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Building on a Solid Foundation: A History of the College of Engineering and Applied Sciences at Western Michigan University 1903-2003

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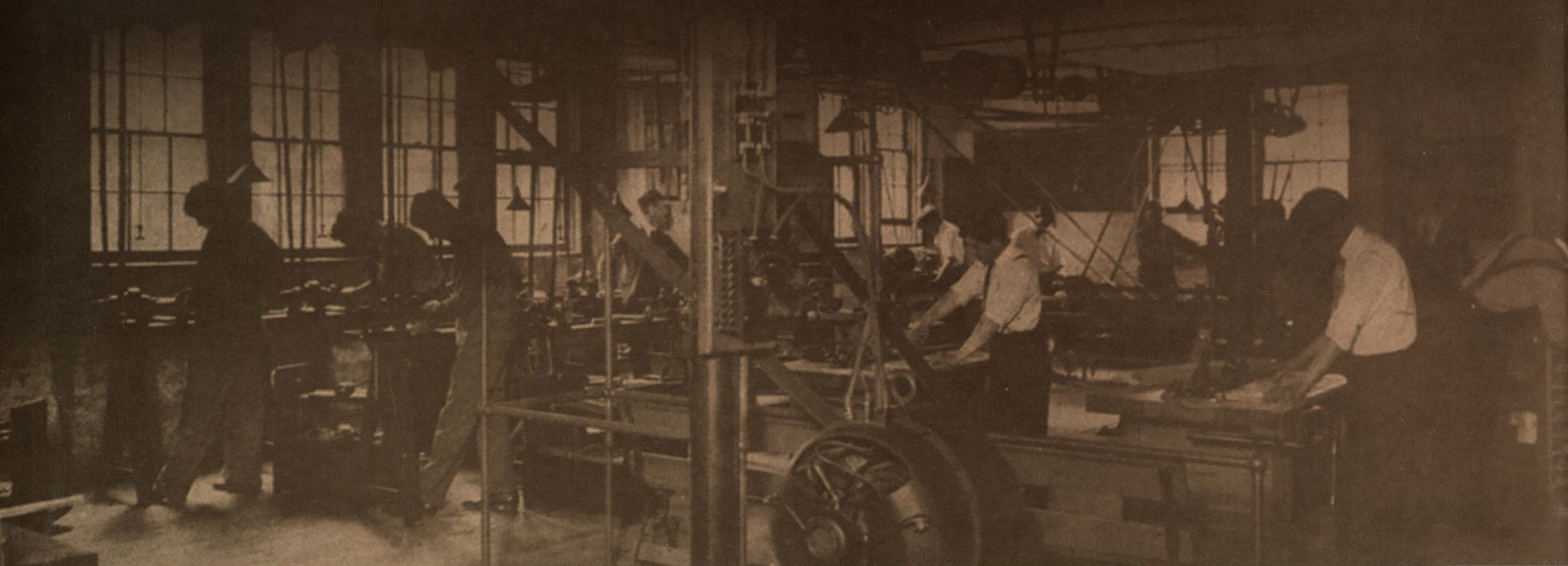
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BUILDING ON A SOLID FOUNDATION

A History of the College of Engineering and Applied Sciences at Western Michigan University • 1903 – 2003



COVER PHOTOS

Top front and back: The College of Engineering and Applied Sciences moved into its new home on the University's Parkview Campus in August 2003.

Photos: John Gilroy

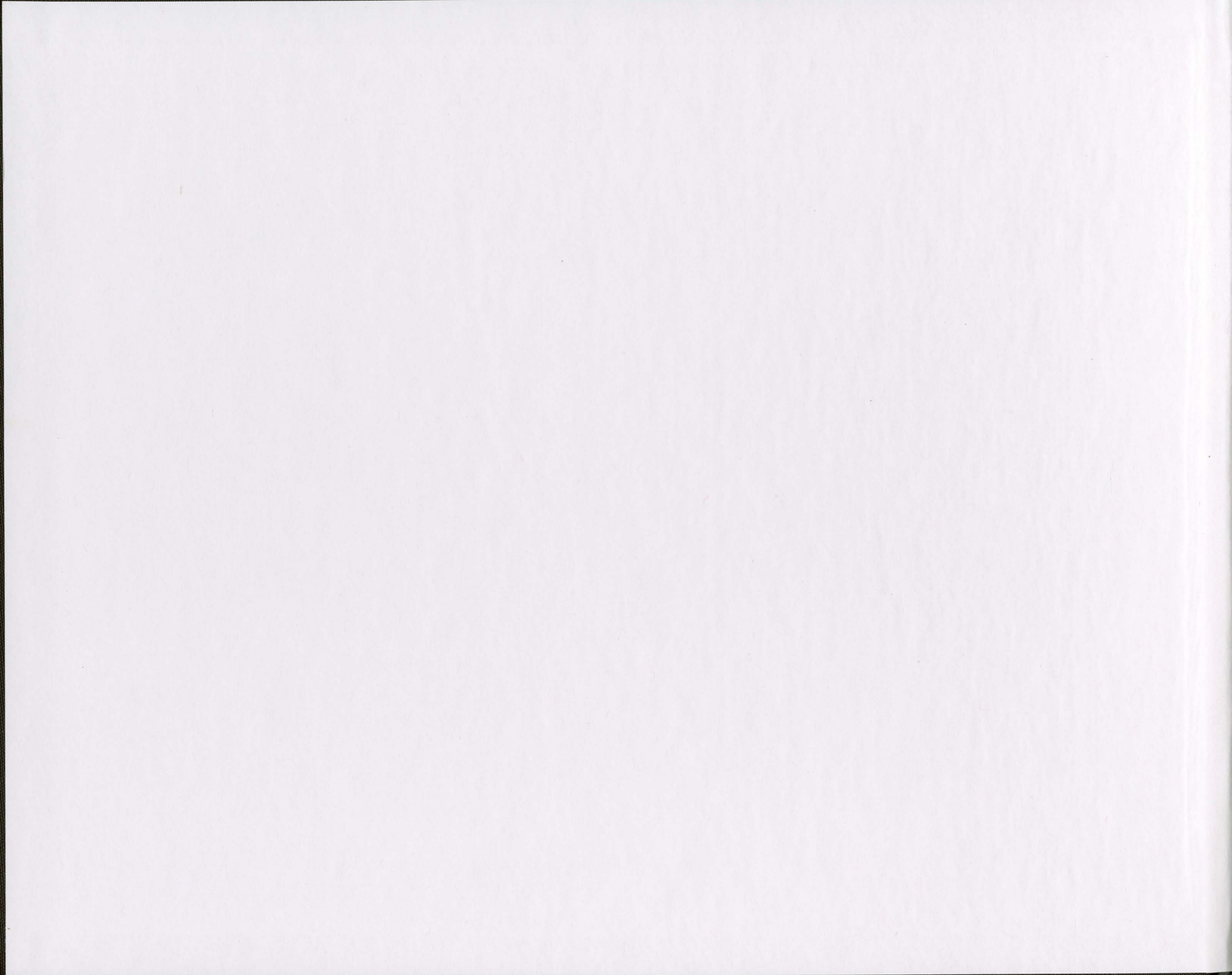
Bottom front: Wood and machine shop. Circa 1911.

Photo: Western Michigan University Archives

Bottom back: The Manual Training program was housed in this humble shed, located next to the Kalamazoo Public School buildings, during the 1912 school year.

Photo: Western Michigan University Archives







BUILDING ON A SOLID FOUNDATION



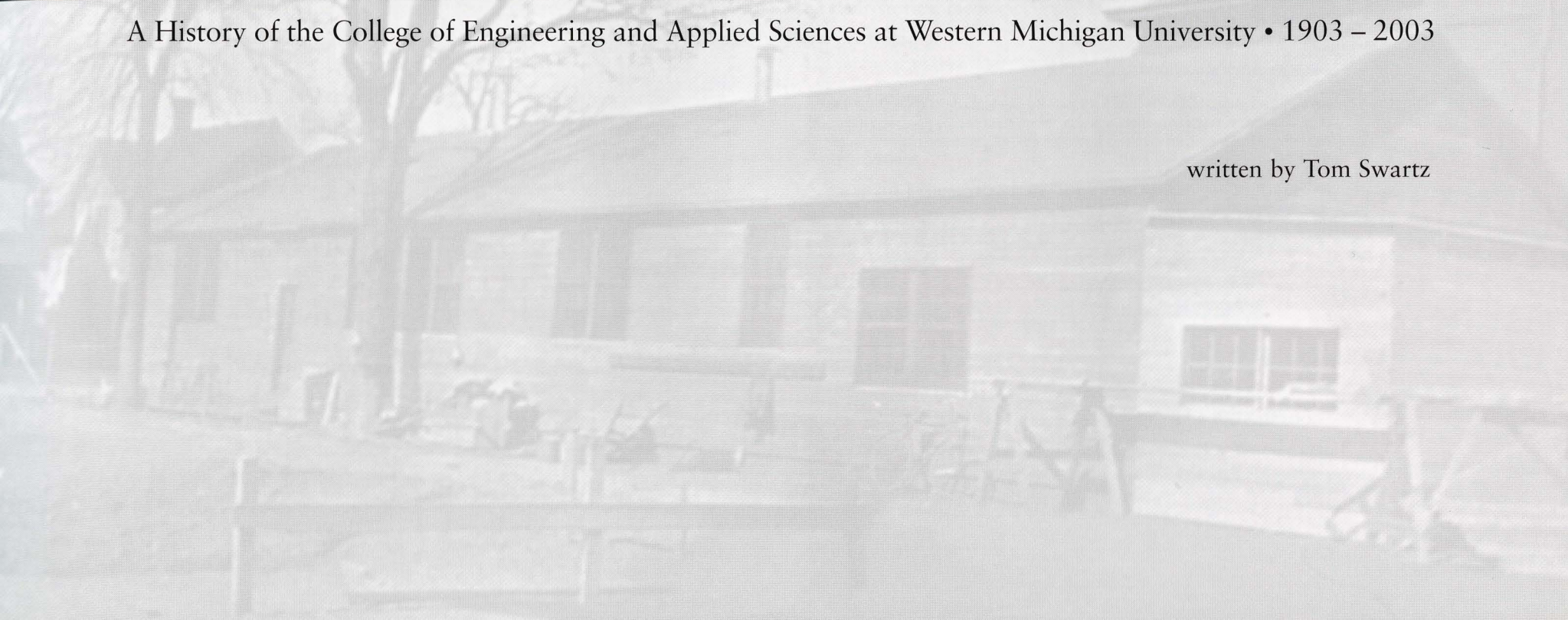
WESTERN MICHIGAN UNIVERSITY



BUILDING ON A SOLID FOUNDATION

A History of the College of Engineering and Applied Sciences at Western Michigan University • 1903 – 2003

written by Tom Swartz



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Western Michigan University Archivists, Sharon Carlson and John Winchell

Photos: Western Michigan University Archives, Western Michigan University News, The Western Herald, The Kalamazoo Paper Foundation, John Gilroy, John Lacko, Kanti Sandhu, and the private collections of Herb Ellinger, Charles Woodward, Fred Sitkins, and Lawrence J. Brink.

DEDICATION

To the faculty and staff past, present, and future
of Western Michigan University's College of
Engineering and Applied Sciences whose quiet
commitment to their tasks has built a solid
foundation for a world-class, student-centered
education and research institution.

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INTRODUCTION

FORGE 103
W.S.N.S.

WHAT WE NOW KNOW as the College of Engineering and Applied Sciences can be traced back to 1904 when Western State Normal School first opened its doors. Two of the original departments, the Department of Domestic Economy and the Department of Manual Training, have played a large role in the history of Western Michigan University.

The Department of Domestic Economy saw the development of many programs including Occupational Therapy, Home Economics, Distributive Education, Hotel and Restaurant Management, and Fashion Design, most recently under the heading of Consumer Resources Technology. These programs have grown, evolved, and moved to the College of Health and Human Services, the College of Business, and the College of Education.

What has evolved into the internationally recognized College of Engineering and Applied Sciences at Western Michigan University began modestly as the Department of Manual Training at Western State Normal School. The Department of Manual Training from 1904 to 1917 was primarily a program that trained teachers in the industrial arts including woodworking, iron and sheet metal, and mechanical drawing. George Waite was one of the original faculty members hired at Western Normal, and he served as director of the department until his retirement in 1917. The

George Waite is pictured in an archival photo from his Forge 103 class taken in about 1912 in the basement of one of the old Kalamazoo Central High School buildings that was used for classes by the Manual Training Program. He stands in the background as several of his students pose before a line of anvils. Several of the anvils are still with the college, and two of them were restored as part of WMU's Centennial celebration.

need for more space led to the purchase in 1916 of the Eames Mill, located at the intersection of Stadium and Oakland Drives. The Manual Training Department occupied the building until 1921.

Hired in 1911, and a graduate of the Normal School, Marion Jay Sherwood, took over as director of Manual Training upon George Waite's retirement. Under Sherwood's leadership the Department began to shift its emphasis from teacher training to industrial training. Increased demands for production and a technically skilled workforce brought on by the First World War contributed to this shift. The construction of the Manual Arts building was completed in 1921, and in the period after the War, the Department changed its name to Industrial Arts, reflecting the new emphasis. Marion Sherwood retired in 1948.

In 1934 the State Board of Education granted teachers colleges the right to award bachelor of arts and bachelor of science degrees as an effort to upgrade the teaching profession. Many students who completed Western's programs did not go on to be teachers but instead took jobs in business and industry. After 1934 they were not required to take education courses, and Western began developing two-year technical and pre-professional programs. One of the first pre-professional programs (listed in the 1935 catalog) was engineering. The program was a two-year course of study that did not end with a degree but prepared students to move on to professional engineering schools to complete a bachelor's degree.

In the mid-1930s the rise to power of Hitler leading to

MANUAL TRAINING			
		First Year	Second Year
FALL TERM	Psychology I	4	Psychology IV.....4
	Public School Art I.....4		Mechanical Drawing IV
	Mechanical Drawing I...4		Applied Physics2
	Manual Training I		History of Education...2
			Practice Teaching4
WINTER TERM	Psychology II	4	Manual Training V.....4
	Public School Art II.....4		Mechanical Drawing V
	Mechanical Drawing II...4		Applied Physics2
	Manual Training II		History of Education...2
			Practice Teaching4
SPRING TERM	Psychology of Occupa- tions	4	Manual Training VI.....4
	Public School Art III...4		Mechanical Drawing VI
	Mechanical Drawing III..4		Applied Physics2
	Manual Training III		History of Education...2
			Applied Chemistry4

The course of study for 1904–05 included two-year programs in both the Manual Arts and the Domestic Arts. Both programs were based on a three semester per year term of twelve weeks.

World War Two and the need to fulfill the shortage of technically skilled workers in defense factories brought about a significant change in the technical programs offered at Western. Manpower training courses were instituted in areas like aviation mechanics, machine shop, radio, and air conditioning and refrigeration. These program changes required a restructuring of the Department of Industrial Arts with the formation of the Division of Vocational and Practical Arts responsible for many of the new programs. During World War Two the Division oversaw training programs for the armed services; the Navy's V-5 program was the largest, at one point offering training courses in three shifts on a nearly round the clock basis. In a fall 1942 article written for the *Western Michigan College News*, President Paul V. Sangren reported that from 1940 to 1942, 300 students had received training as fliers and about 200 of them were flying for the United States Army, Navy, or Marines. He estimated that in 1942, 150 or more pilots would be trained.

The war years also led to the construction of the Mechanical Trades Building (completed in 1941 and later called Brink Printing Services) and brought to the forefront some of Western's most brilliant and dedicated faculty. E. C. "Buck" Weaver directed the aviation mechanics program, Dr. Joseph Giachino oversaw Industrial Technical Education, and Dr. John Feirer directed Industrial Arts Education. In 1945, Dr. Deyo B. Fox was hired as director of Vocational Education. Dr. Fox died in 1950, and Dr. George Kohrman was hired in 1951 to replace him.

Following the Second World War, local industry experienced tremendous growth and turned to Western to help supply qualified technical employees. In 1948, a group of Kalamazoo Valley paper company executives approached

Western president Sangren with a request for a research and testing facility and a program in paper technology. The request was accompanied by an offer of support in the form of personnel, money, and equipment, and the Paper Technology Program began. In 1957 the Paper Industries Laboratory extension to McCracken Hall was completed. The Department of Paper Engineering, Chemical Engineering, and Imaging still receives strong support from industry with its graduates achieving a nearly 100 percent employment rate. Another example of the strong support that Western received from industry was the Adrian Trimpe Distributive Education Building, which was built in 1965 at no cost to Western.

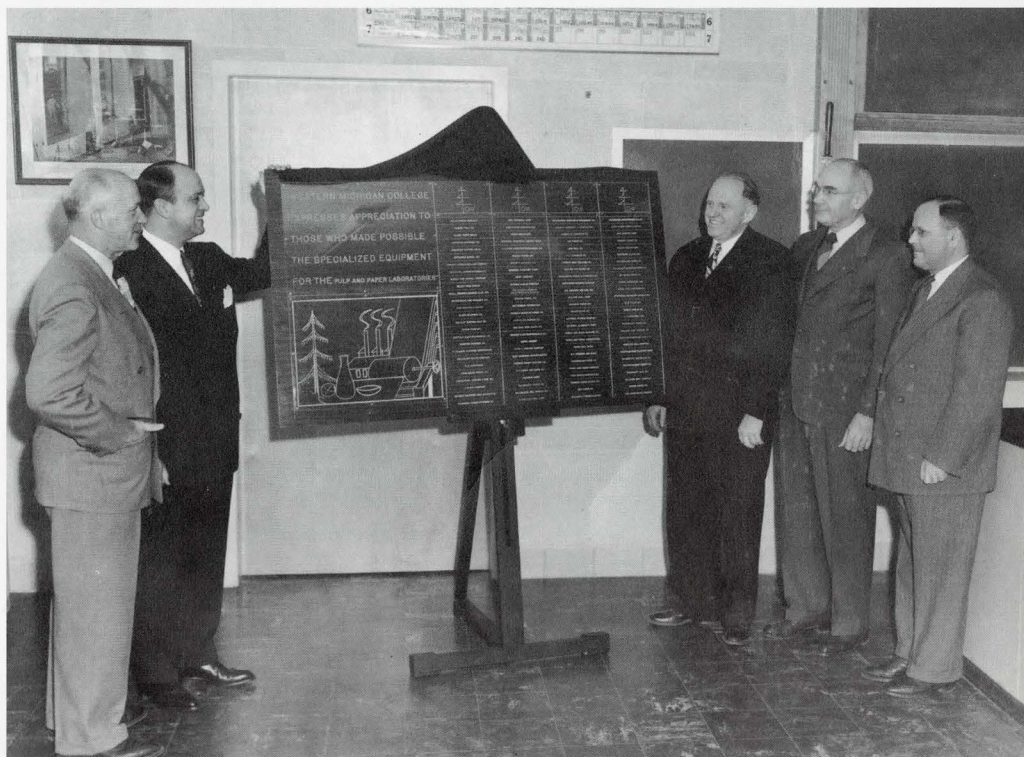
The 1950s saw the development of four-year bachelor degree programs in technology as students with two year degrees found the four-year bachelor's degree a necessary tool for promotion. The first four-year program was industrial supervision, offered through the Department of Industrial Technology, and it was designed to prepare graduates for management positions in industry. The program was the start of a two plus two program, where students completed a two-year program in a chosen technical field and then went on to complete their bachelor's degree in industrial supervision.

In 1957, by act of the State Legislature, Western Michigan College was changed to Western Michigan University. In anticipation of the change Western (in 1956) restructured its departments into five schools, with Dr. George E. Kohrman as dean of the new School of Applied Sciences. The School of Applied Sciences consisted of seven departments: Agriculture, Distributive Education, Home Economics, Industrial Arts, Industrial Technology (changed in 1961 to Engineering and Technology), Occupational Therapy, and Paper Technology.

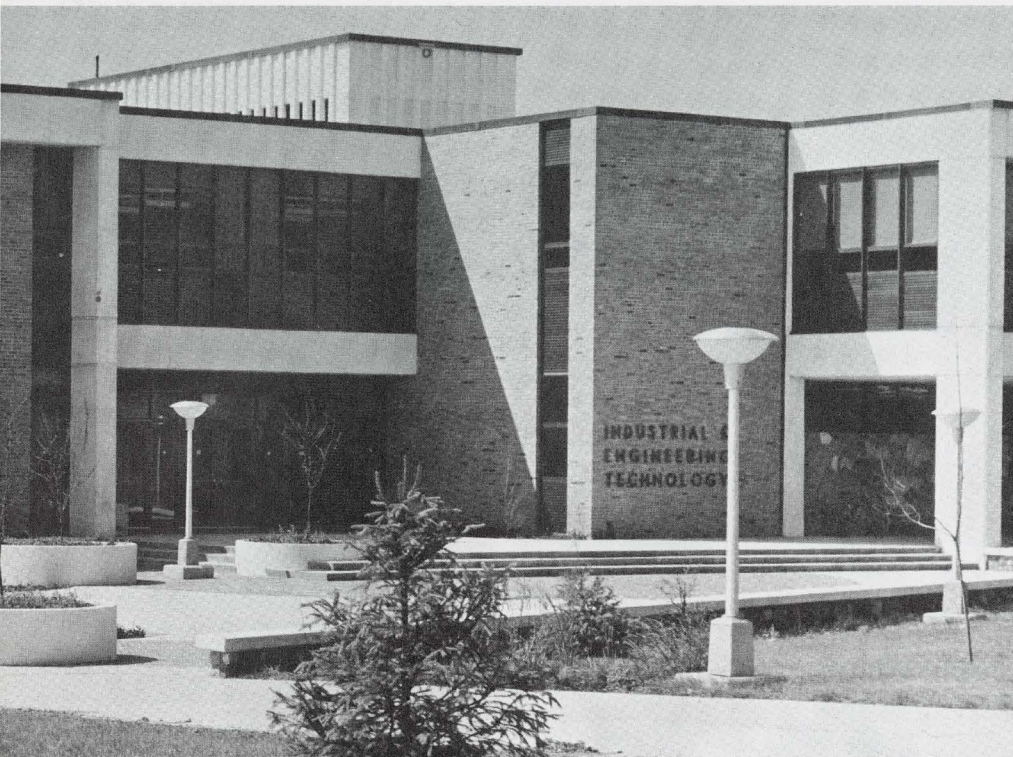
The 1960s saw the technical programs develop more depth with students fulfilling strict requirements in mathematics, science, and physics, taught within the respective departments. This made technology students compete academically with students in those departments. This strategy gave students a strong theoretical background while maintaining their high degree of “hands-on” experience in the workshop and lab classes. Western technical graduates found themselves competitive candidates for positions in industry, often able to command salaries comparable to those of graduates from engineering schools.

Where contributions to the War effort brought Western national prominence, its growth in technical programs and the ever-widening influence of its faculty in the 1950s and 1960s began to bring it international prominence. The College of Engineering and Applied Sciences has seen its share of well-known authors, but the group of faculty from the Departments of Industrial Arts and Industrial Technology represented an assembly of very prolific writers. Professors John Feirer, John Lindbeck, Joseph Giachino, Herbert Ellinger, Henry Beukema, William Weeks, Gilbert Hutchings, Elmer Brune, and Glade Wilcox have more than 100 books listed in WMU’s card catalog, with John Feirer having fifty entries, many in collaboration with others among the faculty.

The growing prominence of Western’s technical programs is best demonstrated by its development and staffing of a technical college in Ibadan, Nigeria. In 1960, at the request of the U.S. and Nigerian governments, the College of Applied Sciences, under the leadership of George Kohrman, built and staffed the Ibadan Technical College. From 1960 to 1968, Western trained Nigerian students in technical and business programs that gave the newly independent country



This photo was taken April 6th, 1950, in McCracken Hall at the dedication ceremony of the new pulp and paper school and the dedication of the equipment in the laboratory donated by the paper industry. L to R: Dr. Paul V. Sangren, President, Western Michigan College; O.W. Callighan, Edgar Brothers, Chairman, Equipment Committee; Dr. Gerald Osborn, Professor of Chemistry (and later Dean of Arts and Sciences), WMC; Dr. Deyo B. Fox, Director of Vocational Education, WMC; Dr. A.H. Nadelman, Head of Pulp and Paper School, WMC. Mr. Callighan unveiled a plaque displaying the names of 103 donors of equipment and money.



View of Kohrman Hall (completed in 1966). This photo is from the dedication ceremony brochure. Notice the signage: Industrial Engineering Technology

a foundation for building a lasting infrastructure. Groups of eight to ten faculty members and their families lived and taught in Nigeria for two year intervals during the eight year project. The long-term success of the Nigerian project can be seen today in the high enrollment of international students at WMU — over 2,000 in the Fall 2001 semester — and its successful “twinning” programs in Malaysia, India, and Pakistan.

In 1966, to accommodate the need for more space and improved technical training, the School of Applied Arts and Sciences moved into the newly opened Industrial Engineering and Technology Building, which was dedicated as Kohrman Hall in 1980. Partnering with industry continued to be a cornerstone of the School of Applied Arts and Sciences as seen in the expanding Printing Marketing and Management Program, which was initiated in 1957 by Lawrence J. Brink and continued to flourish under the leadership of Erwin Rayford. During the 1960s continued collaboration with the auto industry paved the way for the formation of the Department of Transportation Technology in 1967. Western students and faculty frequently participated in automotive trouble-shooting competitions, fuel economy races, and design contests. These activities are still popular today. Western has competed in all the major solar-powered automobile races since they began in 1990. The steady growth of the aviation program from its beginnings in 1939 led to the formation of the College of Aviation in 1999.

In 1969, a student counseling center was opened to offer better academic advising, with Don W. Nantz as director. In 1970 the school’s name was changed to the College of Applied Sciences. And during the 1972–73 academic year Dr. W. Chester Fitch was named dean of the college, while

the Department of Engineering and Technology was split into the departments of Industrial, Mechanical, and Electrical Engineering. The 1970s also saw the growth of extension programs, notably in Grand Rapids.

Program changes in the 1970s included the formation of the Fashion Merchandising curriculum. Industrial Technology

and Education updated and expanded its printing management program, and computer technology began to be integrated into many of the existing programs. In 1976 the College was reorganized into the Division of Applied Sciences, directed by Don Nantz, and the Division of Engineering,

directed by Robert Boughner. In 1982, the College of Applied Sciences was renamed the College of Engineering and Applied Sciences.

The changes of the previous two decades laid the foundation for the accreditation of the many four-year engineering degree programs that we have today. In 1979, Industrial Engineering was the first program to be accredited. In 1985, the Mechanical, Electrical, and Computer Engineering programs were accredited with Industrial receiving re-accreditation. 1987 marked the dedication of the newly built Welborn Hall to house the printing management program.

The 1980s and 1990s featured growth, especially in the area of graduate studies and off-campus programs. In addition to Grand Rapids, sites in Muskegon, Battle Creek, St. Joseph, and Lansing opened.

The most recent years have seen the development and use of wireless technology in the classroom. The Paper Coating Pilot Plant officially opened on October 11, 2002, on the newly constructed Parkview Campus. The summer of 2003 found the college busily packing up Kohrman Hall and moving into Parkview, where classes began in the last week of August.

The College of Engineering and Applied Sciences has enjoyed the leadership of several deans throughout its history. Dr. George Kohrman directed programs and served as dean from 1951 to 1973. Dr. W. Chester Fitch served from 1973 to 1982. Mr. Robert Boughner was at the helm from 1982 to 1983; followed by Dr. James Matthews from 1983 to 1988. Dr. Harley Behm directed the college in 1988 and 1989; and Dr. Leonard Lamberson led from 1989 to 1999. Dr. Daniel Litynski served from 1999 to 2002. And today the College of Engineering and Applied Sciences is guided by Dr. Michael Atkins.

Today, the College of Engineering and Applied Sciences consists of nine departments offering 18 undergraduate programs and 16 graduate programs, including 11 masters and five PhD degree programs.

