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Director of University Information: ARTHUR J. O'CONNOR

Editor: Robert G. Rubom

Associate Editors: John S. Lore, Hal Bateman, Joe B. Freeman

Class Notes Editors: Kay McBain, RoseMary Higginbottom

Cover Design/Art Direction Jani Mohr

University Printer: Lawrence J. Brink

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Our University

The forward thrust of Western Michigan University's academic growth is real, significant and relevant. Past issues of Western's Magazine have highlighted the growth and development of our programs in both specialized and general areas of subject matter. This issue concentrates attention on the areas of psychology and physics.

In the area of psychology, Western has undergone a dramatic change of emphasis in both its undergraduate and graduate offerings. This emphasis can best be characterized as one in which laboratory and research experience has become the center of focus in our teaching of psychology. Needless to say, the laboratory aspect is straining our existing facilities and will continue to do so until we can get adequate permanent physical facilities commensurate with the needs of our psychologists who are making their programs highly viable and exciting for the students.

In the area of physics, and this is within the broader context of the physical sciences, the visible and tangible signs of our thrust are most apparent. In the two-block area immediately west of Sangren Hall there is rising an $8 million Physical Science Building which is now halfway toward being ready for use. The six-story structure will house, in addition to our Department of Physics and its 12-million electron volt linear accelerator, our outstanding Mathematics Department, our expanded University Computer Center, and our fine Department of Geology.

Concurrently there is rising out of the ground a significant $4.5 million addition to McCracken Hall whose existing structure will be significantly remodeled and refurbished to accommodate both the expanding undergraduate and graduate programs of chemistry and paper and pulp technology.

The development of these physical structures is the urgent response that this University has had to make to the dramatic changes, over the past 10 or 15 years, in our expanding graduate offerings and the changes which have occurred in the mix of our student body. Few people in the state of Michigan are really aware that Western now has 63.6 per cent of its student body at the junior, senior and graduate levels, a fact which incidentally places Western third among institutions of higher education in Michigan.

Western is one of only two universities in the state that has more juniors and seniors enrolled than it has freshmen and sophomores—the other being the University of Michigan. Many people in the state of Michigan are unaware that Western is the fourth largest producer of degrees granted annually. We are granting annually 1,500 more degrees than the fifth institution in Michigan and only a few hundred fewer degrees than the third institution in the state.

These changes have not occurred overnight. They have been going on for the past dozen years and they indicate why this institution must insist upon equity in its legislative appropriation if it is to fulfill its role as a Twentieth Century university serving the needs of southwest Michigan, the state of Michigan and the nation.

We can take justifiable pride in the fact that we are now at the stage where brick and mortar and equipment needs of the physical sciences, notably chemistry, physics, mathematics and geology, will soon be commensurate with the outstanding faculties which are being gathered in these disciplines and the fine student body which is enrolled in these areas. The psychologists have physical needs no less real than the physical scientists, and these needs will have to be presented most vigorously and with persuasive arguments in both Lansing and Washington.

We can take some measure of satisfaction in the progress being made to acquire the basic needs of our physical science area. Needs, however, in other areas are equally great and very real. The solution to these needs will require the best efforts of all of us.

James W. Miller
by larry oppliger

A physics department is sometimes compared to a gas since both will expand until they completely fill their containers. The Western Michigan University Physics Department is no exception. The present quarters in McCracken Hall are filled and the Physics Department is planning its expansion into quarters in the new Physical Science Building now under construction. In addition to the enlarged and improved quarters, the department will obtain new equipment needed for its expanding research programs in the areas of atomic spectroscopy, solid state physics and nuclear physics. The single largest and most expensive item is an accelerator which will be used by the nuclear physics group. The accelerator will be housed in a basement facility adjacent to the main Physical Science Building.

ROLE OF ACCELERATOR
Why is an accelerator useful in the study of the nucleus and how is it used? Before answering these questions, it might be profitable to review what is known about the atom and its core, the nucleus. The diameter of an atom is very small, only about $10^{-8}$ cm (0.00000001 cm). These small objects might be considered the "building blocks of nature" since all matter is composed of atoms. However, the atom itself is built up of small parts, neutrons, protons, and electrons. The nucleus forms the central core of the atom and is composed of protons which have a positive charge and neutrons which have no charge. It is surrounded by electrons which have a negative charge. In a normal atom there are equal numbers of protons and electrons. Since proton and electron charges are the same size, but differ in sign, a normal atom is electrically neutral.

Quite a bit is known about the motion of the electrons around the nucleus. It was early realized that the electrons are held in place in the atom by an electrical force which attracts them to the nucleus. In general, charged particles having different signs of charge are attracted and those having the same sign are repelled.

Investigation of the electrons in atoms has also revealed that only certain discrete energy states are allowed. Or in other words, the electrons in the atom can have only certain energies. One can promote the electrons from lower to higher energy states by putting energy into the atom. The energy required to excite the atom or to promote the electrons to higher energy states is relatively small: 1-1000 electron volt. The electron volt, (eV), is a unit of energy equal to the energy acquired by an electron when it falls through an electric potential of one volt. An electron volt is extremely small by ordinary standards. For example, a million billion electron volts will lift a typical college professor only about 0.0001 cm. You can see that college professors are hard to budge, at least with a few electron volts!

A great deal has been learned about atoms and the force holding the electrons in the atom by studying how these electron states are excited when energy is put into the atom and by studying how the atom gets rid of the energy when the electrons go back to the lower energy states. At present our understanding of the atom, exclusive of the nucleus, is quite complete and, specifically, the force which binds the electrons to the nucleus is well understood.

However, regarding the nucleus of the atom our knowledge and understanding is less complete. It is known that the neutrons and protons in the nucleus are bound together very strongly, but the force which is responsible for this binding is not understood. It is clear that there are discrete energy states of the nucleus just as there are discrete energy states for the electrons in the atom. However, because the forces holding the neutrons and protons together are strong, the energy required to excite these states is large, of the order of one million electron volts (1 MeV), or more than one thousand times the energy required to excite the electron energy states. So if one wants to study the nuclear forces by studying the excited energy states and how they...
A proton is repelled by the positive charge on the sphere.

At the ground end electrons are removed from the belt leaving it with a positive charge. The belt carries this charge up to the dome where it is deposited. This method of charging produces an exceptionally stable voltage and, therefore, has found wide use in accelerator application. Such accelerators are called Van de Graaff accelerators after the man who developed this charging method. It was also found that there is little discharge or leakage of charge if the dome is placed in a large tank and surrounded with dry air (or nitrogen) at pressures of 100-200 psi. And since the protons could not travel far through the high pressure air, an evacuated insulated tube is needed to provide a path for them.

DESCRIPTION OF ACCELERATOR

A simple way to accelerate protons is to utilize the fact that they are charged and, therefore, are attracted to or repelled from other charges. For example, if a proton were placed near a large amount of positive charge located on a sphere (or dome, in accelerator terminology) as shown above, it would be repelled and would move away increasing its speed. If the charge on the sphere corresponds to a potential $V$ above ground potential, the proton would have an energy of $V$ eV when it arrived at ground potential. Therefore, to increase the proton energy to 1 MeV one must have a potential of one million volts on the dome. Of course, there are non-trivial details such as: 1) How does one place the charge on the dome and insulate the dome to prevent sparking and discharge? 2) How does one obtain the proton to place near the dome? 3) What sort of path must be provided so the protons can move from the dome to the ground? Specifically, since the new WMU accelerator utilizes the basic principle outlined above to accelerate protons, how are these problems solved in it?

The method used for charging the dome was developed in the 1930's. An insulated conveyor-like belt runs from ground potential to inside the dome as shown above.

At the ground end electrons are removed from the belt leaving it with a positive charge. The belt carries this charge up to the dome where it is deposited. This method of charging produces an exceptionally stable voltage and, therefore, has found wide use in accelerator application. Such accelerators are called Van de Graaff accelerators after the man who developed this charging method. It was also found that there is little discharge or leakage of charge if the dome is placed in a large tank and surrounded with dry air (or nitrogen) at pressures of 100-200 psi. And since the protons could not travel far through the high pressure air, an evacuated insulated tube is needed to provide a path for them.

Obtaining the protons is relatively simple. The simplest atom, hydrogen, consists of one proton (the nucleus) and one electron. A positive hydrogen ion, that is a proton, is obtained by removing the electron. Since the energy required is relatively small, this can be accomplished quite easily in a number of ways. If such a proton source were placed within the dome, the protons produced would be repelled from the dome and emerge from the machine with an energy corresponding to the potential $V$ on the dome. Machines such as this have been used since the late 1930's and have produced proton energies up to about 7 MeV.

