

does not eliminate poverty and that science can be destructive unless guided by worthy human values. The desire to uncover new scientific technology and apply it is so powerful that it appears to be in the saddle, driving mankind. The English novelist, E. M. Forster characterizes science as an independent force "that moves on, but not on our lines; that proceeds, but not to our goals." Part of the reason is that we have fragmented knowledge to gain specialization. In turn, the specialists are shackled by their exceptional competence and therefore most of them are unable to see, or perhaps choose to ignore, the side effects and broader consequences of their new technology. There is ample evidence that society at large is calling a halt to such an unbridled approach. An example is society's scotching of the supersonic passenger plane, over the loud protests of technologists and even of our government. The citizens said we don't need it. Technological degradation of our environment, the crush of automobiles, is part of a list that extends ad infinitum. More and more it will be recognized that we must guide technology rather than ride its comet tail.

In agricultural instruction we have the responsibility to help interpret our technology in relation to our needs for food, clothing, and shelter. It is not enough that an instructor shows how to produce a better crop, how to create a better machine that is inconsistent with larger goals. Each unit in the chain of influence must be analyzed with a systems approach. This means that each instructor and scientist must know his particular specialty and at the same time know where it fits into the overall scheme of our economy.

A Base for Higher Level of Excellence

Now as to the point regarding NACTA. I have reviewed prac-

tically all of the past journals. I am pleased with the improvement that has been made, but we still have a long way to go. We need more submissions of articles, and of higher quality. Some of the past issues obviously have used filler material such as the history of a particular university in order to flesh out the publication. That this was necessary is unfortunate. I believe that the journal primarily should consist of professional articles relating to instruction, and reports of research results supporting instructional procedures. We need to work harder on this, and we are ready to receive suggestions from members on what can be done. Quality is an elusive thing and unless we in NACTA insist on continuing high quality, we will not meet the lofty goals set for the organization, or serve our people.

Membership is growing, and this is a good sign. My unofficial count is 380 paying members in all categories, institution to individual. We hope it continues to grow, but there is much more to an organization than the counting of heads. Quality does not necessarily depend upon numbers. It seems to me that with all the resources of the institutions represented by memberships in NACTA that we have a great base from which to reach for even higher levels of excellence. I think this should be our major effort in the immediate years ahead.

References

1. Centra, John A., Student Instructional Report No. 2., Educational Testing Service, Princeton, New Jersey, 1972.
2. Toombs, William, Productivity and the Academy: The Current Condition, Center for the Study of Higher Education, Penn State University, Report No. 16, April 1972.

*Remarks by president-elect Jerome K. Pasto, The Pennsylvania State University, at the 19th Annual Convention of NACTA, June 13-15, 1973.

Facilities For Effective Instruction In Agricultural Technical Programs*

Howard Sidney.

Agricultural and Technical College – Cobleskill, N. Y.

A brief explanation of how our facilities have been developed and the bases for these facilities as related to our objectives is an appropriate introduction.

The six State Schools of Agriculture were authorized by the State Legislature in 1911, and were established to improve the art of farming and homemaking. In the decade following, the schools were built at Canton, Alfred, Farmingdale, Delhi, Morrisville, and Cobleskill, New York. The six Agricultural Schools operated independently, under the State Education Department, and offered short courses, and one and two year programs until 1948, when the State University of New York was formed. Since that time 72 State University units have come into operation in the state which include four university centers, 36 community colleges, the four-year colleges, and the six Agricultural and Technical Colleges.

The primary objective of the Agricultural and Technical Colleges is occupational education – preparing graduates for successful job entry after one or two years of instruction. A few of the program offerings are duplicated in more than one of these colleges, and some have different offerings

unique to the particular institution. These six colleges are enrolling approximately 3000 students in agricultural programs. The colleges are state financed, and coordinated through State University Central Administration.

SUNY Agricultural and Technical College at Cobleskill

In 1973-74 this college will enroll 2400 students in the instructional divisions of Business Administration, Food Service Administration, Nursery Education, General Education (Liberal Arts and Science Laboratory Technology), and the Division of Agriculture and Natural Resources.

Eight hundred students will be enrolled in the Division of Agriculture and Natural Resources in one of the 16 programs offered in the division. The 16 programs are administered in four departments: Animal Husbandry, Agricultural Engineering Technology, Agricultural Business, and Plant Sciences. Seven hundred fifty of the students will be enrolled in the Associate Applied Science degree programs, and from 50 to 60 students in the one-year occupational programs.

For the past seven years 25% to 35% of

the graduates have continued their education in four-year colleges, and 65% have been placed in positions related to their area of study.

The facilities here at Cobleskill have been planned and constructed with our first priority being effective instructional programs for the student in the Agricultural Technologies. It is essential that the physical plant be adequate for efficient conduct of the educational program in accordance with the objectives. In overall planning, consideration has been given to adequacy, effectiveness, maintenance, location, types of buildings, and provisions for classrooms, laboratories, offices, parking facilities, et cetera, to support the curriculums offered.

