ENGINEERING

100

1911–2011

UNIVERSITY OF
DETROIT MERCY

ENGINEERING CENTENNIAL NOTEBOOK

University of Detroit Mercy
College of Engineering & Science

Over the past 100 years, more than 13,000 engineering graduates have earned undergraduate and graduate degrees in 13 different engineering disciplines from our University. Those engineers have excelled in their fields with many rising to high level positions in a wide variety of industries including automotive, aerospace, chemical, civil engineering, computing, construction, defense, electronics, energy, intellectual property, and many more. Others have become leaders of national laboratories and federal agencies, and still others have become leaders of engineering education, including four deans of engineering colleges.

Exceptional faculty and administrators have created outstanding engineering programs . . . and the programs and colleagues of the College have transformed students into engineering professionals. While each has a story, this book highlights only a small sample of these people and their innovations and impacts on the world. We have attempted to make it a representative sample to reflect the diversity of technical disciplines and people who have been part of UDM engineering since that first class occurred on October 2, 1911.

I am humbled to have followed the exceptional leaders who served as dean. Innovators like the first dean, John McColl, who launched the engineering program, the second at any Jesuit university in the nation (just after Marquette University), and one of the first three to require co-operative education . . . Clement Freund who served as dean for 27 years and was nationally recognized as a leader in experiential education . . . Lawrence Canjar who reorganized the graduate programs and added the Doctor of Engineering Program . . . and Warren Baker who brought engineering and science together into one college emphasizing the interdependencies between those fields. I am honored to be the first dean of engineering who graduated from our University.

As we approach the cusp of our first and second centuries, it is also appropriate that we take a snapshot of the engineering programs and people. Here are a few elements of the mosaic of engineering at UDM today:

- The engineering faculty are a "community of teaching scholars," regularly receiving awards for teaching excellence and grants for innovative teaching materials and methods.
- Our students win or place very high in many national and international engineering contests, such as the Intelligent Ground Vehicle Competition and the ASME Innovation Show Contest.
- UDM ranks very high nationally in attracting and graduating minority and female engineering students; minority and female students each typically comprise 25 to 33% of the engineering student body.
- New degrees, concentrations and minors have recently been created in such areas as entrepreneurship, bioinformatics, advanced electric vehicles, architectural engineering and environmental engineering.
- Student design projects reflect the College's motto, "Envision a Better World, Then Create It," by focusing on service themes, such as assistive technologies for people with disabilities, transit design for Detroit, renewable energy, and resources for the homeless.
- Pre-engineering programs annually serve over 4,000 students in Detroit between 4th and 12th grades through Saturday classes, summer camps and curriculum that motivate and prepare them for careers in engineering and science.

All of this is only possible through the efforts of outstanding students, faculty and staff, and active engagement and support of the College's alumni and corporate partners that have sustained the excellence of our engineering programs. Of course, all of us in the College are grateful for that engagement and support; without the guidance of many professional leaders and the generous support from them and their organizations, the College would not be where it is today . . . poised at the beginning of our second century of exceptional engineering education focused on the innovations that will sustain the strength of our nation and, indeed, through the good work of our alumni, make the world a better place.

I am confident that one hundred years from now, those who follow us will have built new programs in emerging areas that we can only imagine and will celebrate the second century of outstanding engineering education and impact of our graduates.

Dr. Leo E. Hanifin '69, '72, '76
Dean, College of Engineering & Science
September 2011

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Title: Department of Engineering Begins

Left: John R. McColl was the dean of the new Engineering Department from 1911-1925. He was responsible for including cooperative education as part of the engineering curriculum, enabling students to experience the practical application of theory. Right: University President William F. Dooley, S.J.

Above: Packard Motor Car Co. was one of the original co-op employers of University engineering students.

Original Co-op Employers:

American Blower Co., American Car & Foundry Co., American Pattern Works, Bryant & Detweiler Co., Burroughs Adding Machine, Detroit Shipbuilding, Detroit Stove Works, Detroit Twist Drill Co., Detroit United Railway, Edison Illuminating, Federal Motor Truck, Gemmer Mfg. Co., General Motors, Great Lakes Engineering, Harrigan & Reid Co., Laner Machine Co., Michigan Central RR.Co., Michigan State Telephone Co., Michigan Stove Works, Motor Truck Body Co., National Twist Drill Co., Northern Engineering Work, Packard Motor Car Co., Park, Davis & Co., James W. Partlan Co., Peninsular Stove Works, Russel Wheel & Foundry Co., A.W. Schultz, Solvay Process Co., United States Tire Co., W.E. Wood Co.

Historical Highlights:

- Department of Engineering was founded in 1911, holding classes on Jefferson Avenue.
- 20 students comprised the enrollment. First class was held on Oct 2, 1911. The department opened with offerings in Mechanical, Civil and Electrical Engineering.
- The Jesuits taught the sciences and mathematics in the engineering school the first year. The more specialized engineering subjects were taught by laymen.
- The annual tuition was $100 plus fees. In 1915 students were still able to obtain weekly board and lodging for $4.50 and upwards.

These pages sponsored by: Leo E. Hanifin '69, '72, '76 Signed: Leo E. Hanifin

elow: 1911 Packard Automobile.

1911-1915

To meet the needs of the city as well as the growing demand of the students, it was decided to begin the University's expansion program with the Department of Engineering. It was proposed that classes begin in the new school on the second Monday of September 1911. However, classes in engineering could not be held until October 2.The delay was necessary to allow Dean McColl more time to get his faculty together and to complete the extensive repair work being done on the buildings at 348-350 Jefferson Avenue, on the south side of the street across from Dowling Hall, where the engineering classes were to be held.

The man to organize the school was well chosen. Professor John R. McColl, a graduate of Cornell University had taught for three years at Purdue and had later been head of the Department of Engineering at the University of Tennessee for ten years. More recently, as a member of a prominent Detroit firm of consulting engineers, he had come to know at first hand the engineering needs and opportunities of the city. Dean McColl entered his new position full of enthusiasm determined to establish the Engineering Department of the University of Detroit on a plane lower than none in the country. In this task he was to be ably assisted by the Reverend Henry Otting, S.J., registrar of the school.

It was first thought that the usual four year course in engineering would be adequate and it was so laid out. But President Dooley was not satisfied. He and Dean McColl studied the programs of other schools and were struck by that of the University of Cincinnati where Dean Schneider, originator of the co-operative engineering course, had had such a program going for six years. They visited Schneider and came back convinced that the new plan would suit Detroit perfectly.

(The University of Detroit 1877-1977: A Centennial History, Herman J. Muller, S.J., 1976, Pp. 84-85.)

- Under the guidance of President William F. Dooley, S.J., and Dean John R. McColl, the Engineering Department developed the co-operative engineering course, which began in 1912. Pay was 10 – 25 cents per hour.

- In Fall 1915, 45 students were enrolled; 27 were freshmen. With increases in enrollment, plans began for a new building. Ground broke March 8, 1915, and Dinan Hall opened on Jefferson Avenue in February 1916. The Dinan brothers—John and Michael— were the lead benefactors.

Date: 7/4/11

Title: Construction of Dinan Hall

John P. Dinan (left) and Michael T. Dinan were generous donors to the College over the years. They had earned their wealth as owners of a grocery store and investors in other business ventures. In addition to funding the College's Dinan Hall and St. Catherine's Chapel, they were major contributors in establishing the McNichols Campus.

Dinan Hall was erected o the south side of Jefferso Avenue near the Trowbri House, the College's orig classroom building. The Department of Engineeri moved into the ground fl of the new building on Fe 28, 1916, sharing the spa with administrative office The law school was hous on the second floor. The Physics Department with laboratories and lecture halls was located on the third floor and the Chem try Department was on th fourth floor. The baseme was used for heavy engi neering equipment and a cement laboratory.

Historical Highlights:

- Chemical Engineering was added to the curriculum in 1917.
- Ford Motor Company became a co-op employer in 1918.
- U of D was included on a list of technical engineering schools approved by Department of War during World War I. U of D radio school is particularly noted for its excellence.

These pages sponsored by: Peter J. Basso '59 Signed: PJ Basso

The first engineering graduates in 1916 were:
Top Left: William G. Streeter,
Bottom Left: Eugene D. Reno,
Top Right: William F. Crowe,
Bottom Right: Clarence Glazer.

- Aeronautical Engineering Department started to take shape in 1921. Thomas Dunn was named Dean of Aeronautics.
- 1920 enrollment was 260: 5 seniors, 53 juniors, 69 sophomores, 133 freshmen.

Date: 7/6/11

1916-1920

Conditions those first few years were somewhat crowded for the new engineering school. By the fall of 1915 there were forty-five students registered, twenty-seven of whom were freshmen. The course was becoming popular. It was at this point that the Dinan brothers, Michael and John, the latter an alumnus of the College, came to the rescue. Because of their munificence and the generosity of other alumni, friends and business firms, a beautiful new building was planned and erected on the south side of Jefferson Avenue a few doors west of where the original Trowbridge House had stood. Ground was broken March 8, 1915. The building was not ready for full occupancy until February 1916. On February 25 the Law office moved in and on the 28th the Engineering Department started to move in at noon.

"There have been few additions to the architecture of Jefferson Avenue which are of quite as high style as the new engineering school." So thought the *Free Press*. We recall it as a fireproof structure of reinforced concrete, with four floors and a basement. The façade was of Bedford limestone and highly ornamental and was considered the "handsomest piece of stone work" put up in the city in recent years. It was done in a Collegiate Gothic Style and was designed to fit in with other buildings in the neighborhood such as the College of Arts of the University and the Art Museum down the Avenue. The building had a frontage of a hundred feet on Jefferson Avenue and extended back to Woodbridge Avenue, where it also had a frontage of a hundred feet.

The building was divided into three sections, each being 100 x 50 feet. The front section on the main floor was given over to a large lobby with offices of the Dean and the Registrar to the right and the reception room and office of the President to the left. The rest of the ground floor contained laboratories for the three branches of engineering.

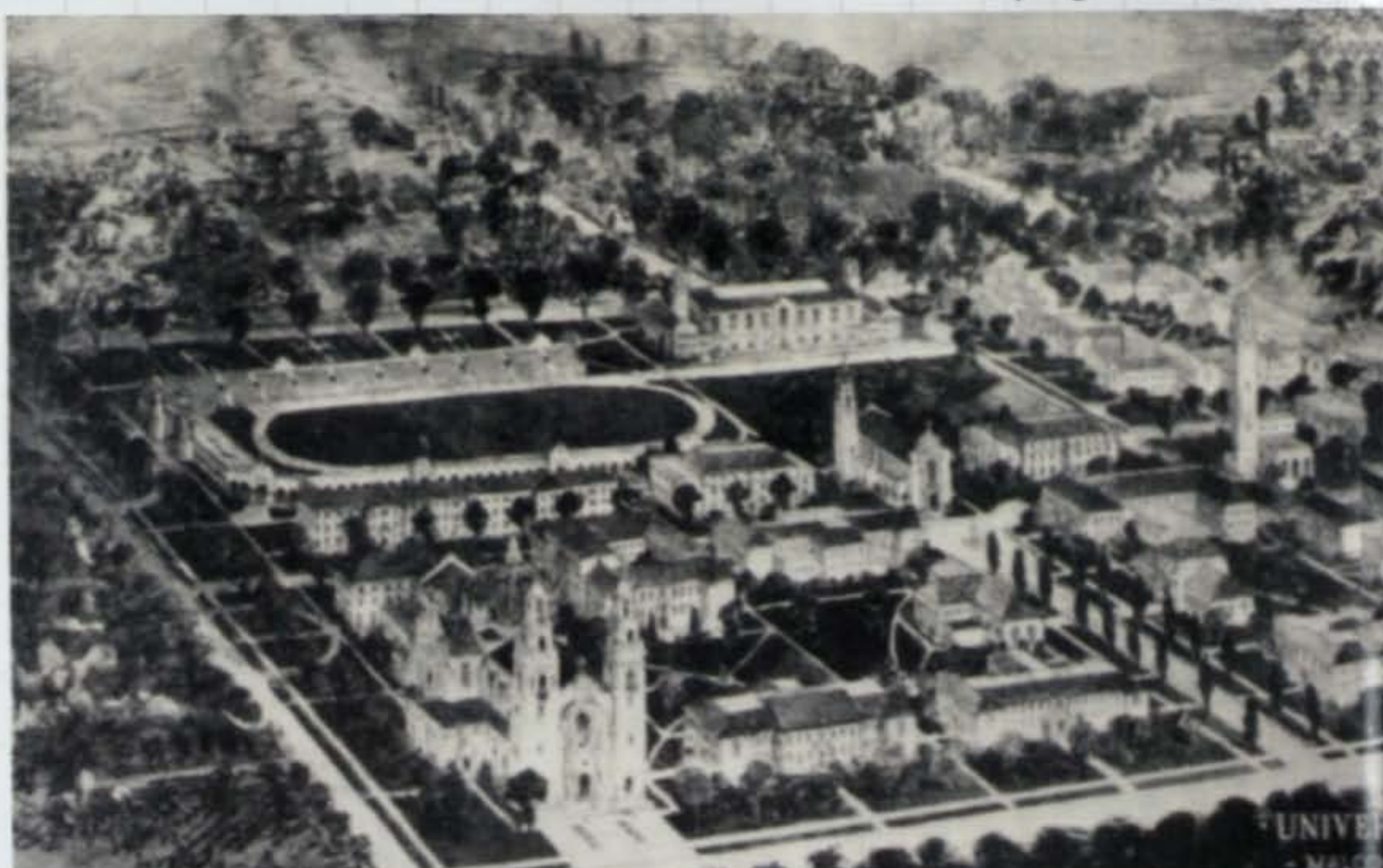
(The University of Detroit 1877-1977: A Centennial History, Herman J. Muller, S.J., 1976, Pp. 86-87.)

Title: Aeronautical Engineering

Engineering Class of 1925.

Aeronautical Engineeri program begins in 192

Architectural engineering student.



McNichols Campus sketch, circa 1925.

Historical Highlights:

- Aeronautical Engineering was added in 1922. It was one of the first three programs in the country. (A *Detroit News* article states that it was the first.)
- Department of Engineering changed to College of Engineering.
- Co-op rotation changed from a weekly rotation to a two-week rotation. Average co-op pay was 30 to 40 cents per hour.
- Architectural Engineering was added in 1923 with Professor Bert N. Blackslee from University of Michigan as the new department chair.
- Industrial Engineering was listed as an option to the Mechanical Engineering curriculum during this period.