About 10 years ago a tandem Van de Graaff accelerator was developed. As the name implies, a belt is used to charge the dome. But the dome potential is used twice to accelerate the protons and, therefore, protons having higher energies became available for experimental use. It is a tandem Van de Graaff such as this that Western Michigan University has purchased from the High Voltage Engineering Corporation.

By studying the picture which depicts the WMU accelerator facility one can understand how the tandem uses the dome potential to accelerate the protons twice. The trick is to use a negative hydrogen ion, that is,
A schematic picture of a Van de Graaff accelerator showing the positive dome, the charging belt, the pressure tank, and the evacuated accelerating tube.

A proton with two electrons instead of only one!

If one ionizes hydrogen to produce protons as described above and then allows the protons to pass through hydrogen gas at a low pressure, there is a good chance that some protons will pick up two electrons. The ion will then have a net negative charge.

These negative ions are guided into the low energy end of the accelerator which is at ground potential. The ions are attracted to the dome which is at a positive potential of $V$ volts. When the ions arrive at the dome, they have an energy of $V$ eV. At the dome these energetic ions pass through a small amount of gas and now since the ion is moving very fast there is a good chance that both electrons will be stripped off, leaving only protons. These protons will be repelled from the positive dome and will move down to ground potential at the high energy end of the accelerator. When the protons leave the accelerator, they will have an energy of $2V$ eV. So if the dome potential is 6 million volts, the protons will have an energy of 12 MeV.

The protons then move through a 90$^\circ$ analyzing magnet. For a given magnetic field setting only protons of a certain energy will be bent through 90$^\circ$ by this magnet and, therefore, pass through the exit slits of the magnet. Changing the magnetic field setting allows protons of another energy to pass through the slits. These energy analyzed protons then go to the switching magnet which directs them to the chosen target station in the target room.

The Western Michigan accelerator will accelerate protons up to energies of 12 MeV (about 30,000 miles per second) with an energy spread of about 0.002 MeV. It is anticipated that the beam intensity will correspond to a current of a few microamperes. In addition to protons the WMU tandem will be able to accelerate deuterons (heavy hydrogen nuclei) and heavy ions such as oxygen. Later modifications of the ion source are planned which will allow alpha particles (helium nuclei) to be accelerated.

While there is no danger of explosion with this accelerator, there are certain radiation hazards which exist when the accelerator is running. For this reason the entire facility is located underground with sufficient shielding so that no radiation hazard will exist on the ground above the facility. In addition there are thick concrete walls which will protect personnel operating the accelerator from radiation produced in the machine and target rooms. An interlock system will turn off the accelerator if anyone opens gates into the target or machine rooms.

**USE OF ACCELERATOR**

How does one use this beam of energetic protons to investigate the nucleus and the nuclear forces? When the protons impinge on a target located in the experimental area and collide with the nucleus of a target atom or pass sufficiently close to the nucleus of a target atom some interaction will occur. This may result in the proton being scattered through some angle or it may result in the proton being absorbed by the nucleus and, therefore, exciting it. The nucleus may then decay and give up its energy by emission of a proton or possibly by any other means. This may be by emission of a gamma ray, a neutron, an alpha particle or some other combination of neutrons and protons. If one knew completely the nature of the forces acting between the incident proton and the neutrons and protons of the target nucleus one could calculate, at least in principle, what sort of scattering or reaction cross sections to expect. That is, one could calculate how many protons would be scattered to various angles and how many particles of various types would be emitted at various angles. Of course, even if one knew the nature of these forces it seems clear that they are so complex that these calculations could not be done exactly. Anyway since the
The new WMU accelerator facility.

forces involved are not well understood one must, more or less, work backwards. That is, one must measure as accurately as possible these scattering and reaction processes and then try to extract information from these data about the forces which produce them. Hopefully if this is done for a large variety of incident particles at a large range of energies and for many different targets, one can eventually reach a good understanding of nuclear forces.

Of course, a lot of experimental equipment is needed in addition to the accelerator. Some of this equipment will be purchased and some special items will be designed and constructed at Western Michigan University. In reality the accelerator is only a small part of the equipment and apparatus needed in the study of nuclear physics.

One item which should increase the scope of experiments possible is a fast digital computer which will be used "on-line" with the accelerator. The computer will sort and collect data from the experimental stations and, at least to a small degree, analyze this data. More extensive analysis will be performed using the larger IBM 360/50 university computer which will be housed in the Physical Science Building.

In October, 1968 the large tank was lowered into place in the accelerator facility and in this sense the installation began. It is anticipated that the assembly of the accelerator and the beam handling system can begin in March of 1969. If the projected schedule is followed, the accelerator should be operating by the fall of 1969 and the experimental program can begin. This accelerator, complemented by the computer facilities, will give Western Michigan University a fine, modern nuclear physics research facility. One which should make a meaningful contribution in the field of nuclear physics.

Article by DR. LARRY OPPLIGER, associate professor of physics at Western Michigan University, who has been a Department of Physics faculty member since 1963.
It is a tragedy of our times that research is so widely attacked as a luxury item among public expenditures. Yet research is the main road to knowledge.

No doubt a number of development projects can be deferred. But it is symptomatic of our times that research is so often singled out as the low priority national activity.

For the first time in the world's history scientific understanding opens the possibility of a bountiful life for all the planet's inhabitants. For the first time the people of the world understand enough of our place on this planet and its place in the universe to appreciate the absolute necessity of living as one world in peace together. Yet the temper of the times is symbolized by comrade Kruschev, hammering with his shoe on his desk at the U.N. Even here in Kalamazoo, some of your own voters seem to have been more interested in the shoes of our presidential candidates than their programs. It is time we switched the emphasis, from feet to heads.

The human head is a much neglected resource. The intellectual capabilities of the human race are extraordinary if only we will develop them and use them. What we have learned about our universe, our more immediate environment and about ourselves has fundamentally altered our philosophical attitudes. We see ourselves in true perspective. We know the heights to which man's intellect can rise, and know that all men and women—given access to quality education—can share in the enrichment of this understanding. Let me take you for a moment into the heady world of astrophysics and cosmology to give you an example.

Scientific inquiry in the field of astronomy has taken us from a primitive anthropomorphic view of the universe to a glimpse of the very dawn of creation itself. The galaxies comprising the universe appear to be rushing from one another in a general expansion. The more distant the galaxy, the more shifted to redder colors is its light, and the higher its apparent speed away from us. Since nature rigorously obeys the rule that no object can move with a speed faster than that of light, we calculate a theoretical radius for the universe. At this prodigious but quite definite distance the astronomical bodies would be rushing away at speeds approaching that of light itself. No object could have reached such a distance more quickly. Therefore this distance must be the very edge of the universe that can ever be known to us.

Two mysteries then present themselves. With powerful enough telescopes we can imagine observing objects out to this ultimate distance and thus see all the way to the limits of the knowable universe. Is it meaningful to speculate on the nature of a primordial void beyond? And turning inward, if all matter is rushing apart, did it come from a point in space, a moment in time? Was there truly a beginning to the universe? A time when there was no past, only future? Is this cosmological beginning only theoretical speculation too, like the universe's edge? Or can we actually find evidence that will permit members of the human race on this insignificant planet to experience the extent and the origin of his existence?

The most important epoch on the earth since man first emerged as a creature distinctly superior in capability to other creatures is now beginning to occur. For the first time man no longer exists in a terrestrial environment whose nature is determined solely by causes independent of man's own presence. The human race is no longer a small perturbation on his habitat. In a very local sense this has been true since man first burned the fields near his den to flush out the game. But the isolated impact of local human habitation would relax back to the natural order in sufficient time after man moved elsewhere. Throughout human history, islands of human civilization have spread their influence on the world in all directions as though distances were unlimited.

But now man has no place left to go. When we gaze off into the distance we realize that we are beginning to see the backs of our own heads. The human ecosphere is a spherical shell. It is closed. Our human and natural
environments are interlocked. The world can no longer be separated into the physical, the biological and the human. We must consider them collectively.

Consider the scale of human activity. There will soon be 10 billion people on earth. Each one must eat a couple of thousand calories a day; each of us as we metabolize our food dissipates about 100 watts of heat energy. Thus human beings are putting out through their own bodies—never mind their machines—one million megawatts of power. This energy comes from the food we eat, which in turn ultimately derives its energy content from the sun. But the sunlight falling on the earth’s arable land is only about 20,000 times greater than this million megawatts.

When you consider the great inefficiency with which solar energy is converted into plant and animal material, and this material is made available to man as food, you realize the scale of influence that the human population is exerting on his world. If, in addition, you realize that advanced societies use solar power, fossil fuels and now uranium power at per capita levels of 10 to 20 times the power expended by the human and animal populations, you realize that we are forever committed to dependence not just on the new energy arriving each day from the sun, but on consuming the resources and energy stored for us in the earth over hundreds of millions of years. But for the discovery of nuclear fission power, a world energy crisis would inevitably follow.