Designing a New Agricultural Campus

We were fortunate to be able to construct a new agricultural campus. This was intentionally located in close proximity to the dormitories, dining halls, classroom buildings, library, recreational and other facilities for the total instructional program. At the same time, consideration was given to having the agricultural campus at a convenient walking distance from these

facilities so that students could readily change from classes, laboratories, and have free access to all facilities every hour and day of the week.

We did not desire to have the large farm equipment and livestock in the center of the campus (which would be of some handicap in operating the library, dining halls, and facilities of this type).

Most of the programs to educate technicians, particularly in the agricultural field, require extensive and highly specialized laboratories. You will be able to see a few of these specialized laboratories today — such as our Meats Processing building, livestock housing, planned for student use; the nursery and arboretum to support the plant sciences; greenhouses with modern equipment; agricultural mechanics shops, all designed specifically for courses.

The facilities have been planned to provide the necessary elements of educational experience and exercises to meet the objectives of particular technical programs. It is essential that these laboratories meet high standards of quality, since the objectives and strengths of the programs lie in providing valid laboratory experiences, basic in nature, broad in variety, and intensive in practical experience. These laboratories must be well equipped to enable the students to perform laboratory work as required in each program.

The facilities are supported by this equipment so that students will have experiences which illustrate the functions and applications of principles using as wide a variety of components, devices, systems, procedures, and techniques as practical and consistent with what may be encountered by the graduates when they become employed. This is the reason you will observe, in our Animal Husbandry Department, for instance, two breeds of dairy cows, two types of silos, two milking systems, and other comparative equipment for student use.

The variety and quality of equipment in the facilities is more important than the quantity.

Laboratories Indispensable

The expensive laboratory equipment and facilities are a major element of the cost of such a program, but these facilities are indispensable if the training objectives are to be met. All the equipment you will observe on the campus has been selected by our faculty, technical specialists they have consulted, and people working in the industry. At the end of each instructional year, our faculty spends many hours selecting and buying laboratory equipment and they are directly involved in the maintenance, repair, and ordering of new equipment, therefore, the need of each item is well established before the purchase.

Expensive equipment is not always required; you will find that some apparatus has been constructed by faculty and students during instructional laboratories.

Student See and Do

During the instructional year the faculty places a high degree of emphasis on the basic underlying principles which serve as the reasons for applications in the field of study. This assists the student in developing an understanding of, as well as the skillful performance of, the techniques which are peculiar to that particular technology. This is the reason our students in Animal Husbandry in the Laboratory Techniques course have instruction and practice in the use of the milking parlor, the feeding equipment, and the operations in the care and management of the dairy, beef, or horse livestock, according to their program. This same principle is followed in teaching students how to operate and produce crops in the greenhouses, the nursery, and on the farm.

It is not enough to demonstrate the principles. In most cases the student must see and understand the principle as applied to the management of the farm, or whatever area he is studying in his technology.

Today you will observe our facilities by departmental arrangement, however, they are jointly used by faculty in all departments and there is a close cohesiveness between faculty in the departments and also in the division, as is necessary when sharing facilities, equipment, and enrolling students in courses in departments other than their own. This does require careful coordination, but works smoothly and successfully through regular meetings and planning with the department and division chairmen.

We have been fortunate in having new facilities constructed by the State University, with a budget for equipment to support the facilities and the programs. In addition to this, we have an annual budget for supplies and some equipment. There is a separate rental equipment budget which supports a considerable amount of the large equipment used in Agricultural Engineering and in the college farm operation. These funds are essential — to repair and replace equipment, to purchase new equipment, and to meet modifications and changes on an annual basis. A successful technical program in agriculture is dependent upon these kinds of laboratories and equipment.

Library

Just a word about the library. Even though it will not be included in our tour today — you might like to take time to visit this facility, since it is absolutely essential for technical education. The growth and success of the graduate technician will depend in a large measure on his ability to keep abreast of the changes in the field. After our graduates are employed they will be expected to obtain information for themselves without supervision, and therefore they must have experience in using a library.

A central library, under the direction of a professional librarian, contributes much

to the success of a teaching program. The library is, therefore, a part of the instructional facilities and the resources for our agricultural programs. How the library organizes its materials is probably less important than what it contains and how often and how well the materials are used.

The Head Librarian at this college has established a policy that one librarian sits in on all the divisional faculty meetings throughout the year. This has been mutually beneficial. It keeps the library personnel in close contact with curriculum changes, faculty ideas for new programs or changes in materials as they may affect the library. The library, as you will observe, contains scientific books, references, periodicals, publications of suppliers, journals — all which are pertinent to the technical field. Our faculty is requested each year to update references in their specialized fields, and to make recommendations to the librarian. This continuous preoccupation of the library staff and the teaching faculty adds strength to one of our important and necessary facilities.

Division of Agriculture and Natural Resources

The college owns over 500 acres of land. As our enrollment has increased we have purchased three farms adjoining the campus since 1952. Approximately 250 acres is in cultivated crops, hay and pasture land to support our agricultural programs. This acreage supports 170 head of livestock and also crop land which is used by our students studying agronomy. The Agricultural Engineering students use the farm as necessary in the operation and maintenance of farm machinery. The farm is also used in the Agricultural Business department for Farm Management studies and for a number of courses in the Plant Science Department.

