggested Two-Year Post-High School Curriculum — \$.75
*OE-80033	Instrumentation Technology — A Suggested Two-Year Post-High School Curriculum — \$.75
*OE-80037	Scientific and Technical Societies Pertinent to the Education of Technicians — \$.35
*OE-80041	Civil Technology — Highway and Structural Options — A Suggested Two-Year Post-High School Curriculum — \$.60
*OE-80049	Pretechnical Post-High School Programs — A Suggested Guide — \$.45
*OE-80054	Forest Technology — A Suggested Two-Year Post-High School Curriculum — \$1.25
*OE-80056	Criteria for Technician Education — A Suggested Guide — \$.45
*OE-80057	Water and Wastewater Technology — A Suggested Two-Year Post-High School Curriculum — \$1.50
*OE-81012	Metallurgical Technology — A Suggested Two-Year Post-High School Curriculum — \$1.25
*OE-81014	Grain, Feed, Seed, and Farm Supply Technology — A Suggested Two-Year Post-High School Curriculum — \$1.50
*OE-82016	Food Processing Technology — A Suggested Two-Year Post-High School Curriculum — \$.50
*OE-80062	Architectural and Building Technology — A Suggested Two-Year Post-High School Curriculum — \$1.50
*OE-87021	Child Care and Guidance — A Suggested Two-Year Post-High School Curriculum — \$.40
*OE-80063	Learning for Earning, New Opportunities for Pay Check Education — The Vocational Education Amendments of 1968 — \$.25
*OE-81015	Agricultural Equipment Technology — A Suggested Two-Year Post-High School Curriculum — \$1.25
*OE-81016	Farm Crop Production Technology — A Suggested Two-Year Post-High School Curriculum — \$1.50
*OE-80008-69	Vocational and Technical Education, Annual Report, Fiscal Year 1969 — \$1.25
*OE-81017	Ornamental Horticulture Technology — Suggested Two-Year Post-High School Curriculum — \$1.75
*OE-80068	Scientific Data Processing Technology — A Suggested Two-Year Post-High School Curriculum — \$1.00
** Free	The Vocational Education Amendments of 1968 — Reprint from American Education — December 1968-January 1969
** Free	How Can We Prepare More Instrumentation Technicians? — (April 1969)

- ** Free Education of Technicians for Water Conservation and Wastewater Control — (October 1969)
- ** Free Preparing Supportive Personnel for New and Emerging Technologies — (May 1970)
- ** Free Environmental Career Education to Meet the Nation's Manpower Needs — (May 1972)

¹ Presentation by Walter J. Brooking, Education Program Specialist, Post Secondary and Adult Occupational Programs Branch, Bureau of Occu-

pational and Adult Education, USOE, at the annual National Conference of the National Association of Colleges and Teachers of Agriculture at the State University of New York Agricultural and Technical College, Cobleskill, New York — June 13, 1973.

* May be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

** Free from the U.S. Office of Education, Technical Education Section, Post-Secondary and Adult Occupational Programs Branch/DVTE, Washington, D.C. 20202

THE EMPIRE STATE CAMPUS

Dr. James Hall, President

Empire State College, State University's non-residential Arts and Science College, was created to explore and develop alternative approaches of higher education, building upon the strengths and resources of the entire State University system. It is not meant to be a replication of present college systems.

Instead, Empire State College is a response by State University to provide greater access to students throughout the state who require flexibility in time, place and method of learning. The College attempts to be responsive to the human and social circumstances of persons, especially to the need for flexibility of time and place, so that those previously unable or unwilling to attend a campus regularly may be able to pursue an education.

To meet the educational needs and purposes of diverse students in a rapidly changing society, the College provides content, affording initiative to each student in planning a program of study fitted to his specific needs and purposes.