Now let us consider a more serious question, the capability of the world to feed an expanding population. Present population trends in the underdeveloped world prove that even with relatively optimistic extensions of present efforts at population control, two consequences will ensue. First, the food requirements of the population in the 1970’s and 1980’s cannot be much reduced by birth control programs. Adults eat more than children; the young adults of 1989 are being born this year. Second, the population increase in the period 25 to 50 years from now will defy any conceivable efforts to feed it unless dramatic improvements in population control are effected in the next decade. Medical science, social psychology, effective organization and both cultural and political leadership will be required to avert a situation for which famine and war are the only alternatives.

But that is just the beginning of the problem, not the end. We can predict population in the less developed countries through the 1980’s and the attendant food requirements. We can also predict the world’s productivity for food of all kinds. I ask you to imagine that the United States and other developed countries are willing to live off exactly the same amount of food per person as the poorest peasant of India or Brazil. Also please imagine that all the food produced in the world can be distributed uniformly among all the people—something our transportation systems are quite incapable of today. Now let’s look into the future as food supplies grow but population grows faster. Some day the food available for each person in the world will drop to a marginal 1,500 calories per day, a semi-starvation level. When do you think that will happen?
One authoritative prediction came out 1984. The children of the young married among you will be teenagers then. Unless we solve the world food problem, long before we see the results from necessary efforts to control population, the choice of famine or war will again have to be faced.

But the food problem too can be solved. It will require not only our best intentions and a lot of our wealth. It will require our best brains and call for ingenuity and inventiveness. We must increase the per acre productivity of agriculture in underdeveloped countries by a factor of 10. To do this will require a reasonable level of industrialization of these countries to produce investment capital. For fertilizer and pesticide factories must be built, distribution systems set up. Science will have to develop appropriate new strains of food plants that can benefit from intensive agricultural practice under the local environmental conditions. Possibly chemistry can find economical means to produce edible protein synthetically. And people who have for centuries grown food only for themselves and satisfied their minimum external needs by barter will have to adapt to a semi-industrialized money economy, for they must have credit to buy seed, fertilizer and pesticides, and they must market their products to provide food for the workers in the industrial sector.

All this will require a tremendous educational effort. A cultural revolution must be brought about. Hopefully it will be done as nearly in the context of the cultural traditions of the people as possible. But there is no alternative to cultural revolution. The only choice is Mao Tse Tung's way or a better way we and the people of the underdeveloped world must invent.

Can it be done? Not without major help from the U.S. and other wealthy nations.

Will we do it?

In the present national mood the prospects are very discouraging. And it is far from clear that our universities have the strength and support to organize themselves for the technical demands of such a task. Worries about the narrow professionalism of our academic disciplines are real enough. Physical scientists are widely regarded, though unfairly I think, as turning their backs on human problems to amuse themselves with their gadgets in the laboratory. You know the old saw about how to tell a physicist from a little boy? You ask him the price of his toys.

And the social scientist is still struggling to develop his techniques so that the results of his studies can have demonstrable validity apart from the subjective judgment of the individual.

But just around the corner is an intellectual revolution that can, if we meet the challenge, transform the academic pigeon loft of today into a new unified approach to understanding the human ecosphere from all its aspects, physical, biological and social.

Let me give you a few examples of what I mean, by discussing the effect of deprivation of the development of a species. We are accustomed to identifying members of cultural groups by many of their attributes. The members of the Ceylonese population are "Ceylonese" because of things that happen to almost all Ceylonese infants in the first few months of life. Environmental shapes the adult-to-be not only through cultural influences, but through biochemical ones. Thus there is convincing evidence in animal studies and strong evidence with humans that extreme protein deficiency, such as prevails in thousands of Indian villages, permanently and irreversibly impairs intelligence. Less well established is the suggestion that in the first few weeks of life proximity to the virus content of filth builds up in the infant defense mechanisms against selected amino acids, the lack of which may permanently limit capacity.

Thus the very desire and capability of a deprived population to lift itself from deprivation to a tolerable and even pleasant existence may be affected by such circumstances. And one begins to see that physical environment, culture, and human capability are intertwined and must be studied as a single system.

These are examples of problems, on a global scale, that demand our attention now with considerable urgency. Forged from a melting pot of nationalities and races, our country is truly a representative of the families of man. Much of our vitality undoubtedly derives from this diversity. That we have not solved our own problems of racial minorities, and of our deteriorating physical environment, is intolerable. We have expected our poor to pull themselves up by their bootstraps. First we must give them the boots. But we have the capacity to do so and at the same time to turn to the vastly greater poverty problem that girdles the equatorial belt of the globe.

At the same time we are rebuilding our own society so it can function in harmonious equality, we should be able to accept our international responsibilities in the face of world poverty and population problems, problems that both mirror and overshadow our domestic crises and threaten the survival of man more than any other danger.

Provision of the kind of society, the quality of life, to which mankind is entitled, a society that lies within our reach, will require not only new dedication but a new approach to intellectual endeavors. All our scientific, analytical and human skills must be brought to bear in an integrated effort, focusing both on man's own intellectual development and on the improvement of the ecological conditions for human survival.

At the heart of the effort is research and education at all levels, in all nations and for all ages.

The fierce and urgent need for action now to ensure the survival of a viable human society is our challenge.

The prepared mind and dedicated spirit, for ourselves and especially for those whom we may be privileged to teach, these are our armaments.

The world family of man living together in a manner worthy of an intellect which grasps the mysteries of the universe and a spirit aware of the need for compassion—this is our goal.
A familiar dial, similar to the one on an ordinary telephone, enables language students at Western Michigan University to obtain instantly a course lesson in any one of six foreign languages. A new language laboratory, recently installed in W.M.U.'s Brown Hall, is the end result of three years of planning and an integral part of the foreign language program at Western. Although the Department of Modern and Classical Languages has utilized a forty-eight position audio active language laboratory for the past five years, this is the first time students have been able to record their responses and play them back for comparison and evaluation.

The dial access laboratory can accommodate forty-two students in individual booths, each equipped with a telephone type dial, a headphone for listening and speaking and buttons for operating their own recorder.

*Article by JAMES YZENBAARD, a 1968 WMU graduate, who is now Director of the University of Kentucky's Language Laboratory.*
To select any one of the sixty-four programs available at one time, the student dials a code number, activating a program tape recorder in another room. The recorder plays the lesson into the student's earphone. By pushing the "record" button in his booth, the student starts his own machine, recording both the master program and his own responses. At appropriate pauses in the lesson, the student recites into his microphone and hears and records his voice through the earphone as it would sound to another person.

At the end of the lesson the master program recorder automatically rewinds itself and is prepared for another student. The student then pushes his rewind button and winds back his recorded tape. He then pushes "play" after his meter tells him that his tape has rewound itself and is in position to function at his command. After the student has pushed "play," he hears both the master program and his own responses. The machine is now his to stop, play, rewind, and wind at his command.

Each of the student booths is connected with a master console located between the dial access record laboratory and the audio active laboratory. The console provides monitoring of students, communication with individual students or groups, and it may direct special material to any or all booths. Eight classrooms on the fourth floor of Brown Hall are equipped with dials and may receive over a loudspeaker any of the programmed material from the sixty-four program sources. Communication with the main console is also possible via the handset located on the dials in these rooms.

The bulk of the electronic equipment is located in a little room 200 feet away from the language laboratories. Here the memory bank, testing unit, student recorders, and program machines may operate without any supervision. Directly across the hall from the language laboratories are the studios, tape library, audio visual equipment, maintenance room, and office of the laboratory director.

An outstanding feature of these laboratories is that only one assistant must be present whenever the laboratory is in operation. In addition, the studios are designed to promote local production of language material, with the arrangement for the tapes providing great flexibility. Some of the tapes will be purchased with lessons already composed on them; others, specifically programmed to what instructors want at a specific time, will be made by members of the language department and native speakers.

The laboratories are open a total of fifty-two hours per week during which all of the sixty-four different programs may be received. The audio active laboratory is used for review lessons, special cultural material, and long tapes of a specialized nature.

Operating in conjunction with the language laboratories is the Multiple Audio Distribution System which provides programmed lesson material to the various dormitories on the West Campus. The entire system is designed for the expansion of function and number of programs at any time, without obsoleting previous installations, and for future addition of remote video displays selected by the same dial system.
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The position of the behaviorist in 1968 is an interesting one. His basic tenet is that all psychological issues can be expressed in terms of behavior. The concepts of behaviorism are so profound as to change man's entire psychological self-image. Man is resisting this, much as he resisted Darwin's notions of the biological nature of man and much as he resisted Galileo's notions of the nature of the universe.