These pages sponsored by: William L. Kozyra '80 Signed:

1921-1925

The spring of 1921 was to project a startling innovation at the University of Detroit. A real first in the history of engineering schools! As the *Free Press* broke the news: "Looking into the future and seeing there its home city the center of the aeronautic industry as she has been the center of the automotive development of the country, the University of Detroit is developing a five-year course in aeronautical engineering, the first of its kind in the country." ...This was the first time that a University would offer a complete five-year program leading to a degree in aeronautical engineering. Considering that Detroit was the "birthplace of Liberty Motor" and considering her technological expertise, most people took it for granted that Detroit would take the lead in the aeroplane industry. It was to teach its citizenry the science of designing, building and flying aeroplanes that the University of Detroit launched its new five-year program. Two degrees were to be made available, a Bachelor of Aeronautics and a Master of Science in Aeronautics. Speaking of the future of aeronautics in Detroit against a background of post-war recession, F. W. Hersey concluded that "while there is a University of Detroit and a few brave citizens with eyes that focus beyond the points of their noses, there is hope."

The University of Detroit was well equipped to start the proposed Department of Aeronautical Engineering. The new Dinan Hall still afforded considerable space. Its aeronautical library was considered to be the most extensive in the country with the possible exception of the Air Service Library in Washington. Again, the department had in its possession one of the two existing sets of rare photographs illustrating the development of aviation from 1863 to modern times. Since the course was to be on the co-operative plan it was most fortunate that students could, for the most part, stay right in Detroit for their practical "shop" experience. The University was fortunate also in the staff who started the Department. It was inaugurated by the Reverend John P. Morrissey, S.J., Regent of the College of Engineering. To the first Dean of the Department, Lieutenant Thomas F. Dunn, goes the credit of having suggested the innovation. At a special meeting of the Board of Trustees held on March 19, 1921, the Reverend Fathers unanimously agreed with Professor Dunn that the time was ripe and Detroit the place to start such a school. Professor Dunn had been with the Aviation Division during the World War. Specialized instruction in aeronautics fell to Professor Clarence H. Powell who had been associated in England with the National Physical Laboratories and the Sopwith Aeroplane Company.

(The University of Detroit 1877-1977: A Centennial History, Herman J. Muller, S.J., 1976, Pp. 112-113.)

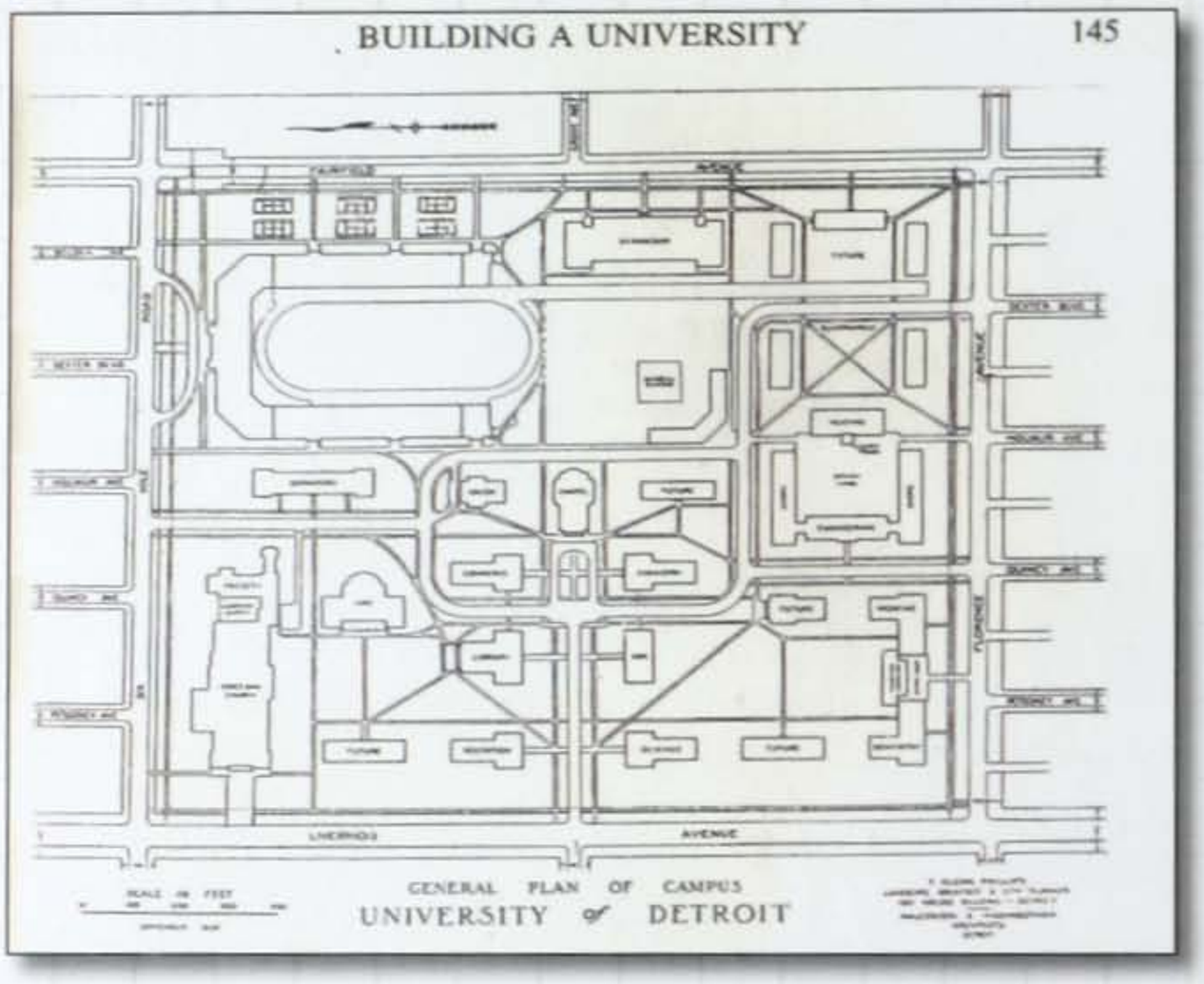
- In 1923 enrollment was 300 with the addition of the new programs, particularly Aeronautics.
- In 1925, Gus Dorais, famous football quarterback from Notre Dame and early developer of the forward pass with Knute Rockne, became the University's football coach.
- Father John P. McNichols S.J., became president in 1921 and started looking for property to build a new campus. The property selected was 43 acres on the current property site at McNichols and Livernois. Fr. McNichols started the process of adding new structures on the site, including the present Engineering building. The first structure however was the football stadium.

Date: 7/8/11

Title: The McNichols Campus

Russell Lawrence was dean of the Engineering College from 1927-1932.

Mechnical Engineering Lab, 1930.



McNichols Campus Plan.

Historical Highlights:

- The new McNichols Campus was finished in 1928 and included the new Engineering building. It was built to accommodate 1,800 engineering students.
- The Aerodynamics building opened in 1930. Airplanes up to seven feet could be tested in the new wind tunnel.
- In 1926, Russell Lawrence, former head of the Mechanical Engineering department, became acting dean, and was named dean in the fall of 1927.
- In 1930, College enrollment was 1,400 engineers, 500 were in the aeronautical engineering program.

Engineering students, circa 1930.

The Engineering Building, 1930.

- On campus, the football team under Coach Dorais was undefeated in 1928 and rated one of the best in the nation.

1926-1930

President John McNichols, S.J., soon realized the short-comings of the Jefferson Avenue campus. On October 24, 1921, he called a special meeting of the Board of Trustees of the University to discuss the purchase of thirty acres of land near Palmer Park "for College and Athletic Field Purposes." He decided on the Six Mile property, which was to become the McNichols Campus.

It was thought that, since the University itself was made up of a multitude of small units of more or less equal importance no one or two buildings should dominate the group. ...The architects chose the Spanish Mission style developed in the Americas. Basically this was a Spanish Renaissance style adapted by the Padres to the materials at hand and the limited skills of the workmen. This style was chosen for the University of Detroit group of buildings because of its simplicity, its dignity and its great flexibility. The material originally chosen for the buildings was a grey or white granite. Instead a Carboniferous Berea Sandstone was used, a type that is supposed to resist cold and heat well and which at the same time very durable. Time has proven these qualities accurate.

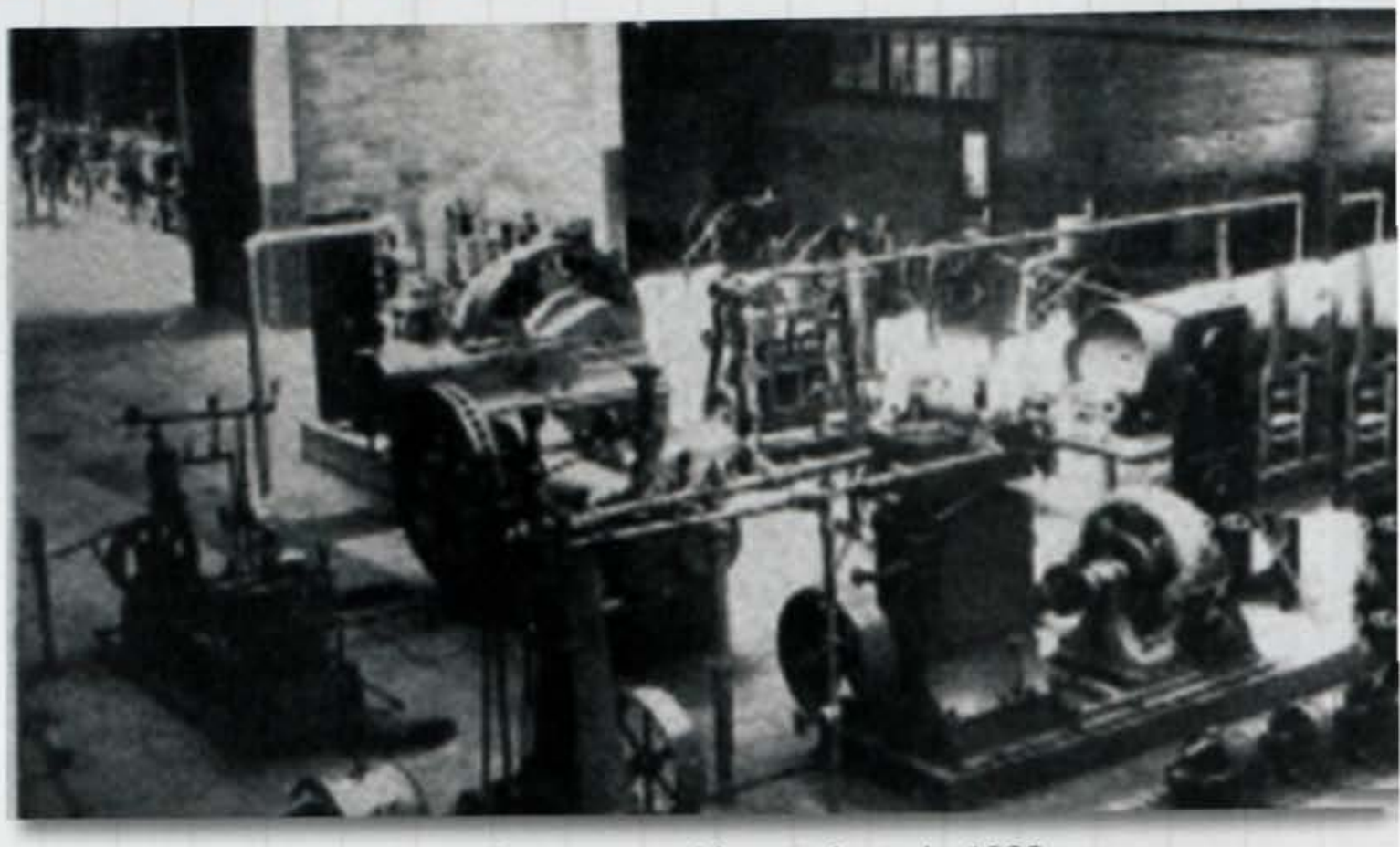
The Detroit News carried a feature article with the general plan of the University and an architect's sketch of the faculty building. The *News* explained quite accurately that a faculty residence and power plant would come first. Once these were under way the chemistry and general science buildings would follow. Next would come arts and engineering buildings followed by commerce and finance, library and administration units. All of these were to be ready by the fall term 1927. As soon as possible after the first group had been completed there would be erected in turn buildings for law, student union, chapel, medicine, dentistry, research laboratory, gymnasium and others, which would include dormitories. But because of lack of funds all thought of the second group of buildings had to be abandoned. Of the first group the power plant and tower, faculty building, commerce and finance, chemistry, science, and engineering buildings were ready by 1927 as promised.

(The University of Detroit 1877-1977: A Centennial History, Herman J. Muller, S.J., 1976, Pp. 123, 146, 150.)

Date: 7/11/11

Title: Dean Clement J. Freund

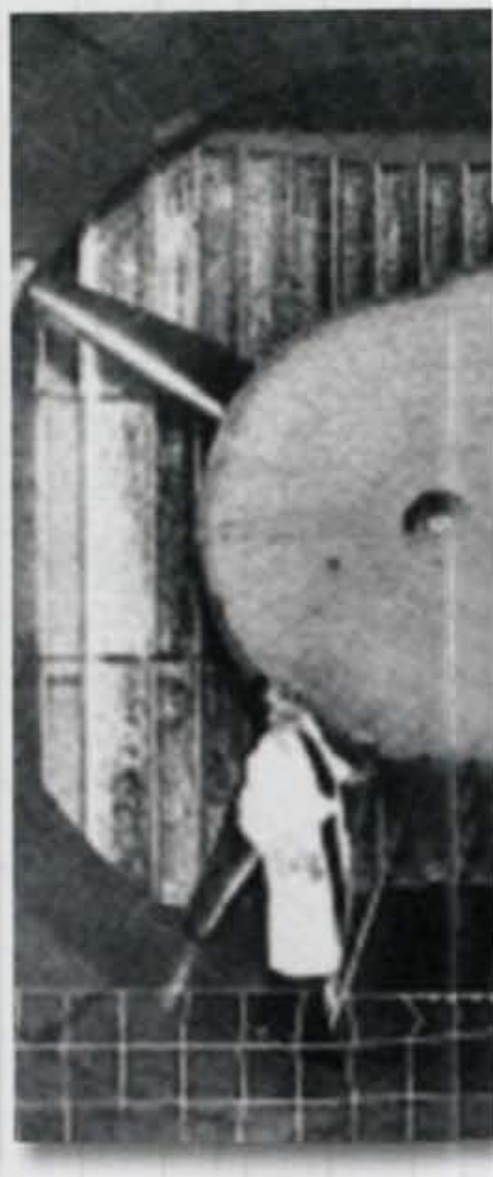
Clement J. Freund was dean of the College of Engineering from 1932-1962.