Finally, Empire State seeks methods to lower the per-student cost of higher education. Its aim is to lower costs in a non-campus situation to 50 or 60% of the per-student cost in conventional institutions of higher learning. The College will evaluate and utilize learning resources within a community including, for example, public libraries, theaters, laboratories, government and social agencies, as well as those resources already on established campuses of the State University and private colleges and universities throughout the State. Empire State College doesn't intend to duplicate existing learning resources and facilities.

In order to achieve these purposes Empire State College is in the process of developing five basic alternatives to the traditional classroom/lecture method of study. Any or all of these alternatives may be used to produce a suitable study plan for each student of the College.

1. The first and probably most adaptable alternative is the individually tailored study plan prepared between a student and faculty mentor. This mentorship mode requires a full-time core faculty, supplemented by a larger number of part-time adjunct specialists. The mentor helps students define their goals, plan a program of study which moves the student toward those goals, and evaluates the progress.
2. The second alternative is the program mode.

Students may select from a wide range of faculty prepared independent study materials, including modules especially developed by Empire State College. These materials, which include use of television and other media, provide highly flexible sequences of study for students who wish to work in this mode.

3. A third alternative encompasses the field studies or experiential aspects of learning. Many students incorporate prior learning gained through job or life experience through this modality. Travel, international studies, internships are all possible sources for learning.
4. Empire State College will offer yet another alternative — the SUNY degree. This is actually a composite or regional degree in which a student completes a degree at several different institutions. Empire State College will bring together a panel of faculty from these institutions which then approves the academic validity of the student's plan, and supervises its effective completion. Empire State College will provide the mechanism which recommends the student to the SUNY Board of Trustees for a degree.
5. Finally, the degree by examination alternative (external degree) is offered by the New York State Regents. Students can incorporate such examinations into their degree plans at Empire State College; conversely students who develop competencies through studies undertaken at Empire State College can apply the credit earned toward a Regent's degree. In this way the two New York State programs are fully complementary in providing the full range of educational alternatives to students.

Presently, there are five Regional Learning Centers within the State, located in Albany, Rochester, Manhattan, Saratoga Springs and Old Westbury. Learning Units, staffed by one or two administrators and clerical staff, have been established in Plattsburg, Purchase, Utica and Manhattan for students who wish to study through the use of learning modules, media and other learning materials being developed by the College. Empire State also has a Unit in London for those students who wish to pursue international studies.

The College has also developed several special purpose programs. A Center for Labor Studies, located in Manhattan, is designed to give an opportunity to working people, especially union members, to pursue an undergraduate education. New Models for Career Education, located in Rockland County, funded by the Kellogg Foundation, will provide new career ladders for students in business, engineering technologies, community services and allied health fields. Students will have the opportunity of studying religion as it relates to large city problems through a spe-

cial program by the Hazen Foundation in New York City. They may also take advantage of a fine arts program being run in cooperation with the Metropolitan Museum of New York.

In the 18 months that Empire State College has been in operation, enrollment has grown to 1,600 students; the age of the average student is in the middle thirties with a range from 17 to 72. Presently Learning Centers have a list of students waiting to enroll as mentors are able to accommodate them.

Entrance requirements are a high school diploma or its equivalent and the possession of a high degree of self initiative and motivation. To continue in good standing, students normally carry at least a half-course load. The experience has been that about half are enrolled on a part-time basis. Students also may include courses taken on a conventional campus.

Presently four degrees are offered, namely: Associate in Arts, Associate in Science, Bachelor of Arts and Bachelor of Science.

It is important to reemphasize that Empire State College is not a re-creation of already duplicated resources of persons and facilities, but a different approach to learning.

Empire State believes that education is not confined to the walls of a classroom, and that people learn and require education throughout their lives. Empire State College was created to provide a true alternative to traditional higher education for those students who are unable, or do not want, to attend classes in a traditional campus setting.

What Empire State College hopes to do is to put the College into the community where previously the student has been provided with a "community" with which to identify (the campus community). Now the town library becomes the college library; the area expert on whatever subject becomes a professor or tutor; the local museum becomes a research facility. In all, the community truly becomes the campus.