What follows is a partial look at some of the places the college has used to carry out its mission, a representative few of the many dedicated and talented people who have shaped what the college has become, and an overview of the programs that the College of Engineering and Applied Sciences has offered throughout its one hundred year history. As with any work of this nature more is left out of the story than retained. Materials gathered for the college's centennial history project have been retained and are housed in the University Archives.



Grand Rapids Regional Campus.



PLACES

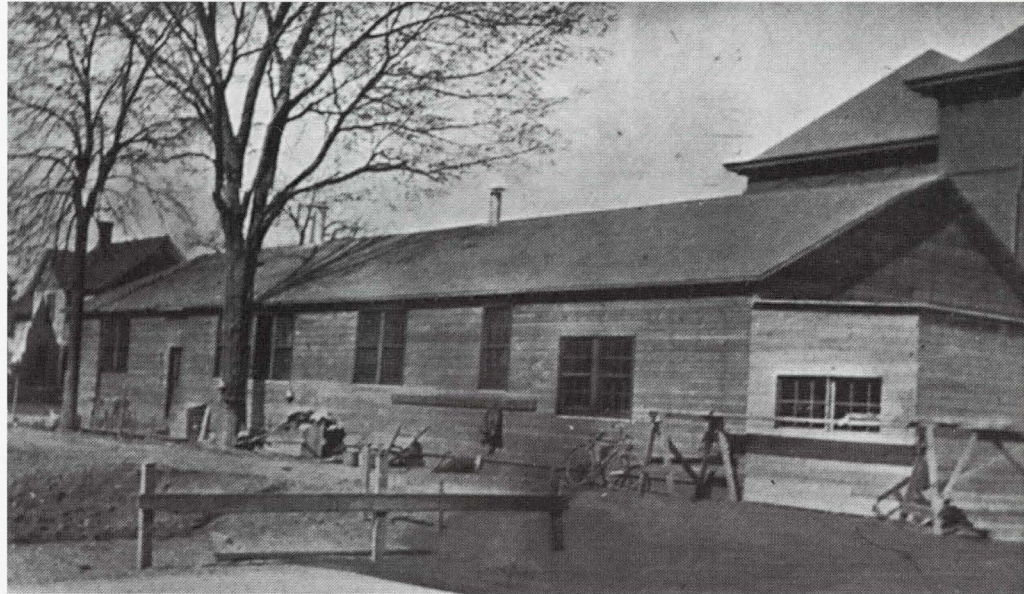
AS THE COLLEGE of Engineering and Applied Sciences has moved into its new facilities at the Parkview Campus, it is interesting to reflect on the many places that have housed the college and its many programs.

Every move has led to growth, reflecting the broadening role that the college has played. The search for facilities has fulfilled a need for new and improved educational programs for one hundred years.

When classes began in 1904, the Department of Manual Training offered classes in Kalamazoo Public School buildings, located three blocks east of Normal (Prospect) Hill. A review of President Dwight B. Waldo's annual reports to the State Board of Education during the first decade of Western State Normal School shows requests annually for additional monies to expand the Manual Training Department by providing a building and purchasing equipment. At one point in 1912, when the Kalamazoo Public School building was being renovated, the Manual Training program was moved to an adjacent shed, with part of the program using the basement of the Training School. But from those humble beginnings, great things were to come.

In 1915, the State granted Western funds for construction of five new buildings, including a Manual Arts facility. The building, much like present-day Kahrman Hall and the new Parkview Campus, was designed by the instructors of the manual arts department, with structural details worked out by an architect, in this case Louis Kamper of Detroit. The original cost was estimated at \$75,000, with \$15,000

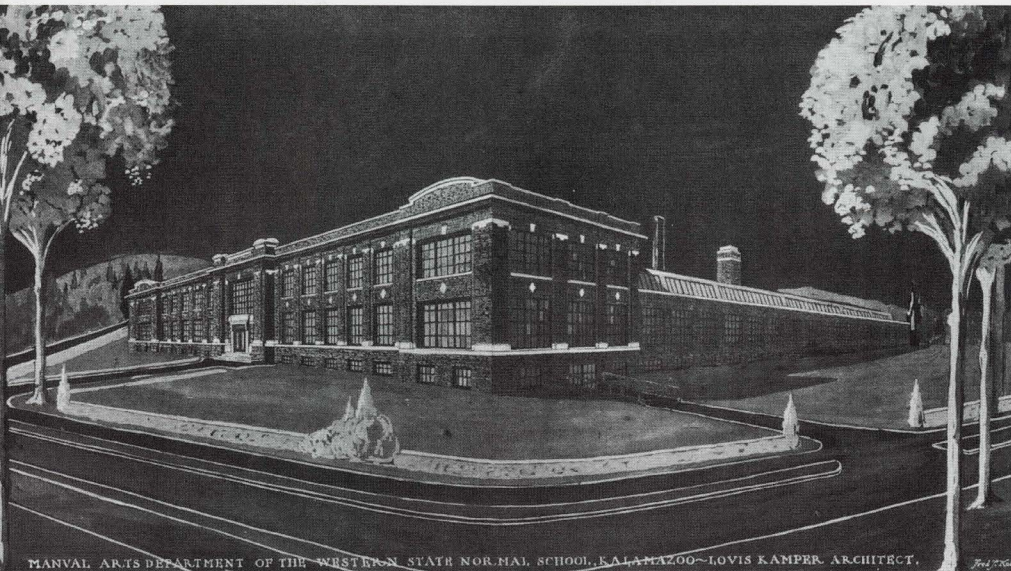
Kalamazoo Public School buildings were used for classroom space in the early years of the Department of Manual Training. One of these buildings is no longer standing, but the other is home to the present day Vine Street Alternative High School.



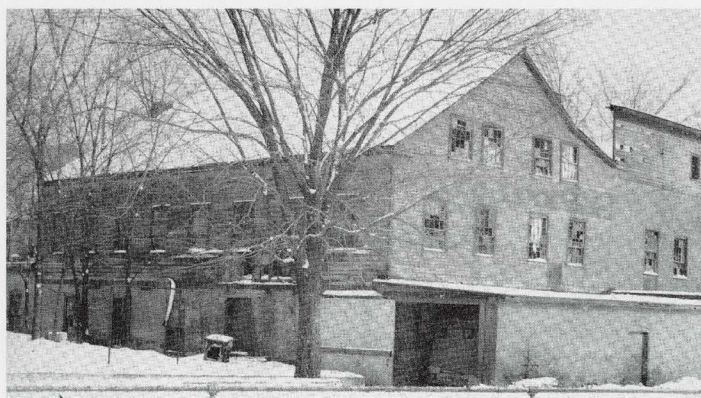
The Manual Training program was housed in this humble shed, located next to the Kalamazoo Public School buildings, during the 1912 school year.

allocated for new equipment and \$10,000 worth of existing equipment.

The 1916 Brown and Gold described the planned structure as a “two-story front of reinforced skeleton concrete construction and a one-story building of slow burning mill construction.” The basement was to house a coal bin, coke bin, sand pit, oil storage room, blower, exhaust for the forge shop, shaving exhaust for the wood-working department, lumber storage room and facilities for the “repairing and storing of automobiles and the building of boats.” The shop building was to include a “wood-turning shop, machine room, cabinet shop, mill room, finishing room, tool rooms and offices.” Plans also included a machine shop, forge shop, foundry, offices and locker room. The front of the building



A 1915 rendering of the planned Manual Arts building shows a two-story central unit for classrooms with an adjoining one-story wing to house laboratories. The building was designed to be one of the best arranged and most completely equipped structures of its kind in the country.



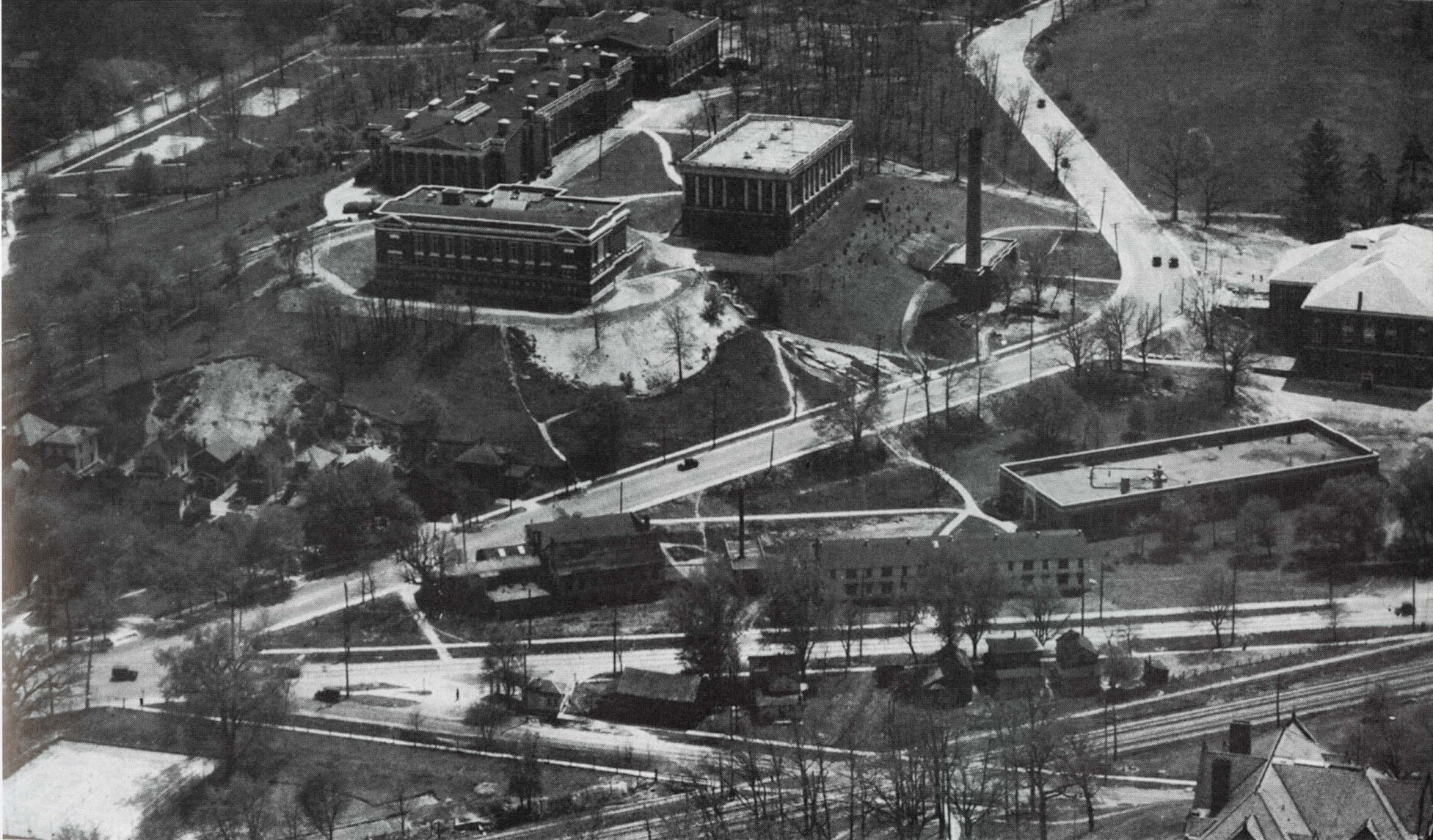
Eames Mill was purchased in 1916 and used until 1921 for Manual Arts Training, when the program moved into its new building. Eames Mill was then occupied by the theater department.

was to house the print shop, store rooms, reception room, teachers' room, and lecture room. The second floor was to hold the applied arts and design room, reading room, store rooms, blue print room, classrooms, mechanical drawing room, and offices for the instructors. The yearbook reported that the planned facility and splendid equipment would "give the opportunity for the best possible preparation for the teaching of Manual Training, which has become one of the largest and best known departments of the school."

The detailed description of the planned facilities speaks to the growing prominence of the Manual Training Department and also suggests the kinds of programs that were important to the department in its formative years. But plans have a way of changing and although the building was scheduled for completion in time for the fall 1916 classes, World War I delayed completion of the building. A modified Manual Arts Building opened in 1921 at the corner of Oakland and Stadium Drives. Scarcity of supplies and a depleted budget brought about by the War led to a scaled back version of the original. The major change was the deletion of the second story; however, the space was still suitable for the planned activities. The building still stands and is used today by the Physical Plant.

When the first World War caused a delay in the construction plans for a new building, Western purchased the George T. Eames Mill building, which stood adjacent to the planned Manual Arts building site. The building was used from 1916 to 1921 by the Manual Arts Department. Upon completion of the Manual Arts Building, the Theater Department moved into the Eames Mill building.

During World War I several wooden "barracks" buildings were erected to accommodate military training for the war



1925. In the foreground is (from left) Eames Mill, the Temporary Building (the barracks-like structure — erected during World War I for military training) and the relatively new Manual Arts Building. Oakland Gym is also visible at the right hand edge of the photo, with East Campus in the top center.

effort. These barracks or “temporary” buildings remained on campus for many years and were used for classrooms for several Manual Training programs. In a 1925 aerial photograph printed in James Knauss’s *Western: The First Fifty Years*,

the new Manual Arts building, a Temporary Building, the Eames Mill, the Oakland Gym and East Campus are visible. It is interesting to note that the opening of the Manual Arts Building made the Manual Training Program the first major



department to open its doors off the main (then the Prospect Hill) part of campus. The search for space to accommodate technology had led the program into new territory.

The next major construction project was brought about by the need for increased training facilities during World War Two. Between the two world wars, Western had moved from a place that produced teachers to an institution that trained professionals in all walks of life. The war created a demand for workers with industrial skills, and the Manual Arts Department (now named Industrial Arts) was there to fulfill the nation's need. The Mechanical Trades Building was erected in 1941 with funds from the W.E. Upjohn Unemployment Trustee Corporation and the State Board of Education based

(top) Airplane engines cast in concrete embellished the distinctive decorative panels on the Mechanical Trades Building.

Portions of the original Manual Arts Training Building are still in use today. The Motor Pool and Physical Plant use the building.

on the growing need for Vocational Education. The building, which stood next to the Manual Arts Building, was completed in time for classes in September 1941, just in time to aid the World War II defense effort. The building featured a large laboratory space with very high ceilings suitable for both aircraft and automotive work. The lab space was bordered by a second-story set of classrooms.

The building, together with the Manual Arts building, housed Industrial Arts programs and Practical Arts and Vocational Education throughout the 1940s and 1950s. The building contributed to the development of aviation and automotive mechanics programs until the mid 1960s when Engineering Technology moved to Kohrman Hall and the aviation program moved to Kalamazoo Airport facilities on Kilgore Road. From 1966 to 2002 the Mechanical Trades Building (later named Brink Printing Services for Lawrence J. Brink founder of the Printing Marketing Program) housed the university printing services.

The most distinctive feature of the building and reflecting its purpose was the concrete airplane engine block carvings (four in all) that were inset across the second story of the building and visible from Stadium Drive. Many visitors to Western during the 1950s and 1960s can recall the aircraft sections with engines that were used for mechanical troubleshooting that lined the parking lot on Stadium Drive. And many professors remember trying to compete in lecture with the roar of the aircraft engines being test-fired. The Mechanical Trades Building was razed in December 2002 to make way for the new Seelye Athletic Facility.

While the vocational and practical arts were developing inside the Mechanical Trades Building, the rapidly expanding Paper Technology program (established in 1948) was experi-

encing its own growing pains in McCracken Hall. The original Building I inside McCracken Hall, opened in 1949, provided 2,500 square feet for basic labs, staff, and secretaries. Building II, the Paper Industry Laboratories, was an addition to McCracken Hall, completed in 1957. A 20,000 square foot addition to McCracken followed about two years later. Each expansion added space for newer equipment that expanded the offerings of the program. The Paper Technology program has worked closely with and been strongly supported by the Kalamazoo Valley section of TAPPI and the Paper Technology Foundation. Industrial support enabled the rapid expansion.

By the 1960s, the Mechanical Trades Building had reached capacity. Photos of the lab show aircraft and automotive students working on projects across the aisle from each other, with equipment and machinery strategically placed for optimum efficiency. Additionally, the electrical and electronics classes had moved in the 1950s to the old power plant building on Oakland Drive, right across the street from the gymnasium. In order for the programs to continue to grow, a new and larger space was needed. The Industrial and Engineering Technology Building, completed in 1966 and named Kohrman Hall in 1979, filled that need.

Much of the background for the construction of the Industrial and Engineering Technology Building comes from an unpublished oral history, when George Kohrman discussed his tenure as dean of the college from 1951 to 1973. The tape transcript is retained in the University Archives, and Lynn Houghton conducted the interview. A synopsis of Kohrman's remarks follow.

Kohrman recalled that in his first employment interview with President Paul Sangren in 1951 Sangren stressed that a

building to house vocational-technical education was a high priority. When President Miller came on duty in 1960, he cited a building for technological education as one of the top three projects and began to ask the State legislature for appropriations. The State appropriated funds in 1962, architectural planning began in 1963, and the ground breaking ceremony took place on February 19, 1965.

The Industrial and Engineering Technology Building contained 215,000 square feet of floor space, 68 classrooms, laboratories and shops, plus 75 offices. Designed by Louis C. Kingscott & Associates, Inc., of Kalamazoo, the building carried a price tag of \$4.25 million and opened for classes in fall 1966. The building was constructed on the western edge of campus on the former Gateway Golf Course to the southwest of Wood Hall.

The building was well planned to provide for technical needs. Dr. Kohrman recalled a meeting he had in Lansing shortly after Kingscott was awarded the contract. He ended up at lunch sitting next to an architect who had done some previous work on Western's buildings. When Kohrman asked him why he had not bid on the job, he replied that after he had reviewed the requirements for electrical demands, gas lines, and various other utilities and realizing how different laboratory space was from regular classrooms, he decided to pass on the project.

Dr. Kohrman also recalled that the building systems worked quite well in general but that the air-conditioning was always a problem. He noted that air-conditioning was not included in the original design, but after an unusually hot spell in the summer of 1965, the department heads asked if it were possible to add air-conditioning. It was, but the system never quite worked as well as it might.

One feature in the design of the Industrial and Engineering Technology Building that has worked exceptionally well is the design that included non weight-bearing wall partitions. This feature has allowed several redesigns and configurations of laboratories and classrooms throughout the building's thirty-seven year history. Following Dr. Kohrman's retirement, an effort, led by Dr. W. Chester Fitch, dean of the college, resulted in the building being named for George E. Kohrman in 1979 and dedicated in 1980.

Kohrman recounts another significant land exchange in his discussion with Lynn Houghton. For many years, the Agricultural program had been using a large tract of land just south of Milham road between Oakland Drive and Westnedge Avenue (Prince of Peace Lutheran Church sits just west of there). In the 1960s a land developer wanted to build homes on the tract in the area of what is now Goldsworth Valley. The university then offered to trade its farm for Goldsworth Valley, and the contractor agreed. This created space for the university to expand its housing, but left the Agricultural program without a farm.

At about the same time the State Hospital was going to give up its land along Parkview Avenue because they did not use it anymore. State policy directed that when one State institution gave up land, other State institutions got first choice on it. Western applied for the land and got it. The land was used by the Agricultural program and eventually named the Lee O. Baker farm, after the longtime program director. Today, that tract of land is the site of the College of Engineering and Applied Sciences' Parkview Campus.

At almost the same time as the construction of the Industrial and Engineering Technology building, the Distributive Education Building was being constructed just



The Manual Training program was housed in this shed during the 1910 school year.



Adrian Trimpe Distributive Education Building.

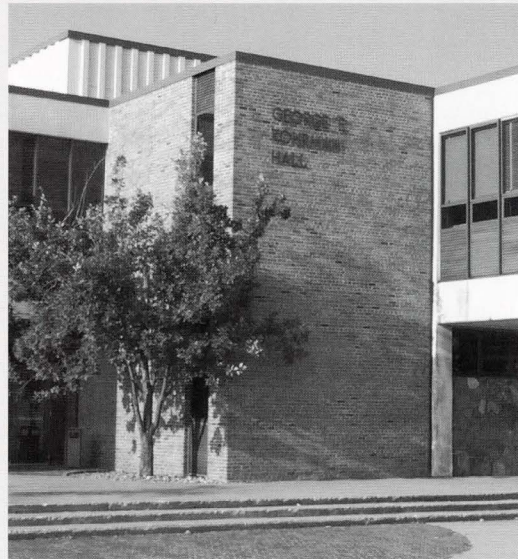


Photo taken July 31, 2001.
The tree has grown
(compare with photo
on page 12).



Presentation of Welborn plans, c. 1982-83. L to R: Dr. Peter Ellis, Kellogg Foundation; Homer "Scrap" Cox, Chair Printing Advisory Committee; Charles "Chub" Thompson, Printing Advisory Committee; Dr. James Matthews, Dean College of Engineering and Applied Sciences; and Dr. John Bernhard, WMU President.



Welborn Hall Ground Breaking. L to R: Dr. Arvon D. Byle, WMU; Dr. Dennis Darling, WMU; Dr. Richard Valley, PPSE Chair WMU; Keith Lash, WMU; James Ulmer, WMU; Karin Moses, WMU; WMU President John Bernhard.



Mr. Dan Thill, of Thill Oil Company, presents Dr. George Kohrman with a check for \$5,000. Donations, like this one, from private industry were the primary source of funding for the Distributive Education Building. Building construction is underway in this 1965 photo.

to the west. Chairman of the Department of Distributive Education, Mr. Adrian Trimpe, had formed advisory committees to work with the Food and Petroleum Distribution programs. The advisory committee was made up of representatives of industries in those fields who solicited money from major companies. The need for the building was great, as the programs had been using a temporary “barracks” style building near the Read Field House that was left over from the War years.

As a way to raise money for the building, the advisory committees decided to rent Cobo Hall in Detroit. They held a dinner hosted by a nationally known TV personality and sold tickets for \$250 apiece. Rent for Cobo Hall was \$30,000, but the evening was a great success with over \$135,000 raised. The Distributive Education Building was renamed The Adrian Trimpe Distributive Education Building following Trimpe’s retirement in 1977.

Another program that was experiencing growing pains was the Printing Management program. Originally founded by Mr. Lawrence J. Brink in 1956, printing management had been using the limited space available in the Manual Arts and Mechanical Trades buildings. When the Industrial and Engineering Technology building opened, part of the Printing program moved its operation to the basement of that building. Creating a space to house the growing program and the required new equipment became a priority. CEAS Dean James Mathews worked closely with the industrial advisory board led by Homer “Scrap” Cox and Charles “Chub” Thompson, to develop Welborn Hall plans in 1984. Ground breaking followed shortly after and the building was opened in 1987.

To expand the Paper and Printing programs a combining

of the two programs took place with the formation of the Department of Paper and Printing Science and Engineering. A building that could house portions of both of these processes was needed, and in October 2002 The Paper Coating Pilot Plant was dedicated, the first Western Michigan University building to open on the new Parkview Campus. The building is 50,000 square feet and houses a modern, high-speed paper coater acquired from Boise Cascade Corporation’s Portland, Oregon facility. The coater is the only equipment of that type in North America not affiliated with a private company. The plant offers research space for industry clients while providing hands-on experience for students as well as research opportunities for both faculty and students.

In the fall of 2003, the College of Engineering and Applied Sciences moved into its new home at the heart of the University’s Parkview Campus. The 343,000 square-foot facility was completed in August 2003 after two years of construction. The 72.5 million dollar high-tech academic building is the University’s largest.

The new building features two, two-story wings — each more than 600 feet long — joined by a central glass hub. The entire engineering complex, which includes two attached parking ramps, a Paper Coating Pilot Plant, and an energy resource center, is a major component to the Parkview Campus. The new 265-acre campus, which is three miles south of WMU’s main Kalamazoo campus, also includes a Business Technology and Research Park. That park has been designated a Michigan SmartZone and is home to more than 20 companies in the life sciences, information technology and advanced engineering.

The new facility includes seven computer teaching labs, 75 research and teaching laboratories, and a number of flexi-

ble classroom and lecture spaces. Many features are aimed specifically at student study and research needs, including study lounges and breakout rooms where small groups can work together on engineering projects. The facility is a wireless computing environment, but it also includes extensive hard wiring for high-end computing needs and interactive instruction.

The move from Kohrman Hall to the Parkview Campus represents another large step forward in the engineering and technology programs at WMU. But student-centered, hands-on learning combined with industrial collaboration remain at the core of the academic programs.

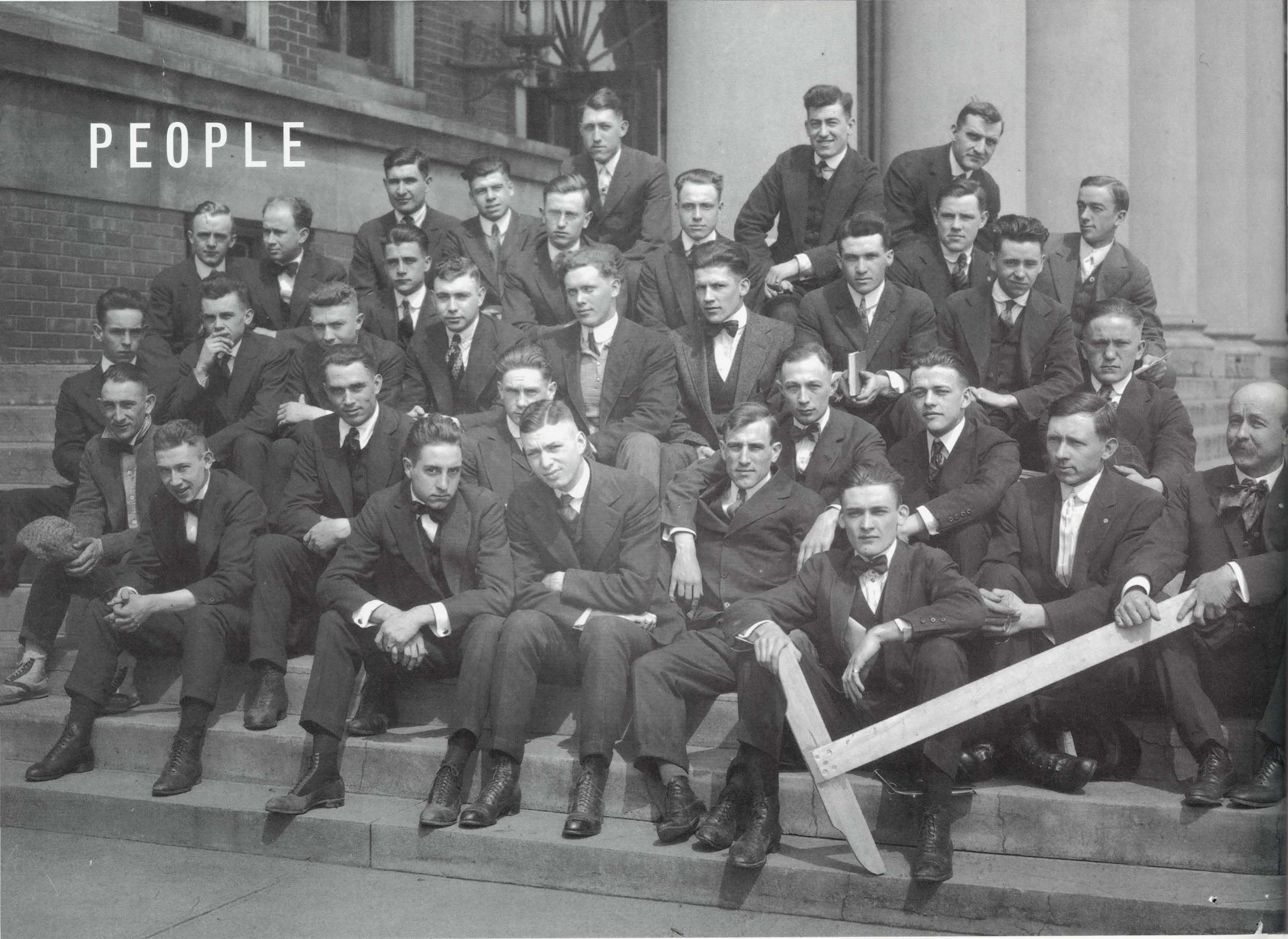


Erected in 1941, the Mechanical Trades Building was razed in December 2001 to make room for the Seelye Athletic Facility.