Mechanical engineering equipment used by students in 1933.

Electrical engineering students, 1933.

Aeronautical engineering lab, 1933.



Wind tunnel, 1933.

Historical Highlights:

- This period was dominated by the effects of the Depression. Co- op jobs decreased. Students were allowed to go to school continuously. The existing co-op jobs paid 50-75 cents per hour for juniors and seniors and 40-45 cents per hour for freshmen and sophomores.
- Dean Clement Freund was appointed dean of the Engineering College in 1932.
- First annual Slide Rule Dinner was held in 1932.

These pages sponsored by: Mary E. Andrecovich '49, '51
(daughter of Dean Clement J. Freund)
Signed: Mary Freund Andrecovich

1931-1935

Clement J. Freund served as dean of the College of Engineering from 1932-1962, and helped to grow the College's enrollment and reputation in engineering education. A native of Wisconsin, Freund earned a bachelor of arts degree from Campion College and a mechanical engineering degree from Marquette University. Upon receiving his engineering degree, Freund worked for Falk Corporation in foundry production and in educational training. U of D's Acting President Poetker, who had known Freund from Campion College, hired him as the dean of the College of Engineering. During his first year, Freund revised the engineering curriculum, postponing cooperative training until the third year so students would be more mature and better prepared for employment. In subsequent years, Freund expanded program requirements to include liberal arts courses so students achieved a broader education.

During his tenure, the College of Engineering attracted more students than any other unit at the University. Many students enrolled from outside the Detroit area. The maximum number of engineering students was just over 2,900 in 1946-47 due to returning war veterans.

Freund was active in engineering professional societies as a way to create greater awareness of U of D's engineering program in Detroit and Michigan. In 1946-47, he served as president of the Engineering Society of Detroit. He also participated in national societies, serving as president of the American Society for Engineering Education in 1948-49. This involvement gained national recognition for the College.

His participation in other national engineering societies focused on industry relations, professional ethics, and cooperative education. He frequently contributed to engineering journals on engineering education and presented talks before local, state and national technological and business organizations.

From 1958-1960, Freund took a sabbatical to advise the Pakistan government on the development and administration of technical institute education and training through a Ford Foundation appointment. He then served as a consultant to Pakistan's Commission on National Education for the engineering profession.

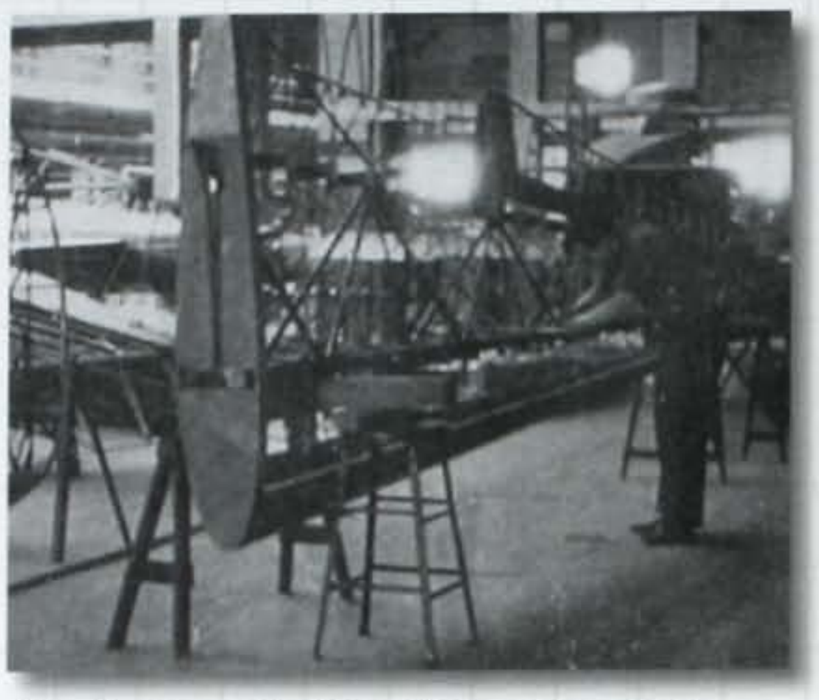
In 1962 Freund retired as dean but continued on faculty, assisting with recruiting students and maintaining relations with industry and engineering societies. During 1965, Freund served as a consultant for starting the Southwest Minnesota State College, which would offer instruction in engineering technology. For the next seven years, Freund spent half the year (winter) in Marshall, Minnesota, establishing and guiding the engineering technology program and the other half of the year (summer) in Detroit.

Among his many honors and awards, Freund received an honorary Doctor of Engineering degree from U of D in 1977 in recognition of his leadership and contributions to engineering education. In 1979, Freund was the first recipient of the newly instituted annual endowed Clement J. Freund Award of the American Society for Engineering Education for cooperative education achievement in engineering or engineering technology. U of D College of Engineering & Science also bestowed upon him the Pride of Engineering Award in 1980. He was named a Fellow by the American Society for Engineering Education in 1983.

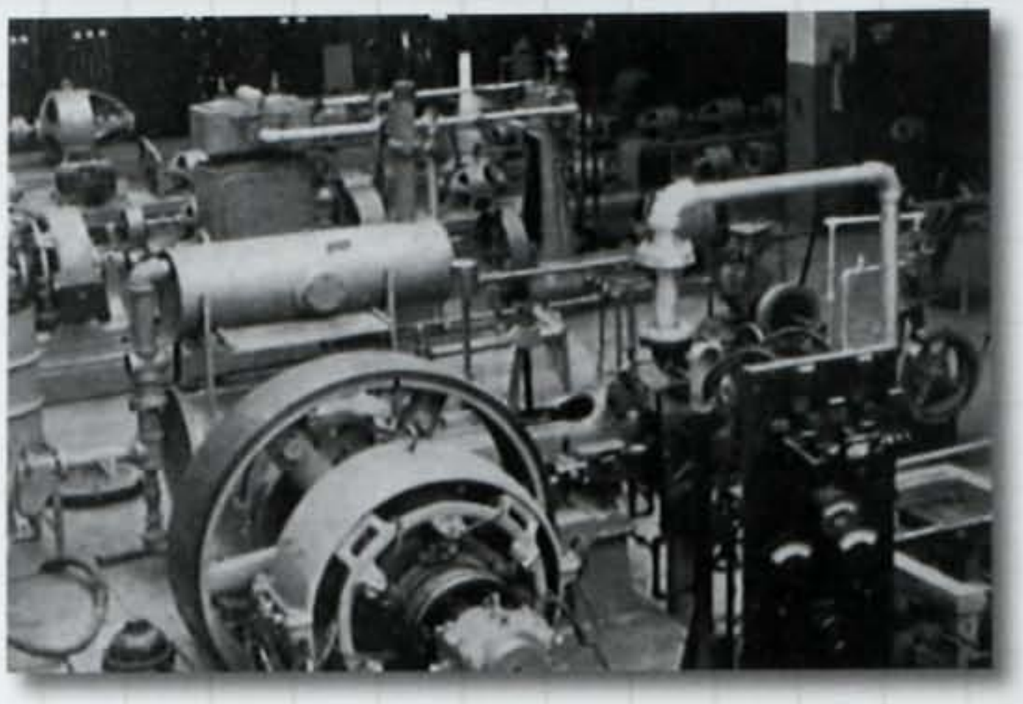
(Biography of Dean Clement Freund by Mabelle Freund, 1977)

- Dean Freund changed co-op rotations to start after the sophomore year to protect co-op jobs for juniors and seniors during these Depression years. Later, starting co-op after the sophomore year became normal practice.
- ASEE (American Society for Engineering Education) has created the Clement Freund Award that "honors an individual in business, industry, government or education who has made a significant positive impact on cooperative education programs in engineering and engineering technology."

Title: Engineering Esprit de Corps



Student conducting glider as part of aeronautical engineering program, 1937.



The electric section in the Engineering Building.

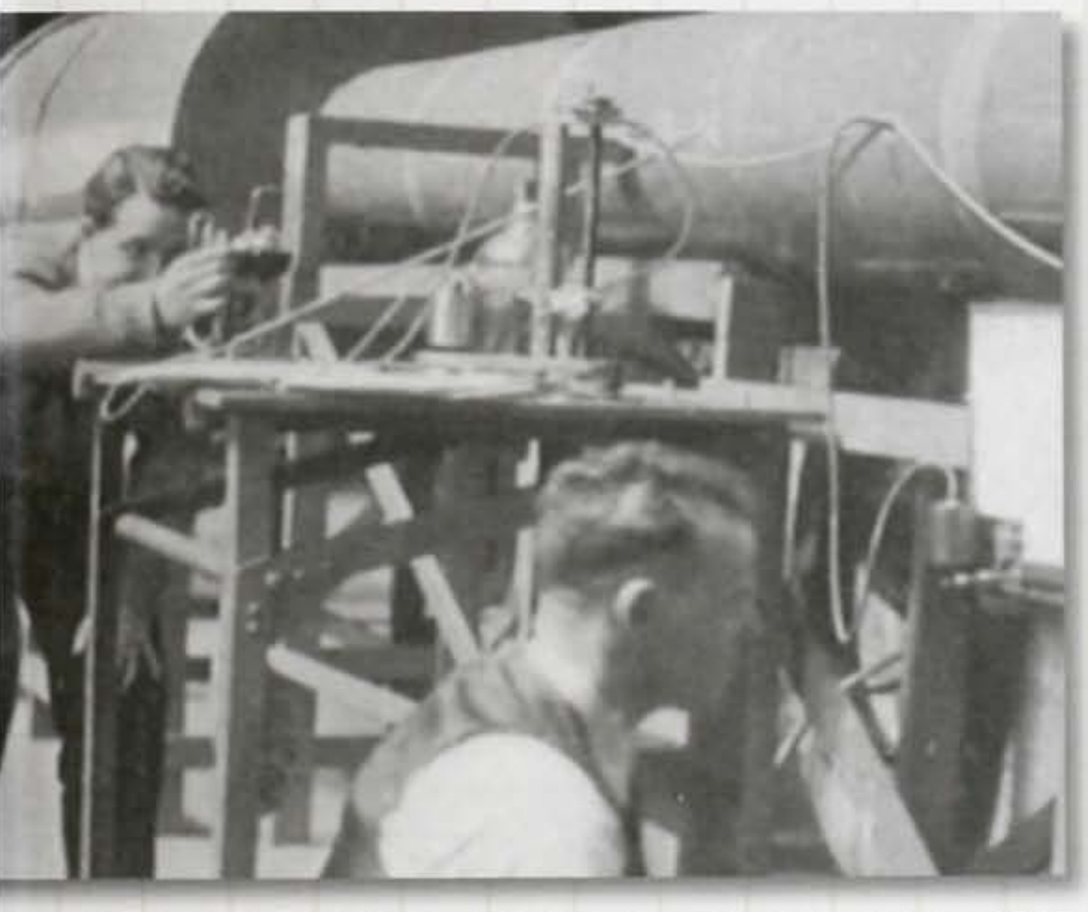
Right: Students working on assignments in the Engineering Drafting Room, 1937.

Engineering Building, 1937.

Plane used for demonstrations in aeronautical engineering program, 1939.

Historical Highlights:

- While still in the Depression years, President Albert Poetker, S.J., refinanced the University's debt, a major contributor to the well-being of the entire University.
- In 1937 U of D was listed in first letter of Accreditation by the Engineering Council for Professional Development, making it the first University to be accredited in the nation (along with the others accredited that first year). The Aeronautical, Architectural, Civil, Electrical and Mechanical Programs were accredited. U of D was the only metro Detroit program to have all engineering degrees accredited.



Students determining airflow through a ventilator, 1937.

1936-1940

Engineering Esprit de Corps

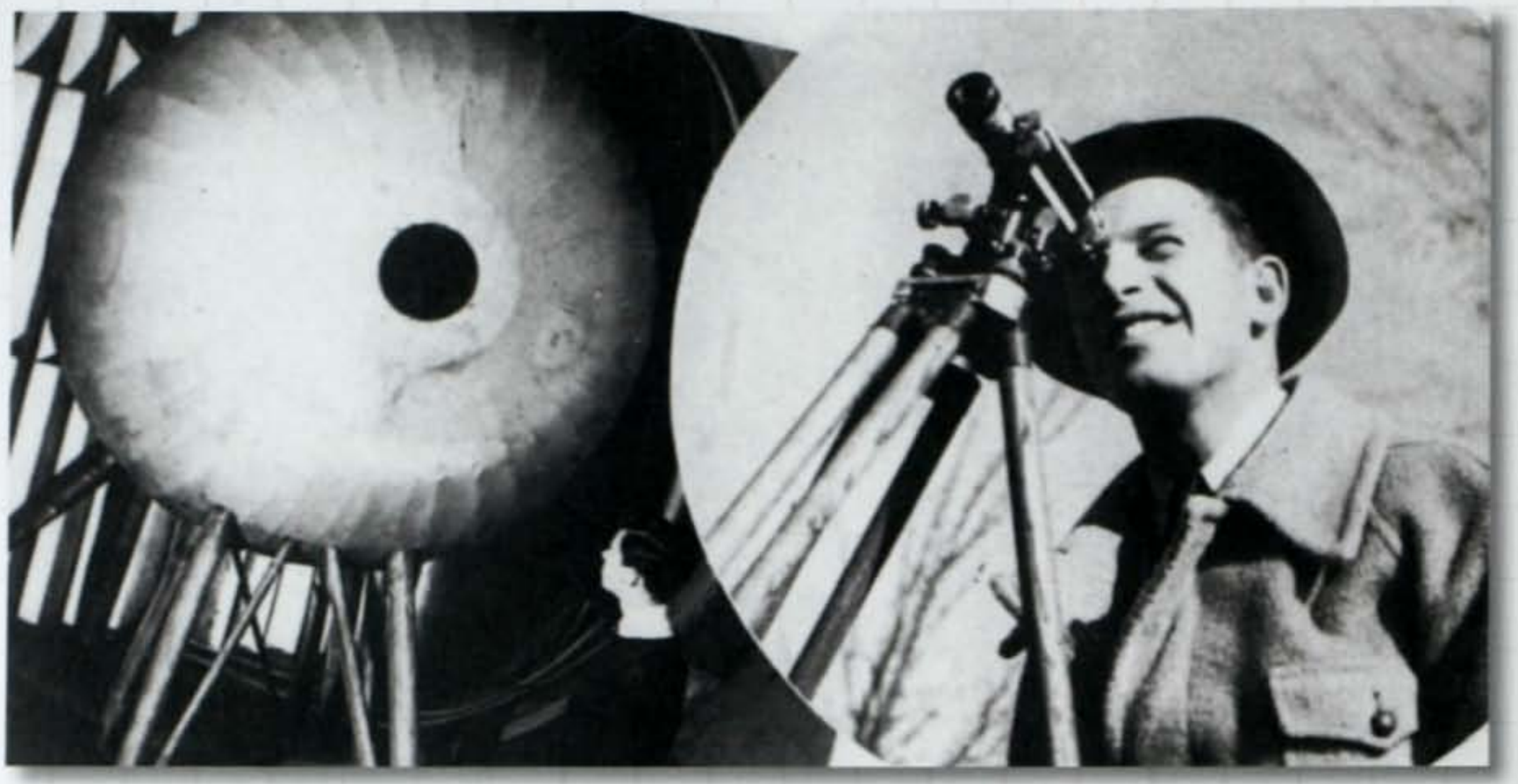
From the outset the engineers seem to have had a fine esprit de corps- a spirit that in many ways outlasted their student days. In 1913 an Engineering Club was formed to "promote social activity and general good fellowship among the students of the college as a whole." One result was the formation of the University's first band, the "Clown Band," to play at football games. Another was the intramural activities of the group. Considerable rivalry prevailed as the Engineers defeated freshman Law students in football 7 to 6 in the fall of 1914; but the Lawyers got even in basketball 14 to 7.