Animal Husbandry Facilities

The dairy housing is of special construction, as designed by the faculty to support the instructional program. You will note two milking systems, two breeds of livestock, different methods of housing livestock, the manure handling system, two types of silos, and a variety of equipment as used on the modern dairy farm.

Since our horse program has expanded faster than anticipated, we do rent 16 stalls off campus at the local fairgrounds, and hope to correct this in the near future by constructing a building for equitation classes and additional horse housing.

Plant Science Department

Some of the facilities you will see will include the 11 greenhouses — again, a variety of construction, specialized laboratories for floral design, floral shop management, and laboratories and equipment to support the programs offered in the department. The Plant Science Department has also established an arboretum and a nursery and all of the flowers, shrubs, and

trees on the campus are maintained by the staff. This gives the faculty access to all of these plantings for the instructional program.

Agricultural Engineering Technology Department

The Agricultural Engineering building houses specialized laboratories for farm mechanics, farm machinery, and gas motors, diesel motors, a machinery shop, hydraulics, paint shop, welding laboratory, small gas engines laboratory, farm electricity, mechanical drawing and drafting room, and a locker room for student use.

Agricultural Business Department
The Agricultural Business program does

not require separate specialized laboratories. The Meat Processing building is the only specialized laboratory. The students do have available the Computer Science Center (for introduction to data processing), and the laboratories and classrooms on campus used for Business Administration and agricultural courses which are part of the Agricultural Business curriculum.

This tour will be only a birdseye view of the specialized laboratories at Cobleskill. Our faculty is always interested in improving our facilities and in keeping them up-to-date. There is a continuous on-going evaluation each year, and an opportunity for faculty to have input into maintaining our modern facilities. This is coordinated in each department through the depart-

ment chairmen, and a committee of the department chairmen and the division chairman. These people meet regularly and are constantly planning improvements. In some instances we have had to make compromises to obtain the facilities we have, and therefore have not always achieved the ultimate or the ideal. These compromises are acceptable if they are within the basic principles of providing the facilities necessary for instruction and at the same time recognizing the need to work to achieve and acquire the facilities and equipment necessary for effective teaching.

*Presented by Howard Sidney, Chairman, Division of Agriculture and Natural Resources, SUNY Agricultural and Technical College, Cobleskill, N.Y., at the 19th NACTA Convention, June 13-15, 1973.

ENSMINGER AWARD GOES TO DR. CAMPBELL OF MISSOURI



Dr. John R. Campbell, left, receives the coveted Ensminger-Interstate Distinguished Teacher Award from Anthony Razaitis, President of Interstate Printers and Publishers of Danville, Illinois. The presentation was made at the recent National Association of Colleges and Teachers of Agriculture (NACTA) convention held at State University of New York, Agricultural and Technical College at Cobleskill.

In addition to this award, Dr. Campbell was also named one of the 1973 NACTA Teaching Fellows.

Dr. John R. Campbell, a member of the faculty at the University of Missouri, was awarded the coveted Ensminger-Interstate Distinguished Teacher Award at the national convention of the National Association of Colleges and Teachers of Agriculture (NACTA) held in June at State University of New York, Agricultural and Technical College at Cobleskill. The award was presented to Dr. Campbell by Anthony Razaitis, President of Interstate Printers and Publishers, Danville, Illinois.

The Missouri professor was selected for the award for his outstanding qualities as an educator, a scholar, a counselor, an advisor, a gentleman and a faithful friend to many. From the beginning of his teaching career in 1958 as a graduate assistant in dairy husbandry at the University of Missouri, Dr. Campbell has distinguished himself by a close association with students and their activities. His philosophy is that mutual trust and understanding among students and teachers are basic to superior teaching and learning, and that teachers should understand their students as well as their subject matter if they are to relate successfully to student needs and interest.

Dr. Campbell's philosophy of teaching has been recorded for others in his book "In Touch with Students." One of his colleagues said of this book, "He wrote it, he believes in it, he practices it."

The Ensminger-Interstate Award was initiated by Dr. M. E. Ensminger, animal scientist, author, consultant, and professor. He is a distinguished professor at Wisconsin State University and founder of Consultant Agri-Services of Clovis, California. During his career in agricultural education, Dr. Ensminger has received many honors, included listing in American Men of Science, Leaders in American Science, and Who's Who in America. He has authored many articles, set up training schools, worked for the U.S. Department of Agriculture, and served on the faculty of Washington State University, University of Massachusetts, University of Minnesota, and Wisconsin State University.

Mrs. Ensminger acts as Dr. Ensminger's assistant in developing and carrying out his various endeavors.

The 1973 NACTA Fellows were also announced at the convention in Cobleskill. These went to: Ensminger Award winner Dr. John R. Campbell of the University of Missouri; Dr. Donald A. Emery, North Carolina State University; Professor Howard R. Bradley, Kansas State University; Dr. John A. Froseth, Washington State University; Professor William D. Treese, Northwest Missouri State University.