The College of Engineering and Applied Sciences, Parkview Campus.

PEOPLE



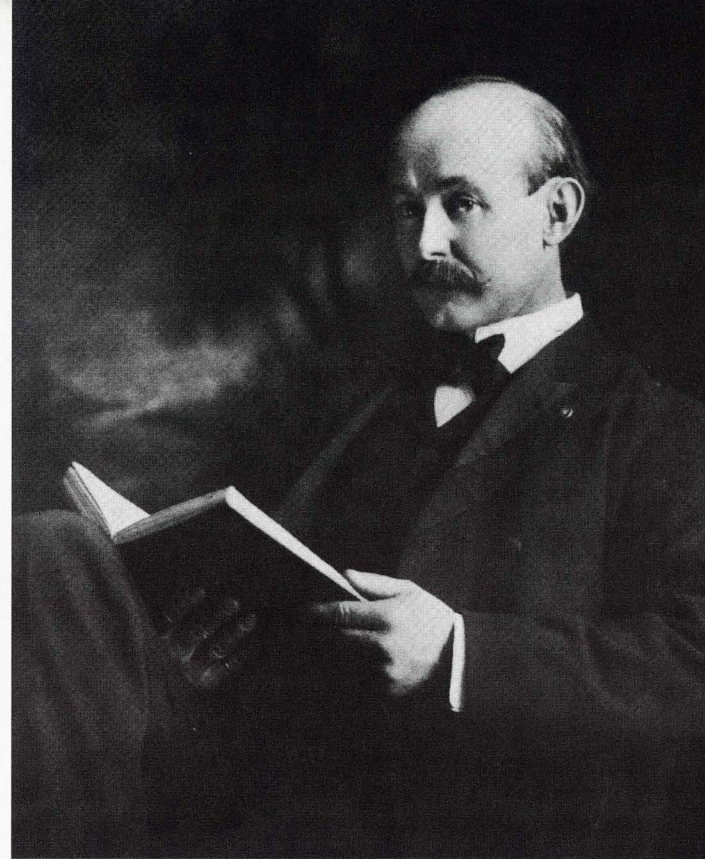
George S. Waite

MANUAL TRAINING, the precursor of engineering at WMU, reflected much of the philosophy and spirit that is present in today's programs. From its continual growth and search for adequate space to its farsighted pioneers, the Department of Manual Training grew with Western.

The first director of manual training, and its only instructor in 1904 was George Stockton Waite. Mr. Waite came to Western State Normal School from Toledo and also worked with the Kalamazoo Public Schools. During the first term (summer 1904) classes were held in two rooms of the high school building and in the attic of the grammar school. Instruction was given in mechanical drawing and shop work, consisting of advanced bench work in wood.

The department gained momentum when the old grammar school building was converted into a manual training school. The increased space allowed for an expansion of course offerings to include wood turning, pattern-making, forging, and machine work, making WSNS's offerings as complete as most courses of schools throughout the country. In 1912, the public school building and temporary manual training home was damaged in a fire, and the department's equipment was moved into a shed at the rear of the high school awaiting the completion of the new manual training school. Despite the struggle for space, the manual training department "turned out a larger percentage of successful graduates than any other department of the school," as reported in the 1912 Brown and Gold yearbook, with

1911. George Waite (far right with T-square) pictured with staff and students of the Manual Training Department on the steps of East Hall.



George Waite, 1916. George Waite was one of the 13 original WSNS faculty members hired in 1903. He was the first Director of Manual Arts Training.

program graduates working in almost every state of the Union.

Mr. George Waite is credited for much of the success of the early years of the program. The 1912 Brown and Gold attributes the program's success to Waite's "years of experience, perseverance, and popularity with his students." In the first eight years, Waite had just a few assistants — Peter Tazalaar in 1910–1911, Marion J. Sherwood in 1911–1912, and Fred Huff and Alba Hill as summer school assistants.

Waite's popularity with his students is reflected in the 1916 Brown and Gold, which is dedicated to Mr. Waite. The dedication page reads: "Dedication to George S. Waite of the Department of Manual Arts, builder of the manhood of Western State Normal, admired by his fellows and esteemed by his pupils, we respectfully dedicate the Brown and Gold of 1916."

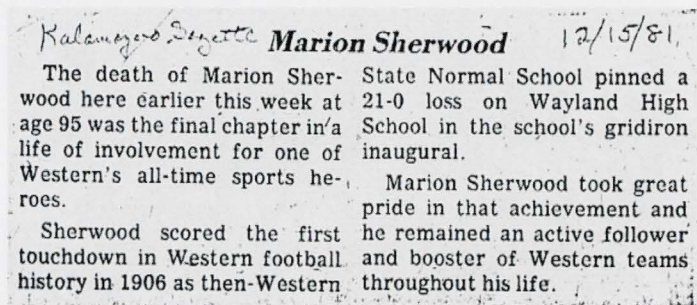
Marion J. Sherwood

The program continued to grow, and several new instructors were added, including a WSNS graduate, Marion J. Sherwood. He received a Life Certificate in 1907. While a student at WSNS, Sherwood quarterbacked the first Hilltopper football



squad. He has the distinction of scoring Western's first touchdown in 1906 in the school's gridiron debut. (For the record: Western won the game 21-0, over Wayland High School.) Sherwood then worked as an assistant in the manual training department (1911-1912) and then became a full-time instructor. He became head of the Manual Arts Department in 1917, upon George Waite's retirement, and stayed with Western until his retirement in 1948.

While an instructor at Western, Sherwood continued his own education, completing a BS degree in industrial arts from Columbia University's Teachers College in 1918 and an MA in Education from Columbia in 1930. Sherwood believed in the importance of education and hands-on experience, a philosophy that is reflected in programs even today. His essay, published



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in the 1912 Brown and Gold was foundational in early program development and is an important part of our history. It is repeated here as a valuable glimpse at our past.

Manual Training

Manual Training today has a stronger foothold in our public school curriculum than ever before. Like all good reforms, it has fought its way through long seasons of opposition and distrust. What we now have is the result of the efforts of a few far-seeing pioneers who conducted a continuous campaign endeavoring to convince a skeptical public that the growing boy and girl needed a closer contact with material things, that their hands ought to work in unison with their brains, and that the problem before so many of our children is not "How to live completely," but rather the very serious problem of "How to live at all."

But when the believers in manual training had gained the hour or hour and one-half a week for their work, the results gave great promise of what might be done with this system of training. The general success of this so-called "experiment" has not only been the direct and indirect cause of the birth of many vocational schools and trade schools, but has caused the manual training hour in our common schools to be lengthened, new equipment to be purchased, and more efficient teachers to be secured. And this movement is not confined to our urban centers, but is fast spreading to rural districts and the one-room school. For it is here where the boy and girl oscillate between school and a farm home, that the closest relations between school work and home activity can easily be established. Many there are who think the farmer's son and daughter do not need manual training. These people seem to confuse manual training with

manual labor and physical culture. While manual training has its value in each of these, its fundamental function is entirely different, is a part of general education, a different kind of culture. It means the harmonious development and training of the head, the hand, and the heart; the training of the hand to express the mind, the training of the man to govern both.

The general trend of the whole movement is toward the practical, the useful, which at the same time makes a more vivid appeal to the child. The newer courses, such as printing and reinforced concrete, and the hearty support they receive, show this tendency.

To the graduate from the manual training course, the future promises a liberal wage and a pleasant occupation even though he does not take his work seriously. Yet the teacher of manual training who is satisfied to earn a living wage by making his work a meaningless routine of tasks will find himself sooner or later in a mood of keen dissatisfaction with his work, with himself, and with the universe. He will regret his choice of profession, not seeing that he himself is to blame for degrading his work by his own unintelligent attitude towards it.

But to the real student of manual training this field of work enlists the very best he has of mind and energy. We feel sure that real constructive handwork is only at its beginning and that its results and possibilities are only partially appreciated. Let him who would do his best in this work, not only attend summer schools, read current literature, and attend conventions, but also let him spend some time in work shops and manufacturing establishments, meeting tradesmen and craftsmen in their own spheres, and keeping his mind open toward the world of things and

forces. Then will he be able to carry this movement forward in a worthy manner and the institution from which he was graduated will claim him with pride.

Marion J. Sherwood, 1912

Francis V. Lemon

A student from that time period who may be claimed “with pride” was Francis Lemon. His career reflects the path that so many of the early manual arts graduates followed. A portfolio of Francis Lemon’s mechanical drawings is housed in the University Archives. The dates and increasing skill of the drawings demonstrates a student of that time period. Mr. Lemon’s first drawings are dated 1909 and consist of things like practice lettering and simple drawings.

Lemon was a high school student at the time and began taking Western classes when they were offered in the public high school building. The drawings progress through 1913.

One particularly difficult drawing, dated 10-15-13, is titled, “The Development of the V and Square Threads by Means of the Helix.” What is important for those who grew up with the computer to remember is that this piece was done at the drawing board, in ink on vellum paper, a medium that did not allow for many mistakes. The drawing reflects good craftsmanship, but it also speaks to the expectations of Western’s faculty. As difficult as the drawing may have been to produce, a notation in the bottom right corner records a

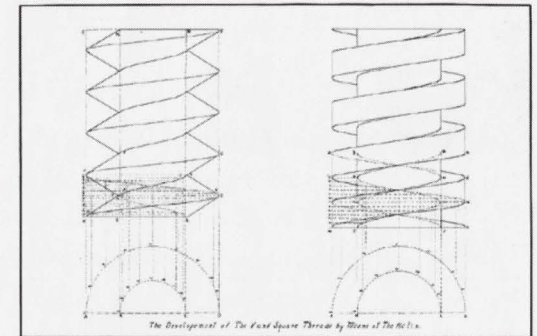


PLATE 1
Francis Lemon, 1913

grade of B+ by a Mr. Bowen, an instructor in Western's Manual Training Department.

Mr. Lemon's career path was similar to many of Western's Manual Training graduates of that time. His obituary from the Kalamazoo Gazette notes that after attending Western, Francis Lemon served his country in World War I and returned to the area. He was an Industrial Arts teacher in the Kalamazoo Public Schools for 36 years and a member of the Bethlehem Baptist Church. After his retirement he stayed involved in education as a member of the Retired Teachers Association. Francis Lemon died on May 25, 1973 at the age of 79.

Elmer C. (Buck) Weaver

Where Francis Lemon may embody the essence of the student of the early days of Western's Manual Training, Buck Weaver is symbolic of the essence of the teacher of Manual Arts. He served Western from 1917 to 1955, and, among so many other things, founded the Aviation Mechanics program in 1937. His colleague, Fred Huff, who was with Western for just about as long, wrote an article on Buck Weaver for the Summer 1955 Western Michigan College News Magazine (vol. 13, no. 4, pp. 13 & 18) that not only captures the elusive character of Buck Weaver, but also outlines the spirit of Industrial Arts in the first half of Western's one hundred year history. It is presented below almost in its entirety.

It was forty-two years ago when a tall, quiet high school boy fresh from Ohio walked into the woodshop where I was teaching in Kalamazoo Central High School. He was wearing the first wristwatch I had ever seen on a man. I mistook this boy for a sissy and being partial to the rougher element among students I considered chasing him out of the class.

I am glad I waited — for in this boy I found unusual talent. He had a wonderful pair of hands and a way with machinery seldom given to any man.

Buck came to high school in or on a windwagon mounted on bicycle wheels and driven by a motorcycle engine and an airplane propeller. It had no brakes and he stopped it by dragging his foot over the side onto the pavement. Buck kept himself in shoes and gas by working for ten cents an hour. Among the many things he turned his high school hands to was to make the first flicker-photometer for Prof. Hammond's physics laboratory. He also installed much of the mechanical equipment in the then new Central High School.

Buck graduated from Western Normal in 1917. I remember the day back then when Marion Sherwood of the manual training department at Western said, "I think we made a good deal. President Waldo has just hired Buck Weaver." As I remember it before the year was over Buck had enlisted in the Aviation Section of the Signal Corps of World War I. At that time there was no Aviation Corps but Buck's work was in that field where he worked up from buck private to Master Sergeant. He took the examination for first lieutenant and might have had his commission but his uniform would have cost \$115 and the war was over. He took the money and got married instead.

Buck likes to fly. He owned the first private plane in Kalamazoo. It was a Standard V J-100 H.P. XX6, which he bought in Minneapolis and flew to Kalamazoo. Since then Buck has owned many planes. Most of them have been rebuilt jobs he picked up after someone wrecked them. Buck bought what was left, rebuilt them, had them licensed and flew them and sold them. How many? I doubt if Buck remembers.

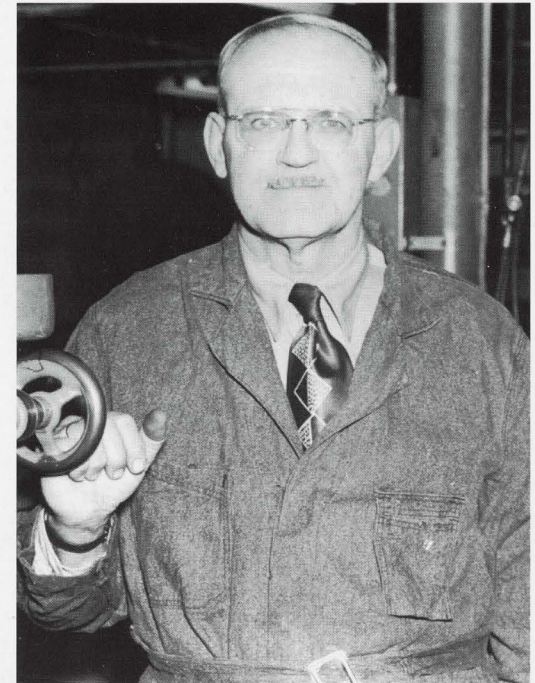
I remember the time Buck invited me to go for a plane ride. I drove out to the Austin Lake Airport and met the Weaver family. Buck took me up and as we passed over the field a bright yellow Cub plane was taking off below us. At that time the runway was short. To land, one had to just skim the power lines along the east end of the runway. When we came back the Cub was parked in front of the hangar. Buck remarked, "I see Jeanne [Buck's daughter] is back." It was her first solo flight. It was typical that he had not mentioned it before.

Buck completed his B.S. at Columbia University in 1926 and returned to the same place for his A.M. in 1933. During the summer of 1937 he attended Penn State for a college driver-training certificate. He came home and altered five cars for dual control. He then personally trained 100 teachers and 400 students. This was the first driver-training program in Michigan outside of Detroit. For three years, in addition to full-time teaching, he personally maintained some 22 passenger cars, busses and trucks owned by this college. For this work President Waldo added \$300 a year to his salary as a teacher.

I remember talking casually with Buck in the hallway of the Industrial Arts building. Buck remarked that someone was asleep. He said, "There is money out there and no one is after it." The rest of the story is too long and involves too many people but it can be boiled down to something like this. The Upjohn Unemployment Trustee Corporation put up \$60,000 towards the Mechanical Trades building. It is significant that it was completed just in time to aid the World War II defense effort. Buck was made a coordinator and supervisor of defense training. Under his supervision 917 Navymen were given primary and secondary flight training. Not one received so much as a scratch in training. While this was going on Buck also

saw to it that 6,892 civilians, men and women, were trained for industry and placed in defense jobs. Buck's flight training netted some \$46,000 profit which was invested in new college equipment. This was just the start of a prodigious amount of material Buck brought on to this campus. Buck knew where and how to get government surplus equipment. Much of it was unsuited for our use. Mostly it was too big. Take the \$265,000 (government price) airplane that Buck got for the price of the gas to fly it to Kalamazoo. The engines and other parts could be used to train students. The heavy machinery he brought in was swapped for new machines of the right kind and size and the difference if any could buy steel, lumber and things necessary to alter, renew and re-equip the shops and drawing rooms of the Industrial Arts department.

Buck has always been busy. He has planned ahead for Western and he has worked. When I say work I mean that during the thirty-five years we have been together at Western the most of the time I have spent with him has been after teaching hours. I have seen him working after school, Saturdays, holidays, nights and vacation probably thousands of times. He built, he continually altered, he changed, he improved, he kept up his shops and he taught his students



to do likewise. These things the shop teachers of Michigan know. Quietly and sincerely they salute him as a Master Teacher.

Buck has been reliable. I never knew him to be sick or to be absent from his classes. I doubt if he has ever been tardy. I saw him nod once in a faculty meeting, but I knew that he had just pulled in from a round trip without stopping to rest from New York City to attend that meeting. He had gone there to pick up a plane, load it on his flat top trailer and bring it home. I remember the time President Waldo sent some of us to Chicago to buy new books for the Library and needed by the Industrial Arts department. The car available was an old Model T Ford with a noisy ring gear. Buck said it would last so we took off. It broke off within fifty feet of the home garage door and we pushed it inside.

And now Buck is leaving teaching and going into industry. The loss to teaching is hard to estimate but all is not lost. Buck will be with the Orthopedic Frame Company, Kalamazoo. Let the doctors, the surgeons and the hospitals state their needs. If it is made of wood or metal or if it moves or needs strength in the right places or if it must be safe, reliable or spark proof Buck can make it. Buck Weaver's fine hands as yet unscratched by any accident to whom one ten-thousandths of an inch is no problem may go on to greater things than ever before.

Fred Huff, 1955

Joseph Giachino

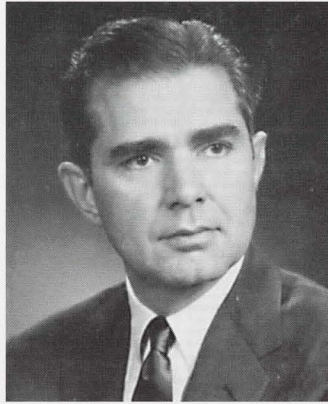
Dr. J. W. Giachino joined the Western faculty in 1939. He received his bachelor's degree from Wayne University and his master's from the University of Detroit. While a faculty member, he completed his PhD degree in Industrial Education from Penn State College in 1949.

He is best noted for his contributions to the growth of technical programs at Western and his prolific output as an author. He was active in service to his country during World War II as a training officer at the headquarters of Naval Technical Training Command from 1942 to 1946. He was a technical education advisor for the Ford Foundation and the government of East Pakistan from 1956 to 1958, and accompanied George Kohrman to Nigeria in 1960 to study the feasibility of starting a technical college in Ibadan. From 1952 until his retirement in 1967 he served as chair of the Department of Engineering Technology. Giachino was active in professional societies and was president of the Michigan Industrial Education Society.



John L. Feirer

Dr. John L. Feirer began teaching at Western in 1940 and headed the Department of Industrial Technology and Education for 32 years until his retirement in 1983. Feirer was a prolific author. The current WMU card catalog lists 50 entries for works that he wrote, co-authored, or edited. He



also served as Executive Editor of Industrial Education, which at the time was the oldest and largest professional magazine for industrial, vocational, and technical education. Over his 43 year career with the university, Dr. Feirer wrote 20 technical books on metalworking, woodwork-

ing, building construction, and the metric system. His books have been adopted in schools in every state and have been translated into many languages. Dr. Feirer served widely as a consultant to industry as well as to the federal government and the State of Michigan. During his career, Feirer received numerous awards, including the Apollo Achievement Award (NASA), Man of the Year in Industrial Education, the Distinguished Achievement Award for Editorials from the Educational Press Association of America, and was named to the Academy of Fellows of the International Technology Education Association. In 1982 he was designated a Western Michigan University Distinguished Faculty Scholar.

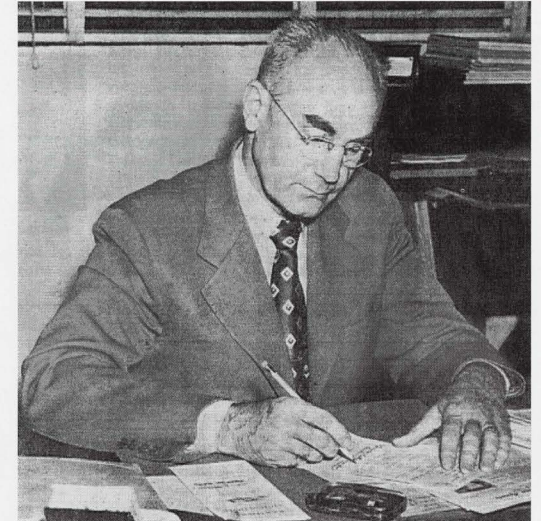
Deyo B. Fox

A native of Wayland, MI, Dr. Deyo Fox earned a Life Certificate in 1917 from Western State Normal School. He taught in the public schools in Hudson, Crystal Falls, and Jackson, MI, where he spent five years as an industrial arts teacher, five years as an industrial arts counselor, nine years as principal of Jackson Vocational and Technical School, and two years as industrial education supervisor for the State

Board of Control for Vocational Education. He earned BS and MS degrees from the University of Michigan and a PhD from the University of Pittsburgh in 1944. He came to Western in 1945 as director of the newly formed Division of Vocational Education and Practical Arts. Fox oversaw the creation of numerous two-year vocational programs and a fast-growing student enrollment in the post World War Two era. He, along with Dr. Alfred Nadelman, was instrumental in bringing about the Paper Technology program in 1948, which rapidly gained national attention. Under Fox, the Division of Vocational Education formed four main areas that included Business Studies, Distributive Education, Home Economics, and Industrial Education. Fox died suddenly in December 1950. George Kohrman was hired to replace him.

Adrian Trimpe

An alumnus of WMU, Adrian Trimpe established the first distributive education program in Michigan while a teacher in the Pontiac public schools. In 1947, He joined the Western faculty and served as head of the



(below) 1957.
L to R: Rosalie Reber, Wendell Fidler, Raymond Dannenberg, and Adrian Trimpe.



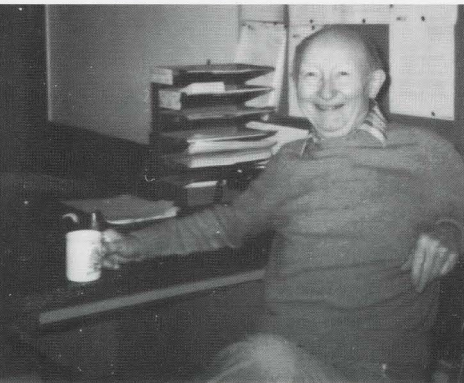
Department of Distributive Education from 1957 to 1972. Trimpe is best known as a tireless fundraiser with strong ties to industry. Due mainly to his efforts from 1963 to 1965, he led an effort to secure funds from business organizations and foundations to match federal monies available to construct vocational facilities. The Distributive Education building was completed in 1966 without the use of state tax money. He retired in 1972, and the facility, now called the Trimpe Building, was named for him in 1974.

Glade Wilcox

Glade Wilcox received a bachelor's degree from Western Illinois Teachers College, a master's from the University of Illinois, and a Doctorate in Education from Indiana University. He joined the faculty at Western Michigan University in 1955, where he directed the development of the electrical engineering department. Dr. Wilcox was the author of five textbooks and numerous professional papers, served as Senior Editor

in the areas of electrical and electronic technology of the Editorial Advisory Board in Technical Education for Holt, Rinehart and Winston, and as a Consulting Editor for the Allyn and Bacon Series in electricity and electronics technology. He was a senior member of the Institute of Electrical and Electronics Engineers and was awarded their Centennial Medal for Outstanding Service in 1984. He retired from Western in 1982. Those familiar with Kohrman Hall should think of Dr.

Wilcox when they look at two of the building's features that he designed. In the third floor classrooms, the breaker buttons with the red lights were added as safety devices at Wilcox's



request as well as the pulley feature on the rooftop antenna that allows for easier changing of equipment. It was also Glade Wilcox who enticed Dr. Cassius Hesselberth, the college's first engineering PhD, to join the faculty from the University of Illinois in 1963.

William M. McCabe

Professor McCabe came to WMU in 1970 after 16 years on the faculty at St. Louis University, where he had also earned his bachelor's and master's degrees. He taught at WMU until his retirement in 1987. In addition to electronics, McCabe also had a linguistics background, which he drew on to develop, with professor Lambert

Vander Kooi, the computer engineering curriculum. While on the faculty at St. Louis University, McCabe had Joe Keleman as a student. Keleman is currently a faculty member at WMU in the department of Electrical and Computer Engineering, and has been for the past thirty-five years. Professor McCabe was a senior life member of the Institute of Electrical and Electronics Engineers and had served as a Science Faculty Fellow at Stanford University.

Donna R. van Westrienen

Professor van Westrienen served Western for 27½ years in the Consumer Resources and Technology program. Van Westrienen was one of the first two students to graduate





Dietetics students instruct visitors in proper nutrition at this Kohrman Hall open house.

included heart-healthy menus, with about 40 guests served two times per week. In the area of curriculum, van Westrienen was instrumental in the development of the food service administration major. She was active in the faculty advisory committee that helped achieve accreditation status for the department's graduate-level pre-professional practice program in dietetics.

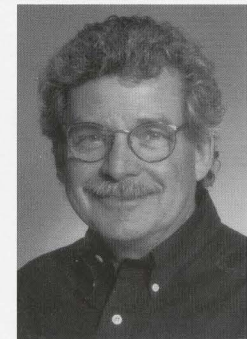
Donald Nantz — *Assistant Dean, founder of Advising Center*
 Dr. Donald Nantz joined the Western faculty in 1952 and served the college for thirty-two years, retiring in 1984 as assistant dean in the College of Engineering and Applied Sciences. Nantz became the

from the University's dietetics program in 1954, and she began teaching at WMU in 1968 after completing a master's degree at Michigan State University. She is best known for creating an intra-departmental, student-operated restaurant in Kohrman Hall. The restaurant became popular on campus, combining the efforts of faculty and students in dietetics, food service, interior design, and textiles. The bill of fare

director of admissions and chair of the Applied Sciences Council in 1975. During his tenure, Nantz developed several degree programs and supervised two Michigan Department of Education projects to facilitate the transfer of community college credits to the University. Nantz is best known for founding the college's advising office and developing a course scheduling and sequencing matrix to aid students in their degree programs.

Fred Z. Sitkins

Professor Sitkins began teaching at Western in 1979 and continues to do so. His specialty is in Manufacturing Processes. He began with the Department of Mechanical Engineering Technology and has served as interim chair of the Department of Engineering Technology. His first memories of Western were as a student in 1955 in the Industrial Vocational Education program. As a student he served as president of the Men's Union and recalls many meetings with WMU's president Paul Sangren. Sitkins has been active in many areas of WMU and has contributed much to the current history project. Together with John Lindbeck, Jim VanDePolder, and Tom Swartz, he coordinated a restoration project of the Trolley Car that ran on Western's East Campus from 1908 to 1948.



As a student, Fred Sitkins was a member of the 1956 ROTC Rifle Team and President of the Men's Union.

Floyd Cook, Jr. — *First African American Engineering Graduate (BS in Mechanical Engineering Technology, 1964)*
 Floyd Cook, Jr., from Muskegon Heights, Michigan, holds the distinction of being WMU's first African American gradu-

The CEAS is well known for its undergraduate advising office. Director Sandra Blanchard advises a student c. 1980.



ate with a bachelor's degree in engineering (BSMET 1964). Mr. Cook was encouraged to attend WMU by friends and acquaintances to pursue his interest in mechanical engineering; however, his high school guidance counselors, who felt the engineering field presented too many barriers at that time to African Americans, dissuaded him to go into engineering. Mr. Cook persisted, figuring the 1960s were a time for change, completing his degree in 1964.

While at WMU, Mr. Cook participated in basketball (2 years) and track (4 years) as a standout in the 440 yard dash and as a part of the 4 x 440 relay team that briefly held the U.S. indoor record. Cook was also a member of Kappa Alpha Psi, the first chartered Black fraternity at WMU, where he served as dean of pledges for two years and as song leader. Cook remembers his days at WMU as a challenge, balancing 17 credit hours per semester in a rigorous curriculum with his athletic training schedule, which left little time for socializing. He also recalls his sense of isolation at often finding himself the only African American in his classes. Cook viewed himself as a groundbreaker, his desire to be an engineer and his religious faith carrying him through the tough times.