Tau Beta Pi, the national engineering honorary society, was established in 1885. Our Michigan Delta Chapter traces its history back to 1941. At the time we were a local engineering honorary society known as Accemites. The name Accemites is a coined word taken from the first letter of the five branches of engineering taught at University of Detroit. They included aeronautical, civil, chemical, electrical and mechanical engineering. In October 1940, we petitioned to become a chapter of Tau Beta Pi at the 45th convention in Boston. Our petition was accepted, and on March 10, 1941, we became Tau Beta Pi's 90th chapter. Since we were established, our chapter has been dedicated to the ideals of integrity and excellence in engineering. We are proud to be celebrating our 70th year as a chapter of Tau Beta Pi.

(The University of Detroit 1877-1977: A Centennial History, Herman J. Muller, S.J., 1976, Pp. 87-88.)

- University of Detroit student won an engineering drawing contest sponsored by MIT – another sign of the growing national reputation of the College of Engineering.
- Tau Beta Pi, the national engineering honorary society, was established in 1940.

Title: # World War II Impacts Campus



Civil engineering student surveying.

Student at the drafting board, 1

SAE club members with one of the vehicles they disassembled and put back together as part of the club activities, 1942.

Historical Highlights:

- Engineers were urged to stay in school by President Charles H. Cloud, S.J. and Dean Freund as best way to serve the country.
- Football was cancelled but other sports played mostly freshmen and sophomores.
- Engineering College was awarded an Army contract to train additional military engineers from around the country. They resided in the Faculty Building (currently Lansing-Reilly Hall). Jesuits relocated downtown.

These pages sponsored by: John S. Berten '61 Signed:

Students in engineering laboratory.

Aeronautical Engineering students, 1942.

1941-1945

World War II dominated the campus mood and activities during this period. The University was proud that it was listed among the first 24 American engineering schools approved for "intensive training courses in the development of the National Defense Program." The courses were to provide training to designers, inspectors and supervisors in government agencies and cooperating industries. Applicants for the course of studies were required to have had two years of engineering education or the equivalent. From 700 applicants in Detroit, 257 were selected for the initial five courses in the program.

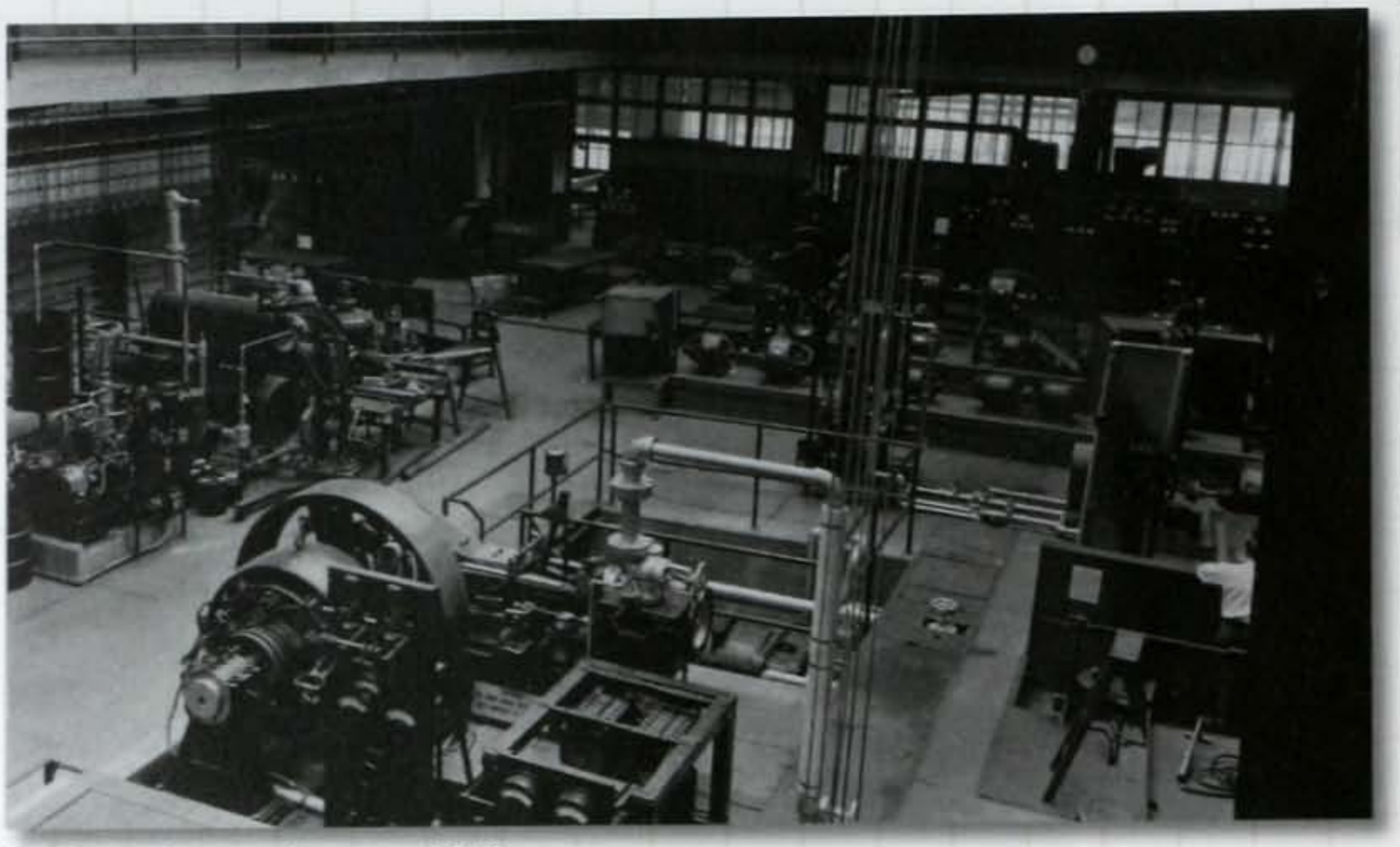
During this period, the University had also been conducting both primary and secondary Civil Aeronautics Authority flight training programs.

In 1943, the five-year engineering program was changed to a four-year program to expedite schooling. At this time, President Cloud recommended that the Jesuits turn over their residence, Lansing-Reilly Hall, to the Army. Within 10 days the University was notified that 400 cadets would be sent to reside in the facility. The Jesuits relocated to a downtown residence.

- U of D was part of the government-sponsored, post-war planning process with other universities, including Harvard and Yale.
- Enrollment increased in 1944 as servicemen were discharged.
- Pi Tau Sigma formed in May 5, 1943.
- Holden Hall was planned and opened in 1947.
- U of D had several winners (3) in this period for the prestigious Charles T. Main national engineering essay competition. Awards were presented at the Waldorf Astoria in New York City.

Date: 7/18/11

Title: Post World War II



Engineering equipment, 1950.

A Strength of Materials class in the Engineering lab, 1949.

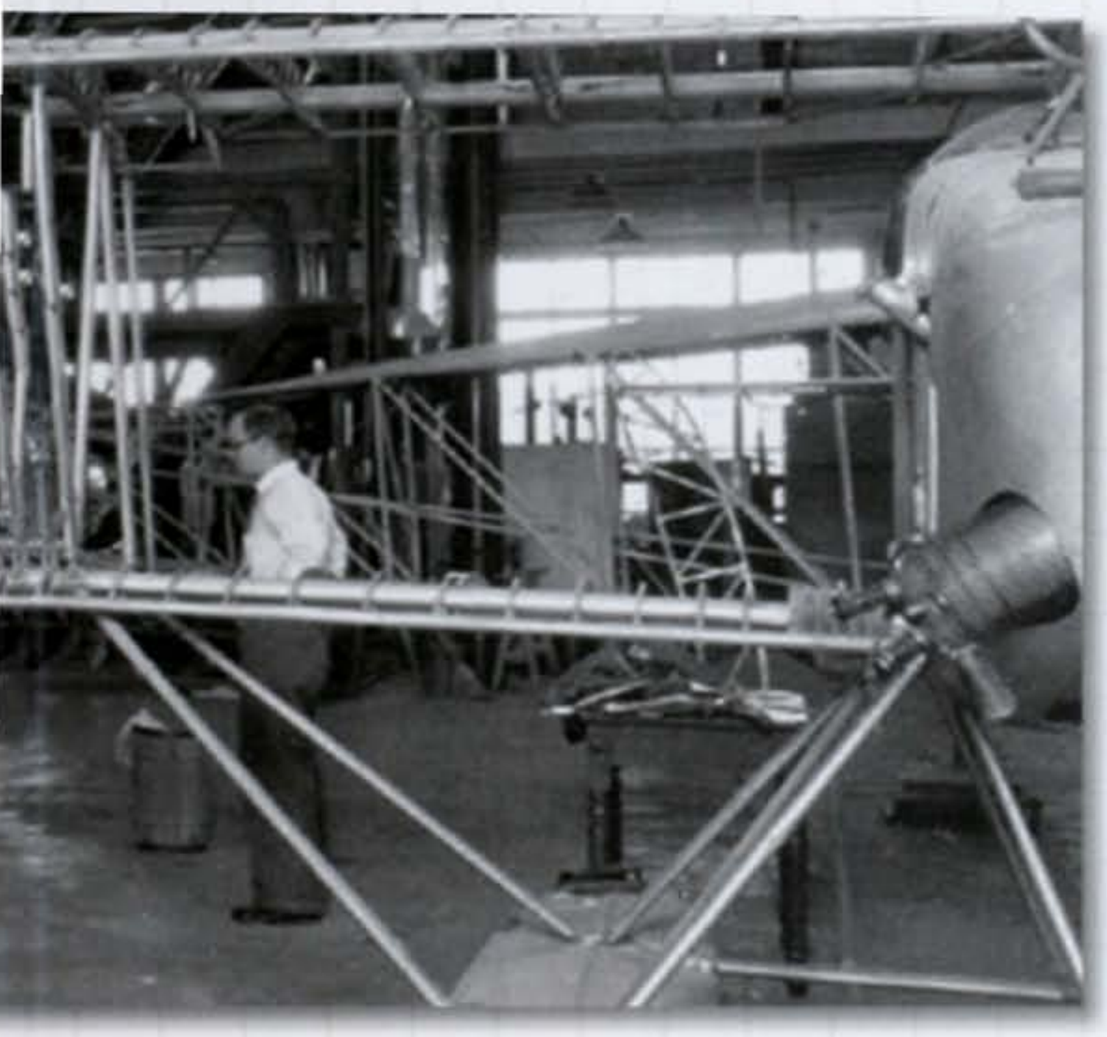
Civil engineering students with surveying equipment.

Students working on seaplane experiments.

Historical Highlights:

- Deans Clement Freund and Jasper Gerardi, Professors Donald Hunt, Thomas Hansen and Charles Duncombe made several major national and local addresses and presentations throughout period.
- U of D hosted several national engineering organization meetings on campus and in downtown Detroit.
- Department by department, the Engineering College was ranked very high by other universities. U of D graduates were admitted to the most prestigious graduate schools.

The student chapter of the American Society of Mechanical Engineers, 1950.



1946-1950

The University and Engineering College experienced dramatic enrollment increases as veterans returned from war. The University grew from approximately 2,000 students to 9,787 in 1948. (VN November 5, 1948) The Engineering College enrollment was over 2,000 students and the College added an evening engineering program.

- U of D becomes 2nd largest Jesuit University.
- Engineering College is in top 13% by enrollment of all engineering colleges.
- Engineering enrollments reach just over 2,900 in 1946-1947. This post-war "bubble" is clearly the highwater mark for engineering enrollments leading to the largest graduation class in history: 404 in 1951 (five years after the end of the war).
- Largest co-op enrollment in the country.

"In retrospect, the combination of Jesuit dedication to learning, the discipline imposed by Dean Freund and the wonderful support of the engineering faculty made the entire experience at the University of Detroit a productive period of time. As veterans, most of us in the class of 1949 were probably a little more focused than the non-veteran students, but that does not entirely explain the high industrial success rate of University of Detroit engineering graduates of that time frame."

Gordon H. Millar '49, Vice President for Engineering (ret) John Deere

- Engineering students continued to win the prestigious Charles T. Main Awards.
- Eta Kappa Nu, Electrical Engineering Honorary Society, started on May 24, 1947.
- U of D joins the Missouri Valley Athletic Conference.
- Holden Hall opened in 1947 and the new Library was completed in 1950.
- University holds first spring Carnival at state fairgrounds in 1950.
- Father Celestin J. Steiner, S.J., became president and announced a $20,000,000 campaign with $10,000,000 for new buildings.

Date: 7/20/11

Title: # An Engineering Student in the 1950s

Electrical engineering student, Albert Van Schaemelhow, '55

Student members of the American Societ of Civil Engineers, 1951.

Students leaving Engineering Building.

Historical Highlights:

- Recognized as a prominent national spokesman, Dean Clement Freund was a guest speaker at several national conventions discussing the shortage of engineers and engineering education themes.
- The engineering curriculum changes to include three required philosophy courses to add breadth to U of D's engineering education.
- Throughout the 1950s, the Slide Rule Dinner hosted such industry leaders as General Electric's Technical Personnel Director, Detroit Edison's CEO, President of Chrysler Corporation-Dodge Division, Chairman of the Mackinac Bridge Authority, a General Motors Vice President and Ford Motor Company's technical expert on Russian industrial development. Several of these addresses were broadcast on WJR radio.

