

THE Georgia Tech

ALUMNI MAGAZINE • FALL 1978

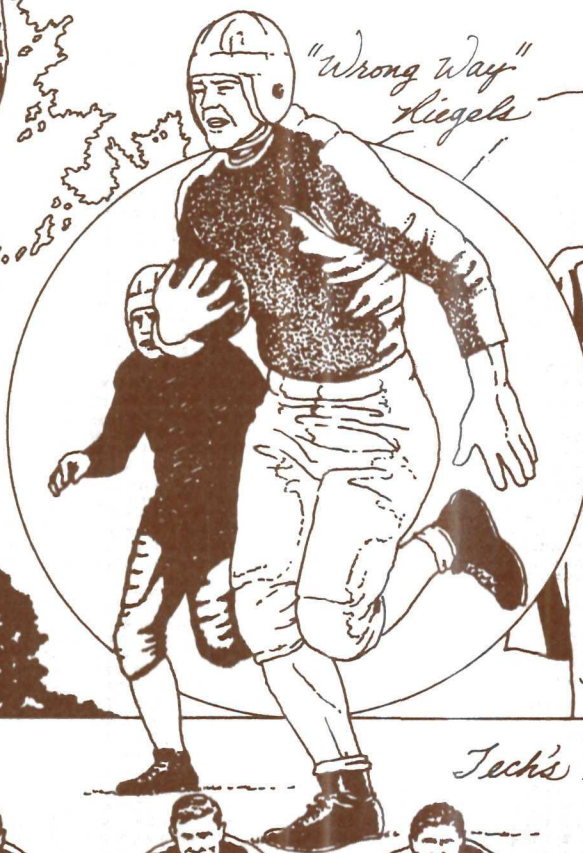
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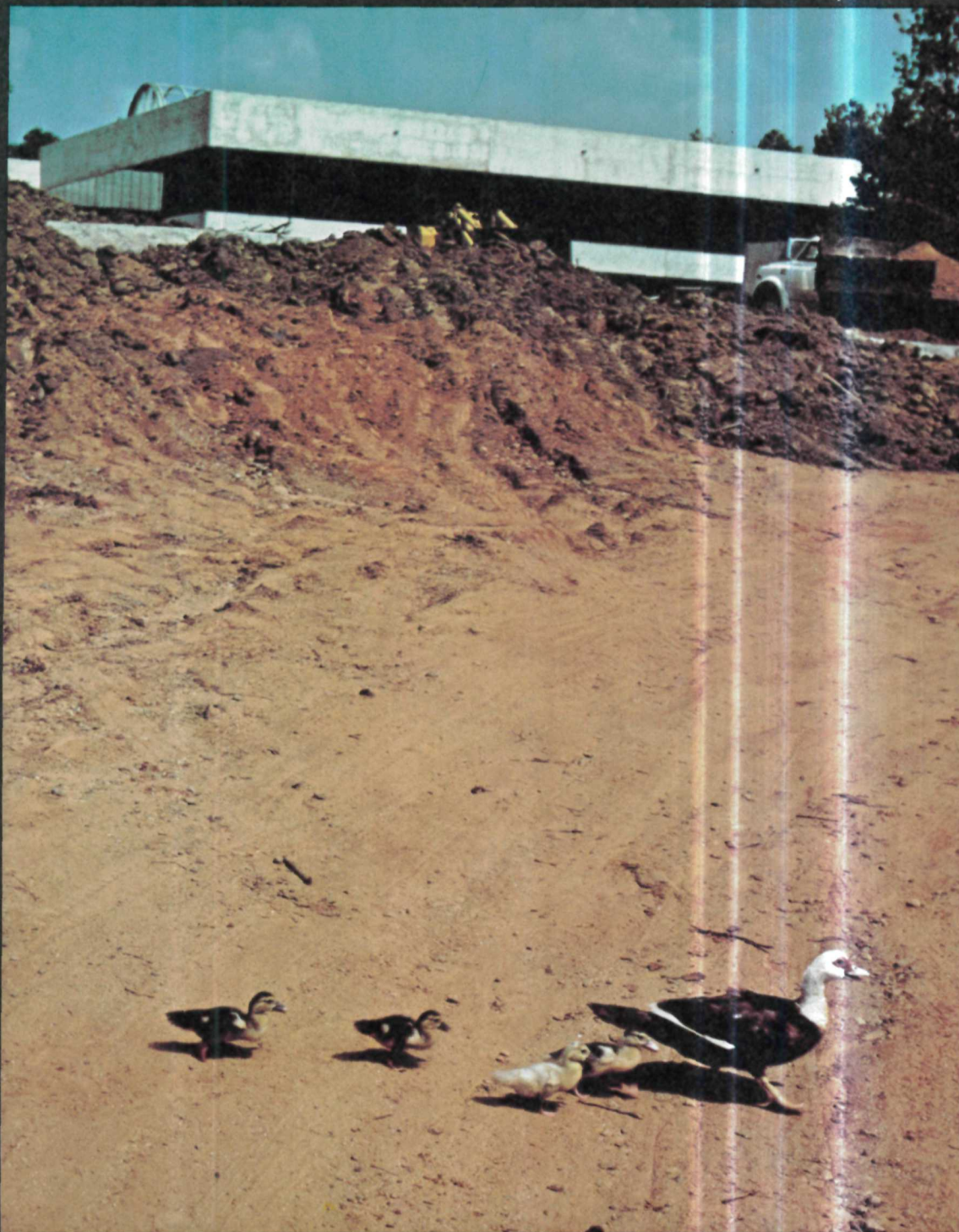