At first glance, a behavioristic position seems to oversimplify excessively the psychology of man; it seems to leave too much that is human out of consideration altogether. Unfortunately, the way one understands creativity, love, art, and thinking from a behavioristic point of view is clear only after long and thoughtful exploration and consideration.

The approaches recommended by the behaviorist for the solution of many of man's problems seem inhumane much as such notions as vaccination and surgery did to our forebearers. It is difficult to avoid a culturally determined reaction to a superficially understood behaviorism; it is equally difficult to give up our most cherished beliefs about the nature of man. It will be a long time before behaviorism is accepted by the general public.

In the meantime, behaviorists will continue to apply their techniques to solve those human problems which are behavioral in nature. Behavioral approaches are being developed in all areas of human relations; business, music, industry, art, even politics.

Article by DR. RICHARD W. MALOTT, Associate Professor of Psychology, a native of Indiana who obtained his undergraduate degree from Indiana University and pursued his graduate study at Columbia University. After teaching at Denison University he came to Western to participate in the development of the unique program which he has described herein.
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An improved team and one of the best home schedules in history highlight the Western Michigan University baseball picture this spring.

"We could be better than last year," said head coach Bill Chambers, who posted a 17-11-1 record in his first season as head coach in 1968. "We'll have better pitching, both in depth and talent. Our biggest question mark will be the double play combination."

Chambers has nine lettermen returning including lefthanded pitcher Ken Bratherton of Livonia, who was named to the all-conference team last spring. Other standouts returning include catcher Dan Benoit, infielders Marc Hari and Eric Munther, outfielders Dal Mackie, Dave Shoemake and John Schlukebir and pitchers Marty Schlerch, Dick McKeon and John Pasierb.

The schedule is more demanding this season since, under a new conference rule, teams will play three games during a weekend of league playing, including a single game on Friday and a doubleheader on Saturday. After a spring training trip to Florida, the Broncos will start on a regular season schedule that includes 21 home games. with the first 14 at home. Such a schedule demands plenty of pitchers and Chambers feels he has them.

Besides the returning veterans, two new additions who should help are righthander Joe Hubbard, back from the service, and righthander Rich Weinrich, a transfer from Grand Rapids Junior College.

Among the top sophomore prospects are righthanded pitcher Mike Yesh, infielders Tim Locke and Harry Shaughnessy, outfielder Scott Kemple and catcher Ray Larsen.

The top losses from last season were shortstop Jim Redmon and second baseman Pat Locanto along with outfielder Marty Barski, who led the team in hitting. Redmon had a year of eligibility left but signed a pro baseball contract last summer, while Locanto has graduated.

The top losses among the pitchers are John Mayer, who had a 5-1 record, and Chuck Mestek, who was 4-1.

The Broncos finished second in the conference last season and should once again be a contender although defending champion Ohio University has most of its players returning.

WMU’s May 12 game with Northern Ill. will be a night affair, played at Kalamazoo’s Sutherland Field. WMU’s first home night game, shown here, was also played at Sutherland Field, in May 1964, against Michigan State.
tennis

Varsity tennis at Western Michigan University has entered a rebuilding period.

For years, the Broncos were a perennial contender for the Mid-American Conference title and placed second last year but prospects aren’t as bright this season.

"It’s a rebuilding year," said head coach Ray Sorensen. "We don't have the depth we've had in the past. We'll be battling for third place in the conference."

Only three lettermen return but one of them is junior Bill Richards of Sturgis, who won the league title in number six singles and combined with Norm Werner, now graduated, to win the number three doubles title.

Jack Sartore of Berwyn, Ill., also is back while Mike Wilson of Kalamazoo has rejoined the team after lettering two seasons ago. Sartore was second in the number two singles at the league meet.

1969 TENNIS SCHEDULE

Mar. 29 at Ball State
Apr. 9 TOLEDO*
11 NORTHERN ILLINOIS
17 NORTHWESTERN
21 Davidson (at Davidson, N. C.)
22 Belmont Abbey (at Davidson, N. C.)
23 Pfeiffer College (at Pfeiffer, N. C.)
25 at Miami*
26 at Bowling Green*
29 MICHIGAN STATE
30 at Michigan
May 3 OHIO UNIV.*
5 at Notre Dame
9 at Northwestern
10 SOUTHERN ILLINOIS
12 MARSHALL*
17 KENT STATE*
23-24 MAC CONFERENCE*
*Mid-American Meets

basketball

A second-division finish again seems in prospect for the Western Michigan University golf team.

Last season the Broncos compiled a 4-9 dual meet record and placed sixth in the Mid-American Conference.

"We'll finish in about the same position in the conference," said head coach George Hobbs. "We have no team depth although we do have two outstanding golfers in Timo Kilpelainen and Steve Eckert."

Both Kilpelainen, a Farmington senior, and Eckert, a senior from Benton Harbor, lettered last season and Kilpelainen was named to the all-conference team after taking second in the league meet.

Kilpelainen averaged 73.2 strokes for the season while Eckert had a 74.5 average. The only other letterman returning is Bill Fuller of Lansing, whose best round last season was a 73.
Ten new Western Michigan University Alumni Association directors have been named to terms expiring Dec. 31, 1970 and Dec. 31, 1971. Four of them are presidential appointees of Alumni Association president Barbara Bird.

Elected to terms which expire Dec. 31, 1971, were Robert B. Burns '41, Harry Contos, Jr. '50, Charles D. Miller '58, Robert J. Noga '63, Mrs. Phyllis Streidl '42, and Dr. Frederic B. Zook '61.

Presidential appointees to terms expiring Dec. 31, 1970 are Rev. John F. Mangrum '43 and Thomas L. Reece '64, and to terms expiring Dec. 31, 1971 are Sterling L. Breed '55 (MA '58) and Carl M. Oelrich '47.

Meet the New Directors

ROBERT B. BURNS '41 of Grand Rapids is a Judge in the Court of Appeals at Grand Rapids as well as a member of the Grand Rapids Bar Association. He holds a bachelor of laws degree from Wayne State. He and his wife, Corrine (Walsh), who attended WMU, are the parents of three children.

HARRY CONTOS, JR. '50 is a Kalamazoo attorney who is active in the Kalamazoo YMCA and the Catholic Social Services agency at Kalamazoo. He and his wife, Rose Marie, are the parents of four children.

CHARLES D. MILLER '58 is a State Farm Insurance Co. agent at Kalamazoo. A member of the Kalamazoo Life Underwriters Assoc., he started and was president of the Milwaukee Area Alumni Assoc. of WMU. He and his wife, Doris, a 1959 WMU grad, have two children.

ROBERT J. NOGA '63 is circulation manager of the *Ypsilanti Press*, Michigan newspaper. While a WMU student he was an Alpha Kappa Psi, business fraternity, member. He's married to the former Kathleen Griffith.

MRS. PHYLLIS STREIDL '42, a housewife and mother of eight, is a public library trustee and active in church work. Her husband is Jack Streidl, former Bronco grid star and longtime Plainwell High School football coach. Her mother, Carmeleta (Barton) Miller, a 1908 Western grad, and twin daughters, Diana and Cynthia, 1967 grads, with her round out three generations of Western alumnae.

DR. FREDERIC B. ZOOK '61 (MA '64) is Dean of Students at Ottawa University, Ottawa, Kas. His wife, Constance (Foglesong) is a 1963 WMU grad. At WMU Dr. Zook was Student Council president and the student speaker at the inauguration of Dr. James W. Miller as WMU President.

REV. JOHN F. MANGRUM '43 is an Episcopal priest at Tampa, Fla. He received a divinity degree at Berkeley Divinity School, New Haven, Conn. His wife, Shirley (Stahelin) is a Western grad.

THOMAS L. REECE '64 is marketing manager for Ronningen-Petter Co., Kalamazoo. He and his wife, Sandra (Miller), a WMU alumna, have one daughter. He was a member of the Bigelow Hall house council at WMU.

STERLING L. BREED '55 (MA '58) is academic counseling coordinator in WMU's Counseling Bureau, which he joined in 1956 as a counselor. He is an associate professor at WMU. His wife, Betty (Hansen) is a WMU alumna. They have one son.

CARL M. OELRICH '47 of Pomona, Calif., is a California area director in the Wage and Hour Division, U.S. Dept. of Labor. He and his wife, Margaret (Malmborg) a 1949 WMU grad, have a son Oelrich holds an MA in guidance and personnel (Univ. Mich.).
A FACE IN THE STADIUM CROWD BECAME MISS MID-AMERICAN CONFERENCE CENTENNIAL FOOTBALL QUEEN FOR 1969

WMU'S CINDY DEMAREST

Miss M.A.C. Centennial Football Queen, Cindy Demarest, a Western Michigan University junior from Quincy, is reigning in conjunction with the 100th anniversary of football this year. She appeared on national TV at the Notre Dame-Southern Cal. grid game in Los Angeles in December with the more than a dozen other queen contestants and also appeared on the Joey Bishop TV show.