These pages sponsored by: Henry A. Nickol '55 Signed: Henry A. Nickol

Art Haman '55, '61, '64, professor and associate dean of Engineering.

1951-1955

Engineering Professor Arthur Haman has taught engineering at the University since 1956, but he was also an undergraduate student at the University of Detroit from 1950 to 1955. He completed his bachelor's and master's degrees in Mechanical Engineering and his MBA at the University of Detroit. Haman explained that being an engineering student in the 1950s was a lot different than it is today. During that time, there were a lot of men coming back from World War II, so the average age of students was a lot older. There were not as many students coming straight out of high school. Many of his classmates were veterans and had traveled around the world, so they were looking to learn, but also have a good time. He explained it as being a "have fun environment," inside and outside of the classroom. The classes were also much larger in the '50s, and three of the five years were taught in quarters instead of semesters.

Technology in the 1950s, Haman explained, was much simpler and not as sophisticated as today, since there were no computers. Haman noted, "What engineers had was a slide rule." He said that there was not as much precision, and calculations were less complex than what engineers deal with today. For his co-op, Haman worked in the Mechanical Engineering department. He noted that many more people did co-ops across the country in the '50s than today, especially in California to work with the aircraft industry.

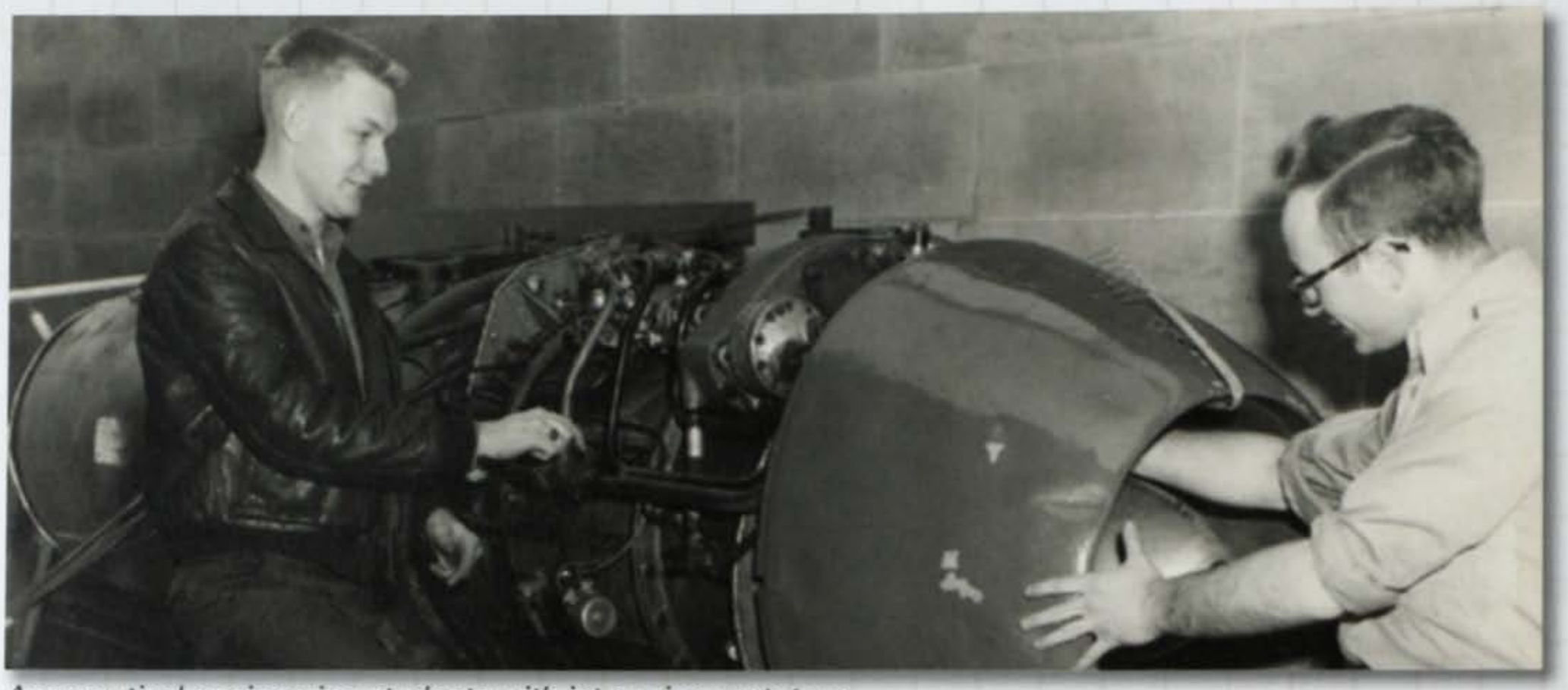
Haman's favorite engineering faculty member was John J. Uicker, who actually hired him as a faculty member a year after graduating in 1956. Haman said, "I never dreamt of becoming a teacher." He was hired as an instructor, and even though he was not sure about doing it, he fell in love with teaching. And he has not stopped teaching since.

- Engineers are in demand with such national companies as General Electric, Westinghouse, Bell Telephone, State of California, Boeing, Esso, IBM, Pratt and Whitney along with the Big Three Automotive Companies, with companies placing recruitment ads in *The Varsity News*.
- The spring engineering exhibitions were a major event on campus with approximately 9,000 people viewing the displays inside and outside of the engineering building
- Both Reno Hall and the Student Center were completed in 1955.
- The spring Carnival was the biggest campus-wide activity during the 1950s. Arthur Godfrey, Loretta Young, Bing Crosby, Danny Thomas, and Ed Sullivan were among the entertainers at these festivities.

Date: 7/22/11

Datetate:

Title: Aeronautical Engineering in the1950s



Aeronautical engineering students with jet engine prototype.

Aeronautical engineering students with model.

Students perform tests utilizing super sonic wind tunnel.

Historical Highlights:

- Engineering enrollment totals nearly 1,500 students during this period.
- A testimonial dinner was held for Dean Clement Freund in honor of his 25th anniversary as dean.
- Professor of Civil Engineering Elihue Geer takes a two-year leave to join the Graduate School of Thailand.
- In 1957, the University announces a curriculum in Architecture will replace Architectural Engineering.

These pages sponsored by: Arthur C. Haman '55, '61, '64 Signed:

Students take test flight at City Airport.

Aeronautical engineering students with jet engine prototype.

1956-1960

Changes in Aeronautics Engineering

In 1921, the University of Detroit was the first university in the country to establish a five-year Aeronautical Engineering degree program. For many years its graduates achieved prominence in the field. Prior to World War II, Detroit was the hub of the aeroplane industry just as it was of the automotive. With the development of the larger planes during the war, the industry gradually moved west and south. In spite of this the University had no problems placing its co-op students in San Diego, Los Angeles, Seattle, Dallas, Houston and elsewhere. The real problem came with the rapid advance of the aerospace industry. The prohibitive cost of bringing the Department sufficiently up-to-date to meet the challenge forced the University administrators in June 1965 to drop the program they had so fondly cherished through the years.

(The University of Detroit 1877-1977: A Centennial History, Herman J. Muller, S.J., 1976, Pp. 307-308)

- Plans are formulated to tear down Dinan Hall (the original engineering building in downtown Detroit) to make room for the Chrysler Freeway in downtown Detroit.
- The new Arts Building (Walter O. and Jane Briggs Building) is completed in 1959.
- University of Detroit's first Tau Beta Pi Fellow, Phil Austin, used his fellowship to attend California Institute of Technology to further his studies in Aeronautical Engineering. Several University students are accepted into prestigious graduate programs.

Date: 7/26/11

Title: The Professor Uicker Brothers

John J. Uicker

George B. Uicker

Freshman engineering students in a graphical analysis and computations course.

Chemical Engineering, 1966.

Engineering co-op student tests support for a trailer at Fruehauf Co

Historical Highlights:

- Clement Freund returns from two years in Pakistan where he advised that nation on the creation of its technical education programs and is reappointed as Dean of the College of Engineering.
- 50th anniversary of the founding of the College of Engineering.
- Growth in "feeder schools" to engineering totaling 19 institutions in 1963; these were all Catholic colleges and universities that taught the engineering students their liberal arts, math and science in their first two years; students then transferred to U of D for their last three years that included all of their engineering courses and their co-op program. These schools included Aquinas, Canisius, St. John Fisher, St. Michael's (VT), Xavier, St. Bonaventure, John Carroll, King's (PA), Niagara, Scranton, Loras, and many others.

These pages sponsored by: William C. Young '64 Signed: William C. Young

1961-1965

The Professor Uicker Brothers, 1940-1970

There probably isn't anyone who studied Mechanical Engineering at the University of Detroit between the years of 1940 and 1970 who did not study under Professors John J. and/or George B. Uicker.

John J. Uicker joined the University of Detroit in 1940 as an assistant professor of Mechanical Engineering. He had earned his Bachelor of Science degree in Mechanical Engineering and his ME professional degree from the University of New Hampshire, and his MS degree from Pennsylvania State College, and also was an instructor of mechanical engineering at both institutions. At U of D, he quickly rose through the academic ranks becoming a professor in 1946.

At the request of the Engineering Society of Detroit following World War II, John Uicker devised and taught a Refresher Course program to help engineers obtain their professional licenses in the State of Michigan. He continued to teach these refresher courses from 1944 until his retirement in 1970. He was also a consultant to the state's committee on registration and graded Part 1 of the licensing exams from 1944 until 1983.

John Uicker also assumed administrative duties as director in 1950 and then chair of the Mechanical Engineering Department in 1952. He served as acting dean of the College in 1958, and was named dean of the College of Engineering and Architecture in 1962. In 1965 he returned to teaching in the ME department until his retirement in 1970 when he was named Professor Emeritus. The Uicker Scholarship was instituted in his honor at that time.

John Uicker's brother, George B. Uicker, also obtained his bachelor's degree in Mechanical Engineering from the University of New Hampshire and then his MS degree from the University of Pennsylvania. With the surge of students in Mechanical Engineering at the end of World War II, Professor George Uicker joined the University of Detroit in 1946 after teaching at both Villanova and Swarthmore Colleges. The two Uicker Professors shared the teaching of courses on Thermodynamics for the next 18 years. Both were registered professional engineers. In 1963, George Uicker left U of D to join the faculty at the Detroit Institute of Technology.

Professor Emeritus John Uicker passed away in 1988, and his brother George Uicker died in 2003.

(Dr. John J. Uicker, Jr., Professor Emeritus of Mechanical Engineering, University of Wisconsin–Madison)

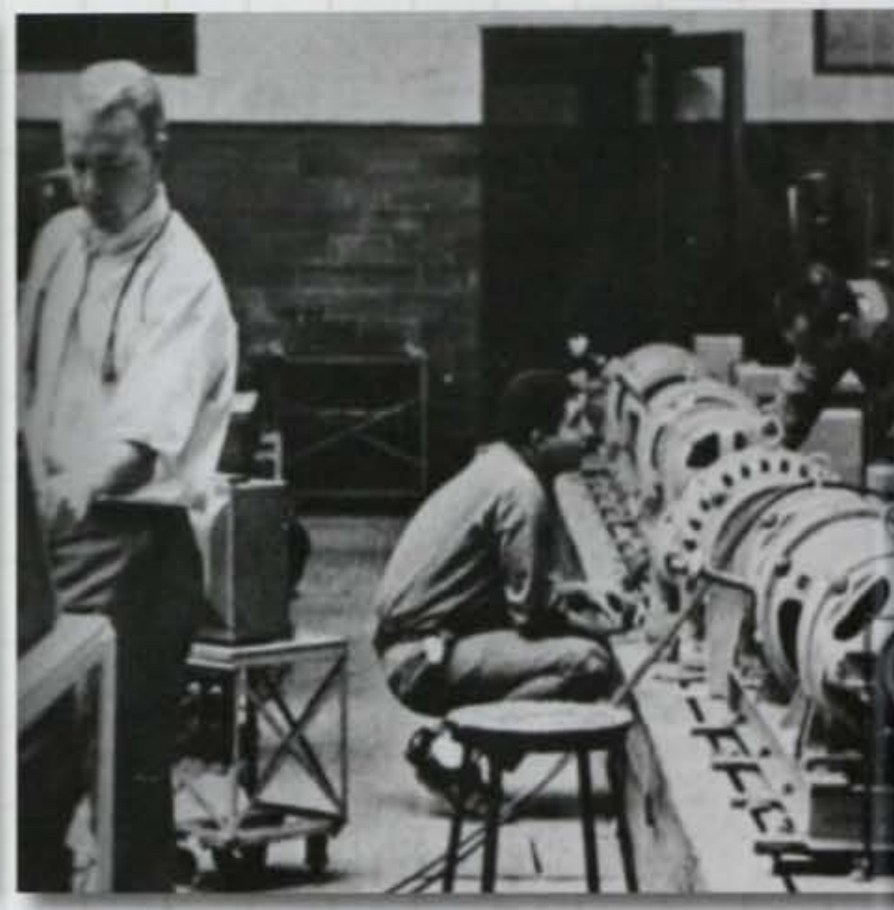
- Engineering Graphics: Conference on "Graphics in Scientific Engineering" held at U of D campus, sponsored by the National Science Foundation. The Graphics Department received a grant of $68,000 for the development of the new engineering graphics program, and Department Chair and Professor Paul Reinhard was named director of the nationwide project.
- In 1965, Department of Architecture moved out of the College and became a separate school.
- With a five year co-operative curriculum leading to the bachelor's degree in Aeronautical, Civil, Chemical, Electrical and Mechanical Engineering, U of D's College of Engineering ranks among the best in the United States.
- Decision to phase out Department of Aeronautical Engineering was made in 1965.
- All departments adopted a "common core" curriculum in which all students study the same basic courses, together with the specialized requirements of their majors.

Title: # Dean Lawrence Canjar:
An Innovator in Engineering Education

Dean Lawrence Canjar

Engineering Week Parade led by Dean Lawrence Canjar.

Student at drafting board, 1966.



Students in Engineering lab, 1968.

Historical Highlights:

- In 1967, the new Electrical Engineering Chairman J. S. Hitt plans to remodel laboratory settings to expose students to the same modern technology that they will encounter on the job.
- The first Engineering Alumnus of the Year award is presented in 1966 to Merrill Hayden at the 34th Annual Slide Rule Dinner.
- Auto critic Ralph Nader attended the Annual Slide Rule Dinner in 1968 as the keynote speaker.
- In 1967, the Engineering Department assisted in repairing the Tower bells after 15 years of silence in preparation for the Inauguration of Fr. Malcolm Carron, S.J. as University President.
- The College of Engineering developed a Bachelor of Science degree and the Computer Engineering Program in 1969.
- U of D's Pi Tau Sigma chapter, Mechanical Engineering Honorary Society, founded by Professor John Uicker, celebrated its 25th anniversary in spring 1968.