After graduating, Cook pursued his interest in engineering (product design and development). He worked for several southwest Michigan companies and was awarded several design and invention patents while continuing his education. He received a master's degree in Occupational Education Administration from the University of Michigan. In addition to engineering, Mr. Cook has worked in various Vocational Administrative capacities for the Muskegon, MI, Intermediate School District and periodically as a substitute teacher.

Currently, Mr. Cook is active as a member of the WMU Foundation, WMU Alumni Association Board of Directors,

and serves as president of the Onyx Society. He helped to organize the second African American Alumni reunion, which was held September 18–21, 2003, and is also involved in the WMU Alumni Mentor program. A most recent and valued accomplishment involves his recognition and participation as a facilitator for the Institute for Healing Racism — Muskegon, Michigan.

Klazina A. Welch — *Office Coordinator, Department of Industrial and Manufacturing Engineering*

Klaz Welch is representative of the outstanding staff support the College of Engineering and Applied Sciences has enjoyed throughout its history. Ms. Welch began her employment

with WMU in 1964 as an Administrative Assistant to the Associate Dean of the College of Education. She has been with WMU continuously since, with two short leaves of absence. She has worked in the Teacher Education Department, the Community School Development Center, the Department of Educational Leadership, and the



Evaluation Center. In 1977, Klaz began with the Industrial Engineering Department. She has aided department chairs for more than 25 years, including Frank Wolf, Kailash Bafna, Richard Munstermann, Michael Atkins, and Paul Engelmann. She is frequently a member of the Sunseeker Solar car race team, offering logistical and organizational support. Klaz's skill and dedication have twice been recognized (in 1998 and 2001) with the Staff Excellence Award.

Klaz Welch is the person that many go to for help in

doing their jobs. Klaz recalls one young woman, a student in the IE Department, who was struggling with many personal difficulties. Klaz helped her with class scheduling and listened and offered moral support. When the student finally made it to graduation, she made a monetary donation to WMU in Klaz's name to show her appreciation. Klaz notes that it is nice to see former students who stop by the office to say hello. She greets them with a smile and a hug and wants to know what they are doing. From office supplies to meeting minutes and the mystery of a university budget process, Klaz is the person to see.

Klaz plans to retire in one to two years and travel with her husband to the Netherlands. After returning, they plan to get a motor home and see the United States.

Molly W. Williams — *First Woman Faculty Member with a PhD in Engineering, and advisor to first WMU Chapter of the Society of Women Engineers*

Dr. Molly W. Williams joined the WMU faculty in 1973 with the Department of Mechanical Engineering. She was the first woman faculty member with a PhD in engineering to work for the college. She has promoted the engineering career to women throughout her tenure and served as a role model for many of the college's female students. In 1978, she coordinated a series of workshops for high school women that offered them the opportunity to hear about careers in various fields of engineering. Women in Western's engineering curricula participated in the workshops. In 1979, she became the first



advisor to the newly formed student chapter of The Society of Women Engineers at Western.

Dr. Williams has researched and published widely in the field of mechanical engineering. She currently serves the College of Engineering and Applied Sciences as the Associate Dean of Research and Graduate Studies.

Margean V. Gladysz — *First Woman to Graduate with a Bachelor of Science in Engineering*

Margean V. Gladysz of Galesburg, Michigan, received a Bachelor of Science in Engineering — Industrial Engineering in 1975. Originally Ms. Gladysz entered WMU as a math major, but she enjoyed the challenge of calculus-based physics courses and noted that many of her classmates were engineering majors, so she decided to switch. After reviewing the various curricula in engineering, she discovered that only two programs, paper science and industrial engineering, included as requirements the math, physics, and computers courses that she had taken so far. She chose industrial engineering because of its broader industrial and non-industrial applications. Gladysz began engineering courses in the summer of 1973, and in 1975 she completed the program in industrial engineering, graduating not only as the first woman but also Cum Laude and with Honors.

Following graduation, Gladysz went to work for Bendix corporation in South Bend, Indiana, as a Process Engineer within the Quality Department involved in the assembly, inspection and testing of jet engine fuel controls. During this period, in which she was the first woman engineer employed by the Energy Controls Division of Bendix, several skills developed at WMU made her stand out: her ability to write clear, concise documentation; to create sound capital project

justification (which she attributes to her Engineering Economy class); to devise assembly and disassembly tools and test fixtures; and a holistic approach to quality and internal customer service. The latter was noticed and led to her advancement to supervisor of her seven-person engineering unit. Her leadership skills honed at WMU enabled her to take an under performing department and create a highly responsive unit. While at Bendix, Gladysz began graduate work at Indiana University at South Bend and in 1978 completed a MSBA degree concentrating on Finance, Economics, and Organizational Development. She also became the first woman member and President of the South Bend Chapter of the American Institute of Industrial Engineers.

Shortly thereafter, Gladysz led several projects for Bendix that involved relocation and merging of facilities. She relied heavily on her facilities management and plant layout training from WMU to tackle these assignments. When involved in an operations move to a new complex in Jacksonville, Florida, Gladysz caused quite a stir when she asked to use the R&D computer to launch a simulation to forecast the number of very expensive engine test stands required for the new facility that would be based on new digital technology. She thanks Dr. Wolf for his Operations Research class for making this concept feasible. Recommending ergonomic concepts in the design of these stands, she established a style that continued to be used for years afterwards in many locations.

Margean V. Gladysz became a plant manager with 75 employees and in 1983 was invited to join the senior staff of the Bendix Aerospace Sector Headquarters as a Senior Strategic Planner charged with the development of sector-wide strategic plans, oversight of divisional plans, as well as merger and acquisition analysis. Recently, Gladysz has held the

position of Executive Director of the Governor's Office of Volunteerism in the State of New Jersey. As of February 2003, Gladysz was the Senior Vice President and Regional Director — New Jersey for the National Executive Service Corps.

SURVEY OF EMERITI FACULTY

In the summer of 2001, to kick-off the College of Engineering and Applied Sciences' History Project, emeriti faculty members from the College were invited to a reception (held in August 2001). Included with the invitation was a survey that asked the emeriti to send information about themselves and their tenure with the College. The survey form requested information in six areas: name; years with the College, department, and area of specialty; what Western was like on first arrival; significant events to be included in the College's history; specific contributions the faculty member made; and what the faculty member had been up to since retirement. The emeriti faculty members were also invited to add additional pages of commentary. The following is a synopsis of the results of the survey. At the conclusion of the history project, the response forms will be filed with University Archives.

Lee O. Baker

Myrtle S. Baker-Kerr responded for Lee Baker (who died in 1982). Baker was with Western from 1954 to 1982 and worked in the Departments of Biology and Agriculture, eventually becoming head of the Department of Agriculture.

1957. Lee Baker (left) with Howard Corbus. Corbus came to Western in 1927.



Ms. Baker-Kerr noted the small, friendly atmosphere of the place in the 1950s. She mentioned the significance of Rural Life and Education along with Agriculture in the early development of Western. In recognition of Lee Baker's contributions to Western, the farm on which the new Parkview Campus is being constructed bears his name.

Max Benne

Professor Benne began teaching at Western in 1964 with the College of Education. He began teaching Agricultural classes in 1975 with the College and then with the College of Business when the Consumer Resources and Technology program moved to the business college. He remembers the small size and friendly atmosphere of Western when he first arrived. Since retirement, he has continued to work on his commercial farm near Sturgis, MI.

Henry J. Beukema

Professor Beukema was a Western student from 1938 to 1941. He was a staff member from 1943 to 1977, teaching for six years in Industrial Education and thirty-four years in Engineering Technology, specializing in Drafting and Design for Manufacturing Engineering. Beukema recalls Western in the 1940s as a "typical teachers college" with some Liberal Arts but 95% Education. He remembers that a majority of the students were women. He noted the World War II training efforts with the Navy V-12 programs, the curricula upgrades, and the move to West Campus as the most significant events of the College. He taught courses in conjunction with the University of Michigan in Descriptive Geometry and Engineering Drawing on WMU's campus so that Western

students could automatically transfer into the U. of M. engineering curricula. Two of the textbooks that he wrote were adopted in curricula from junior high through college level. He has stayed active in his apartment association and has played trumpet in bands in Hasting, MI, and Vero Beach, FL.

Lawrence J. Brink

Mr. Brink was with Western from 1935 to 1980, with a two-year gap in the 1940s for Navy service. He taught Printing for the Department of Industrial Arts and founded the Printing Management program with "good wishes but no money" in 1957. He remembers Western in the early days as "small with many outstanding faculty members." Brink also spent his entire career at Western with University Printing

Services, serving as publisher of the Western Michigan College/University News Magazine for many years. After the programs in the Mechanical Trades Building were moved to the newly opened Kohrman Hall, the building housed University Printing Services and was designated the Brink Printing



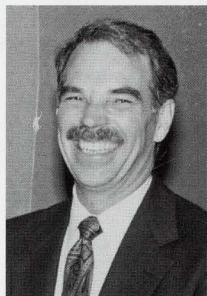
Services Building. Mr. Brink continues his interest in printing, working with the Printing Craftsman's Club. He is also involved with the Kalamazoo Area Retired School Personnel.

Phillip L. Bruce

Professor Bruce was with the College from 1963 to 1990 in the Industrial Education, Engineering Technology, and Consumer Resources Technology Departments. He specialized in Plastics Technology along with woods and crafts. Bruce recalls that a golf course existed where Kohrman Hall now stands and notes that the place was much smaller in the 1960s and that most faculty were familiar faces, if not actual acquaintances. He cites the move to West Campus as a significant event. Bruce established the Plastics Technology program. He has kept busy since retirement with building, maintaining homes, travel, and as president of the Southwestern Michigan American Bell Association Chapter.

Arvon D. Byle

Dr. Byle served the College from 1962 to 1996 in the Departments of Industrial Education and Technology and



Paper and Printing Science and Engineering. He specialized in Printing and Graphic Arts along with Printing Management and Marketing, and he chaired the Department of Paper and Printing Science and Engineering for eight years. Byle recalls the smaller number of students when he started at Western and the primary emphasis on teacher education. He notes the founding

of Paper Technology, the establishment of Printing Management, and the construction of Welborn Hall as some of the most significant events of the college. Byles's major contributions include helping to move WMU's printing programs to national prominence and securing major funding grants and fund raising for building Welborn Hall. After

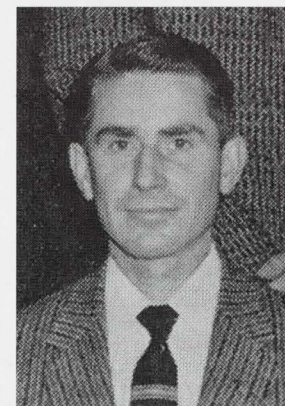
retirement, Byle took a sailboat from Holland, MI, to Florida via the Mississippi River. He splits his time between homes in northern Michigan and Florida.

Richard W. Flores

Dr. Flores was with Western from 1983 to 1993 in the Paper and Printing Science and Engineering Department specializing in papermaking courses for both freshmen and printers. He served as Executive Director of the Paper Technology Foundation from 1989 to 1993, keeping it "in the black" for all five of those years. He lists the establishment of a PhD in paper and printing in 2000 and the opening of the new building for the pilot paper plant (on the Parkview Campus) in 2002 as two of the most significant events of the College. Since retirement, Dr. Flores has been active as a volunteer for the Kalamazoo Air Zoo, the WMU Gary Fund, and his church. He attends most home football, volleyball, and basketball games.

Herbert Ellinger

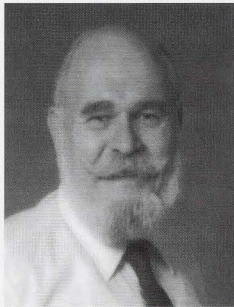
Mr. Ellinger worked for Western from 1942 to 1983, beginning in the Division of Practical Arts and Vocational Education. He was instrumental in developing the Aviation and Automotive Technology programs and has authored several textbooks. He recalls the campus size of about 2,000 students when he first started teaching. He believes that the evolution of the Vocational Aviation Mechanics program into World War II training programs and then into the modern Engineering and Technology programs is the most significant aspect



of the College's history. He served as acting chair of the newly formed Transportation Technology Department in 1967 and has written extensively about the history of the aviation and automotive programs at Western. Since retirement, he has remained active by writing, holding seminars, and traveling.

Jerome H. Hemmye

Professor Hemmye served Western for 15 years until his retirement in the 1990s. He taught in the Mechanical



Engineering Department and specialized in machine design and reliability. Hemmye notes that Western was relatively unknown in engineering years ago but the movement to get the engineering programs accredited changed that. He established the ASME Chapter at WMU and aided in the move from technology to engineering. Since retirement, Dr. Hemmye has worked as a

volunteer, teaching graduate classes in Probabilistic Design and Reliability at the University of Guanajuato, Mexico.

G. Stewart Johnson

Professor Johnson served the College from 1960 to 1984 with the Engineering Technology and Mechanical Engineering Departments. He specialized in control systems and machine design and served as chair of the Mechanical Engineering Department for three years. He remembers the Mechanical Trades Building housing many of the college's programs in the early 1960s. He noted his work in changing the emphasis from "hands-on" technical training to accredited engineering programs as being most significant. He and his wife now live in Spring Lake, MI.

John Lindbeck

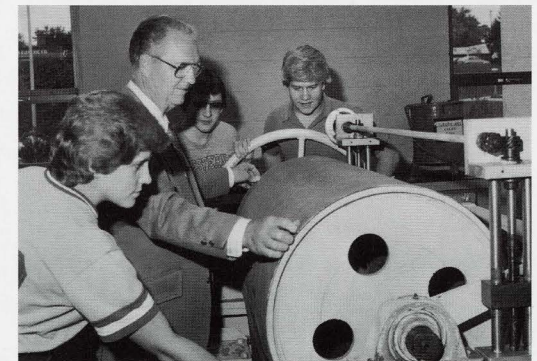
Dr. Lindbeck was with Western from 1957 to 1991 with the Engineering Technology Department. His specialties were Product Design and Manufacturing, and he offered courses that had a broad based appeal. His Arts and Ideas course drew students from the Humanities, General Studies, the Honors College, and Engineering. He recalls Western of the 1950s as a small, provincial teachers college on its way to greater things. He lists the change from teacher education to engineering technology to engineering, the Ibadan (Nigeria) Technical College, and the College's national involvement in metric conversion among the most significant events. Dr. Lindbeck notes his teaching in humanities; coordinating student projects in Japan, India, and China; directing local and national metric education and training; serving as a NASA project director; and authoring more than twenty textbooks among his achievements. Since retirement, he has kept active by writing textbooks, performing volunteer work, and traveling.

Erwin W. Rayford

Dr. Rayford worked at Western from 1967 to 1983.

He began in the Industrial Technology and Education

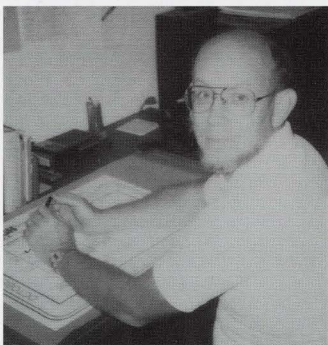
Department as head of the Printing Program. He recalls a significant event from 1981 when he took six students from Western's Printing Management and Marketing program along with six students from Rochester Institute of Technology to Italy for ten days as guests



of the Gravure Technology Association and Italian Press Manufacturers. The group toured Italy and studied the Italian printing and press manufacturing methods and facilities. Dr. Rayford designed the Marketing curriculum to be added to Printing Management, visited and spoke at numerous high schools in Michigan, Indiana, Illinois, and Wisconsin about the program, and was instrumental in getting the flexographic and two offset printing presses and other equipment donated to the program. He also initiated the forming of an Advisory Committee for Printing Marketing and Management that led to the move to build Welborn Hall.

Lambert Vander Kooi

Professor Vander Kooi served WMU from 1970 to 2000 beginning in the Engineering Technology Department. He specialized in Random Processes, Control Systems, Digital Systems, and Circuit Theory. Vander Kooi remembers that when he first arrived the College and Department were primarily teaching units and the programs were vocational. He cites the change to engineering, the accreditation of engineering programs, and the initiation of graduate engineering programs among the most noteworthy events in the College's history.



One of his greatest contributions was founding, along with William McCabe, the Computer Engineering Program.

Terry Wingblad

Mr. Wingblad was a graduate assistant in 1968 to 1969 in Industrial Education for Elementary Teachers. He notes the Ibadan (Nigeria) Technical College as the College's significant

accomplishment. Mr. Wingblad taught at the Ibadan Technical College from 1967 to 1968 as a Peace Corps volunteer offering instruction in commercial woodworking and commercial drawing. Wingblad retired from General Motors in 1992 as a Senior Project Engineer in Automotive Safety. He notes that his graduate degree from Western in 1969 allowed him to pursue a successful engineering career at General Motors.

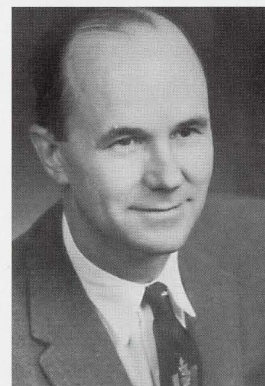
DEANS OF THE COLLEGE

George E. Kehrman

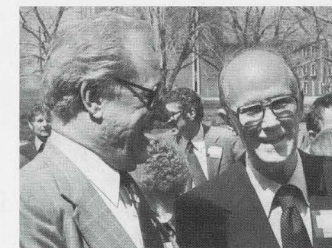
Dr. Kehrman was a native of Missouri, where shortly after the Great Depression, he played a key role in setting up a high school and handing out its first degrees. While in Missouri, Kehrman became state director of industrial education and later state director of war production training during the Second World War. Dr. George E. Kehrman was hired in 1951 to head the Division of

Practical Arts and Vocational Education at Western Michigan College upon the sudden death in 1950 of Deyo B. Fox.

In 1957, when Western Michigan College became Western Michigan University, Kehrman became the first dean of the newly formed College of Applied Sciences, a position he held



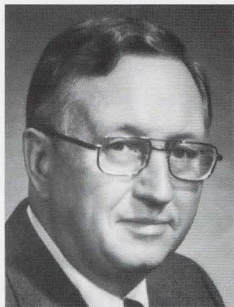
WMU President John Bernhard (L) and George Kehrman at the 1980 dedication ceremony of Kehrman Hall.



until 1973. Kohrman is best remembered as the person who organized the College of Applied Sciences by bringing together talented people to develop its technical programs. During the 1960s Kohrman was instrumental in setting up a technical college in Nigeria on behalf of the U.S. Agency for International Development. For eight years he made regular trips to Africa to monitor the growth and development of the college. Under his leadership, programs in areas such as occupational therapy and paper science technology gained national recognition. Kohrman stepped down as dean in 1973 and returned to the faculty for one year before retiring. In 1980, the Industrial and Engineering Technology Building was dedicated as George E. Kohrman Hall in recognition of his years of excellent service to the college and the university.

W. Chester Fitch

Dr. W. Chester Fitch received a bachelor's degree from Montana State College and went on to earn master's and doctoral degrees



from Iowa State College. He was an engineer with a consulting firm before becoming head of the Department of Mechanical Engineering at Michigan Technological University. In 1968 he came to Western Michigan University to head the Engineering Technology Department. In 1973, he became dean of the College of Applied Sciences. As dean, Fitch ushered in the change in program emphasis from technology

to engineering by preparing engineering curricula for accreditation. Under his leadership, Industrial Engineering became the first accredited program in 1979.

Robert E. Boughner

Mr. Robert E. Boughner served as interim dean in the College of Engineering and Applied Sciences from 1982 to 1983. A WMU faculty member since 1967, Boughner was an assistant dean in the college from 1974 to 1982 where he was responsible for the administration and development of engineering and related programs. He also directed the Institute of Technological Studies for nearly a decade, beginning in 1974. As director of the institute, Boughner drew on his long-time experience in the private sector to actively develop positive relationships with industry in Southwest Michigan that resulted in applied research opportunities for Western's engineering students.

Robert Boughner received a bachelor's degree from Wayne State University in 1959 and a master's degree in 1969 from Western. He also did considerable post-graduate work at Northwestern University.

James B. Matthews

Dr. James B. Matthews was appointed dean of the College of Engineering and Applied Sciences in 1983. Prior to returning to WMU, Matthews served as dean of engineering and technology at Bradley University in Peoria, Illinois, and from 1978 to 1981 he chaired WMU's Department of Mechanical Engineering. Between 1956 and 1978, Matthews held several positions at Rose-Hulman Institute of Technology in Terre Haute, Indiana, including professor and head of mechanical



Mr. Robert Boughner (left) and Dr. James B. Matthews.

engineering and vice president for academic affairs and dean of faculty. As CEAS dean at WMU, Matthews led a successful effort in 1985 to accredit programs in mechanical, electrical, and computer engineering, with industrial engineering receiving re-accreditation. He was also instrumental in the effort to bring about the construction of Welborn Hall.

Harley Behm

Dr. Harley Behm received a bachelor's degree in industrial education from Northern Montana College. He later earned a master's and a doctoral degree from the University of Missouri. In 1968, he came to WMU to head the Department of Transportation Technology, where he oversaw the aviation and automotive programs. He served as dean of the College of Engineering and Applied Sciences from 1988 to 1989. Following his tenure as dean, Dr. Behm served WMU in several capacities including Associate Vice President, Director of Computing and Communication Services, and as Acting Dean of Libraries.



Leonard Lamberson

Dr. Leonard Lamberson completed his undergraduate studies at the General Motors Institute. He received his master's degree from North Carolina State University and his doctorate from Texas A&M. He was a faculty member at Texas A&M, Kettering University, and then Wayne State University



Cutting tools donated to WMU wood manufacturing program, 1991. Stiles Machinery Representatives are shown with CEAS faculty Fred Sitkins (center), Roman Rabiej, and Leonard Lamberson, CEAS Dean (far right).

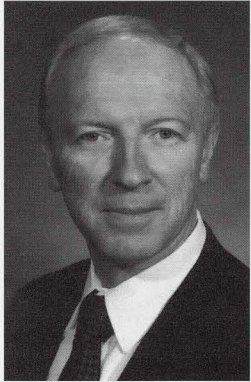
in Detroit, Michigan. After 20 years at Wayne State as a department chair, Lamberson came to WMU in 1989 as dean of the College of Engineering and Applied Sciences. He served in that capacity until 1999. Under Lamberson, the CEAS experienced program growth, especially in the area of

graduate studies. He was involved in the move of the College of Aviation to the Battle Creek International Airport and in the initial development of the Parkview Campus. Lamberson is currently a faculty member in the Department of Industrial and Manufacturing Engineering.



Daniel M. Litynski

Dr. Daniel Litynski did his undergraduate work in physics at Rensselaer Polytechnic University. He entered the Army ROTC intending to serve for six months and then go on to receive a master's degree. However, as an armor and ordnance officer



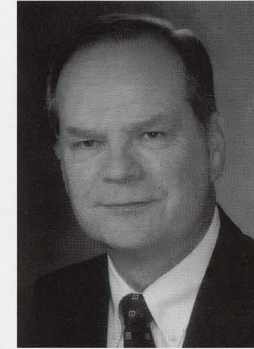
involved in research, the army sent him for a master's degree in optics from the University of Rochester. From there, Litynski went to West Point to teach in the Physics Department, and while teaching at West Point, he completed his PhD (from RPI). Litynski then went on active duty in Germany before returning to West Point to teach in the Electrical Engineering Department. He held positions as associate professor and professor before becoming chair of the department, a

position he held for about nine years. In 1999, Dr. Litynski came to WMU to serve as dean of the College of Engineering and Applied Sciences, a position he held until 2002 when he took the job of WMU Provost and Vice President for Academic Affairs. For the first six months of 2003, Litynski served as interim president of the university and has currently returned to the position of provost. Litynski was instrumental in the design and development of the college's new Parkview Campus.

Michael B. Atkins

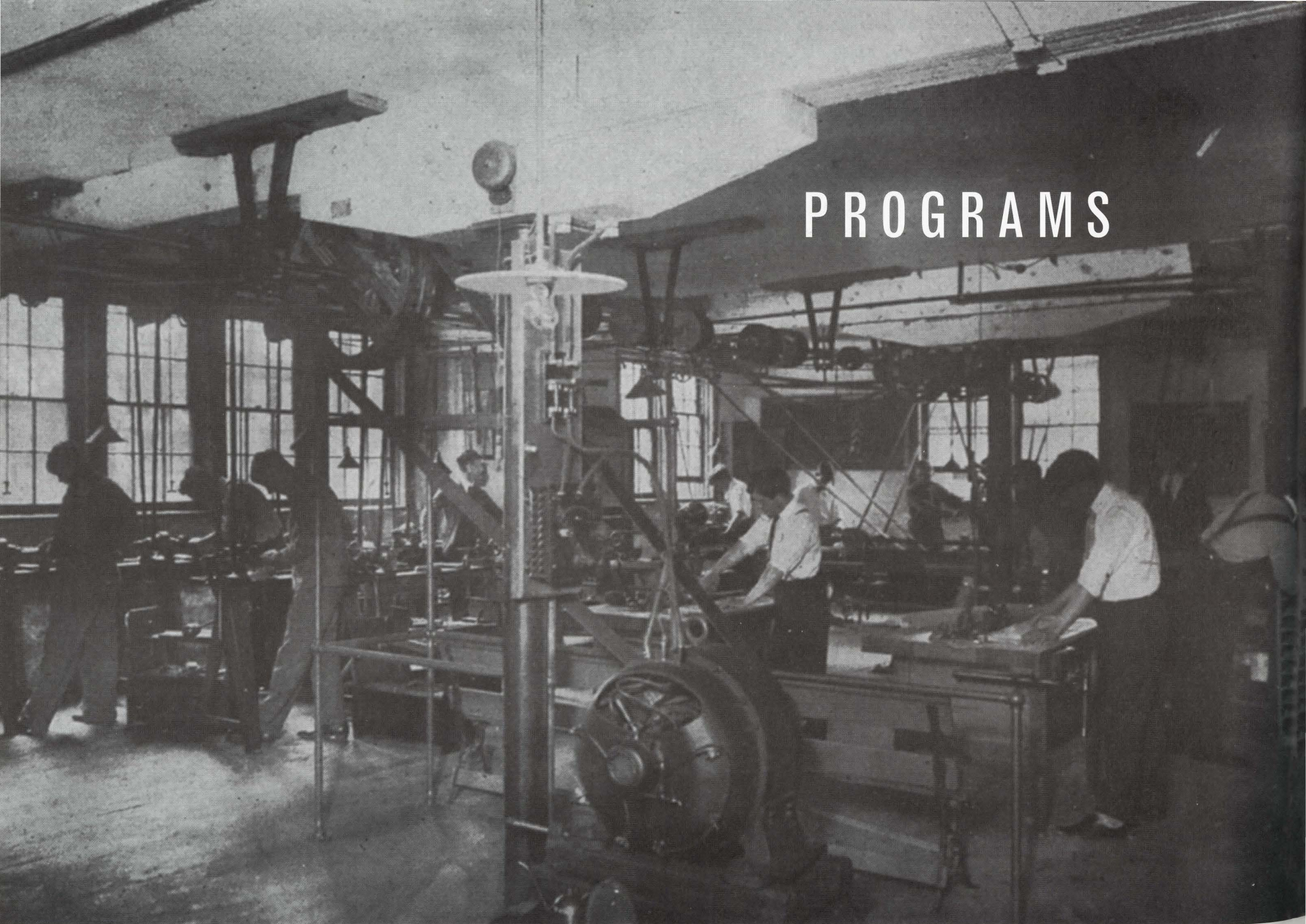
In Fall 2002 Dr. Michael B. Atkins was selected as dean of the College of Engineering and Applied Sciences. Prior to coming to WMU in 1971, Atkins taught at both Texas A&M University and San Antonio College. Atkins served as chair of

the Department of Industrial and Manufacturing Engineering from 1998 to 2002. During his tenure at Western, Atkins was instrumental in establishing the college's Computer Aided Engineering Center and negotiated a number of major partnerships with the makers of industrial computer hardware and software products including the French-designed CATIA system, quality simulation software from Varatech of Holland, Michigan, and design analysis software from Moldflow Corporation of Australia. As dean, Atkins was responsible for overseeing the completion of WMU's new engineering complex on the Parkview Campus.