Cindy, of course, was WMU's 1968 Homecoming Queen.

Five WMU Alumnae Nominated As Outstanding Young Women

Included among those listed in the latest annual issue of "Outstanding Young Women of America" are five who were nominated by the Western Michigan University Alumni Association. The program, sponsored by the Outstanding Americans Foundation, is designed to recognize the abilities of young women between the ages of 21 and 35.

WMU alumnae nominated include Rosalie Amman '66 of Ferndale, Karen S. Knoska '64 of Kalamazoo, Judith A. Rohm '62 of Whitehall, Mrs. Georgiana (Lewis) Shinn '54 of Michigan City, Ind., and Pamela Silverwood '66 of Washington, D.C.

The young women selected for the compilation are "in the tradition of women who combine the best virtues of vision, vitality, and personal strength. These young women leaders are lighting the way for more and more truly developed women of tomorrow." Selection guide lines include unselfish service to others, charitable activities, community service, professional excellence, business advancement, and civic and professional recognition.

The foundation will select one "Outstanding Young Woman of the Year" for each of the 50 states from this list.
'16 - '39

Dr. Homer Stryker '16, a retired Kalamazoo orthopedic surgeon and an inventor of aids for the handicapped, was one of six persons receiving presidential citations in early November, 1968, for helping the handicapped.

Pearl Ford '25 this winter was honored with inclusion in the current edition of Who's Who in American Education, after previously having been listed in Who's Who in the Midwest and in American Men of Science. Miss Ford, who served on Western's faculty as a mathematics and science teacher 1925-49, before then was a teacher in rural schools in Calhoun county 14 years and principal of the Urbandale school near Battle Creek four years.

Dr. Richard D. Evans '31, concluded a teaching career which spanned nearly 40 years with his retirement as superintendent of the Melvindale-Northern Allen Park School District in late November.

Dr. Alvin D. Loving, Sr. '31, professor of education at the University of Michigan has been added to the nine-member Board of Editorial Consultants for the PHI DELTA KAPPAN, newsletter of the professional fraternity for men in education. Dr. Loving is active in many state and national programs for the improvement of educational opportunities for minority groups.

Ronald Bennette Myers, Sr. '31, has left Technicolor Motion Picture Division after 22 years of service in Hollywood.

Wallace J. Gatherer '33, was promoted to U. S. manager of Zurich Insurance Co., Chicago, and president of its three affiliates.

Louis Hunsberger '34, is now the business manager for the Lansing Symphony Orchestra.

George MacDonald '34, retired principal of Roosevelt Elementary School, Kalamazoo, has been named to the Kalamazoo Valley Intermediate School District Board of Education.

Jacob A. Solin '35, was promoted to dean of instruction at Gogebic Community College in October.

Delmar J. Proctor '36, is the new general chairman of the executive committee of the National Safety Council's meat packing, tanning and leather products section for 1969, at the Fort Wayne Peter Eckrich & Sons plant.

Thomas S. Hall '38, who joined American Oil Co. in 1938, has been made business supervisor for the western region of that firm, in Salt Lake City, Utah.

Frank Hall '47, with 20 years experience in new-paper and advertising work to his credit, has formed his own advertising agency, HPH, with two partners in Grand Rapids.

Harold M. Thrapp '47, is now the executive director of the Tuberculosis Society of Columbus and Franklin County, Ohio.

Robert W. Wright '47, was recently appointed controller of the Brazos Oil and Gas Division of the Dow Chemical Co.

Dr. Richard L. Cutler '49, former University of Michigan vice president for student affairs, became the U. of M's special assistant for urban affairs, August 1, in a move to create a focal point for urban development research on campus. Dr. Cutler has been at the University of Michigan since 1954, coming from a position at the University of California at Berkeley.

John D. Fowle '49, was named to the administrative assistantship, business management division, Midland Public Schools, beginning January 13.

George A. Momany '49, is now director of Salary Administration for the U. S. area, Dow Chemical Company. Formerly serving with Dow International in Zurich, Switzerland, for three years, he has been with the firm since 1954.

'40 - '45

Irene Scovell Miner '40, author of five books for children, has had her volume "First Book of the Earth" translated into Japanese. First published 10 years ago, it was also translated into Spanish, and is enjoying renewed sales in Japan.

Howard Thompson '40, past president of the Jackson County Heart Society, received an award in December from the Jackson County Medical Society, citing his "outstanding contributions to community health."

Leone H. Weber '41, was recently appointed director of the Creative Arts Room of University Center at Central Michigan University.

Col. Donald E. Martin '42, recently retired from the United States Air Force and now a professor at St. Louis University, was awarded the Legion of Merit for exceptionally meritorious service from June, 1963, to July, 1968, at Scott AFB, Illinois.

Dr. Lawrence R. Dawson, Jr. '43, is now English department chairman, School of Liberal Arts and Sciences, Central Michigan University.

Kenneth W. Gordon '43, was promoted at International Harvester, to chief engineer, axles and transmissions, product engineering.

Robert S. Perry '44 (MA '57), has been named administrative assistant to the executive vice president of American Seating Co. He will co-ordinate activities for the Grand Rapids Division and the Universal Bleaching Co., a Champaign, Ill., subsidiary.

Leonard L. Westdale '44, was recently named "Dealer of the Year" by the Grand Rapids Real Estate Board. He organized his own firm in Grand Rapids in 1956, and has served in executive capacity on several real estate boards.

'46 - '49

John C. Hoekje '46 was elected secretary-treasurer of the Federation of State Associations of Independent Colleges at a Pittsburgh, Pa. meeting of the group this fall. He is currently employed as president of the Association of Independent Colleges and Universities of Michigan, with headquarters at Lansing. There are 25 colleges and universities in the Michigan organization, which Hoekje has headed since March, 1967.

Ben Almany, Jr. '47, has recently been promoted to Safety Planning Associate, Safety Director's Office, Ford Motor Co.

'50 - '54

James H. C. Duncan '50, was recently named chairman of the Nazareth College Advisory Board, for a one-year term. He is presently vice president of First National Bank & Trust Co., Kalamazoo.

James N. Heathcote '50, a mathematics instructor in St. Joseph for the past 17 years, was made principal of St. Joseph High School this past fall.

John H. Toornman, Jr., '50, joined the Internal Auditing section of the Office and Finance unit of the Upjohn Co., Kalamazoo, in December.

William Alman '51, was selected to direct the Delton Kellogg Schools' community High School program initiated in November by a grant from the Mott Foundation of Flint.

Gerald P. Falardeau '51 (M.A. '55), assistant principal for counseling at Lowell (Flint) School, is now deputy principal of Bryant Junior High there.

Kenneth D. Arend '52, has been appointed manager of range sales at the Gibson Refrigerator Sales Corp., Greenville.

Richard C. Higg's M.A. '53, former principal of Allegan High School, has been hired as principal of Portage Northern High School.

Al Mallory '53, accepted the post of vocational director-consultant for the
Max E. Matson '55 (M.A. '57), is serving as the new senior high school principal for Albion.

Dr. Lois A. Nelson M.A. '55, represented Western Michigan University at the October 5 inauguration of the president of Edgewood College, Madison, Wisc. Dr. Nelson is involved with the speech and hearing clinic at the University of Wisconsin.

John C. Wattles '55, has been named president of the board of directors of Lakeside Boys and Girls Residence, Kalamazoo, a private agency providing residential care for children with emotional or behavioral problems.

Walter Dowdy '56, effective January 16, was appointed director of special programs at Kalamazoo Valley Community College, giving him responsibility for administration of student financial aid programs, and increasing opportunity for disadvantaged students. He had been a case work supervisor with the Kalamazoo Juvenile Court.

'57 - '58

Thomas R. Gaspke '57, began his duties in October as an assistant vice-president of the People's Bank of Alpena.

Dr. Theodore E. Hagadone M.A. '57, is the superintendent of schools for the Huron Valley Schools, Pontiac. Dr. Hagadone began his duties with the fall opening of school.

Gerald T. Klein '57, (M.A. '61), has been named to the faculty of Olivet College this year as an assistant professor of physical education.

Albert J. Klosterman '57, has been elected president of the Michigan Tobacco & Candy Distributors and Vendors Association.

Floyd J. Mattheyusen M.A. '57, Coloma High School government teacher and testing program head, has been listed in the 1968 edition of "Who's Who in the Midwest United States and Canada."