These pages sponsored by: R. Michael Canjar '73
(son of Dean Lawrence Canjar)

Signed: R Michael Canjar

il engineering
dent .

Civil engineering students at project site.

1966-1970

One of the most beloved leaders in the College's history, Dean Lawrence Canjar, only served seven and a half years as dean, but his impact is felt even to this day. As dean from 1966-72, Dean Canjar implemented many changes to engineering education. He modernized the engineering curriculum, incorporating 36 liberal arts credits. He also allowed students to tailor their program of study in choosing courses. At the time, U of D's Engineering College was the only one with such a liberal program.

According to Dean Canjar, "The purpose of the enlarged curriculum is to enable the professional engineer to plan for and optimize his resources." (1968 Tower Yearbook)

In addition to curriculum changes, Dean Canjar initiated a doctorate degree in engineering with a design and development focus. He also added bioengineering, environmental and computer engineering programs in 1967.

Dean Canjar was also a member of Project Harmony, which promoted better racial relations on campus. According to *The Varsity News*, "The student rapport was among the dean's strongest points...His compassion and feeling for them is legendary among engineers. And his undying faith in students was great encouragement to many who faltered... In his seven years, he became an institution. He was undoubtedly one of the most loved persons on this campus, and one of the most respected." (Nov. 10, 1972)

- In 1968, the Engineering Student Council, updated its constitution, planned a convocation for high school students interested in engineering, published a monthly newsletter and sponsored Engineering Week to make the entire campus aware of engineering activities.
- In 1968, The Dupont Corporation provided a grant to Mechanical Engineering to purchase lab benches equipped with experimental set-ups.
- In 1969, the Polymer Institute was formed to provide a concentrated study of plastics.
- At the 36th Annual Slide Rule Dinner and Honors Convocation, Professor Kenneth E. Smith was named Teacher of the Year, The guest speaker at the dinner was Colver R. Briggs, director for Automotive Safety Research for the Ford Motor Company.

Date: 8/2/11

Title: # 1970s Alumni of Year Serve as Role Models

Engineering Building, 1975.

During Engineering Week, teams of engineering students formed to push a car over an assigned course, vying for best time and a case of beer.

In 1972 Engineering students redesigned a Ford Maverick as an entry in the 1972 Urban Vehicle Design Competition. The entry won top honors in emissions and safety.

Some 300 cars received tune-ups, which cost their owners only the price of parts during the Clean Air Car Clinic in 1971.

Historical Highlights:

- The 1971 Engineering Parade was the official beginning of Engineering Week when Dean Canjar led the students on a singing tour of campus.
- In 1974 Arthur C. Haman was named new chairman in Mechanical Engineering department.
- The Master of Engineering Management program began in 1974 with first class starting Jan. 8, 1975. The Engineering and Business Administration cooperative degree develops skills in management while continuing to advance studies in a technical area.
- In 1972 Warren E. Cerrone returned as Assistant Dean of the College of Engineering. He taught from 1964-1968 after having a position with NATO. He replaced Associate Dean Jasper Gerardi.

1971-1975

During the 1970s, the College recognized a series of outstanding engineering alumni with the Alumnus of the Year award. These individuals rose to prominence in their respective fields and exemplified the professional engineer to future generations of University engineering students.

As the 1971 Alumnus of the Year, Leo Linsenmeyer BME '52, was recognized for his sales and marketing expertise at such companies as Dana Corporation, Rockwell International and Gulf & Western, retiring as vice president and general manager of Gulf & Western's Piston and Casting Division. He was a national consultant to the automotive industry for new products and marketing, and also taught management and marketing at local colleges.

In 1972, Jasper Gerardi BCE '29, was named Alumnus of the Year in recognition of his leadership in engineering education. For more than 45 years (1929-1972), he served as a University of Detroit engineering faculty member and administrator, retiring as associate dean of the College of Engineering. He was widely published in the areas of engineering drafting and standards.

The 1973 Alumnus of the Year George S. Graff was a nationally recognized aeronautical engineer. As a student in 1942, he was recognized with the Continental Aviation Corporation Award for Design Excellence for U of D Student Designed and Built Aircraft. During the 1960s and 1970s he held a variety of positions at McDonnell Aircraft, retiring as president in 1982.

A longtime employee of AT&T, William E. Ebben ME '58, MBA '66, the 1974 Alumnus of the Year, rose through the company holding a variety of positions with different responsibilities. As Corporate Vice President-AT&T Forum, he oversaw the examination and analysis of critical issues facing the corporation. He assumed responsibility for managing AT&T's purchasing & transportation, building operations, support services, and corporate education and training, as well as management of AT&T's real estate interests. As a student at U of D, he was a star player on the Titan basketball team.

- In 1973, 25 seniors and graduate students are given the opportunity to work with the fire department in an attempt to find the most efficient use of manpower with the most prudent use of equipment at the most beneficial cost.
- In 1974, the Toothpick Bridge Building Contest was initiated as part of Engineering Week. In high school and college divisions, bridge builders competed to see who could build the strongest, yet lightest, bridge using only white glue and toothpicks.

Title: 1970s Alumni of Year Serve as Role Models *(Continued)*

Electrical engineering students record data from oscilloscope.

A soil boring project for a Soil Mechanics class.

Mechanical engineering students explore wave phenomena in their fluids laboratory.

Historical Highlights:

- In 1977, science programs joined engineering to become the College of Engineering & Science.
- In 1979 James Kent becomes Dean of Engineering & Science.
- In 1980, students Jim Billings, Jim Hanley, Terry Hunley, Pete Snyder, Tom Viancourt, Dan Fayette, Tonny Soetjoabi and Matt Wrangler design hybrid car. The nearly completed car was shown at Society of Automotive Engineering exhibit at Cobo Hall.

These pages sponsored by: Dean Warren J. Baker Signed: Warren J. Baker

Warren Baker served as dean of the College from 1974-1978 prior to becoming president of Cal Poly San Luis Obispo.

Glynn Lunney '58, at mission controls during Apollo 13 mission.

- In 1974, architect students claimed Engineering Building in an architects vs. engineering football match with score of 19-0. Winner of the match was awarded possession of the structure.
- In 1976, 2nd Annual Engineers vs. Architects hockey game: Sunday, April 11 at Berkley Ice Arena.

Date: 8/9/11

1976-1980

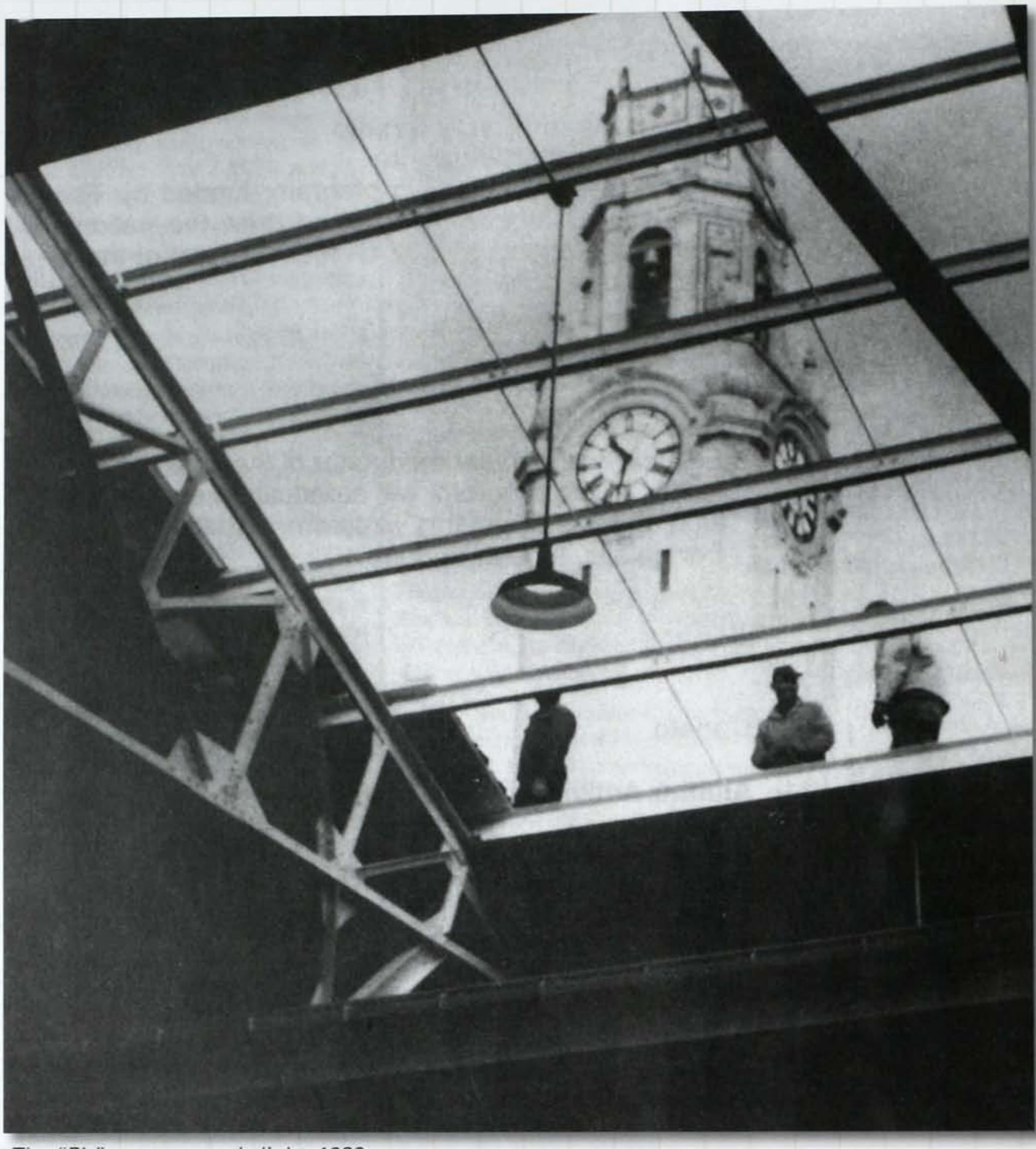
In 1976, Gordon H. Millar BME '49, was named Alumnus of the Year in recognition of his accomplishments in the engineering profession. As director of New Products for McCullouch Corporation, he introduced the lean oil mix and the surface gap ignition system to outboard motors. He worked at John Deere for 23 years, retiring as vice president for Engineering. He holds seven patents and has published numerous papers.

In 1977, Glynn Lunney AE '58, was named Alumnus of the Year in recognition for his contributions to the U.S. Space Program. Lunney served 30 years at NASA, and was a member of the initial NASA Space Task group that inaugurated the U.S. manned space flight. He played significant roles in each of NASA's manned space programs during his tenure at NASA. In 1985, Lunney joined Rockwell Space Operations Company, a subsidiary of Rockwell International Corporations Space Systems Division. He initially was responsible for the development of unmanned spacecraft, payloads and advanced satellite systems. He then assumed responsibility for NASA's space operation with Rockwell managing the Space Shuttle and Space Station operations. He was recognized with many awards including two NASA Distinguished Service Medals, the NASA Outstanding Leadership Medal and the Presidential Medal of Honor.

"The most impressive thing that I've ever seen was when Glynn Lunney walked [into mission control.] And if there was a hero, Glynn Lunney was, by himself, the hero. Because when he walked into the room, I guarantee you, nobody knew what the hell was going on. ...And Glynn walked in, took over the mess. And he just brought calm to the situation. I've never seen such an extraordinary example of leadership in my entire career."

Astronaut Ken Mattingly
Voices from the Moon by Andy Chalkin

Title: Henry Nickol '55, 1982 Alumnus of Year



The "Pit" gets a new skylight, 1982.

Engineering studer

Historical Highlights:

- Engineering degree programs changed from five years to four years in fall 1982, but still retained one full year of co-op engineering.
- In 1982, a $243,000 renovation of the Engineering Building included replacement of the old concrete and glass skylight over the building's "Pit" area with a brighter, more energy efficient fiber glass roof.

ifing class, 1983.

Henry A. Nickol '55

Students collaborate on project in Engineering lab, 1982.

1981-1985

Recognized as a supportive alumnus with the 1982 Alumnus of the Year award, Henry A. Nickol '55, has demonstrated his commitment to the University's engineering programs throughout his long career at Ford Motor Company. He joined Ford in 1953 as a co-op student and held a variety of research and management positions His senior positions included chief engine engineer and general manager of Ford Powertrain Operations. He retired from Ford in 2002 as vice president and general manager of Vehicle Operations, Ford North American Automotive Operations.

Nickol was known as a technical innovator, developing fast burn engines, fuel-efficient lock-up transmissions, and electric engine controls during his career. He holds several patents and has published papers on automotive emissions and heat transfer. He directed Ford's strategy to meet emission and fuel economy requirements and was also a leader in Ford's comprehensive quality drive for North American products.

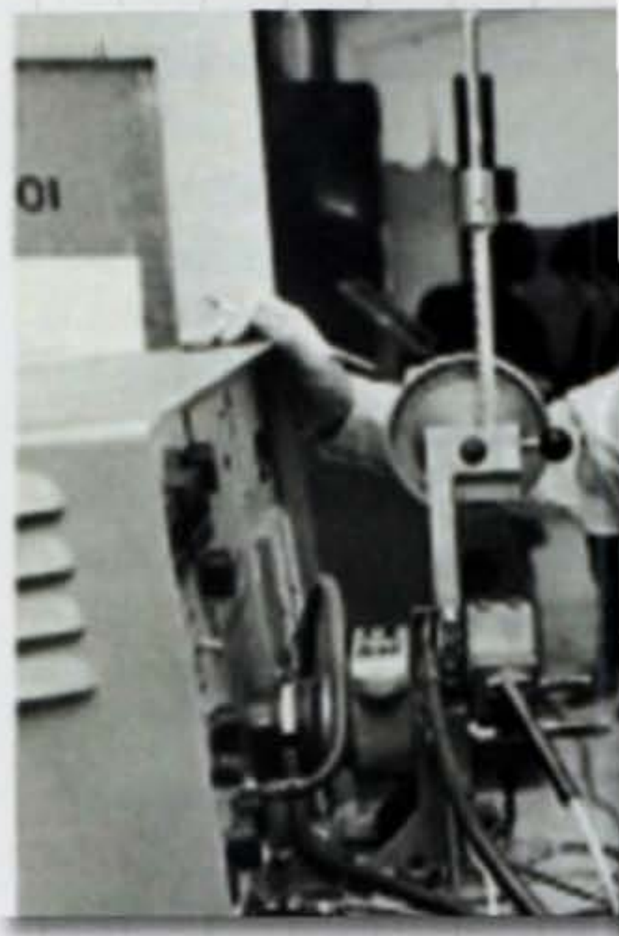
Through the years, Nichol served as an energetic advisor to the University's engineering programs, helping to develop the College's Engineering Advisory Council and assisting with alumni outreach and college development efforts. Nickol initiated a UDM scholarship for engineering and science students who live in the Alpena, Michigan area to help those students achieve college degrees. His engineering colleagues and the University community recognize him for his commitment to the engineering profession and his alma mater.