Atkins earned a bachelor's degree in industrial education in 1963 and a master's degree in industrial education and administration in 1966, both from East Texas State University — now Texas A&M-Commerce. He earned his doctoral degree in industrial education and engineering graphics and architecture from Texas A&M-College Park in 1971. Atkins has authored and co-authored several monographs, articles, and textbooks and is a frequent speaker at national conferences. He is a member of the American Society for Engineering Education, the Institute of Industrial Engineers, the Society of Manufacturing Engineers, and the Computer and Automated Systems Association of SME.

PROGRAMS



The Early Years

IN 1904 the Departments of Manual Training and Domestic Economy offered Western State Normal School students the option to earn a Rural School Certificate, a Graded School Certificate (both one-year programs), or a Life Certificate (a two-year program). The 1905–06 *WSNS Yearbook and Course Bulletin* noted that courses could be entered by experienced teachers and high school graduates without examination. Tuition was \$3.00 per semester; however, those students preparing to teach in the rural schools were given a waiver. In addition to tuition, fees of \$1.00 were required for chemistry and physics courses. The 1904–05 *Bulletin* estimated a semester's "board, room, fuel and lights" to be about \$42.00, with books averaging \$5.00 per semester. As the Normal School operated on a trimester basis, a young man or woman with the aim of acquiring a two-year Life Certificate in order to become a shop or home economics teacher would need to spend about \$300, including the \$3.00 graduation fee.

The departmental course offerings in 1904 were limited by today's standards, but a brief synopsis of those courses, noted in the *Western State Normal School Course Bulletin* for 1904, gives a good indication of the early programs:

Free-Hand Drawing — *Instruction in pure and applied design, design and composition, principles of perspective, water color, charcoal and crayon.*

Mechanical Drawing — *Principles of working drawings, plans, elevation, sections scales, orthographic and isometric*

Wood and Machine Shop circa 1911. This photo of the wood and machine shop was taken the basement of the Manual Training facilities in the Kalamazoo Public Schools building.

projections, architectural drawing, machine design, tracing, lettering and blueprinting.

Cooking — *The fundamental principles of cooking; practice in the preparation of vegetables, soups, meats, cereals; cost of material; care of kitchen; menus; marketing; food for sick; dietaries; food adulteration; history of food products; chemistry of food; practical work in cooking and serving breakfasts, dinners and luncheons; visits to industries.*

Sewing — *Exercise in hand sewing, consisting of basting, hemming and gathering; darning; patching; machine practice; undergarments; shirtwaists.*

Dressmaking — *The use of dress cutting system is taught; patterns for dresses drafted; a woolen dress is made by each student.*

Millinery — *Renovation of felt and straw hats, binding and wiring, cutting and putting on facings, fold and bow making, practice trimming wire and buckram frames, sewing straw, making and trimming a final hat, visits to industries.*

Manual Training — *Elementary work suitable for the primary grades, paper, cardboard construction, weaving and textiles, basketry with raphia, reed and native materials, wire work, whittling and chip carving. The relation of the work to the real life of students will be discussed.*

Expenses	
TUITION FEES.	
Every student in the life course, the graded course, or in a special course, must pay a tuition fee of \$3.00 at the beginning of each term. After the student is regularly entered this fee is not returnable. Tuition is free to all students preparing to teach in the rural schools.	
GRADUATION FEES.	
Rural School Certificate	\$2.00
Graded School Certificate	2.00
Life Certificate	3.00
LABORATORY FEES.	
Physics, each term	\$1.00
Chemistry, each term	1.00
Botany, each term50
Zoölogy, each term50
Living expenses are reasonable. The actual cost varies, but a fair estimate for a term's expenses would be as follows:	
Board, room, fuel and lights	\$42.00
Books	5.00
Tuition	3.00
Kalamazoo offers unusual opportunities for remunerative labor and many of the students during the first year of the school have paid their way in part. Students whose means are limited will be assisted in securing work. This applies to young women as well as to young men.	

Manual Training, Grammar Grades — Work in wood with bench and tools, original models.

Advanced Work — special course in cabinet work, inlaying, wood turning, pattern making, wood carving, finishing of specimens of work, visits to industries.

History and Methods — This course will be given with the practical work and will consider the object and place of manual training in various grades in the school, also the organization, equipment and purchasing of supplies and supervision of departments.

DOMESTIC SCIENCE	
	First Year
FALL TERM	Psychology4
	Chemistry (or Elective)..4
	Cooking I Public School Art I.....4
WINTER TERM	Psychology4
	Chemistry (or Elective)..4
	Cooking II Public School Art.....4
SPRING TERM	Psychology of Occupations 4
	Chemistry of Foods.....4
	Cooking III Public School Art.....4

	Second Year
FALL TERM	Cooking IV Sewing4
	History of Education....2
	Bacteriology2 Practice Teaching4
WINTER TERM	Cooking V Sewing4
	History of Education....2
	Bacteriology2 Practice Teaching4
SPRING TERM	Cooking VI Sewing4
	History of Education....2
	Bacteriology2 Elementary Manual Training4

The common threads to these courses are the sense of the practical, the hands-on approach to learning, and the close involvement with industry. These threads are woven into the programs in Engineering and Applied Sciences one hundred years later.

The two-year life certificate program in Manual Training outlined in the 1905 Course Bulletin includes six terms (Fall, Winter, and Spring each year) of twelve credit

hours. Courses in Manual Training and Mechanical Drawing were required each term, with multiple courses in psychology and education and requirements in applied physics and chemistry as well. Additionally, students who had not graduated from accredited high school programs were required to take courses in Chemistry, Physics,

Mathematics, and English. In the Domestic Science program, numerous courses in Psychology, Education, and Chemistry were required along with Cooking and Sewing. In all, the early programs offered an academic challenge to accompany the hands-on work.

Program growth continued with the Manual Training Department adding courses to meet the technological needs of students and industry. The 1913 *WSNS Yearbook* shows that the original four courses devoted to the manual arts had expanded to thirteen. These included Beginning Wood Work, Cabinet Making, Forging, Woodturning, Pattern Making, Machine Shop, four courses in Mechanical Drawing, Architectural Drafting, and Organization. The addition of Forging and Pattern Making along with the added emphasis in Mechanical Drawing on machine details, equipment tracing, and blue printing displayed an interest on the part of students to explore educational training for careers in industry and the need for industry to have skilled technical workers.

The shift from teacher education to industrial-technical training marked the next three decades in the Manual Training Department. Training workers to contribute to the war effort in World War I led to an expanded role of partnering with industry. Post World War I events also shaped the direction of the Manual Training Program. Economic pressures of the Great Depression led the State Board of Education in 1934 to allow teachers colleges to grant bachelor's degrees in programs other than education. By 1935, pre-professional programs were offered, where students would attend Western for two years and then transfer to a four-year college or university. The first pre-professional program offered was Engineering, and Western students went on to complete their four year engineering degrees at the University of Michigan.



Fashion Merchandising display at the Technology Expo.



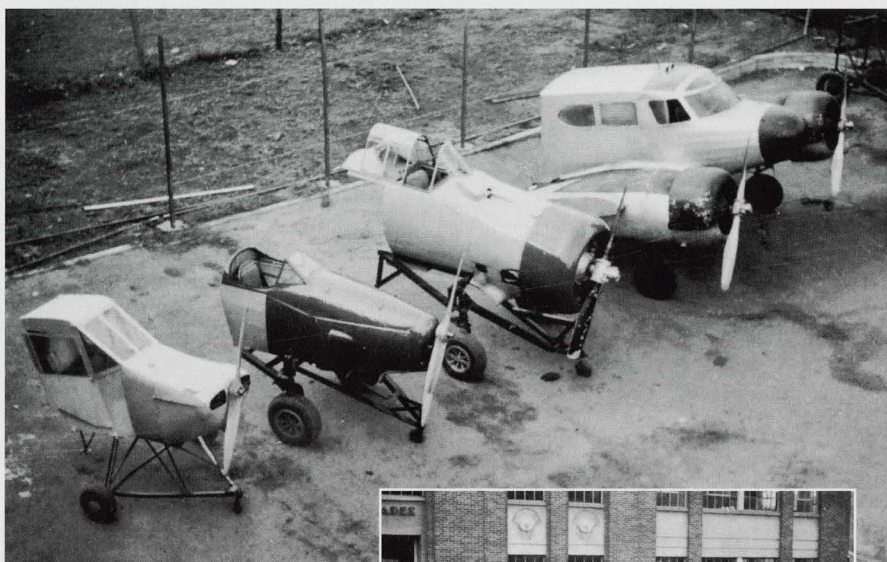
Occupational Therapy. Pictured in this 1957 photo (from left) are Rosalia Kiss, Lois Hamlin, Dean Tyndall, Marion Spear, and Alice Lewis.



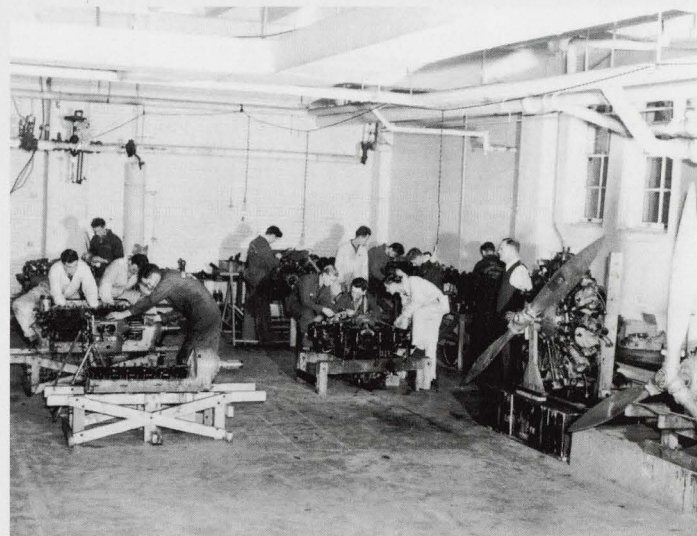
Home Economics. Shown in this 1957 photo (from left) are Rachel Acre, Reva Volle, Betty Taylor, Gladys Rowe, and Opal Stamm.



Industrial Arts Homecoming Float, 1956 (Elvis' Heartbreak Hotel).



Run-up and trouble-shooting engine stands, c.1950 (outside Mechanical Trades Building). Left to right: Aeronca TG-5, Fairchild PT-19, North American AT-6, and Cessna AT-17. Western acquired several engines and trainers as military surplus following WWII. The engines and cockpits were mounted on moveable stands. After students would work on the engines, they were wheeled out to the parking lot and fired up. The roar of the engines was a common sound in the 1950s and early 1960s. The twin engine Cessna at the right presented a particular challenge, as it was 18 feet wide and the doorway to the Mechanical Trades Building was 16 feet. Herb Ellinger rigged the stand with a special pivoting wheel from the landing gear of another aircraft and with a little "chopping" to the wings and frame was able to maneuver the engine stand through the doorway. Note the carved cement aircraft engines in the Mechanical Trades Building (erected 1941).



E.C. (Buck) Weaver's Aircraft Engine Class. Lower basement of Oakland Gym, 1939.



Navy V-5 Drafting class, Industrial Arts Building, 1944). Instructors, Henry Beukema and Fred Huff (at right).

AVIATION MECHANICS

Professor Emeritus Herbert Ellinger has researched and written extensively about the development of the aviation program at WMU. His writings and support materials are housed in the University Archives. Much of the information in this section comes from Ellinger's writings and conversations with him.

The aviation program at Western grew out of a local interest in flying and the technical expertise of some of the area's residents, some connected with the college. Elmer C. "Buck" Weaver was one of those people. In 1926 the Department of Commerce required all airmen to have licenses, and Buck was one of the first in the area to receive his. In 1927 the Kalamazoo Flying Club was formed with Dean Nusbaum president, Buck Weaver vice president, and Irv Woodhams on the board of directors.

In 1929 the West Michigan Gliding Club was formed. The group bought a primary glider that had a vertical flat frame with a skid under the pilot and a wing above. The pilot sat on a seat in front of the wing, and the glider was launched using a shock cord, which gave the club members quite a workout as they stretched the cord to its limit. Later an automobile was used to stretch the shock cord. Buck Weaver, in an article printed in the April 1944 issue of *Gliding* magazine, described his first flight in the glider: "*Safety belt buckled and all set, the members put everything they had in stretching out the shock cord. The two holding the glider let go and whew [I] was flying 'right now.'* The sudden take off banged my head against the leading edge of the wing. My feet left the rudder bar and dangled in the air. Nothing to do but hang on to the stick, get the feet back on the rudder and the glide down the hill was completed and a

landing made. No flight in an airplane ever compared with this thriller in a primary glider."

In 1939 the State Board of Education approved Western's first two-year non-degree curriculum in Vocational Aviation Mechanics. Elmer C. Weaver is listed as the instructor in the 1939–40 college catalog. The program, which was combined with the federally sponsored Civilian Pilot Training Program (CPTP), was designed to prepare students for positions as licensed airplane mechanics, licensed engine mechanics, airplane factory mechanics, and pilot mechanics. The college would offer ground school, and flight training would be offered through contract with a local fixed base operator. The mechanics courses were taught in the basement of Oakland gymnasium, and flight training was done from the North hangar at the Kalamazoo Municipal Airport (called Lindberg field at the time). Over 500 students took flight training in Western's CPT program. In 1942 Civilian Pilot Training (CPT) became War Training Services (WTS).

WORLD WAR II TRAINING PROGRAMS

The onset of World War II brought many changes to Western. In the Fall 1942 issue of the *Western Michigan College News Magazine*, Western Michigan College President Paul Sangren announced that the college could no longer do "business as usual" (p. 1). In directing Western's resources to winning the war, Sangren formed a War Council and initiated accelerated training in order for a greater number of students to complete their formal education before entering military service, to take up "some of the slack in the shortage of teachers in the State of Michigan, and also to train more rapidly some of the technical persons required in the professions such as medicine, dentistry, and engineering" (p. 1). The pro-

grams initiated included reservist programs in all four major branches of the military, with the Naval Reserve Class V-1, V-5, V-7, and V-12 programs having the greatest impact on the areas of Industrial Arts and Aviation. In the 1942 article Sangren noted that since the inauguration of the first pilot training programs in 1940, more than 300 students had been trained as fliers with about 200 of them serving in the four branches of the military. In 1942 alone, Sangren estimated that 150 or more pilots would be trained for the United States Army and Navy (p. 2).

During the War, technical classes were offered six days a week nearly round the clock. To accommodate the large number of mechanical drawing students, a special Department of Engineering Drafting was formed, with faculty member Henry Buekema as head. Deyo B. Fox, who served as the

first director of Practical Arts and Vocational Education from 1945 to 1950, compiled enrollment statistics in a report delivered to the State Board of Education in 1948. In that report, he shows how the War affected program enrollment. When military training was in full swing, the regular Industrial Arts offerings dwindled. The table of the enrollment figures included here is very revealing.

1940-1941	219
1941-1942	142
1942-1943	79
1943-1944	3
1944-1945	18
1945-1946	36
1946-1947	120
1947-1948	134
1948-(1st sem.)	115

(Fox, 1948)

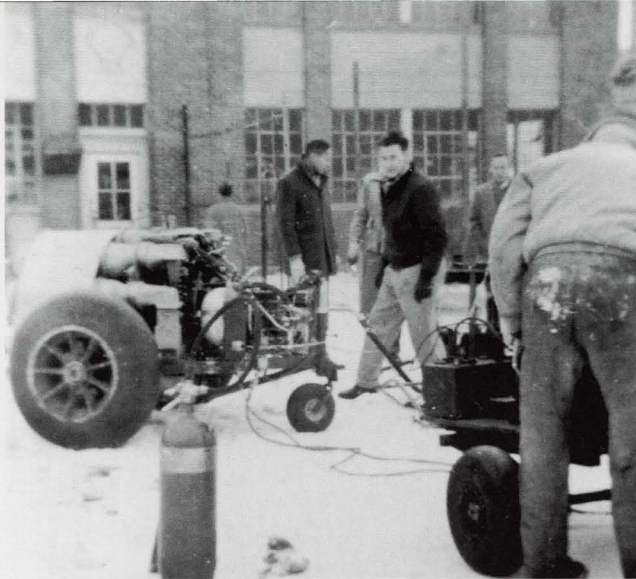
PRACTICAL ARTS AND VOCATIONAL EDUCATION

Following the Second World War, program offerings were shaped by GIs returning from the war seeking to develop career related skills

and industries looking for technically skilled workers. These factors led to a restructuring of Western into three major areas or divisions: Arts and Sciences, Education, and Vocational and Practical Arts Education. Along with this restructuring came the creation of the position of Director of Vocational Education. Dr. Deyo B. Fox was hired to fill that position, and he was charged with “coordinating and expanding vocational, technical, and practical arts curricula” (Fox, 1948).

Many two-year and four-year technical programs were added or expanded upon during this time period, including refrigeration and air-conditioning, automotive technology, electrical (began in 1941) and radio technology, and paper technology (formed in 1948 at the request of and financially assisted by the Kalamazoo Valley section of the Technical Association of the Pulp and Paper Industry).

Under Fox’s leadership, the Division of Practical Arts and Vocational Education was divided into several areas: Industrial Technical Education, headed by Dr. Joseph Giachino; Industrial Arts Education, headed by Dr. John Feirer; and Distributive Education, headed by Mr. Adrian Trimpe. Dr. Giachino, in an article in the Fall 1949 Western Michigan College News, outlines the goals of industrial technical education as fulfilling a need that was so far unavailable to industry by training the technician, “who occupies a position in industry which is between that of the tradesman and the engineer” (p. 1). Among the opportunities provided to students were terminal (not leading to a degree) curricula of two and three year programs in machine shop, drafting, printing, refrigeration and air conditioning, auto maintenance, aircraft mechanics, and radio, with a program in electricity in the planning stages.



WMU's first jet engine, 1950. Herb Ellinger had his students modify a jet engine from Military Surplus. Displayed here is a surplus General Electric I-16 (J-31) jet engine being prepared for a run. The wheels were from a North American 0-47. The year is 1950, and the first test fire of the engine created some unexpected excitement.

Herb Ellinger describes what happened in an article that he is writing on the WMU Aviation program: "We made a control box with electrical switches, instruments and the fuel tank. The control box was connected to the engine with long 3/4 inch fuel hoses and electrical wires so the controls would be about 20 feet in front of the engine. To make a positive shut-off, we used a large taper fuel control valve from one of the surplus airplanes we had disassembled. I figured I could use this valve as a throttle to limit the speed if the governor was not working. We planned to run the engine a little faster on each run until we could trust the governor. Diesel fuel was used as our jet fuel. It took us quite a while to finish the engine stand.



"With everything ready, there was nothing to do but to see if the engine would run. I decided to be brave and do the running. I had most of the students go inside the building. The plan was to turn the ignition on, then get the engine rotating as fast as possible with the starter, turn on the igniter, then turn the fuel on. This would minimize the chance of an explosion with excess fuel in the engine when it started.

"I turned the ignition on, then engaged the starter switch. As the engine was coming up to speed it started to run, even with the tapered fuel valve in the off position. I thought, now what can I do? The primary engine fuel pump was so strong that it pulled the fuel right through the tapered fuel valve. I didn't know if the governor would hold the engine to a safe speed or not, and the fuel valve was already turned off." Ellinger had to use his hands to crimp the fuel supply hose to shut down the engine.

Kalamazoo's First Jet Motor Flight Takes Place--Nearly

Kalamazoo's first jet motor flight almost took place Monday, but some quick action on the part of Herb Ellinger, Western Michigan College instructor, cut the fuel supply to a J-31 jet engine and kept it on the ground. A year ago Western's vocational industrial department acquired a General Electric jet engine and since that time has been working to get in operating condition. When the engine arrived it was more or less just a tube, five feet long and three feet in diameter. It lacked three essential parts, a stand to hold it, a fuel control valve and a starter.

SUDDENLY TAKES OFF
From an old P-39 wheel retraction motor a starter was formed and parts from a model pet engine built at Western several years ago provided other needed pieces. An on-off valve was fashioned to control the fuel and the system seemed ready for operation. Monday it was moved outdoors onto a concrete drive and the motor was prepared. After about 15 seconds of work the engine suddenly caught hold. A great blast of heat from the tail end cleared in three seconds a path five feet wide and 50 feet long.

THINGS HAPPENED FAST
"Things were happening pretty fast about this time," says Ellinger, and he grabbed the flexible fuel supply tube, clamping it together to stop the runaway engine.

As a result of this first test, the jet engine has been taken back inside and will provide engine overhaul and engine operation classes with a lot of work in the near future to correct deficiencies and prepare it for its next test.

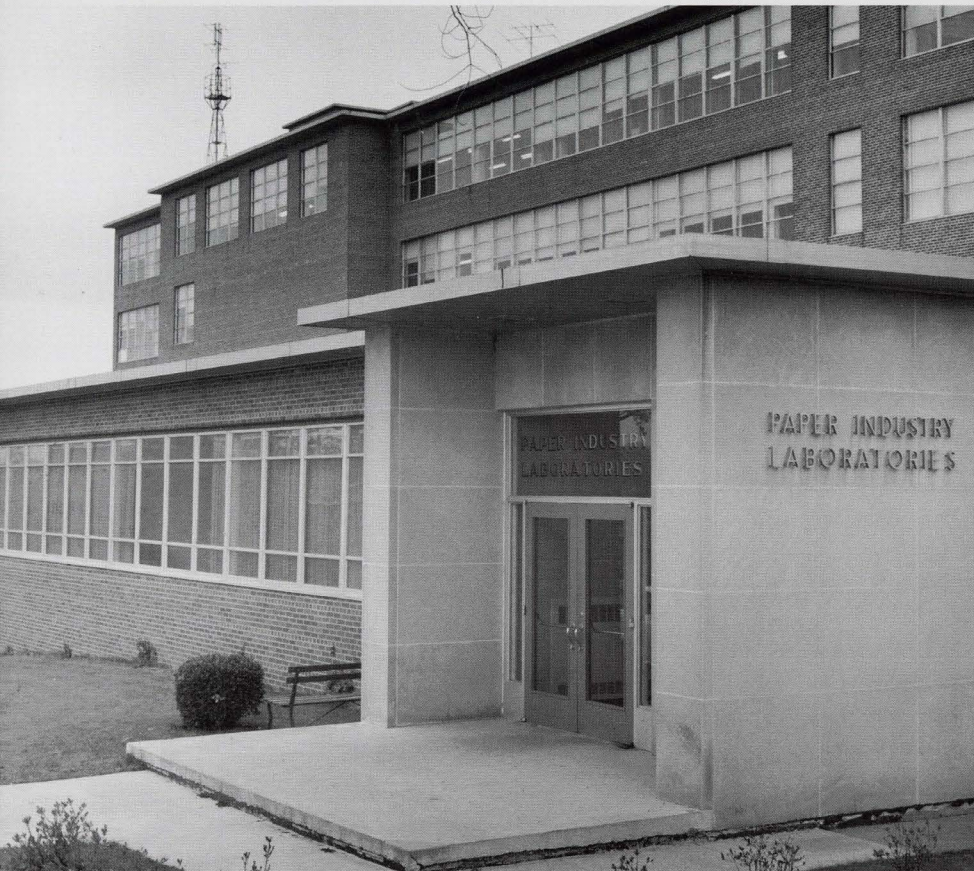
The J-31 jet engine was the first production model built in the United States and saw limited use in the old Bell P-59, first twin jet plane used by the United States Air Force for training.

ASTHMA COUGHS
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TAKE PHILLIPS' MILK OF MAGNESIA TONITE
WAKE UP FRESH FULL OF LIFE

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**The completed Paper Industry Laboratories extension to McCracken Hall.
The photo is taken later than 1957.**



**Student Martin L. Smith, Jr., hard
at work in the Paper Lab, 1970.**

GEORGE KOHRMAN AND THE GROWTH OF TECHNICAL PROGRAMS

Industrial Programs Expand

Following the death of Deyo B. Fox in December 1950, George E. Kohrman was hired to head the Division of Practical Arts and Vocational Education. The demand for skilled engineers and managers in industry was great, and in 1952, under the guidance of Dr. Joseph Giachino and Dr. Andrew Luff, along with Kohrman, the nation's first four-year bachelor's degree program in Industrial Supervision was formed. The faculty drew on their extensive practical experience in industry to develop and keep up-to-date the curriculum.

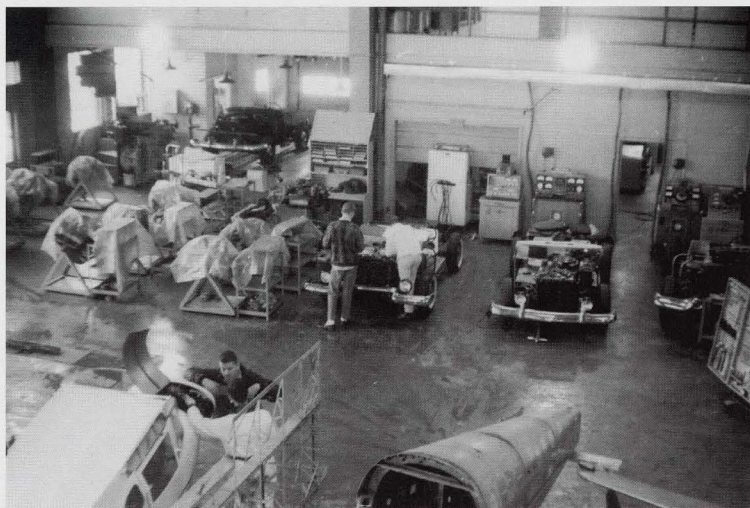
A March 7, 1956, article in *The Kalamazoo Gazette* reports on the success of the Industrial Supervision program. Competition to get into the program was intense, with about one-third of all applicants being rejected; however, competition to hire program graduates was equally intense. Giachino noted that in a follow-up survey of graduates competitive job offers were available to graduates from all over the country. The Industrial Supervision Program combined the best of classroom with hands-on experience. Representatives from area industries comprised an advisory council that reviewed curriculum and suggested changes to keep the program current. One of their suggestions led to a six-week summer seminar in Applied Supervision, where guest speakers from industry would be brought to Western to speak on their specialty followed by field trips to manufacturing facilities. Job-ready graduates have long been a tradition at Western.

Engineering Technology

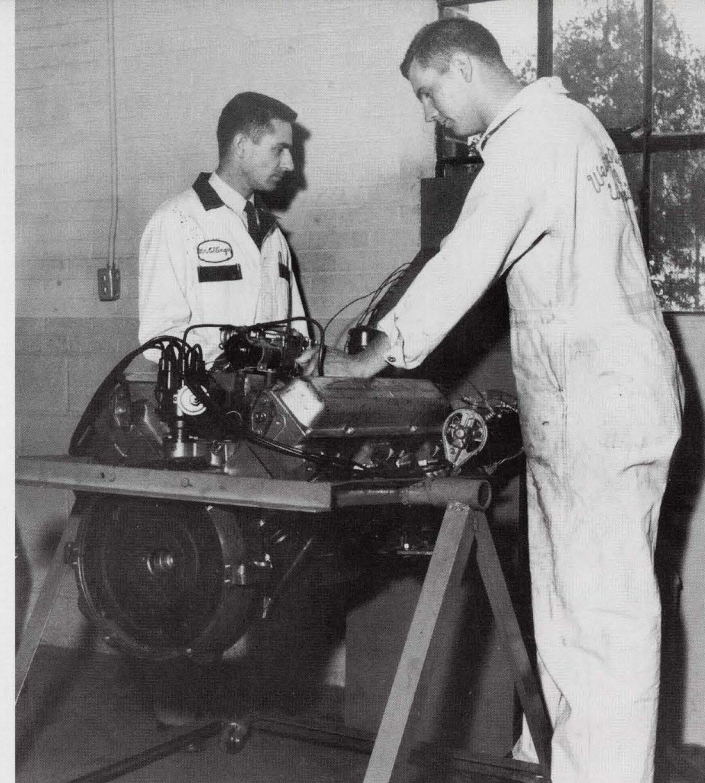
Throughout the 1950s, technology programs continued to grow, with new programs being added. The very successful paper technology program, begun in 1948, became a department in 1953. In 1956, Lawrence J. Brink developed a program in printing management. And in 1959, a program in industrial engineering was established. WMU President Paul V. Sangren commented on the rationale behind the industrial engineering program in the Spring, 1959 issue of the *WMU News Magazine*: "Because of the heavy concentration of industry in this area the establishment of such a program seems logical and wise."