Thomas C. McLennan '57, has been appointed manager of the casualty, surety and property section of the international department at Actna Life & Casualty, Hartford, Conn.

Harold Leep '58, was appointed to the staff of the Christian Counseling Service, Holland. He is assistant field representative for the Michigan Department of Social Services.

Ronald R. McNally '58, is currently secondary principal of the Litchfield Community Schools, a position he assumed in late August.

Earl Phillips '58, is the new vocational director for the Utica Community Schools since his appointment in August.

Dr. Irving Shapiro '58, is the Director of the Center for Communicative Disorders at Harbor General Hospital, Torrence, California.

'59 - '61

John E. Daley '59, was recently named associate director of the Community Services Council in Kalamazoo.

Revd. Kenneth G. Johnson '59, has been installed as pastor of the Immanuel Lutheran Church in Allegan.

R. H. Jones '59, received a promotion to executive assistant to the director of marketing for Georgia-Pacific's printing paper division, with headquarters at Stamford, Conn. He had been the midwest sales representative for G-P's Paper Division operations.

Revd. Arthur D. Jackson '60, is the new pastor of the Westgate United Methodist Church, Comstock Park, Mich.

John H. Peruzze '60 (M.A. '66), was recently promoted from guidance director for the Harper Creek Community Schools, to principal of Sonoma Elementary School, in the same system.

LeRoy R. Porter, Jr. '60, who joined the Buick Motor Co. in 1961, was named in October to assistant superintendent of quality control in the Flint plant.

Lee R. Purzy '60, who has worked at the First National Bank of Kalamazoo the last eight years, is now assistant vice president for marketing at National Bank of Jackson.
Mal Pearson '50 (M.A. '55), former WMU grid star, has been named head football coach at Wheaton (III.) College. Pearson had been an assistant on the Crusader staff the last three years and before that coached a dozen years at Manistee and Battle Creek Lakeview High Schools.

Frederick C. Mischke '58 has been appointed treasurer of the Skyline Corp., a national leader in mobile home construction, sectional housing, and recreational vehicles, after serving as assistant treasurer since 1966. He joined the firm in 1965 as internal auditor. A native of St. Joseph, Mischke is a C.P.A. His wife, Kathleen, is also a 1958 WMU grad.

James A. Stevens '60, a staff member at Harper Creek High School since 1960, is now assistant principal at the school.

Frank A. Stone M.A. '60, has received his doctorate from Boston University and is now teaching education courses at the University of Connecticut. From 1960-66 he was at Tarsus College, Tarsus, Turkey.

Warren L. Wade '60, formerly at Goble's, recently became high school principal for the Pinckney Community Schools.

Arlen D. White '60 has taken the number two position on the staff of the Jackson Metropolitan Area Regional Planning Commission, accepting the post in early December.

Eldon W. Battsbaugh, Jr. '61 (M.B.A. '64), passed the state bar examination in Michigan in past December, and is associated with a St. Joseph attorney.

Larry Campbell '61, a former Niles resident, is in Santiago, Chile, working on space observatory OAO (orbiting astronomical observatory), which is scheduled for a 480-mile orbit around the earth.

Kenneth C. Clay '61, has been appointed cashier for the Peoples Community Bank of Three Rivers.

Arvin L. Davis '61, has been named as an assistant Kalamazoo County prosecutor. He formerly was associated with a Kalamazoo law firm.

Sam Evans '61, has joined the instructional faculty of the State Technical Institute and Rehabilitation Center, Pine Lake, Mich.

Ronald Ferris '61, a faculty member at Northville High School in Grand Rapids since 1961, is now assistant principal and athletic director.

Rev. Noah J. Funk '61, is serving as the new pastor for the Church of the Nazarene in East Tawas.

Tony Lauricella '61, has joined the staff at New Buffalo school and is head of the Social Studies Department.

Martha Nichols '61, represented Western at the October 5 inauguration of the president of the College of St. Benedict, St. Joseph, Minnesota. She is manager of the Grocery Products Division, Ann Pillsbury Consumer Service Center, Pillsbury Co., Minneapolis.

Richard Ramthun '61, is using his past experience as an educator in his new duties as a teacher and principal at Immanuel Lutheran School, Bridgman, Mich.

Paul Rundio '61, was recently made assistant principal of Warren High School. He was previously principal of an Ottawa Lake high school for two years.

Jerry H. Bergmans (M.A. '66) is now the elementary principal of the Sparta Area Schools.

Bob Bolton (M.A. '63), former athletic director and basketball coach at Judson College in Elgin, Ill., is now principal at Britton-Macon School, near Adrian.

Mrs. Jeannie Budszen was one of 33 trainees who graduated from Vista Training at the University of Oregon and is now spending one year as a volunteer working in Glide, Oregon, with the Wolf Creek Job Corps Center. She taught school in Midland for 14 years, retiring in 1967.

Richard A. DeWitt, formerly employed in advertising, is now a sales representative for Lakey Foundry Corp., Muskegon.

Gerrit Lamain, formerly vocal music instructor at Forest Hills (Grand Rapids) High School, is now at Creston High School in the same city as choir director.

Richard MacKeller is now an aviation mechanics instructor in a new program at Western Michigan Community College, Dowagiac.

David W. Olgren recently received a promotion with the Ford Motor Co., to Material Control Manager, in Shreveport, Louisiana.

Robert L. Tymoonly has been promoted from teacher to assistant principal for students at Flint Central High School this year.

Chuck Follett has been recently appointed vice president for marketing at Detroit Moline Homes Corp., St. Louis, Mich., where he has worked for the past seven years.

Daniel H. French joined the Dowagiac law firm of Saitz and Cobb, becoming a full partner. He received his law degree from the Detroit College of Law.

William A. Griffiths, currently at American National Bank & Trust, Kalamazoo, was recently elected trust investment officer for the bank.

William E. Jackson is now the executive director of Harambee, Inc., a nonprofit housing, redevelopment and rehabilitation corporation in Pontiac. Jackson also earned a Juris Doctor degree from Howard University in Washington, D. C., last June. Before enrolling at Howard University, Jackson taught at a junior high school in Pontiac. In his present post, he is in charge of all organizational activities and staff members of Harambee.

'R63

Ramon D. Johnson '63 was recently promoted to the rank of captain in the U.S. Marine Corps as Brig. Gen. Charles F. Widdecke, Director of Marine Corps Reserve, Washington, D.C., pins on Capt. Johnson's new bars. A Vietnam veteran, Capt. Johnson holds the Vietnamese Cross of Gallantry, one of that country's highest decorations. He's a South Haven native.

Edgar J. Blair recently joined the staff at Salesian High School in Detroit as varsity basketball and junior varsity football coach. He is also teaching physical education and history.

George E. Colyer (M.A. '65) is coordinator of special education in the Department of Teacher Education at West Georgia College, Carrollton, Georgia.

Mrs. Claude (Thurza) Cowlies has retired from the St. Joseph School System after 18 years of service, ten of them at St. Joseph.

Ken Freehling teaches world history and is head coach and athletic director at New Buffalo High School this year.

Fred Hannapel, former assistant advertising manager for the Brown Co.'s service products division, Kalamazoo, is now vice president and director of client services for Ad Art and Design Productions, Kalamazoo.

John D. Hasty, Jr. last fall began the practice of law in Roscommon County.

Dr. Richard L. Norris has been added to the staff of the St. Clair Community College as director of research and development.

Thomas P. Wilbur presently an educational research consultant in Michigan's State Department of Education has received his Doctor of Education degree at the Teacher's College, Columbia University.

Russell E. Vannatta '46 has been named to the newly created position of vice president for marketing by the Mead Corp., Dayton, Ohio. A Mead employee since 1946, he has risen from the position of draftsman through the executive ranks of the firm.
'64

Arthur E. Auer in a November appointment became program consultant with the Michigan Tuberculosis and Respiratory Disease Association, Lansing. He was formerly associated with Dairy Technics, of Sarasota, Florida.

Mrs. Pamela Hodge represented Western Michigan University at the November inauguration of the president of the University of New Mexico. Mrs. Hodge is an elementary teacher in Albuquerque.

Edwin A. Johnson (M.A.) represented Western at the November dedication of the Gellerse Engineering-Mathematics Center and the Modern Foreign Language Building at Valparaiso University, Indiana.

David Kaufman is now a machine technology instructor at Glen Oaks Community College, Centreville.

Robert Keicher received a master's degree at Indiana University and is now in his first year as a math instructor at Delta College near Bay City.

Garry L. Kieft was awarded the coveted Chartered Life Underwriter designation at the national conferment exercises of American College of Life Underwriters in Philadelphia last fall. He has his own agency in Spring Lake.