- Dean Emeritus Clement J. Freund died April 24, 1984 at the age of 89. Freund served as dean of the College of Engineering & Science from 1932-1962. Because he helped to develop the engineering co-op program into one of the strongest in the country, the American Society for Engineering Education in 1979 established an annual award in his honor and made him the first recipient.

Date: 8/10/11

Title: Engineering Embraces New Technology

The newly opened robotics lab gives engineering students experience with high tech robots.



Student Michael Shuster (center) tests auto cables while Professor Paul Eagle '84, '90 (left) supervises.

Historical Highlights:

- College of Engineering & Science marked its 75th Anniversary of "providing an education that will make our graduates productive and contributing citizens in the technology of the 21st century," said then Dean James Kent.
- In 1987, the College set up a robotics laboratory for use in advanced undergraduate classes.
- A renovated Engineering Pit made the 1988 Engineering Week program a hit with 380 high school students who visited U of D.

Kurt Frisch, director of the Polymer Institute.

Left: Computer Aided Design becomes an integral part of learning for engineering students.

Students perform tests using a rheumeter to determine the properties of polymetric materials.

- The University of Detroit and Mercy College of Detroit consolidate in 1990 to form the University of Detroit Mercy (UDM).

1986-1990

In 1987, as technology evolved, the College staked out two new innovations areas: Manufacturing and Plastics Engineering. Both Civil and Electrical Engineering embraced the College's emphasis on new technology—civil using computer simulation in problem-solving and electrical turning to computers for signal processing among other uses.

- The Polymer Institute was incorporated as Polymer Technologies, Inc., a for-profit subsidiary of the University, in 1987 to enhance research and development projects for clients.
- College of Engineering & Science began marketing a bachelor's degree program in plastics manufacturing technology.

The Polymer Institute and Kurt Frisch

Polymer Institute Director Kurt Frisch was recognized as a legend in the international polyurethane community for the groundbreaking contributions he made to the industry. He founded the internationally recognized Polymer Institute at the University, authored more than 300 papers and 40 books, and obtained more than 70 patents on innovative products and processes. He also was a teacher and mentor to numerous students during his more than 30 years at the University.

Frisch held positions at General Electric and E.G. Houghton and Co., and Wyandotte Chemicals Corp. before joining the University in 1965 as professor of Polymer Engineering and Chemistry. In 1968, he founded the Polymer Institute to provide research and development support in polymers to industry, government agencies, and professional organizations while offering students in Chemistry and Chemical Engineering opportunities for research and financial support. He was an active industry consultant known worldwide and was recognized with numerous awards for his work and research on polymers. Upon his death in 2000, his former student and colleague Daniel Klempner stated that all of Frisch's students owed a great deal of their careers and success to Frisch.

Date: 8/15/11

Title: # Engineering Launches MPD and Greenfield Coalition

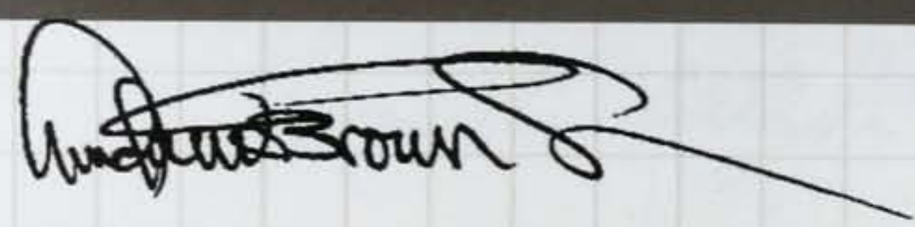
Mechanical Engineering Professor Mark Schumack (left) with students in the Heat Transfer Labs, 1993.

Dean Leo Hanifin (right) and Presidential Candidate George W. Bush congratulate UDM Engineering Instructor Ricardo Espinosa (left) upon being named 1997 Mexican of the Year in the Area of Education by the Mexican Consulate and the Mexican Center of Michigan.

High school students filled the Engineering High Bay at the 1992 Technology Discovery Day.

Historical Highlights:

- Leo Hanifin becomes Dean of College of Engineering & Science in 1991. Dean Hanifin completed three engineering degrees, Bachelor of Mechanical Engineering, Master of Engineering and Doctor of Engineering, at the University of Detroit in the 60s and 70s. Prior to joining UDM he was director of the Center for Manufacturing Productivity and Technology Transfer at Rensselaer Polytechnic Institute. He had also held engineering and management positions at Hughes Aircraft, Aerojet General and Chrysler Corporation.
- In 1991, the College launches the Bachelor of Mechanical Engineering program on-site at Ford. Enrollments quickly grow to over 100 students. The program was created to help designers with associate degrees add the analytical and creative competencies needed to become an "EDA" (Engineer – Designer – Analyst). Students also included employees who were technicians and secretaries wishing to become engineers.



1991-1995

During the 1990s, the College developed two new programs to help educate engineers to meet industry needs with the launch of the Master's in Product Development (MPD) and the Greenfield Coalition Program.

The MPD was created by "PD-21", an educational consortium for product development leadership in the 21st century. Its academic members included UDM, MIT, Rochester Institute of Technology and the Naval Postgraduate School. Its corporate members included Ford, GM, IBM, Polaroid, Xerox and ITT; and its government partners included the U.S. Navy and the National Science Foundation. The degree program began in 1999 with 32 Ford Motor engineers. Since then 200 students have earned the MPD degree providing valuable competencies to U.S. industries, especially the auto industry. From the beginning, the program has focused on systems engineering and architecture, with new focal areas being added later such as six sigma quality, innovation and advanced electric vehicles.

In 1993 the National Science Foundation awarded a $15 million grant to UDM to lead one of eight Engineering Education Coalitions in the U.S. This coalition, the Greenfield Coalition, developed a unique experiential model for teaching manufacturing engineering in an actual production facility at Focus: HOPE (about two miles from UDM). Academic partners were Wayne State, Lawrence Tech, Lehigh and Michigan. Industrial partners were Ford, GM, Chrysler and Detroit Diesel. Dean Leo Hanifin was the Coalition Director for its first three years.

The grant from NSF was matched by an equal amount of funding, mostly from corporate sources. (ref. *Detroit News*, Nov. 1, 1993 and *Crain's Detroit*, week of Nov. 29, Dec 5, 1993.

Students participate in an Engineering Tug-of-War competition in a sand-filled High Bay, 1994.

- The Mexican American Partnership Program (MAP) began in 1992. A collaborative initiative among UDM, Monterrey Tech (ITESM) and the automobile industry, the program prepares bilingual and bicultural engineering students to be leaders in the automotive industry. Seven corporations sponsored the MAP Program and hired these students for co-op positions, including co-op experiences in Mexico. The program was directed by Ricardo Espinosa, a faculty member at ITESM, who came to UDM to complete his Doctor of Engineering degree, and was named the Michigan Hispanic Educator of the Year in 1997.
- The College's Alumni Hall is dedicated on Feb. 18, 1994, to reflect the "remarkable achievements of our alumni." This was made possible through the generous contribution of Chris '64 and Mary Fette.
- Henry Nickol Design Studio was created in 1995 as a flexible teaching environment to support team-oriented design activities.
- John Lobbia '64, chairman of Detroit Edison, was named 1994 Alumnus of the Year.

Title: **James Padilla '69, '69, '70**

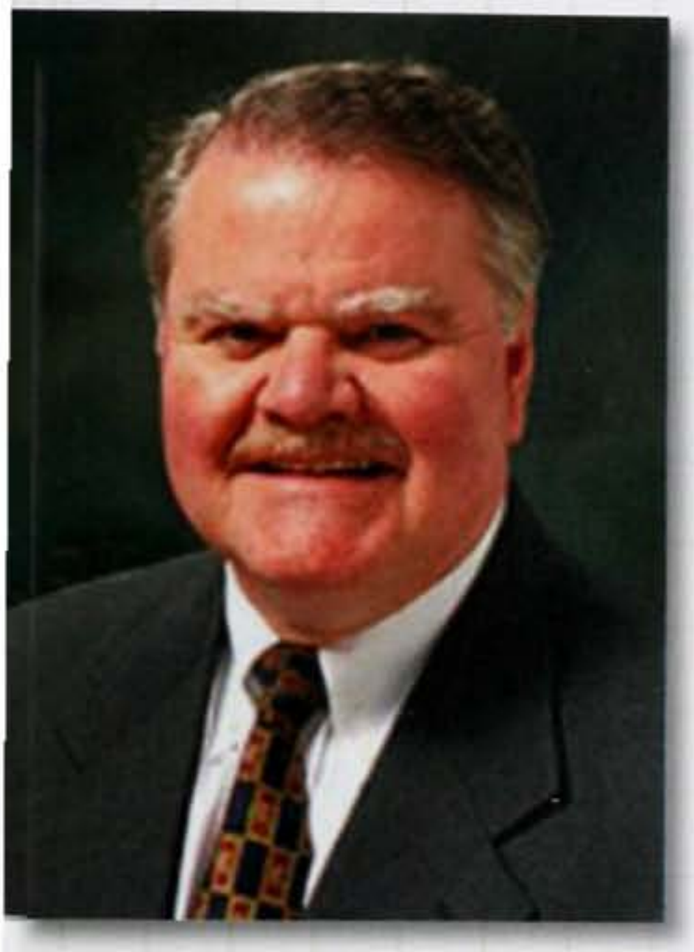
1999 Alumnus of Year

Historical Highlights:

- The College dedicated the Ford Advanced Computing and Teaching (FACT) Center on May 21, 1996, to support state-of-the-art methods of instruction. FACT included a new advanced CAD laboratory and capabilities for multi-media and remote delivery of classroom activity to off-campus sites. The center was funded through a $1.1 million gift from Ford Motor Company.

During this period, other renovations to the Engineering Building were supported by a gift of $1 million from the PICO Company and over $500,000 from alumni. These included the installation of an elevator, environmental engineering and GIS laboratories, new meeting rooms and three large high-tech classrooms.

These pages sponsored by: James J. Padilla '69, '69, '70 Signed:



Top Left: Dedicating the Ford Advanced Computing and Teaching Center in 1996 are Dean Leo Hanifin, '69, '72, '76, Sister Maureen A. Fay '66, UDM President, Leo Brennan, Ford Motor Company Fund President, Ken Dabrowski '66, '68 and Megan Giles Domingue '96.

Top Middle: 1996 freshman engineering students work on water-powered vehicles project.

Top Right: James J. Padilla '69, '69, '70.

Bottom Right: UDM engineering students construct a Baja car to enter in the 1997 Baja Car competition, sponsored by the Society of Automotive Engineers.

Bottom Left: Engineering Professor Gregory Chisolm, S.J., with students in Mechanics of Deformable Bodies Lab, 1997.

1996-2000

James J. Padilla '69, '69, '70, retired president and chief operating officer of Ford Motor Company, received the 1999 Engineering Alumnus of the Year Award in recognition of his professional achievements.

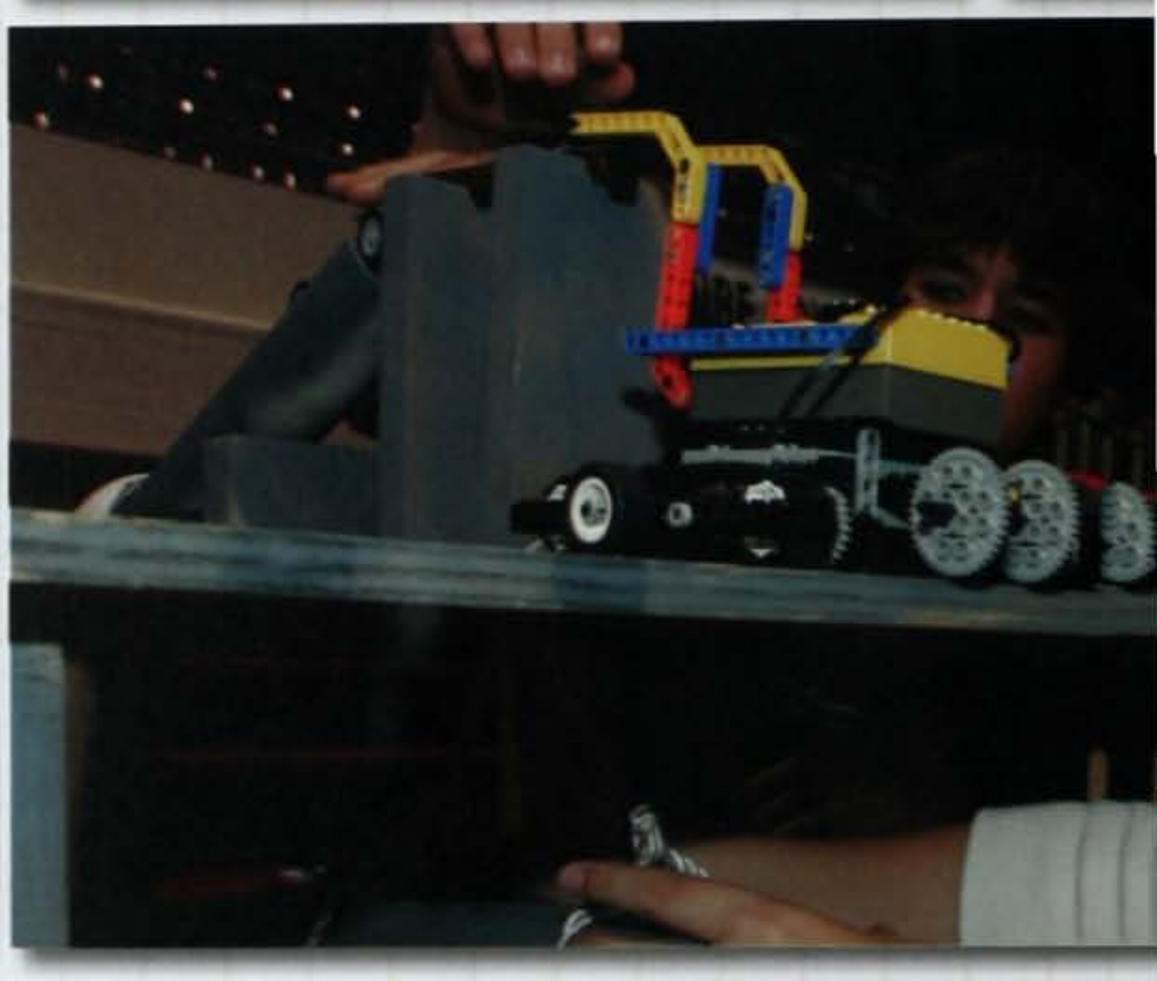
Padilla earned his bachelor's and master's degrees in chemical engineering as well as a master's degree in economics at the University. At 19, Padilla took a job in a Ford factory while he was attending U of D. In 1966, he joined the Ford Motor Company full time as a quality control engineer. Through approximately 40 years with Ford, he held more than 30 positions of increasing responsibility. In addition, Padilla served as special assistant to the U.S. Secretary of Commerce in 1978 and 1979. In 2001, he was named national Hispanic Engineer of the Year and a Fellow by the National Academy of Engineering in recognition of his contributions to the field of engineering.