The combination of technology and applied arts programs struck a very good balance for the 1950s, and a listing of the seven departments that were brought together under the newly formed College of Applied Sciences in 1957, the year that WMC became WMU and the year that George Kohrman became the college's first dean, is an clear example of the diverse range of curricula offered throughout the college. The departments included:

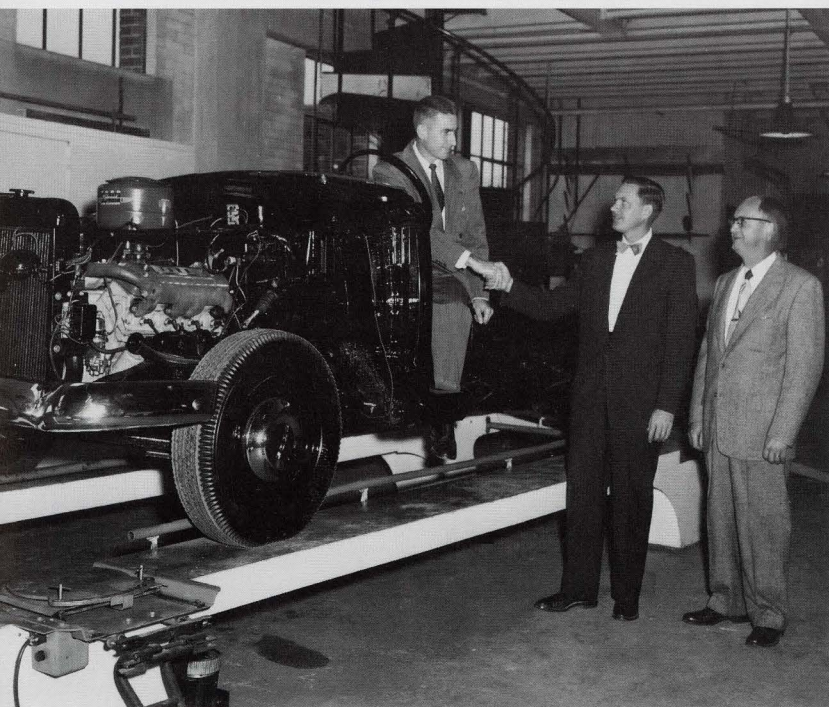
- Agriculture
- Distributive Education
- Home Economics
- Industrial Arts
- Industrial Technology
- Occupational Therapy
- Paper Technology



Mechanical Trades Building, 1964. Automotive and Aircraft labs shared the space. Note the automobiles in the background and the aircraft in the foreground. In 1966, automotive technology moved to the newly opened Kohrman Hall. In 1967, some of the aircraft were moved to the Kalamazoo Airport. The spirit of cooperation in tight quarters predominated this time period. However, there are reports of a few heated exchanges and a yellow safety line being painted down the middle of the lab to more clearly mark territory. Some of the old-timers laugh at this rumor, but never deny it.



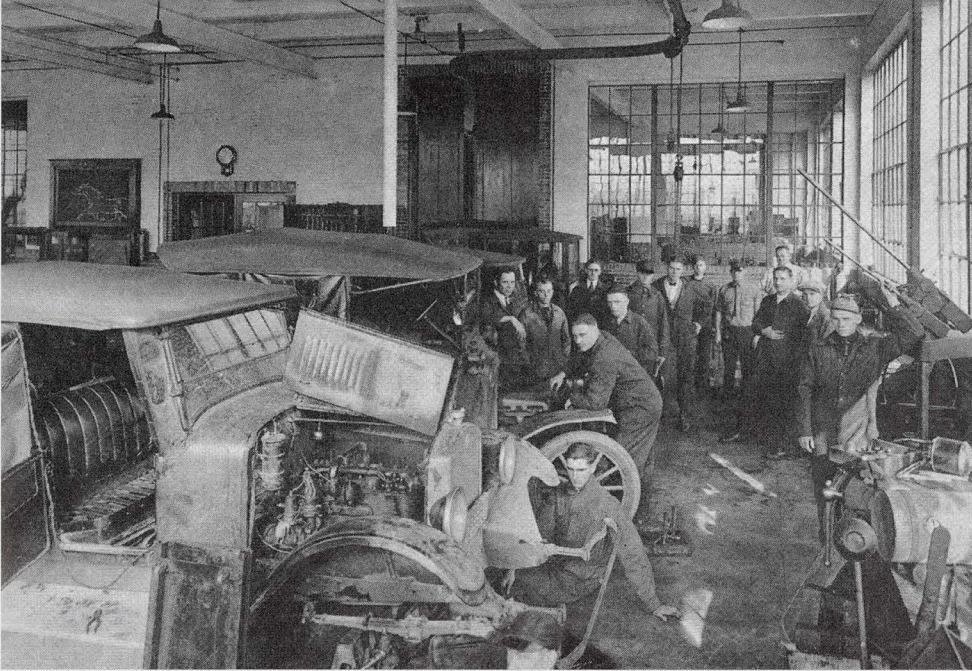
Professor Herbert Ellinger (left) and a student work on a Chevy V-8 engine. The photo is from about 1965, taken inside the Mechanical Trades Building.



This 1954 Ford was donated to the Automotive Technology program. Accepting the gift is professor Herb Ellinger (in driver's seat).



Chopped chassis auto, 1964. Since working on the engine was the main teaching tool, the frame of the auto would be "chopped" to save space inside the lab. This picture was taken January 1964. Students loved to drive this vehicle on snowy days, the short length and full-sized engine were perfect for spinning "doughnuts" in the parking lot.



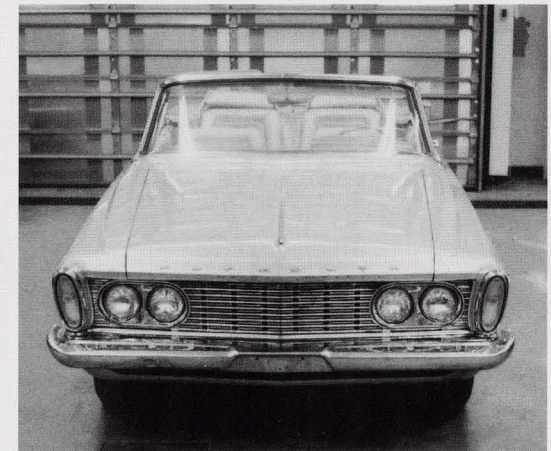
Streamlining had not yet affected automobile design when this picture was taken in 1923.



The College of Applied Sciences places a new emphasis upon energy conservation. Students build an energy saving car.

Plymouth Satellite, 1965. In 1965, this Plymouth Satellite was donated to WMU by Chrysler. It was a prototype and referred to in the industry as a “show car” because of its fine detailing. The convertible was light blue with a “pearled” shine, and the interior white leather also mirrored the pearled texture of the exterior. The car caught the eye of many visitors to the newly opened Industrial and Engineering Technology Building (later named Kohrman Hall), including some high school students who passed through the garage one day. The car was stolen right out of the building one night. A window in a door (just to the right of the overhead door in the picture) was broken to gain entry. The thieves were able to locate the keys (not kept in the car) and drove right out the front door. The story does have a happy ending.

Because the car was so distinctive, it was easy to spot. About a week after the theft, a student in transportation technology spotted the car, headed west on West Main. The student gave chase and was promptly pulled over by a Kalamazoo County



Sheriff's officer for reckless driving. The student explained the situation and the suspects were soon spotted at Wolf Lake (about 5 miles west of Kalamazoo on West Main or M-43). The thieves were in the process of spray painting the car green. Herb Ellinger was contacted. He brought the car to the building immediately, called in his teaching assistants (at 2:00 a.m.), and they applied acetate to the green paint before it hardened and were able to save the finish on the car.

A College in Nigeria

The reputation of Western's College of Applied Sciences continued to grow and to receive national and international recognition. The success of its graduates and the growing recognition of its faculty, through numerous publications, led to an outstanding opportunity for the college and one of its greatest achievements, the founding of a technical college in Nigeria.

In 1960, at the request of the Nigerian government and as part of the United States Aid for Independent Development (USAID), Western Michigan University designed, staffed, and operated a technical college in Ibadan, Nigeria, until 1968 when Western's mission was completed. Dr. Kohrman, in his final report on the Nigerian contract to USAID summarized the objectives of the program: "to assist the Ministry of Education, Western Nigeria, in conjunction with USAID, in planning, developing, and implementing a dynamic, well equipped, and well staffed technical center to be located in Ibadan, capable of enrolling 500 students in Civil, Electrical, and Mechanical Engineering; Town Planning, and Commerce" (p. 1). Twenty-three staff members were sent to Nigeria under the contract, nine from the WMU campus. Faculty members and their families were sent to Nigeria in two-year shifts to fulfill the objectives of the project. Kohrman notes in his final report that WMU staff members contributed a total of "fifty-six man years of work" to the project. The Ibadan Technical College project was one of the most successful undertakings of the USAID program at that time, and Western Michigan University's contribution to the program established WMU as one of the best places for technical education in the world. In an oral history interview conducted by Lynn Smith Houghton, Kohrman named the

Ibadan Technical College as his greatest achievement.

As part of the history project, former faculty members and their spouses were invited to share mementos and recollections of the time they spent in Nigeria.

The first item copied here is the text of a letter from S. L. Akintola, Western Region Premier to Mr. Frank Scott, the first chief of party amongst the Western Michigan Nigerian faculty. The text of the letter is reproduced below.

Independence Day, 1960

My Dear Friend,

I am writing on the occasion of Nigerian Independence to let you know how much my colleagues and I in the Government of the Western Region appreciate your presence at our celebrations and value your association with us. I know you have come either as the representative of your own community, of missionary enterprise or of commerce and business. In all these spheres of activities Nigeria has derived immense benefit from your endeavors and I take this opportunity to thank you and those whom you represent for your help and assistance.

May I, on behalf of my colleagues, the Obas, Chiefs and the people of Western Nigeria, assure you that you will always be welcomed in our midst? We pledge our support for and co-operation with you and your country now and in the future.

I am,

Dear friend,

Yours sincerely,

S. L. Akintola,

Premier.

Mrs. Jean Scott, wife of the first Chief of Party, Dr. Frank Scott, was part of the first two-year team. She and her husband and children arrived in Ibadan in July 1960, the rest of the first team arriving in October. Her recollections are particularly interesting as many of the difficulties in living arrangements were smoothed out by the first team. Her recollections follow.

Remembering Nigeria

This is our first month in Nigeria — a British Colony in West Africa about ten degrees north of the equator. It is very warm — all day and all night. You know you are not in the United States. In a Negroid city of a million, we are 400 whites or Europeans as we are called. In the market or small towns we are called “peeled onions.” Absolutely everything is different and colorful. The women dress in wrap around ankle length skirts, with short loose sleeved blouses and head dresses that are wrapped and tied in special ways. They carry their babies with them on the back of their hips secured by a long scarf around their waists. Our area is populated by the Yoruba Tribe and their principal color is blue — batiks, prints and solids of all shades of blue are worn. The men wear loose pajama type pants with an over blouse that comes to their knees with big wide flowing sleeves and hats that are similar to pillboxes.

Cars are tiny — Morris Minors, VWs, and Mercedes-Benz lorries for transport. Our homes are very nice — two-story cement block painted cream color with wide wooden louvered trellises running along the length of the ground floor to shield the windows from the sun. We have running cold water with a water heater for the tub in the upstairs’ bath-

room. The washing is done in the bathtub on an old fashioned scrub board. Socks and underwear do not last very long. There are no screens on the windows or doors and our beds have large framed mosquito netting above them.

The husbands work from eight to two. The children go to school from eight to one and the mothers shop for groceries and run errands as soon as every one leaves in order to take advantage of the cool part of the day. From noon on, the temperature soars. No one has air conditioning. You shop for the essentials — there are no sales, no bargains and usually only one choice of cereal, tuna, soap, etc. On occasion you find grapes packed in shredded cork from Spain, apples — one per person per family, oranges in season. All local vegetables, tomatoes, cucumbers, peppers and bananas are sold outside the stores by vendors or in the large market place. You have to bargain for these items. Every week the same bargaining procedure takes place with the same African entrepreneur. You become good friends.

Then you drive back home in your small car with your baskets of groceries — having totaled costs in pounds, shillings, and pence (12 pence = 1 shilling, 20 shillings = 1 pound — no base 10 here). You must drive on the left side of the road, dodging goats, bicycles, and people walking along the side of the road with loads on their heads: firewood, bundles of twigs, oranges, bread, or even mattresses. You say to yourself upon arriving home, “I did it. Hooray!!” Then your cook helps unpack the car and all fresh things must be soaked in water colored blue by permanganate crystals for twenty minutes. This is the approved method for killing any bacteria. Meantime the cook (bless his soul) has purchased the meat, freshly butchered in a courtyard in the town. This is also soaked in permanganate water and cured by keeping

it for two days in the frig and two weeks in the freezer compartment of the British frig, which is small but OK. You can't keep the ice cream in the frig for it is not cold enough.

The kitchen is really different — no doors on the cupboards, only cold water, a “meat safe” that hangs on a big long hook from the ceiling — it is really a square type cupboard with screened sides. We keep cereal, sugar, spices, cookies, bread — anything we need protected from ants in it. There is also a tall very important metal container that we poured boiled water into. The water then filters through a cone so that it can be purified and ready to drink. A bottle always stands ready in the bathroom for teeth brushing and taking our daily malaria pills. The small stove is British with three electric burners. The broiler is a shelf under these burners and the oven holds a pizza pan. We are lucky; the natives cook on charcoal and think we are hilarious when we have an outdoor cookout. We raise our own lettuce and bake all our bread, pies, cookies, and cakes from scratch.

Keeping house is pretty much a challenge for housewives, and we need the help of a cook and gardener to clean, sweep up bugs and ants, hang up the wash, watch for snake trails on the grounds, and keep the bushes trimmed so that our little boys, who are four and six, can play safely.

Looking back on our two year's stay — you realize that an additional bonus came in trips to the little thatched mud hut villages, seeing the Niger River and the camel caravans loaded with salt coming in from the Sahara Desert at Kano in Northern Nigeria, festivals with the horses and riders decked out in trappings and tassels, the celebration for Nigeria's independence from Great Britain with the bands and marching soldiers and the visiting English princess going by in the royal touring car, cocktail parties at the Western Region's

Governor's House, and trips to Ghana, Dahomey, Togoland with stilt villages out in the lagoons.

We made our own entertainment and kept as cool as possible by going to the Olympic size swimming pool at Greensprings Motel from three to five every afternoon. We avoided the heat by swimming and visiting while our children learned to dive and swim the length of the pool. We celebrated all our holidays: birthday parties for children were always a must with 24 kids attending, mobs of kids colored Easter eggs in our kitchen, we saved Guy Hawkes fireworks from Christmas for our Fourth of July, Christmas trees were a challenge and we usually traveled then. We made our own Valentines and entertained Peace Corp kids for Thanksgiving, and Halloween costumes were a riot.

When Frank, who was Chief of Party, sometimes came home and said, “Jean, spirits are low — the team is getting discouraged or tired of the hot weather or lack of progress — it is time for a party!!” We would get out our dance records, spaghetti recipes, borrow another table and chairs from the neighbors, and have a wonderfully noisy party for twelve adults. Overseas families have a special camaraderie, which continues for many years.

On occasion Frank would drive to Lagos on business with the US Agency for International Development. Lagos is on the coast 90 miles from our inland city of Ibadan. The road was paved but only one lane wide. When you met a car each of you (hopefully) moved to the outside with one wheel on the dirt and one on the road, keeping in mind that you were driving on the left side. If there was a broken down lorry or a car on the road or a pile of dirt waiting to be removed, you all followed the worn tracks around on the grass. There were few dull moments and always challenges —



PREMIER
WESTERN REGION, IBADAN

Independence Day, 1960.

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I am,

dear friend,

Yours sincerely,

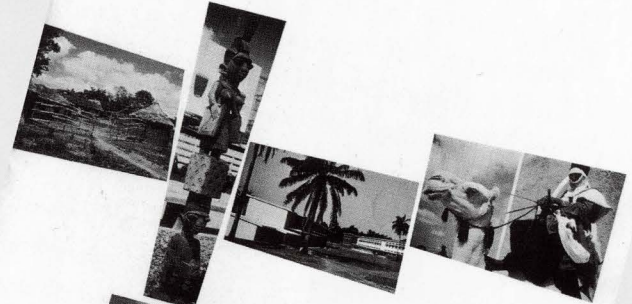
S. L. Akintola

(S.L. Akintola)

Premier.

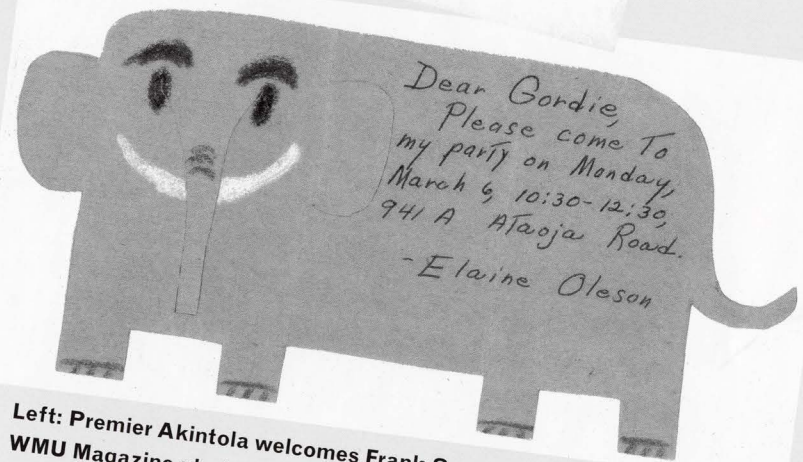
Mr. Scott.

Western Michigan University
Magazine
Summer 1965



Scenes in Nigeria

In This Magazine:
Sargent Shriver
Otto Yntema
Robert M. Limpus



Left: Premier Akintola welcomes Frank Scott, first chief of party; WMU Magazine photos from Nigeria by Frank Scott; bottom right, faculty and staff entertained their children with frequent parties and get-togethers.

like the time the lorry in front of us lost its back wheel, which came rolling toward us while the axle was spewing sparks all over the place.

All of this took place before word processors, computers, cell phones, email, and overseas telephone systems. Our communication with the outside world and QMU was by blue tissue paper airmail forms and in a great emergency by a wavering radiophone. Our team was special: the eight children ages one to nine plus a teenager, the wives, and the men who helped start the Polytechnic School all had to be inventive and tenacious in accepting this tremendous challenge. At the end of two years — we made much progress in our homes: air conditioning in the bedrooms, screens on the windows and doors, a stove and refrigerator from the United States in the kitchen, an Italian washing machine that held two sheets, and clothes posts that had sprouted, which means that they will not rot and fall down. We have many new international friends and our travel plans for coming home are completed. We will travel through South Africa, Victoria Falls, Kenya, Egypt, Greece, Europe, and then come home by ship across the ocean. It has not always been easy, but it has always been a great adventure, and I feel that our team and our families left a positive impression of the United States with the Nigerians.

Signed, Jean Scott

First 2-year team 1960–1962

WMU USAID Project

Mr. Charles Woodward, professor of Engineering Drafting and Design in the Engineering Technology Department, spent a two-year rotation with his family in Ibadan from 1966 to 1968. He and his wife, Carol, shared a project description and two of their personal letters written during their stay in Africa.

Nigerian Project 1966–1968

By Charles Woodward

Position: Charles Woodward — Specialist in Engineering Drafting and Design, Advisor to the Ministry of Education, Western Region Government, Nigeria, West Africa.

Assignment: To set up and organize mechanical and architectural drawing curriculums and courses.

To order and set up drawing labs and equipment.

To educate and train the Nigerian students in mechanical drawing abilities that would enable them to pass the Nigerian government's required test (The British City and Guilds Test). This was a graduation requirement.

To identify outstanding Nigerian students to be further educated in the U.S. and returned to the Technical College as a teaching faculty member.

Reasons for accepting the assignment: To afford the family extensive travel and experience different lands, customs, and cultures. Carol and I were interested in this opportunity and knew that it would benefit our two boys, ages 9 and 11. We knew that moving a family with the required clothing and



George Kohrman lists the opening and development of the Technical College in Ibadan, Nigeria (1961-1968) as one of his proudest achievements. The Nigerian college perhaps best symbolizes the growth of WMU's engineering influence from national to international prominence.

The Biafran civil war, a series of military coups, curfews, heat, humidity, and termites were things the faculty and staff

faced as they went about their duties. The group that came to Nigeria in July 1966 for the final two-year extension included Fred Beeler, chief of party; Carl Engels, science; Joseph Kelemen, electrical engineering; E.L. Marietta, shorthand and typing; Louis Muench, civil engineering/town planning; Richard J. Murray, mechanical engineering; Charles A. Shull, accounting; Charles F. Woodward, drafting; Louis M. Yost, workshops.

household goods to a new home in a different country, hiring domestic help, purchasing transportation and continuing the boys' education in the local international school would be a challenge to our organization and planning skills.

Developing the classroom facilities and courses of instruction took up the initial six months of time. The existing drawing rooms were adequate in size but there was a need to update the equipment and instructional tools with the addition of overhead projectors, a blueprint machine, parallel rules and drafting machines, and large drawing table with tools. The additional new equipment increased the students' interest, drawing quality, and accuracy.

We were able to accomplish the students' passing the required City and Guilds Test, which justified the extension of the contract into 1966–1968 and earned Western Michigan University a performance bonus of \$250,000 from the Nigerian Government and favorable project reviews from USAID.

In 1966, Charles Woodward sent this letter to his parents back in the states.

Sat., Oct. 1, 1966, 1:00 p.m.

Dear Folks,

I am writing this letter while sitting on the balcony. Usually we work at school a half day on Saturdays, but today is the Nigerian Independence Day, so we have the day off.

As you have read, Ibadan is the largest indigenous city in Africa, with a population of 1,300,000 plus. The elevation here is 800 to 900 ft. above sea level and about 5 degrees above the equator, thus an even climate for both seasons.

The prevailing winds in the Wet Season are from the S.W., in the Dry Season from the N.W. In the Dry Season that starts the last part of October, we will have the Harmattan Winds that blow off the desert and are laden with dust and are very dry. We are just finishing the most pleasant weather you can imagine. For the Nigerians, this time of year is their cold season. The temperatures get down to 62–70 degrees. The Nigerians are wearing wool scarves and sweaters in the mornings and evenings and the babies that are riding "caboose style" wear little wool caps. The Nigerians have very strong beliefs about night air this time of year and are susceptible to colds and the like.

The Nigerian education system is still patterned after the English system, but they seem to be beginning to develop a system of their own. For example, they have developed and now use with a great deal of reliability, their own I.Q. test, which I was lucky enough to help administer the third week we were here. I had to laugh at the fact that before, a group of U.S. professors, armed with a Ford Foundation Grant and the good old reliable California Test (which in every case measures reading ability only), came over here to measure the Nigerians' I.Q. as well as educational progress, and went home confused.

The students here are of high quality and the screening of them is very selective. Our Technical College received 900 applications to enter the college in January 1967. Of the 400 tested students, 150 will be accepted to the college by the combination of past grades, entrance test and personal interviews with the Nigerian faculty members.

My teaching activities consist of 14 hours, weekly, of lectures, plus teaching in the drawing lab. I teach Engineering Drawing and Engineering Geometry to both the Electrical

and Mechanical Engineering students and I teach classes in Building Design, Construction and Mapping to the Civil Engineering and Town Planning students.

Costs of items are quite high, but there isn't anything that can't be found! So far I have located the local G.E. and Whirlpool dealers plus many others. Because of the new and higher import duties on items, our new V.W. cost over \$1,900, which formerly cost \$1,500 here.

At present I am revising an order for drafting materials and equipment that is being supplied by the U.S.A.I.D. program to our "Technical College" here in Ibadan. The materials and equipment will total about \$20,000. To control political graft, the stipulation is that we are to buy United States products, bought by our own U.S. agencies then supplied, after delivery to the Nigerians. Since the overthrow of the "political government", a lot more money is finding its way to the Nigerian schools from their own treasury, which is something to say in favor of the Military Government. An interesting thing about our foreign aid program is that because of the "stipulation" on supplying only U.S. products, about 65% of the total cost of our foreign aid program here, is going back to the United States in business activity.

Well, so long for now.

Love

CHUCK — also Carol, Mark and Scott

Mrs. Carol Woodward was kind enough to write down some of her recollections and to provide a copy of a personal letter that she wrote to her parents in 1966.

Nigerian Project — A Wife's Perspective

Traveling to Nigeria in 1966 was our first trip abroad and all of the other firsts this entails. We were a young family with two boys ages 9 and 11 right out of the Midwest. We found the two-year experience a positive one and if I were still that young, I would do it again. Below is a sample of one of the common experiences we encountered every day in a land different from our own in which we couldn't apply any past knowledge.

November 21, 1966

Temp. 80 Hum. 62%

12:35 P.M.

Dear Mom, Dad, and all,

I have just crawled out of bed after two days of stomach palaver. This has been my first bout with it and now I no longer feel guilty for not having been stricken with it. Everyone else in the group has had it at one time or another. Stomach palaver covers a wide variety of undefined ailments. Everyone knows that when you go to Africa you will have it sooner or later so when you do get sick you call it stomach palaver and everyone understands and gives the appropriate sympathies. Actually, I am sure I had a rare, yet undefined, tropical disease and am extremely luck to be alive today. Of course my sickness was so severe and my recovery so remarkable that I now posses an undisputed immunity to

the disease. If I just knew the name of the disease, I would then know where I could volunteer my invaluable services in the many infected areas. Ah, but that is the way of Africa, never is anything organized.

Food is somewhat of a problem here, so I thought I would discuss it in this letter. Canned food and staples are no problem. Either we can get the desired food or we can't. The problem is with the fresh food, especially meat. We have three choices of places to buy. As you can probably guess, I have already gone through all three and am left with no other options except repeating myself.

The first choice is Kingsway, a supermarket department store. Half the meat here is in packages like at home which is very convenient. It is also well labeled. The other half is in an open refrigerated case. You are armed with a long handled meat fork and from there you are on your own to find and recognize a suitable cut of meat. I want you to know that I can immediately distinguish chicken from beef. Beef from pork gives me a little trouble and lamb from goat loses me. The advantages here are the labels on some meat and that it is refrigerated. Also, I can't see the meat cut up so I assume that it is under clean conditions. The disadvantages are that the meat is sometimes imported (good) and sometimes local. I never know what and when. The meat is often very tough and always expensive.