Carl W. Kuerser is now assistant personnel manager of the Hastings Division of the E. W. Bliss Co., Hastings. Lt. Jerry L. Letcher last fall received the Bronze Star for heroic action in early 1968 under enemy fire while serving with the Navy in Vietnam.

James G. Liika (M.A.) became principal of the Hillsdale Community Schools this school year, moving from a position at the Galesburg-Augusta schools.

Mrs. Joseph H. Markert last fall assumed new duties as executive director of the Kokomo (Indiana) Young Women's Christian Association.

Terence G. McCarthy received a January promotion to director of sales promotion in the American United Life Insurance Company's Indianapolis, Indiana home office.

Captain David L. Peebles of the U.S.A.F. received the Bronze Star for meritorious service as Base Disaster Preparations Officer of the 35th Combat Support Group in Vietnam, where he served March, 1967 through January, 1968.

'65

H. Eugene Bennett joined the staff of Lansing's City Attorney, Michael Cavanagh, in November.

John J. Castillo (M.A. '67) was awarded a full three-year scholarship to study law at the University of Denver College of Law. The scholarship is sponsored by the Ford Foundation and the Council of Legal Education Opportunity, Inc. (CLEO).

William G. Clark, (M.A.) a 16-year veteran of Brown Co., Kalamazoo, was appointed manager of accounting services December 21.

Marge DeForest is teaching in the area of special education with a class of six deaf youngsters from areas around Constantine, in a pioneer program at Riverside Elementary School.

Kelin H. Dickinson received his bachelor of law degree from the Harvard Law School last June.

Herbert E. Everts has been promoted to administrative assistant to the sales manager of the Allied Brands Division, part of the Tire Division of Uniroyal, Inc., New York City.

William C. Fox recently joined the Kalamazoo City Personnel Department as a personnel technician, following three years in the Army and another year in Vietnam, near Saigon.

Kenneth A. Schimmpfeneg (M.A.) began his eighth year in the Battle Creek school system with his new position as principal at the Urbandale Elementary School.

Dr. Terry TenBrink an assistant professor in the Psychology Department of the University of Missouri, received his doctorate in December from Michigan State University.

Jon Van Emst has been promoted at American National Bank of Kalamazoo to assistant trust Officer.

Raymond Voorhees is the new vocal music teacher at Fenton High School.

2nd Lt. Wylie B. Douglas is currently serving with the U.S. Marines in Quantic, Va. He graduated with a doctorate of laws degree from the John Marshall Law School, Chicago, in Feb. '68, and was admitted to the practice of law in Illinois.

Robert W. Waddington '64 has been named director of their radio and television department by McLain Advertising, Inc. of Kalamazoo. After graduation from WMU he studied at Michigan State Univ. under a federal grant to examine educational broadcasting. He then worked on the staff of the Educational Broadcasting Department for the Waterford Township Schools before entering commercial radio in Portage, Mich. He also gained experience at WOOD-TV, Grand Rapids, Mich.

Jerry C. Gephart is now an instructor in the Department of Speech and Theater at the University of Wyoming.

J. David Gernant recently received his bachelor of law degree from Harvard Law School, and is now a Vista Volunteer working with the Office of Economic Opportunity in Anchorage, Alaska.

Ned T. Jackson (M.A.) is currently on a one-year appointment as a visiting lecturer in the Department of Special Education with the rank of assistant professor at Illinois State University. He had been an orientation and mobility specialist at the Illinois Braille and Sight Saving School, Jacksonville.

Kenneth K. Kannejieter recently released from the Army, is teaching the second term at Albion Public Schools as a secondary school teacher.

Gabriella K. Kinsolving has graduated with a master's degree in social work from Simmons College, Boston, Mass.

Rev. John R. Kirkman, ordained into the Episcopal ministry this past summer, is curate of the Church of St. Mary the Blessed Virgin in Falmouth, Maine. His wife also graduated in '63, and is teaching in Falmouth.

Daniel R. Kunizer has joined the Chicago firm of Hurdman and Cranston, certified public accountants.

James J. Mason '65, was appointed assistant cashier for the Hackley Union National Bank and Trust Co., Muskegon, this past summer.

Charles Patrick Ryan was awarded his doctor of veterinary medicine degree with honors December 7 from Michigan State University.

Victor Schug (M.A. '67) worked this past summer with the migrant program under the Office of Economic Opportunity in Michigan, and now is principal of the Squires Elementary School, Casopolis.

Marianne Sfreddo was recently elected secretary of the Detroit Area Council on World Affairs' young adult committee. The council was organized to seek facts about the United States' international commitments.

Capt. Richard A. Sperling received recognition for extraordinary bravery while flying a helicopter near Duc To, South Vietnam, by being awarded the Distinguished Service Cross in October.

David K. Stephayn, elected to fill a vacancy on the Lawton school board, will serve until June. He is a project engineer for Auto Specialties Mfg. Co., St. Joseph.

W. Ted Tyler, is now a vice president of the Hackley Union National Bank & Trust Co., Muskegon.
Barry Aspenleiter (M.A.) has been appointed head football coach at Petoskey High School.

Laurence Benjamin, received a promotion to branch manager of the Spring Arbor Bank.

Capt. Stephen J. Cloud is a special forces "Green Beret" officer, on his third tour in Vietnam. He has received numerous awards including the Silver Star, Bronze Star, and Purple Heart while serving there.

William J. Cullen has been commissioned an Army 2nd lieutenant.

Gordon J. Dahm (M.A. 68) is a guidance counselor for Lake Michigan college in Benton Harbor.

Shari Essen is a Trans World Airlines' Hostess assigned to San Francisco Airport.

Speo. 4 Terry L. Gage '66, was awarded the Bronze Star for heroism in Vietnam under fire when he crossed an open area to administer first aid to a wounded Marine.

Frederick E. Klein (M.A. a teacher for six years, has been appointed principal of the Brownlee Park School, Battle Creek.

Patrick Laughlin was named a Legislative Fellow to do research for committees and members of the Michigan legislature, Lansing.

Nicholas R. Ledetle, Jr. is a 2nd lieutenant in the U.S. Air Force.

William L. Locke (M.A.) is a speech pathologist in the rehabilitation unit of the Battle Creek Sanitarium.

Capt. David W. Noyes was recently awarded the Silver Star for heroism in Vietnam as a Marine platoon commander under enemy fire.

Daniel E. Pellegrum played a key role in the 4th Annual New York Congress for Mental Health Oct. 5; he was on a panel discussion following presentations of papers. He is president of his class at Union Theological Seminary.

Mrs. Margaret E. Pontoni (M.A. 68), is teaching commercial courses at Kellogg Community College, Battle Creek.

Calvin Riser (M.A.) is principal of the Laingsburg Elementary School.

Dennis Rogers (M.B.A.) received a scholarship in the Department of Management, University of Cincinnati's College of Business Administration in December.


Mavis L. Walker, a community developer and associate director for the Douglas Community Center, Kalamazoo, was named director of the center in November.

Robert L. Willett, Jr. (M.B.A.) is a vice-president of the Peoples State Bank of Alpena, appointed in November.

Roger Leland Carr is a propulsion and flight instructor at LeTourneau College, Longview, Texas.

Capt. Rodney V. Cox, Jr. (M.A.) was decorated for bravery by the Air Force with the Silver Star, for service as a navigator in Vietnam.

David Ellerby has a graduate assistantship in art at the University of Cincinnati, where he is in the fine arts, painting, M.A. program. Ellerby has exhibited his works in the Kalamazoo area on numerous occasions.

Joseph A. Gamell is director of the Lincoln Skills Center, Kalamazoo, named last September. Also director of Bigelow Hall on Western's campus, Gamell is completing work on his master's degree in teaching disadvantaged youth at WMU.

Bruce A. Garland (M.A.) is the new principal for Suttons Bay School, near Leland, Mich.

H. Glenn Fredrick (M.A.) has joined the Kent State University faculty as an instructor of geography.

Joseph Lineman (M.A.) was made Athletic Director of Detroit College, Dearborn, in a September appointment.

Roger C. Koenighof (M.A.) in the personnel department at Benton Yale & Towne, Battle Creek, valve division, was recently promoted to labor relations supervisor.

Terry McGavin (M.A. 68) is a recent addition to the counseling staff of the State Technical Institute and Rehabilitation Center, Pine Lake.

Allen Peat is the new systems and procedures manager for Brunswick Corp.'s School Equipment Division, Kalamazoo.

Theodore James Peters (M.A.) received his doctorate's degree in audiology and speech science from Western Illinois University recently.

David A. Radius (M.B.A.) who joined Old Kent Bank & Trust Co., Grand Rapids, in 1963, has now been promoted to controller.