Padilla has served on UDM's Board of Trustees since 1999 and also on its Executive Committee since 2002. He was vice chair of UDM's Legacy Campaign, which resulted in a $101.3 million investment in UDM. In 2005, UDM bestowed upon him the University's Distinguished Alumni Achievement Award.

- From 1995-1997, the College received seven National Science Foundation's Instrumentation and Laboratory Improvement (ILI) awards, more than any other private university in the nation. The grants supported the development of new experiments and laboratory curricula.
- About 1,000 students from 29 high schools participated in the 1997 Tech Day event to increase their interest in science and technology.
- Jerome Neyer '68, founder and chairman of NTH Consultants, Ltd., was named 1997 Alumnus of the Year.

Date: 8/17/11

Title: Corporate Partners Invest in UDM Engineering



Historical Highlights:

- In 2003, the College of Engineering & Science celebrated the 75th anniversary of the Engineering and Chemistry buildings, among the oldest buildings on the McNichols Campus.
- The College's new rapid prototyping system allows students to test their design ideas by "printing" actual prototypes that they can hold and examine. This system is the first component of the Visteon Prototype Center supported by a three-year, $500,000 commitment from Visteon Corporation.
- Engineering alumnus and Ford Motor Company researcher Dr. Haren Gandhi '68, '71, wins the highest honor bestowed by the U.S. President to leading American innovators: the 2002 National Medal of Technology.
- A $174,000 grant from the National Science Foundation supported UDM's expansion of its mechatronics program introduced in 1999.

These pages sponsored by: Thomas G. Brick '58 Signed: Thomas Brick

Left: The College hosted the annual Lego League competition in the highbay and also helped train 25 teachers from Detroit schools on how to start and run a team to involve more minority students in the competition.

Top Middle: High school students participate in UDM's STEPS program, which encourages young women to pursue studies in engineering, math and technology.

Top Right: Engineering and Architecture students install seven solar photovoltaic panels on the roof of the Engineering Building.

Bottom: Area students create and race Lego vehicles during the annual Lego League competition.

2001-2005

During this five-year period, a number of corporate partners made major investments totaling over $2 million in new facilities and equipment for UDM's engineering programs including:

- Denso Team Design Center (five design studios for student teams)
- Visteon Prototype Center (a variety of rapid and CNC prototyping capabilities)
- Lear Manufacturing Laboratories (process lab and system lab including robotics, CNC and CMM capabilities)
- Ford Computing Center (distributed and parallel computing and networking laboratories)

These facilities and equipment provide state-of-the-art capabilities for engineering students to acquire hands-on experience with computer-based tools and prototyping methods.

- Enhancements provide high-speed wireless internet connectivity for all users throughout the Engineering and Science buildings.
- The Accreditation Board for Engineering and Technology reaccredited UDM's bachelor degrees in Civil Engineering, Electrical Engineering and Mechanical Engineering. These programs have been continuously accredited since 1936, the first year any engineering programs in the country were accredited.

Date: 8/22/11

Title: UDM International Robotics Champions

Historical Highlights:

- In 2006 through a grant from the National Science Foundation, Electrical & Computer Engineering program integrated robots throughout its "spiral" curriculum.
- A significant number of graduates have become patent attorneys including Joseph Colaianni '56, recipient of the 2008 Alumnus of the Year Award.
- UDM is the lead institution of the Michigan-Ohio University Transportation Center (MIOH UTC), a coalition of five regional universities funded by the U.S. Department of Transportation to address issues of a nation on the move in a global economy. Dean Leo Hanifin serves as the MIOH UTC's director.

These pages sponsored by: Donald E. Robinson '69, '70, '76 Signed: D. E. (Gene) Robinson

Top Left: UDM and Deloitte & Touche LLP collaborated on developing the Woodward Transit Catalyst Project plan, completed in late 2007, to reinstate rail-based transportation on Woodward Avenue from Detroit's riverfront to the New Center Area.

Top Middle: UDM's 2010 IGVC team took first place in the international competition involving 58 teams from 47 schools.

Top Right: UDM civil engineering students compete in the annual concrete canoe competition.

Bottom Left: UDM is the largest DAPCEP program site, hosting approximately 1,400 students annually in programs that motivate and prepare minority youth to pursue careers in science, mathematics, engineering and technically related fields.

Bottom Middle: As a 2006 senior engineering project, a student team designed and built a child carrier accessory for a power wheelchair to help a disabled parent care for his/her child.

Bottom Right: Detroit Mayor Bing spoke at the Sustainability Symposium, "Designing Sustainable Detroit: Riding Trucks, Trains, Boats and Planes to Urban Vitality," Sept. 30, 2010.

2006-2011

From 2006-2010, UDM's student team has placed among the top three teams in the Intelligent Ground Vehicle Competition (IGVC), and for the last three years, UDM has won the First Place Grand Award.

The IGVC is an annual international competition created to offer cutting-edge design experience to engineering students. The competition consists of four challenge events: Autonomous Challenge, Navigation Challenge, JAUS Challenge and the Design Competition. The scores from each of these events are combined to determine the overall First Place Grand Award winner.

This international competition attracts teams from universities around the world. The 2010 competition included 58 teams representing 47 schools that demonstrated the effectiveness of their robotic vehicles. The teams hailed from such nationally recognized leaders in engineering education as University of Wisconsin Madison, the U.S. Naval Academy, Cornell, University of Illinois Urbana, Princeton, Penn State, Georgia Tech, Hosei (Japan) and Ecole de Technologie Superieure (Canada).

UDM's success in the IGVC competitions reflects the high quality of UDM engineering students and the unique capability of our faculty to teach students to design and build complex intelligent electro-mechanical systems that work. According to Dean Leo Hanifin, this education results in highly effective engineers with the competence and the confidence to change the world through the development and deployment of advanced technologies, products and systems.

- Entrepreneurship program begins with IDEAS (Interdisciplinary Design, Entrepreneurship and Service), the cornerstone course of UDM's entrepreneurship minor, taught by faculty from four disciplines. The goal of the program is to instill an entrepreneurial mindset and competencies aimed at making a difference in the workplace and in society.
- The U.S. Army Tank and Automotive Research, Development and Engineering Center (TARDEC) funded research using UDM's engineering expertise to help develop the next generation of military vehicles.
- Evelyn Hirt '75, received the 2011 Alumna of the Year Award, the first female engineer to be recognized.

Date: 8/24/11

Engineering Deans

1911-1925	John R. McColl
1925-1927	Russell E. Lawrence (Acting)
1927-1932	Russell E. Lawrence
1932-1957	Clement J. Freund
1958-1960	John J. Uicker (Acting)
1960-1962	Clement J. Freund
1962-1965	John J. Uicker
1966-1972	Lawrence N. Canjar
1973-1974	Constancio F. Miranda (Acting)
1974-1978	Warren J. Baker
1978-1979	Filomeno N. Almeida (Acting)
1979-1991	James A. Kent
1991	Arthur C. Haman (Acting) '55
1991-present	Leo E. Hanifin '69, '72, '76

1911
- Engineering Department begins
- Engineering moves into Dinan Hall

1920
- Aeronautical Engineering and Electrical Engineering begin
- McNichols Campus is created

1930
- Aerodynamic addition opens
- Clement J. Freund becomes dean
- Depression effects enrollment
- Engineering programs fully accredited

1940
- Tau Beta Pi chapter begins
- WWII impacts campus
- 5-year engineering program modified to 4-year during war

1950
- Engineering enrollment increases to 2,000 students

1960

Engineering adopts common core curriculum

Lawrence Cajar becomes dean

Aeronautical Engineering phased out

1970

Polymer Engineering begins

Bachelor's in Plastics Engineering offered

Engineering Management begins

1980

First graduate engineering programs begin

5-year engineering programs change to 4-year

Pre-college programs begin, serving 4,000 students

1990

Mexican American Partnership program begins

Greenfield Coalition for New Manufacturing begins

Master of Professional Development launched

2000

New degrees, certificates and minors added: entrepreneurship, bioinformatics, advanced electric vehicles, architectural engineering, environmental engineering

2011

100 years of Engineering Education

University Presidents

1911 Rev. William F. Dooley, S.J.

1915 Rev. Philip C. Dunne, S.J. (Acting)

1915 Rev. William T. Doran, S.J.

1921 Rev. John P. McNichols, S.J.

1932 Rev. Albert H. Poetker, S.J.

1939 Rev. Charles H. Cloud, S.J.

1944 Rev. William J. Millor, S.J.

1949 Rev. Celestin J. Steiner, S.J.

1960 Rev. Laurence V. Britt, S.J. '33

1966 Rev. Malcolm Carron, S.J. '39

1979 Rev. Robert A. Mitchell, S.J.

1990 Sister Maureen A. Fay, O.P. '66

2004 Rev. Gerard L. Stockhausen, S.J.

2010 Michael A. Joseph (Interim)

2011 Antoine M. Garibaldi

Engineering Alumni of the Year Award Recipients

1966	Merrill A. Hayden	'35	Electrical Engineering
1967	Richard F. Brennan	'42	Architecture Engineering
1968	Carl H. Schmidt, Jr.	'42	Chemical Engineering
1969	Donald E. Marlowe	'38	Civil Engineering
1970	Harry F. Barr	'29	Mechanical Engineering
1971	Leo J. Linsenmeyer	'52	Mechanical Engineering
1972	Jasper J. Gerardi	'29	Civil Engineering
1973	George S. Graff	'42	Aeronautical Engineering
1974	William E. Ebben	'58	Mechanical Engineering
1975	Thomas J. Feaheny	'53	Mechanical Engineering
1976	Gordon H. Millar	'49	Mechanical Engineering
1977	Glynn S. Lunney	'58	Aeronautical Engineering
1978	George C. Hedges	'50	Aeronautical Engineering
1979	J. Bernard Haviland	'27	Chemical Engineering
1979	Joseph M. Haviland	'36	Chemical Engineering
1980	Robert H. Parker	'60	Electrical Engineering
1981	Richard D. Rossio	'56	Mechanical Engineering
1982	Henry A. Nickol	'55	Mechanical Engineering
1983	Stephen J. O'Mara	'65	Chemical Engineering
1984	Leo DiMambro	'43	Civil Engineering
1985	Noel F. Mermer	'62	Chemical Engineering
1986	Donald J. Giffels	'58	Mechanical Engineering
1987	Byron L. Warner	'54	Electrical Engineering
1988	John B. Colletti	'54	Mechanical Engineering
1989	Chris F. Fette	'64	Mechanical Engineering
1990	Theodore D. Dziurman	'62	Civil Engineering
1991	Leo E. Hanifin	'69, '72, '76	Mechanical Engineering
1992	Lawrence J. Washington	'68, '69	Chemical Engineering
1993	Robert A. DeMattia	'67	Civil Engineering
1994	John E. Lobbia	'64	Electrical Engineering
1995	Albert T. Kersich	'52	Civil Engineering
1996	Kenneth R. Dabrowski	'66, '68	Mechanical Engineering
1997	Jerome C. Neyer	'61	Civil Engineering
1998	Robert J. Simoneau	'60	Mechanical Engineering
1999	James J. Padilla	'69, '69, '70	Chemical Engineering
2000	Harendra S. Gandhi	'68, '71	Chemical Engineering
2001	F. Michael Faubert	'62	Mechanical Engineering
2002	John M. Griffin	'64	Aeronautical Engineering
2003	Keith B. Mayer	'74	Civil Engineering
2004	Louis A. Povinelli	'54	Mechanical Engineering
2005	James F. Connelly	'64	Electrical Engineering
2006	Richard M. Kunnath	'71	Civil Engineering
2007	Charles Biegun	'55	Civil Engineering
2008	Joseph L. Colaianni	'56	Electrical Engineering
2009	Derrick M. Kuzak	'73, '74, '76	Electrical Engineering
2010	William L. Kozyra	'80	Mechanical Engineering
2011	Evelyn H. Hirt	'76	Electrical Engineering

Undergraduate Engineering Degrees Conferred at U of D/UDM

Discipline	Degrees Conferred
Civil Engineering (BSCE and BCE)	1,410
Electrical Engineering BSEE and BEE)	2,612
Mechanical Engineering (BSME and BME)	3,815
Chemical Engineering (BSCHE and BCHE)	1,326
Architectural Engineering (BSAE and BAE)	419
Aeronautical Engineering (BSAeroE and BAeroE)	629
Bachelor of Engineering (BE and BSE)	541
Metallurgical Engineering	18
Plastics and Polymer Engineering	17
Plastics Manufacturing Engineering Technology	25
Manufacturing Engineering	50
Total Undergraduate Engineering Degrees	**10,863**

Graduate Engineering Degrees Conferred at U of D/UDM

Discipline	
Master of Engineering (Civil, Elect, Mech.)	1,481
Master of Engineering Management	473
Master of Science in Product Development	195
Doctor of Engineering	96
Total Graduate Engineering Degrees	**2,245**
Total All Engineering Degrees	**13,108**

In Appreciation

The College of Engineering & Science is grateful to the many individuals and corporations who helped to make this Engineering Centennial Notebook possible. A special thank you to engineering alumnus Donald (Gene) Robinson '69, '70, '76, who helped to research historical facts related to the University's engineering programs through various resources, including UDM's archives.