The second choice is Moor Plantation. This is a government experimental station. All the meat is local. The plantation is quite a ways out of town but everything here takes all day anyway, so you just say on Thursdays I buy meat. Here you walk into the back room, look at the side of what must be beef for it is too big for pork, say knowingly that you want a 4 lb. roast, and have the meat attendant slaughter

it with a dull knife on a well used table, weigh it (good, it comes within a pound), and dump it in a plastic bag (this immediately sanitizes it). You do the same for all cuts of meat and hamburger which he will grind for you because although he started out with a good supply that morning (it is now 9:00 a.m.), he couldn't anticipate the big run on hamburger. Hamburg is something the Americans brought with them and the Nigerians haven't caught on to grinding up scraps of meat yet. Hamburg is anything from chuck roast to steak, usually the latter. Also fat has to be added to the meat. The beef has no fat on it. The advantages here are the reasonable and stable prices and conditions are fairly clean. The disadvantages are the distance and time involved, the fact that you watch the meat cut up (you may be squeamish about seeing a bloody boar's head next to the meat you wanted cut for dinner that night), and that the meat is sometimes tough (a fact my steward never fails to mention when serving a tough piece of meat).

The third choice is Dugbi Market. This is the open-air, open-stall, open-ditch, native market where everything can be bought. This is where our fresh fruits and vegetables come from. And this is where I presently get our fresh meat. This decision was hard to come by but after failing in the other two, I had no other choice. (Besides this is what my steward has been pulling for all the time.) The intimacies of meat buying in Dugbi I cannot accurately relate for my steward does all the buying there. This is one of the definite advantages. What I can't see doesn't hurt us. There are no scales in Dugbi. You just buy the right size. It takes a lot of meat-knowledge to shop this way and somehow our steward can tell whether the meat will be tough or not. This is a barter market and the prices fluctuate. The first week I decided to



Technical college staff, Ibadan, Nigeria, 1966. WMU's management of the college was scheduled to end in 1966, but the agreement was extended to 1968. George Kohrman visited in July of 1965 for the last time as head of the program. President James Miller visited in October of 1965. Enrollment in 1965 was 214, with about 135 enrolled in engineering. The college relied heavily on its support staff.

let Johnathan do all the meat buying, he was in his glory and most anxious to prove his worth. I gave him L3 and let him off at Dugbi Market. I then went on to do the rest of my shopping and whatever else had to be done in town. I then picked him up 2½ hours later (he has to have time to visit friends). Johnathan came across the street with my clothes basket (naturally) full of fresh fruit, meat, and vegetables. Next came my dishpan (naturally) full of more fruit, vegetables, and a frozen fish. All this was put into the back seat of the Volkswagen Bug. But to top it off he then produced two live squawking chickens and flopped them on the top of the frozen fish. All I could think of on the way home was "If my mother could only see me now." After that nothing could surprise me so we are still shopping at Dugbi.

Love,
Carol, Chuck, and boys

Carol added this note to her observations on Nigeria:

"Chuck, the boys and I all had many other wonderful experiences, which were met with the same spirit of adventure.

We also had a baby girl, Susan Carol Oluwabamedele Woodward, born to us on October 9, 1967. In July of 1968 she accompanied Dr. George Kohrman and his daughter Joan on the long trip back to the United States where she stayed with her grandparents while her parents and brothers toured Europe and all those castles before coming home."

Ruth (Shull) Hempen, spouse of Charles Shull, was with the last group of WMU faculty to participate in the Ibadan Technical College project. Her recollections are particularly pointed as Nigeria was then entangled in a civil war. She was kind enough to share her observations.

We arrived in Lagos, Nigeria, July 10, 1966. On July 29 there was another coup one mile from where we lived. Although it was never confirmed, we felt there was no doubt that the leader of the country, Ironsi, was shot and killed along with another man, Fajuyi. After that, the political situation was tense, and it was anybody's guess what would happen next. The entire country was on edge, people were being killed, molested, threatened, etc. In spite of the meetings being held in Lagos, the situation remained critical. At no time did we feel in danger, but felt it was wise to stay away from gathering crowds and not do much driving after dark.

During the following week, we were confined to the compound. We made a few plans in the event we should have to evacuate. Four days later, the restrictions were lifted and we went about our normal activities.

On May 9th, 1967, we went to downtown Ibadan to shop. As we approached the downtown area, we were aware of the lack of activity. As we reached the store, Chellarams, and started shopping, a riot broke out on the street. It was planned by the striking taxi drivers in rebellion of a tax that the government tried to impose on them. They were collecting anything they could to form large fires in the middle of the streets, even soaking old tires in petrol and lighting them. After some time, we were taken to the roof of Chellarams where the Lebanese manager lived and watched the proceedings. There were hundreds of people milling in the streets, making a lot of noise and causing destruction. Finally the

police came and fired blanks into the crowd, which scattered them quickly. The National Police were using their clubs on the drivers and beating them across the shoulder blades. We saw several of them carried away battered and bleeding. After about one and one-half hours, we felt safe to go on in our car. We were able to see black smoke billowing from all over the city. The strike was settled during that afternoon, but several people lost their lives and much damage was done to property. We were amazed at the animalistic attitude of the people including the small children. It was apparent that they all loved it immensely. I suppose it was a diversion from their lives, but even so — .

On Memorial Day, 1967, the Eastern Region of Nigeria seceded from the Federation. They called themselves Biafra, and Civil War was predicted. There was a great deal of tension throughout the country with many rumors and speculation. No danger was present for us.

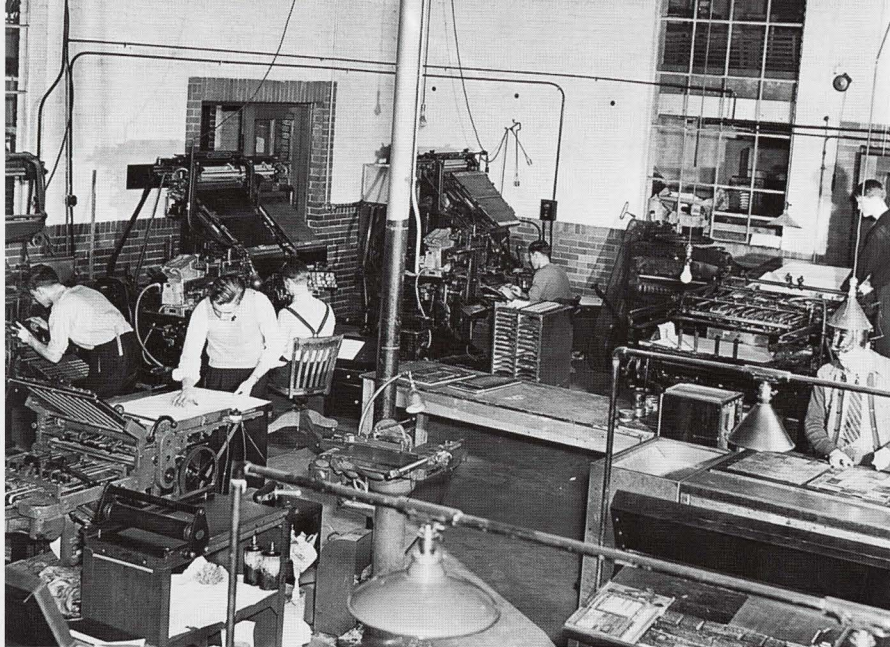
Saturday, June 3, 1967, we were called to a meeting at Beeler's [Dr. Fred Beeler was Chief of Party for the WMU group from 1966 to 1968] and told that we were in a state of permissive evacuation. This meant that if we left the country the wives and children could not come back into the country. This was an earth-shattering announcement as all were planning their R&Rs, and everyone was disappointed. We got very little information from anyone and rumors were many and disturbing.

By August 21, 1967, the Eastern forces came out of their boundaries and advanced rapidly across the mid-West leaving in its wake a coup of the leader, David Ejoor. They scattered throughout several areas and established numerous fighting

fronts. At this time we had heard nothing definite from [US] AID and were waiting. The Ibos were being acted against in Ibadan so a curfew was started on Monday, August 14th, from 7:00 p.m. to 7:00 a.m. We were told to stay out of town on Thursday, but nothing happened, and by Friday, we were permitted to go shopping. Everyone was there as if it were liberation day. On Saturday the curfew was changed from to 9:00 p.m. to 7:00 a.m. so early evening plans were possible. VOA and BBC (radio stations) announced that 15 fighter planes had landed on the Kano airport this past weekend, and in turn, Biafra had announced that they destroyed the entire fleet, sending word to send for more. There were many pathetically amusing incidents and the people were in turmoil constantly. The fighting advanced into the mid-West with the fall of Benin and the announced coup of their leader, David Ejoor. After that, he was found alive. The troops came to within 50 miles of Ibadan and were driven back to within their own borders with the recapture of Benin. It was announced that Enugu had fallen to Federal troops and the end was imminent.

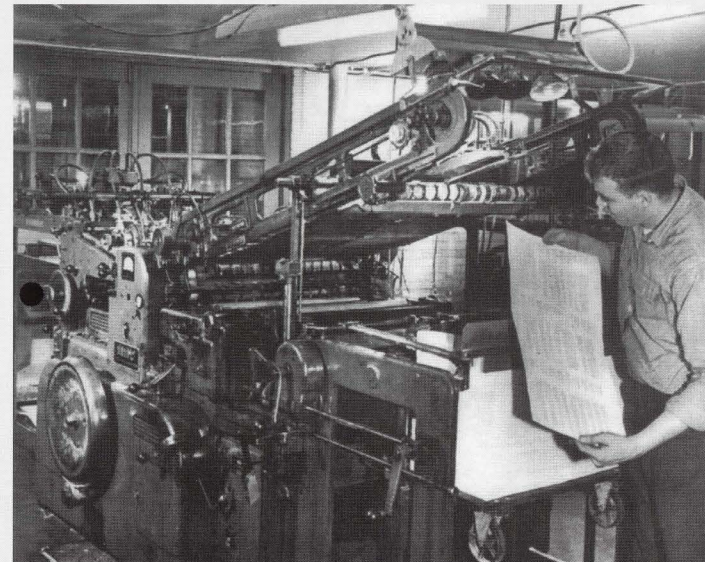
Six weeks passed and it was November. The fighting was localized in the East and on the borders. We got very little news, but understood that the end was not as close as thought previously. On the 21st our government released the travel plan, and we could go on R&R.

Submitted by Ruth (Shull) Hempen



Print Shop, c. 1940 (Located in the Industrial Arts Building)

This is a view of a corner of the Print Shop about 1940. It was located in the Industrial Arts building which is now a part of the Physical Plant. Intertype type-setting machines are in the back. Lawrence J. Brink, wearing suspenders, is seated at the keyboard of one Intertype. A Baum folding machine is on the left. Sheets were fed into the machine one at a time by hand. On the right background is a Miehle cylinder press, again hand fed. In the right foreground is the metal stone upon which a two-page form of the Herald newspaper is being prepared. It would then be placed on the Miehle press for printing.



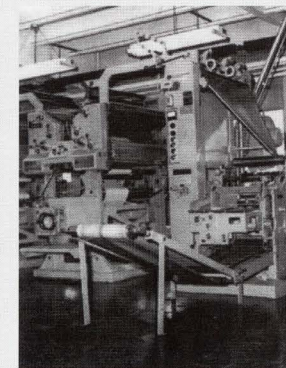
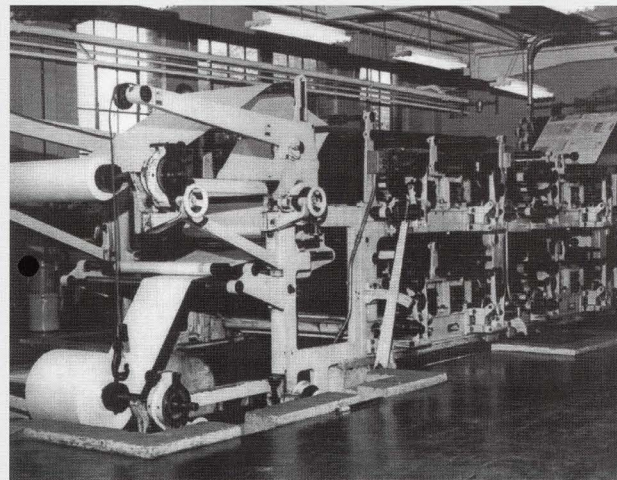
Miehle Letterpress (installed 1950s)

A Miehle 29 letterpress was installed during the "backroom" expansion of printing (1950s). It operated with a mechanical feeder at a faster pace than the Miehle cylinder. It was used for many years to produce quality color and black-and-white work as well as to offer instructional experiences to Management students.

The photo shows Richard Hamelink, a 45 year employee of WMU, examining a sheet at the delivery end of the press.

Duplex Press (Hot Metal era, 1940-1970)

For several years this Duplex press was used to print the Western Herald and other newsprint work. It was from the "hot metal" era and printed from curved stereotype plates. It was capable of printing 16 newspaper pages from rolls of paper to folded, finished product in one pass through the press. Both Printing Management and journalism students were exposed to the operation of this equipment.

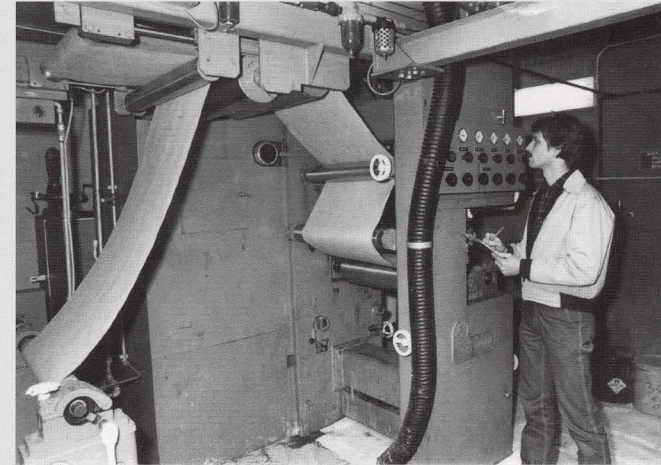


Goss Community Press, c. 1970

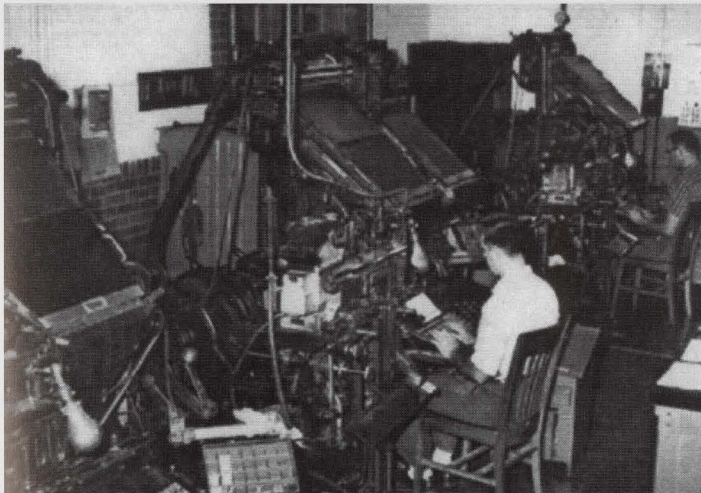
The Duplex was replaced by a Goss Community press which used thin, lightweight offset plates. Quality and speed were much improved. The noise level was much lower. This photo shows only the folder and one unit of this press.



Printing in Kohrman Hall, c. 1970. From 1966 to 1986, printing classes were held in Kohrman Hall.



80s' printing press, Kohrman Hall.



Intertype Machines used 1940–1970

Another shot of the hot metal Intertype machines. Western started training in the operation of these machines in 1940, expanded facilities and taught larger groups after World War II, and continued such instruction until about 1970. At this point hot metal was being rapidly replaced by computerized typesetting.



Compugraphic Set-up Machine, 1970

This Compugraphic set-up for composition via film and paper paste-up was the first venture into such composition by WMU Printing. It went into use in the 1970s.



Comco Flexographic Press, 1999. The Printing Management Program has partnered with industry throughout the program's history. Equipment donations by industry have ensured that Western's graduates are some of the best prepared students in the country as they step into the industry's leadership positions. The Comco Flexographic Press (1999) is one of the most recent acquisitions, helping to ensure the quality of the printing program.

ACCREDITATION: FROM TECHNOLOGY TO ENGINEERING

The accreditation of its degree programs will likely be the most lasting and far-reaching achievement of the College of Engineering and Applied Science for the twentieth century. The move to accredit the first program, Industrial Engineering, began in 1974 with a request that the Engineering Council for Professional Development visit Western and review the program. The process ended in 1979 with Industrial Engineering receiving accreditation by the ECPD. As Industrial Engineering was receiving accreditation, the programs in Mechanical, Electrical, and Computer Engineering were beginning the review process. Much credit should be given to Dr. Fitch who drew on his experience with accreditation from Michigan Technological University to get the review process started and to organize the academic materials and personnel. Six years after Industrial Engineering was accredited, the programs in Mechanical, Electrical, and Computer Engineering received that important designation in 1985. Today, all eighteen of the undergraduate engineering programs are accredited.

As a part of the College of Engineering and Applied Sciences history project, former dean Dr. W. Chester Fitch was invited to share his recollections of the events that took place during his tenure. Following are two pieces that he prepared: "A Brief History of the Development of Engineering at Western Michigan University" and "From Engineering Technology to Engineering in Two Days in 1973."

A Brief History of the Development of Engineering at Western Michigan University

By W. Chester Fitch

Introduction

The following comments deal principally with events with which W. C. Fitch was directly involved as head of the Engineering Technology department (1968–1973) and as dean of the College of Applied Sciences (1973–1982).

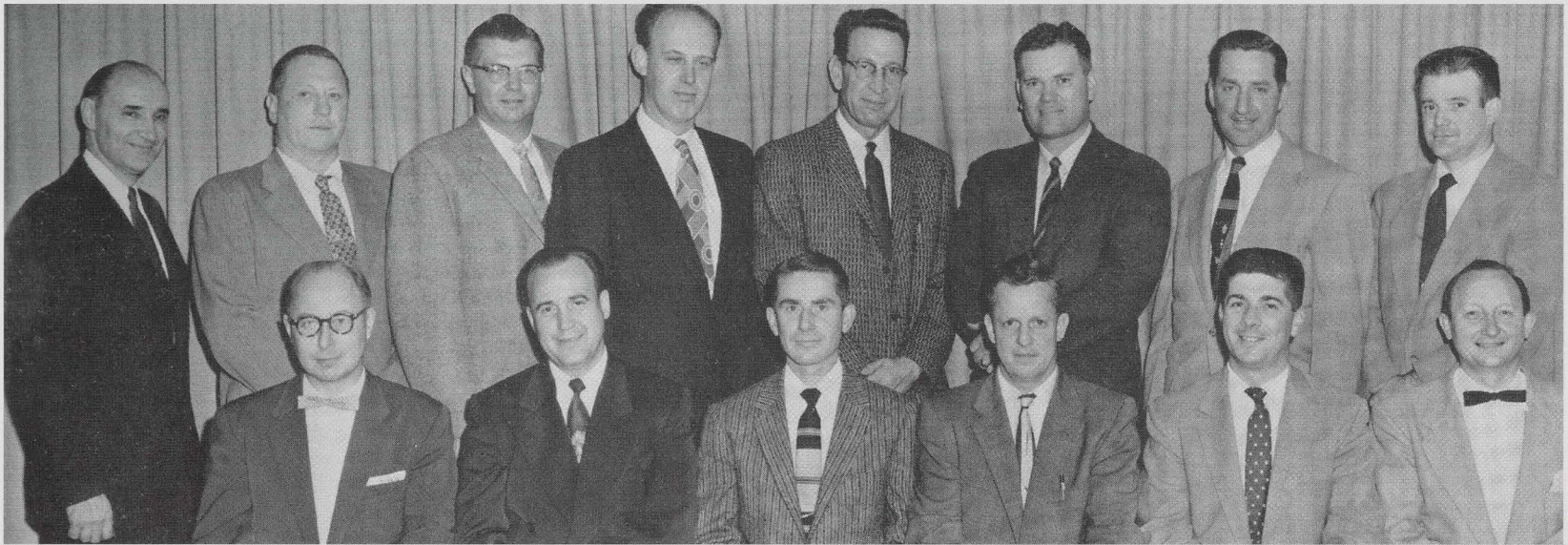
Prior to coming to Western, Dr. Fitch was head of the Mechanical Engineering department at Michigan Technological University (1964 – 1968). He directed the preparation of a study required for reaccreditation of the mechanical engineering curriculum. The curriculum was approved for the maximum period of accreditation. This experience provided a comparison of Western's mechanical engineering technology (MET) curriculum with the mechanical engineering (ME) curriculum at MTU. His experience at other engineering schools provided further basis for his judgment.

1968–1973 Engineering Technology Department

In 1968 Dr. Fitch was hired as head of the Engineering Technology Department. During his interview with President James Miller, President Miller emphasized that changing technology curricula into engineering curricula would not be acceptable. Industrial Engineering was already an established curriculum at this time.

1968–1972

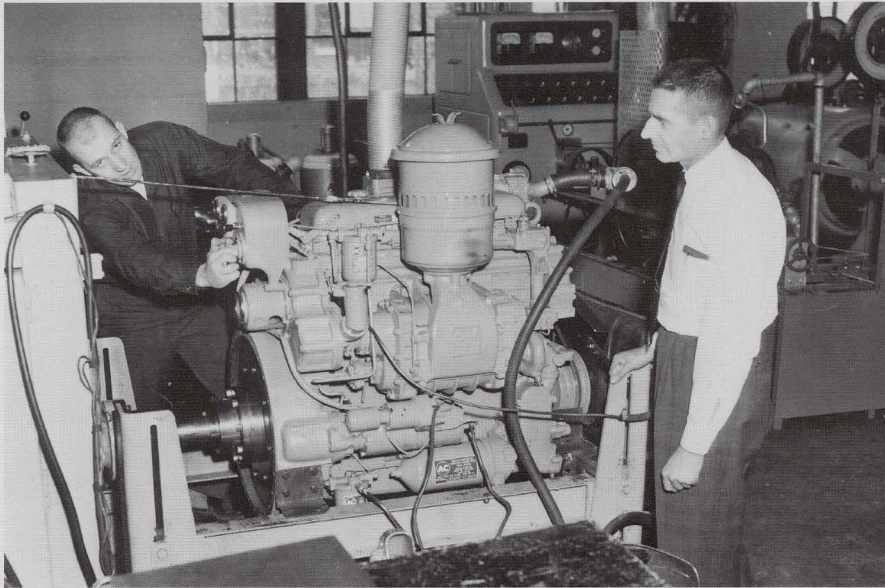
All of the technology curricula (except those related to transportation) were administered as a single department. Efficient use of resources, ease of decision making and moti-



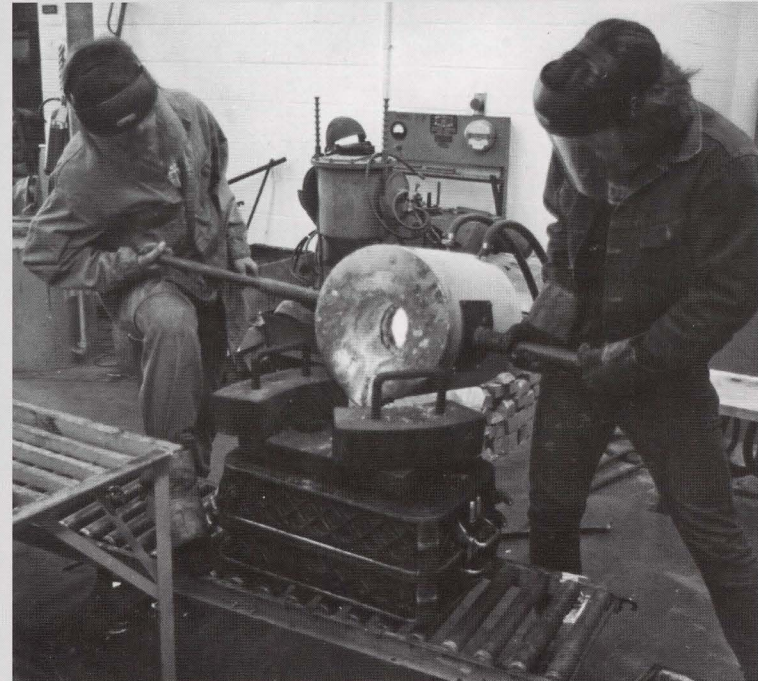
The Department of Industrial Technology, 1957.
Seated: Henry Beukema, Dr. Donald Nantz, Herbert Ellinger, William Weeks, Dr. Andrew Luff, and Dr. Glade Wilcox. Standing: William Schreiber, Donald Black, Robert Huffman, William Wichers, Clarence Van Deventer, Robert Ring, Elmer Brune, and Frank Scott.



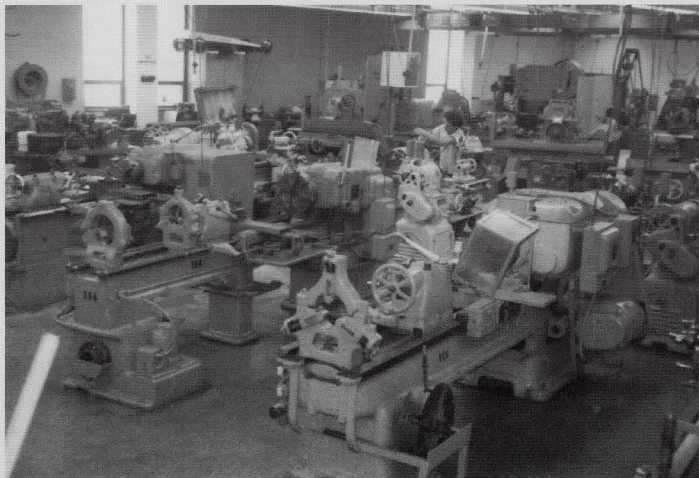
The Department of Industrial Arts, 1957.
Seated: Ted Zimmerman, Gilbert Hutchings, Lindsey Farnan, Fred Huff.
Standing: Don Pullen, Charlie Nichols, Lawrence Brink, Walley Klammer, John Bendix.



This photo appeared in the Spring 1965 issue of the Western Michigan University Magazine. Herbert Ellinger, right, associate professor of engineering and technology, and Richard Hursh, Kalamazoo senior, check over the first diesel acquired by WMU. Hursh helped install the diesel and make it operative.



Foundry lab in Kohrman Hall.



Machine lab in Kohrman Hall.



Registration for troubleshooting automotive competition c. 1968. On the right is Herb Ellinger, assisted by Jim VanDePolder.

vating of faculty to improve and change required an academic organization that could implement programs that related to the current and future engineering developments. Access of students to faculty who could assist in planning their individual program to maximize their experience and minimize their cost was a critical need.

For our graduates to be well prepared to enter industry it was essential to provide industry-oriented educational programs. To do this required a closer tie to industry. Concurrently, we needed to let industry know about the expertise of our faculty and the activities of the department.

Based on these needs, the department was reorganized by grouping faculty according to their relation to each of the engineering technology curricula areas, i.e., mechanical engineering technology, electrical engineering technology, industrial engineering and industrial management. Each group was given the authority to control the academics related to their curriculum. Each group accepted this responsibility for all aspects of the academics and operations of their area. Curricula were upgraded; laboratories modernized; and faculty added with emphasis on advanced degrees and industrial experience.

Emphasis on Students

An academic counseling office, under the direction of Dr. Don Nantz, was staffed using qualified full-time faculty. Their counseling assignment was considered as a part of their teaching load. Student progress toward graduation was tracked using computer assisted planning. Each student was required to prepare an academic plan to complete his or her curriculum. Using these plans, a model was developed to forecast the number of students seeking enrollment in each of the courses,

the faculty required to staff these classes, and the facilities needed. Studies of space needed for classes and laboratories were made.

This system optimized the time a student spent at Western and assured availability of facilities and faculty specialization. As a result, the timing and scheduling of classes were coordinated with the needs of the students and within the constraints of the budget. We were able to plan our offerings so as to reduce to a minimum the time it took a student to graduate.

Relations with Industry

Concurrently, our relations with industry were augmented through Professor Robert Boughner's contacts with industries throughout southwestern Michigan. The qualifications of our students and faculty available to assist them in solving engineering problems and improving their technical management were provided to interested companies.