R. Terry Sack (M.A.) is currently with the Peace Corps in Washington, D.C., as a liaison officer for Latin America in the Office of Volunteer Support. Earlier he served as a Volunteer in Bolivia.

Douglas Sturges was recently ordained to the gospel ministry by First Baptist Church of Portage. He is a second year ministerial student at southeastern Baptist Theological Seminary in Wake Forest, N.C.

2nd Lt. Larry D. Van Duyn received his commission in the Air Force recently and is at Los Angeles Air Force Station.

Leon Wright (M.A.) is Product Assistant at the New York headquarters of the Post Division of General Foods Corp., recently acted as a free consultant instrumental in setting up a Harlem cooperative supermarket designed to spur black capitalism in New York's ghetto area.

Barry Aspenleiter (M.A.) has been named executive vice president and director of the American Seating Co. at Grand Rapids. He joined the firm in 1961 as controller and was elected secretary and treasurer in 1965.

Melvin L. Holmes MBA '68 has been selected as manager for the development of a 200 unit low-cost housing unit to be located on Kalamazoo's north side. The project would cost $3-million and operate under a Federal Housing Administration rent supplement program, with actual construction funds coming from private sources. Holmes is now screening applicants and meeting with the architects and builders and social concerns committee.

Joan Lee Clark has begun two years work as a missionary at rural Graysville, Indiana, under a program sponsored by the United Methodist Church.

Marilyn Ayn Fanul is the new assistant middle school principal and guidance counselor for the Fennville school system.

Patricia Glavich (M.A.) is a secretarial science teacher at Lake Michigan College, Benton Harbor.

Edward W. Goldman has been appointed a part-time instructor at Kent State University, in the education department.

Mary Lanning (M.A.) is now a teacher of emotionally handicapped children in a pilot program at East Grand Rapids' Breton School this year.

Toby Link (M.A.) is an admissions counselor at Oakland University, Rochester.

Arline Bierley Philp (M.A.) is now teaching in the Department of Health, Science and Technology at the Kalamazoo Valley Community College.

Alfred Sager (M.A.) is now a reference librarian for the Kalamazoo Valley Community College.

Charlotte Sturgis (M.A.) is coordinator of rural outreach workers for the Kalamazoo County Community Action Program (Kal-Cap).

Ensign Grant N. Wheeler (M.B.A.) recently received his commission in the Navy, and is now stationed in Washington, D.C., where he will work at the Pentagon with computers.

Patricia Whitman has been assigned to flight duty out of Chicago, following completion of American Airlines stewardess school in Fort Worth, Texas.

Alouch Whitefield, Jr. (M.A.) is now an instructor of biology at Lake Michigan College, Benton Harbor.
IN MEMORIAM

MARY J. (RUTHRAUFF) MCLAUGHLIN '07, died this past fall. A former teacher at Kalamazoo Normal Teachers College, she was employed later at Sutherland Paper Co. until her retirement in 1933.

HOWARD C. BUSH '14, passed away in Kalamazoo early last fall.

MRS. WINIFRED BARNES MILLER '15, died July 27 at a Sturgis nursing home. A retired teacher, she taught in White Pigeon, Three Rivers, Lansing, and Richmond.

JOHN AUGUST BROBERG '17, died June 3 in El Cajon, Calif.

MARY E. JUDSON '18, a member of a pioneer family which settled in Kalamazoo before the Civil War, died this past fall in a Grand Rapids nursing home. Miss Judson began her teaching career at the old Vine Street school in Kalamazoo about 75 years ago, moving to Grand Rapids around 1919, where she taught until her retirement.

HENRY C. BALL '24, passed away in November in his home city, Grand Rapids.

ROY E. WALTERS '30, a member of the Gull Lake-Kellogg Community School Board and a former Potterville school superintendent, died December 20 at his home.

MRS. RACHEL (CAIN) GRANGER '32, died in Buffalo, New York, in mid-August. A resident of Lansing since 1932, she taught in Lansing schools for many years.

ARDELL A. HENRY '35, supervisor of the University of Michigan's Flint Extension Service and Center for Graduate Study, died July 13 in a Flint hospital. He had been appointed to the university post in 1947, and had been on a leave of absence due to illness at the time of his death.

MRS. JOHANNA D. VANDER VEN '35, died in early November at the home of her sister in Holland, Mich. She spent 42 years as an educator in schools in Oceana County, Holland and Lansing, the last years devoted to retarded children.

LEON L. YEAKEL '36, passed away in October at the Veteran's Administration hospital in Fayetteville, Ark. A veteran of both world wars, he attained the rank of colonel. At one time he was the director of vocational education at Bay City.

DALE D. BROWN '37, a farmer and retired teacher, died this past July in Hillsdale. He taught at Whitehall Schools, was the superintendent at Bergland and Osseo Schools, and retired from teaching at Reading Community Schools some 20 years ago.

MRS. FRANGINE BJORK '38, of Traverse City, died November 25 following a two year illness. Mrs. Bjork taught for four years in the Grand Rapids School System, and after her marriage was involved in the Traverse City Junior Woman's Club (past president), and the American Association of University Women.

GENEVIENNE D. CARNAGAN '49, was a teacher in the Mount Cena school system from 1944 to her retirement in 1962. She died in a Detroit hospital following two weeks' illness.

MRS. SHIRLEY HALLMAN COLMAN '51, a former Coloma resident, taught elementary school in Watervliet and Ann Arbor, and then moved to Kalamazoo 20 years ago, at the time she married her attorney-husband.

DANIEL M. KELHOFER '51, a Pittsburgh investment broker and former Grand Rapids resident, died in a Pittsburgh hospital of cancer this past June.

DANIEL J. PATTON, JR. '56, Lincoln Elementary School principal, Battle Creek, died recently of a heart attack at an Ann Arbor hospital. He was Battle Creek's first Negro school principal and very active in civil rights efforts.

1ST LT. JOHN S. BAXTER '57, was killed in action in Vietnam, August 27. A former recruiter and career counselor, he enlisted in the Army in 1957.

MRS. EDNA MORRISON WAGNER '59 (M.A. '61), passed away September 9, in a Shelby hospital, following an illness lasting a year and a half. A veteran of 18 years of educational work, her last ten years had been spent at Whitehall Junior High as a guidance counselor and advisor.

MAJOR ERNEST W. SANDERS '60, drowned while skin-diving with friends in Florida, August 25. At the time of his death, he was an aviation instructor at Ft. Rucker, Alabama. He had been awarded the Bronze Star with 15 Oak Leaf Clusters, the Army Commendation Medal, Vietnam Campaign Medal and the Air Medal.

JAMES R. BREEDEN '62, originally from Muskegon, died in Wisconsin in mid-November.

LARRY E. HARKEY '67, died in a motorcycle accident on his way home to Drayton Plains two hours after his last class, June 16, 1967, this office has learned belatedly.

MRS. NANCY MAY WEST '67, died December 2 in a Livonia hospital following a long illness. She had been contracted to teach in Plymouth but was prevented by illness.

New life members are always a welcome addition to the roster of the Western Michigan University Alumni Association. The following persons have recently joined the growing ranks of this esteemed group.

JAMES E. BURTON '67
CARYL (JONES) BURTON '67
RICHARD GROSENBACKER '67
ISADORE A. ROBBINS '55
Grand Rapids, Mich.

MARI LYN (SNYDER) DOOLITTLE '52
Niles, Mich.

GWENDOLYN (RUSSELL) TULK '59
THOMAS J. JONES '57 M.A. '68
MARY (WALTERS) JONES '67
WILLIAM K. SMITH '57 M.A. '61
Kalamazoo, Mich.

HAROLD C. MARTIN '62
PENNY (PICKENS) MARTIN '62
Carmel, N. Y.

FREDERICK C. MISCHKE '58
KATHLEEN (SCHULTZ) MISCHKE '58
Elkhart, Ind.

MARIE (DICIENZO) MORROW '62
Northville, Mich.

MARY K. NOVAK '63
Saginaw, Mich.

RUTH (WHIPPLE) PERSHING '53 M.A. '57
Denton, Texas

DONALD G. BACHMAN '67
JUDITH (OVERHOLT) BACHMAN '66
BEULAH (CROUCH) REECE '60 M.A. '64
NANCY (MCINTYRE) ROSS '55
Dearborn, Mich.

ALAN R. BARKELEY '56
JACQUELINE (SMALLEY) BARKELEY '58
Pontiac, Mich.

BARBARA (BURK) HOLZGEN '50
Byron Center, Mich.

NOEL J. KOTT '65
Detroit, Michigan.

LUCY (HULL) REEVES '65
Orleans, Mich.

HELEN (MICHKOVITS) SANDERS '60
Dowagiac, Mich.

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