As a result of these contacts, undergraduate courses and curricula emphasizing application of engineering principles to current industrial processes were developed. Graduate programs to train employees were developed. Courses were offered on and off campus. A major step in developing our relationship with industry in the Grand Rapids area occurred when the needs and financial support of the businesses in that area became well defined. Professor Boughner in cooperation with Dr. Stine, dean of Continuing Education, developed and coordinated the offering of a full academic undergraduate program in Industrial Engineering and Industrial Management in Grand Rapids with no attendance on-campus required.

1973–1982: From Engineering Technology to Engineering Organization of the College.

When Dr. Fitch became dean of the College of Applied Sciences in 1973, the basis for setting up departments needed to direct the operations supporting the technology curricula were well established and thriving under the direction of Dr. Dean Bluman (Mechanical Engineering Technology), Dr. Cass Hesselberth (Electrical Engineering Technology), and Dr. Frank Scott (Industrial Engineering and Industrial Management). Engineering departments were established.

The administration of the college was realigned with the appointment of Professors Robert Boughner and Don Nantz as assistant deans. To expedite the work of the office and to promote better relationships with the faculty, students, administration, other educational entities, and companies, the dean's office was reorganized.

Professor Robert Boughner was assigned the coordination of the work of the engineering departments. Dr. Don Nantz was assigned the management of the financial operations of the college. Ms. Jamie Jeremy was assigned the marketing of the college and the coordination of student and alumni activities. Ms. Susan Jensen was assigned the development of computer systems used in the college.

Engineering at Western a Reality

Shortly after Dr. Fitch became dean; a singular event related to the acceptance of the engineering technology degrees as meeting the educational requirement for taking the professional engineering examination occurred. During the 1973 fall semester, a father and son visited the dean's office. The father was disturbed by the refusal of the Professional Engineering Board's permission for his son to take the profes-

sional engineering — engineer-in-training — exam without further study and/or an apprenticeship. The father was strident in his denunciation of Western for not making clear to students the ruling of the Board that graduates of technology curricula would not be accepted as candidates to take the first part of the professional engineering exam. From other sources, it was indicated that graduates from engineering technology programs would not be classified as engineers in their job ratings. Not being classified as engineers could affect their job assignments and salaries.

To alleviate this complaint and to eliminate the onus of a lower job classification for technology graduates than that for engineering graduates, it would take changing the technology curricula to engineering curricula. Otherwise the catalog and brochures would need to emphasize the licensing and job classification problems to be faced by graduates. It was apparent that this was an urgent matter that the university must address immediately. That afternoon Dr. Fitch called Dr. Steven Mitchell, VP for Academic Affairs, and told him about the conversation with the father and son. Dr. Fitch met with Dr. Mitchell that afternoon and briefed him on the conversation and the implications of possible changes. His immediate reaction was to ask about changing engineering technology to engineering. He asked Dr. Bernhard, president of the university, to join in the discussion.

Dr. Bernhard met with Dr. Mitchell and Dr. Fitch the next morning, and Dr. Mitchell reviewed the situation. Dr. Fitch expressed his opinion that the current mechanical engineering technology curriculum was essentially equivalent to the accredited curricula at Michigan Technological University for which Dr. Fitch had been responsible. Likewise, the electrical engineering technology curriculum was reasonably



One of the first Heath robots entertains guests at the Kohrman Hall Tech Expo.

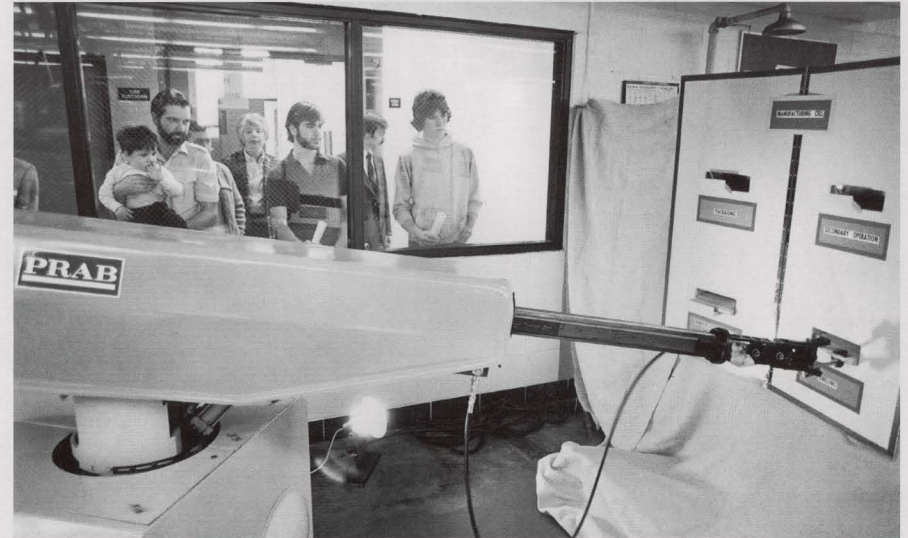


Robo Bronco and his creator, Gurdeep Singh.



Society of Manufacturing Engineers Senior Project, displayed at the 1982 Tech Expo: Named after Nikolai Tesla, the turbine is powered by air instead of steam.

Prab robotic arm at Tech Expo. SME entry.





Greg Lozeau, the first Computer Aided Engineering Center director, works with a student in this early 1980s photo.



Dr. Michael Atkins assists a student with Computer aided drawing.



National Association of Home Builders expo.



Cooperative Education director Mr. Larry Williams confers with WMU Petroleum Distribution students.

close to other accredited electrical engineering curricula based on Dr. Hesselberth's experience.

Development of Engineering. The mission of the engineering section of the college was threefold: (1) to provide students with the best engineering education needed for active involvement in engineering projects and management upon graduation; (2) to provide continuing education for those technical personnel employed in Southwestern Michigan industries, and (3) to assist industry by making known the expertise of our faculty and students.

With the reorganization and name change, the departments undertook a number of changes to accomplish this mission. The staff and faculty under the coordination of Professor Robert Boughner, Dr. Don Nantz, and the department chairs worked diligently to accomplish the following:

Preparation for accreditation of the engineering curricula [dean's office and departments],
Development of departmental programs,
Strengthening of relations with community colleges [Dr. Nantz],
Coordinating student academic plans [Dr. Nantz],
Strengthening of relations with industry [Professor Boughner],
Organization of student council [Jamie Jeremy],
Developing research projects [Professor Boughner and Department Chairs],
Marketing of the college [Jamie Jeremy],
Implementing a budgeting system [Sandy Blanchard].
In 1979 an ECPD (Engineering Council for Professional Development) visitation team recommended the accreditation of the Industrial Engineering curriculum to the ECPD board, which approved the recommendation. Other curricula were

accredited after Dr. Fitch's retirement. *

Discussion of the many other accomplishments, which were purely departmental, has been left to the departments.

Obviously, what we accomplished was a team effort of the faculty, department chairs, and the dean's staff.

W. Chester Fitch, PE

June 30, 2002

*In 1985, Mechanical Engineering, Electrical Engineering, and Computer Engineering received accreditation, with Industrial Engineering receiving reaccreditation. T.S.

Western Michigan University
College of Engineering and Applied Sciences
**From Engineering Technology to Engineering
in Two Days In 1973***

By Dr. W. Chester Fitch

The transition from engineering technology to engineering occurred as the result of a visit of a father and son with the Dean to complain about the refusal by the state board of professional engineering for his son to take the first part of the professional engineering exam. The approval was denied because the son had not graduated with an engineering degree but with a degree in Mechanical Engineering Technology. The father was disturbed that Western's catalog and brochures did not state that graduates of technology curricula were not qualified to take the professional engineering-in-training exam. [Previously students graduating from the technology curricula were permitted to take the exam. A

change in the staff of the Board precipitated this change.]

Immediately after the father and son left, Dean Fitch contacted Vice President of Academic Affairs Dr. Steven Mitchell to discuss the gist of the conversation with the father and son about the PE exam. It was obvious that the university needed to clarify the status of its graduates regarding the PE exam. The implications of stressing in all of our publications that our graduates were not engineers would be disturbing to faculty, students, and industry. Dr. Mitchell's reaction was why don't we change to engineering and drop the technology now.

Such a change was reasonable as Western's mechanical engineering technology curriculum only lacked a rigorous design segment in the senior year to be comparable to accredited mechanical engineering curricula. The faculty was qualified and the facilities were adequate to support changing mechanical engineering. Dr. Mitchell's reaction was to ask President Bernhard to join us and to reach a decision on a course of action. An appointment was made to meet with Dr. Bernhard on the following morning.

Dr. Bernhard was briefed on the previous afternoon's discussion. Dr. Mitchell recommended that an immediate change to engineering be made. Dr. Bernhard asked about the comparability of the programs at WMU and MTU (Michigan Technological University). In the opinion of Dr. Fitch, who had been head of the Mechanical Engineering department at MTU and had directed the preparation of materials for reaccreditation of the ME curricula, the mechanical engineering technology curriculum at WMU was essentially the same as the ME curriculum at MTU except for a lesser emphasis on a senior design project. The faculty was qualified, and the facilities were adequate to support engineering programs. Similarly the electrical engineering technology curriculum at

WMU was comparable to the electrical engineering curriculum at MTU.

Further discussion concerning the immediate and long-term effects of a change revealed that there were many advantages to the university having a college of engineering. It would be an advantage to graduates. It would provide industry in southwestern Michigan with additional resources including expertise of faculty, an opportunity for employee development, and cooperative research projects.

Dr. Bernhard agreed that the change from mechanical and electrical engineering technology to mechanical engineering and electrical engineering should be made, effective immediately. At the following graduation ceremony [December 1973], degrees were awarded in three engineering disciplines — Industrial Engineering**, Mechanical Engineering, and Electrical Engineering.

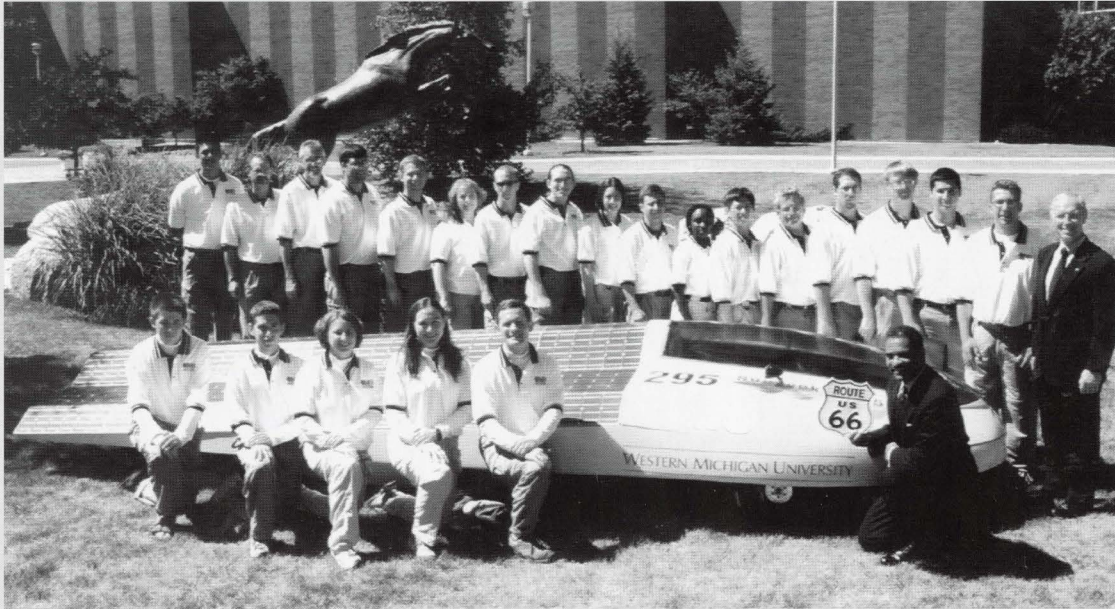
Immediate changes were made in these curricula to fully conform to accredited programs. Preparations were made to invite an accreditation team to visit the University.

What started on a Wednesday morning with a visit by a dissatisfied father ended on Thursday morning with a change of technology curricula to engineering curricula.

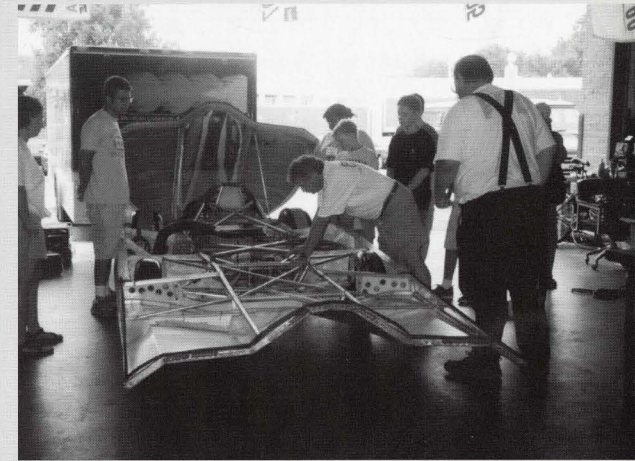
Dr. W. Chester Fitch, July 12, 2002

*When Dr. Fitch was hired (1968), Dr. Miller, President of WMU, informed him that he should not plan on any new engineering curricula.

**Industrial Engineering was included in the original list of curricula when the college was formed.



Sunseeker 295 team after completing the 2001 race along Route 66 from Chicago to Los Angeles. Pictured with the team are WMU President Elson Floyd (kneeling) and CEAS Dean Daniel Litynski (far right).



Sunseeker 295.



Automotive technology has played a significant role in the evolution of the College of Engineering and Applied Sciences. The WMU chapter of SAE hosts an exposition in the Kehrman Hall Automotive Laboratory, c. 1986.



Dr. Michael Atkins inspects Sunseeker 295 at start of 2001 American Solar Challenge in Chicago.

Three Decades of Growth

From the mid 1970s to the early 1980s program emphasis shifted toward engineering. The college offered an MS in Operations Research in 1973, and the Computer Systems Engineering curriculum was added in 1974, with the first graduate of the program in 1976. A flurry of activity in 1974 established the Vocational Education Council (chaired by Raymond Dannenberg); the Engineering and Technology Council (chaired by Dean Bluman); the Institute of Technological Studies (Robert Boughner, managing director) organized within the Center for Metric Education (John Lindbeck, director); and the Center for Depreciation Studies (Frank Wolf, director). To accommodate the rapid change, the structure of the college was divided in 1976. The College of Applied Sciences, with W. Chester Fitch as dean, was divided into two divisions: The Division of Applied Sciences, headed by Dr. Don W. Nantz; and The Division of Engineering, headed by Mr. Robert E. Boughner.

Increasing student enrollment combined with the increasing complexity of its programs led the college to form an undergraduate advising office. Meanwhile, the growth and development of computer technology in engineering led to the need for technical support of the various engineering programs. After many years of development, a state-of-the-art Computer Aided Engineering Center opened in the fall semester of 1983. The Center continues to flourish and is the most used student lab in the college today.

In 1982, the College of Applied Science changed its name to the College of Engineering and Applied Sciences. The May 27, 1982, Western News reported that the name change approved by the Board of Trustees would “provide a greater visibility of the professional area of engineering

within the University” (p. 4). At the time of the name change, the Division of Engineering was comprised of the departments of Electrical Engineering, Industrial Engineering, Mechanical Engineering, Paper Science and Engineering, and Transportation Technology.

Following the renaming, the College of Engineering and Applied Sciences has continued its cycle of growth both in students and in programs. Some of the more recent additions to the college’s programs include Chemical Engineering in 1998, Civil Engineering in 2002, and the move of the Computer Science department from the College of Arts and Sciences to the College of Engineering and Applied Sciences in 2001. Additionally, off-campus programs in Battle Creek, Grand Rapids, and Muskegon continue to flourish. Fall 2003 enrollment in the college was about 3,000. The college has gradually increased its emphasis on research, steadily increasing its funding from both private industry and the federal government, with the faculty gaining wider national and international recognition through their research activities.

Student Showcases

A long-standing tradition within the college, the Open House, has undergone several changes. Originally, the annual Open House was an opportunity to invite the public to a look at teaching and technology. Prospective students, parents, and those curious would visit and be treated to a look at what went on in the classrooms and labs of the WMU engineering facilities. Guests might see an early experiment with a Heathkit Robot or receive nutritional advice from the Dietetics students. As the event grew, the emphasis shifted to more formal presentations by student teams. The revised event was labeled the Technology Expo, and to accommodate

the various groups and presentations the Tech Expo moved to the Bernhard Center.

In 1987 with the expanded offerings in engineering, and to better showcase the talent of its students, the College changed the Tech Expo to a formal conference-style event, the Conference on Senior Engineering Design Projects. The event features presentations by teams of graduating seniors who unveil their capstone design projects to their faculty advisors, industrial sponsors, fellow students, parents, reporters, and numerous visitors. High schools throughout the state have begun bringing students to the event to get a glimpse at what students in technology and engineering are up to. The 33rd Conference on Senior Engineering Design Projects was held in December 2003 at the Bernhard Center with the 34th Conference scheduled for April 2004 at the new Parkview Campus with seventy presentations by teams comprised of about 200 seniors. Recent conferences have highlighted an air filtration device that replaces the lint screen in clothes dryers, a modified toy car that can be operated by children with disabilities, and a memory chip emulator for surgical power tool motors. Many of the projects are sponsored by area industries with project advising duties shared between WMU engineering faculty members and industry leaders.

Student Societies

Student professional societies have played a significant role in the development of Western's engineering students. From the formation of the Manual Arts Club in 1917 growth in numbers and types of student organization has been seen. Most programs offer students a chance to join a branch of the professional organization in their disciplines such as the



Begun in the 1990s, the Fall Food Fest continues to be a popular event among the College of Engineering and Applied Science students.

Society of Manufacturing Engineers or the Institute of Electrical and Electronics Engineers. Numerous other organizations (such as the Society of Women Engineers or the National Society of Black Engineers) offer professional development and networking opportunities that complement academic organizations such as the Tau Beta Pi Engineering Honor Society. Representative of the growth and renewed interest in involvement in professional organizations is the reactivation in December 2001 of the WMU Chapter of Tau Alpha Pi, the national honor society for engineering technology.

The umbrella organization for the CEAS student organizations is The Council of Student Societies that represents twenty-five active student organizations. The Council of Student Societies is involved in the planning of the Fall Food Fest, a popular event held every fall term where students and faculty share a meal together in an informal setting. The Council also helps plan the high school program held before the annual Engineers Week Dinner and the WMU Preview Day activities.



CEAS TODAY

THE CEAS CURRENTLY OFFERS 18 bachelors, 11 masters, and five PhD degrees. The college's nine departments employ about 100 full-time faculty members. Numerous part-time instructors and graduate assistants also share the teaching load. An excellent support staff, including administrative assistants and technical specialists, keep the departmental offices and the seventy-five teaching and research laboratories running smoothly. In December 2003, CEAS Dean, Dr. Michael Atkins was assisted by two associate deans: Dr. Molly Williams, Associate Dean for Research and Graduate Programs, and Dr. Edmund Tsang, Associate Dean for Undergraduate Programs and Assessment.

In December 2003, the College consisted of nine departments:

- The Department of Civil and Construction Engineering
- The Department of Computer Science
- The Department of Electrical and Computer Engineering
- The Department of Industrial Design
- The Department of Industrial and Manufacturing Engineering
- The Department of Materials Science and Engineering
- The Department of Manufacturing Engineering
- The Department of Mechanical and Aeronautical Engineering
- The Department of Paper Engineering, Chemical Engineering, and Imaging

Administration, faculty and staff gather at the beginning of the 2003-04 academic year in the courtyard of the new Parkview Campus.

These departments are housed in the newly opened Parkview Campus where they share over 343,000 square feet in a wireless and wired computing environment.

A few simple comparisons of past and present may best illustrate the progress of the college in the past 100 years. In 1904, when classes began at Western State Normal School, there were 107 students in the entire school, with less than two dozen pursuing one and two year certificates in the Departments of Manual Training and Domestic Science. These programs employed about six full and part-time instructors. Today, the enrollment at WMU (undergraduate and graduate) is approaching 30,000, with about 3,000 of those students pursuing degrees in one of the College of Engineering and Applied Sciences' 34 programs taught by more than 100 full-time faculty.

In 1912, following a fire in the borrowed space of the Kalamazoo Public School building that it was using, the entire Department of Manual Training was placed in a wooden shed of less than 5,000 square feet. Today, the 343,000 square foot Parkview Campus sits on 265 acres that include the Business Technology and Research Park, providing the ability for the college to partner with its neighboring engineering, technology, and business firms.

However, many things about the college have remained unchanged. The effort to provide the best environment with the best people to provide the best quality education remains

the same. A strategic planning session in 1999, led by Dr. Daniel Litynski, articulated the College of Engineering and Applied Sciences' Vision and Mission statements:

Vision

The College of Engineering and Applied Sciences is a scholarly community dedicated to excellence through student-centered education and research emphasizing professional practice in engineering and applied sciences.

Mission

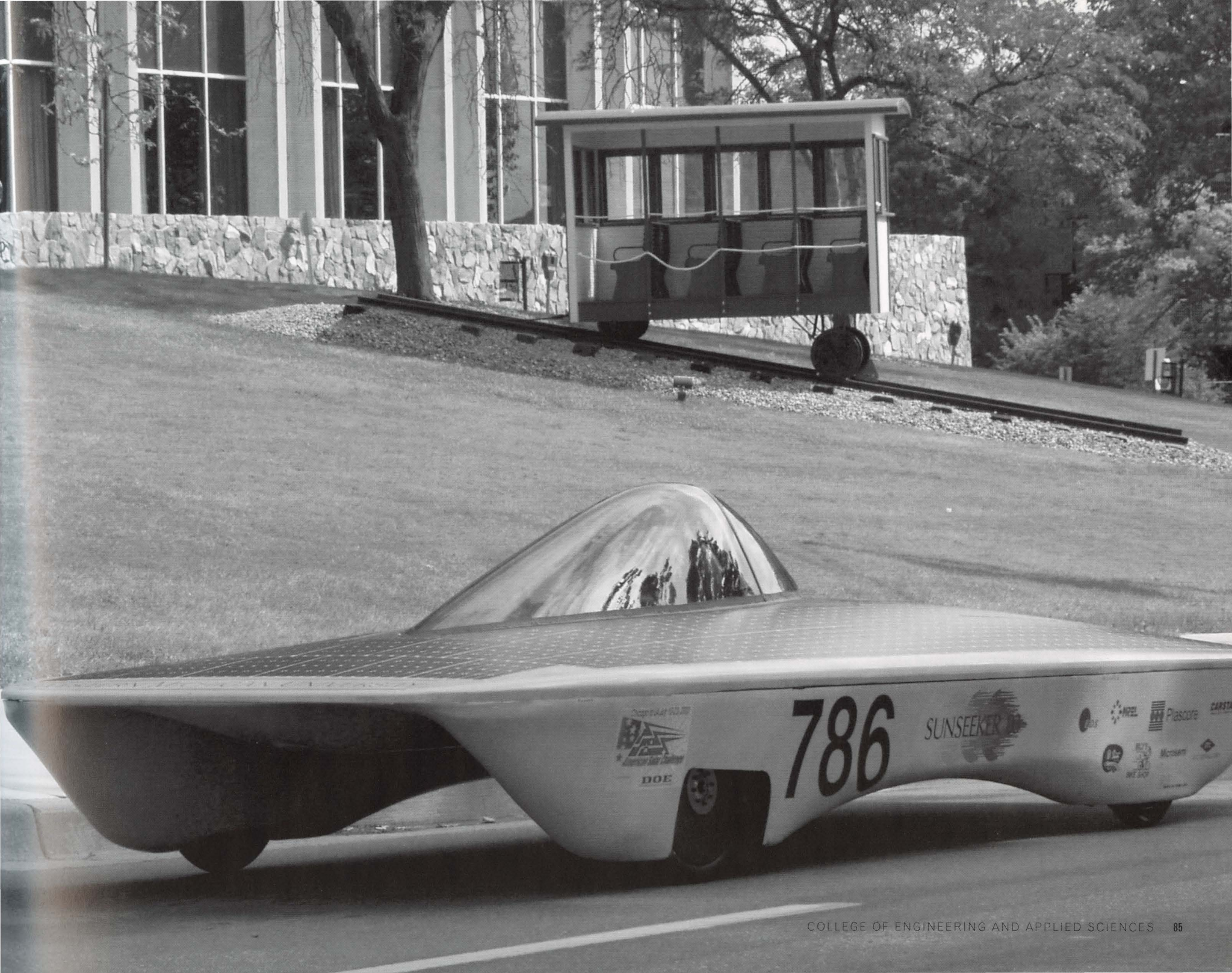
- *Educate our learning community for life-long excellence in responsible professional leadership.*
- *Increase knowledge through collaborative discovery, integration, application, and teaching.*
- *Serve as a resource and partner to our constituents.*
- *Prepare job-ready graduates for the global market.*

The bringing together of past and present can be seen in two recent student-centered projects: The Sunseeker 2003 and The WMU Trolley Restoration.

For the past 12 years, a team of students, with faculty advisors, have designed, built, and raced a solar powered automobile in the bi-annual American Solar Challenge. This past year, Sunseeker 2003 finished in the top five and was recognized with five major ASC awards including the top prizes for “best design” and “sportsmanship.”

During the same year another team of four students, along with their faculty advisors, looked back in time and built a replica of one of the Western Trolley Cars that ran up the hill from Davis Street to the East Campus. That team used old photos, computer scans, and the only remaining remnants, a piece of track and one bench, to reconstruct an exact replica of the original car. The trolley replica was given to the University as part of the Centennial Celebration and now stands in front of the Bernhard Center.

These two projects reflect the depth and breadth of the College of Engineering and Applied Sciences' programs, its proud past, and its promising future.



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The College of Engineering and Applied Sciences History Project began in October 2000 with a conversation with Michael Atkins, then chair of the Department of Industrial and Manufacturing Engineering. We discussed the important role that the emeriti faculty had played in developing the CEAS, the value of collecting their stories and recollections, and two important milestones. In 2003, Western Michigan University would celebrate its centennial; and later that year, the CEAS was slated to move to the Parkiew Campus.

At the conclusion of our discussion, Dr. Atkins requested that I lead an effort to compile a history of the CEAS at Western Michigan University. I gladly accepted his charge.

Later that year, a group of emeriti faculty, Dr. Atkins, and CEAS Dean Dr. Daniel Litynski, met with me to discuss a strategy for the project. That meeting resulted in a reception in August 2001 for the college's emeriti faculty. After outlining the project to the group and giving a general historical overview, I requested that the emeriti help me with the project. Their response was overwhelmingly positive, and I was soon inundated with photos, newspaper clippings, magazines, scrapbooks, letters, phone calls, and emails. The emeriti faculty's support is what made this project possible.

During this time I also began to work closely with University archivists Sharon Carlson and John Winchell, who were most helpful in locating materials for me. Mr. Robert Boughner, who was instrumental in identifying key

dates and events for the CEAS chronology by searching through annual reports, aided me in my archival research.

In 2001, the former deans of the CEAS were invited to return to WMU to tape a roundtable discussion. In August, Dean Litynski and Drs. Fitch, Behm, and Lamberson sat down with me in the WMU television studio to discuss events that took place during their tenures. The result was a 70-minute videotape. The session was most helpful in defining some of the major themes that flowed through the college's history.

My wife, Elizabeth Kerlikowske, and my children, Rose and Nick,

have been
supportive of
this project

throughout. They have come to accept the idea that I often spend Saturday mornings in a place called The Archives. Over the past three years many emeriti faculty have stopped by my office with a story, a photo, or a word of encouragement. Gradually the history emerged. What began as a fifteen-minute conversation, evolved into a three-year project. I've enjoyed every minute of it (but do not plan to compile the next history in 2104 — sorry, I have trout to catch).

Tom Swartz

(Tom Swartz is a faculty member in the Department of Industrial and Manufacturing Engineering at Western Michigan University. He specializes in technical communication and is a WMU alumnus, BA English 1974.)

AUTHOR'S NOTE

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