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Joe W. Guthridge

Vice President Guthridge Dies

MR. Joe W. Guthridge, vice president for development and public relations for Georgia Tech, died September 25 at his home of an apparent heart attack. He had been associated with Georgia Tech since 1958.

Mr. Guthridge, 57, was responsible for the Institute's public relations program, fund raising activities, the alumni association, and student placement activities. He had served as executive secretary of the Georgia Tech Foundation Inc. since 1960.

Mr. Guthridge joined Tech in 1958 as director of placement. In 1960, he was appointed assistant to the president, director of development, and executive secretary of the Georgia Tech Foundation. He organized the development office and inaugurated two urban-renewal programs which increased the area of the Institute from 85 acres to 385 acres.

In 1965, Mr. Guthridge was named vice president of development and, in 1971, he was given the additional responsibility for public relations. He was a graduate of Roanoke College in physics, and was elected an honorary alumnus of Georgia Tech by the Georgia Tech National Alumni Association.

Prior to his career at Tech, Mr. Guthridge served as associate director of student affairs at Virginia Polytechnical Institute and State University in Blacksburg, Virginia. He was a native of Roanoke, Virginia.

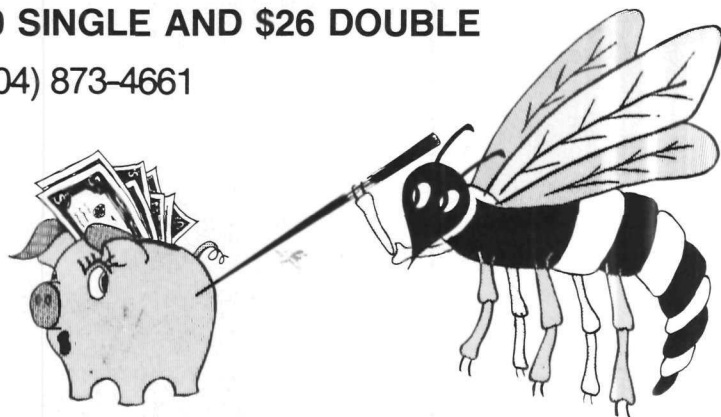
Tech President J. M. Pettit was in China at the time of Mr. Guthridge's death. Vice President for Academic Affairs Vernon D. Crawford said, "I never saw him when he wasn't enthusiastic about his job and Georgia Tech. I never saw him when he didn't have a good word for what he was doing or who he was working with. He was always cheerful in his job. We will miss him as an administrator and I will miss him as a personal good friend."

(Continued on pg. 16)

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THE Georgia Tech

FALL 1978/Volume 55, Number 1

ALUMNI MAGAZINE



"Memories of 1928"

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A SPECIAL MAN...

By KAREN BUTTERMORE

Jack Holman

GENEROSITY, LOYALTY AND vision — these three words aptly describe Jack Holman's relationship with Georgia Tech.

Holman served as president of the class of 1928 and he personally has made sure that members of the class have stayed in touch for half a century. Over the years, he has compiled, published and distributed three directories and reports on the class (see related story).

Holman suggested and coordinated the establishment of the Class of 1928 Memorial Fund. "I suggested the memorial fund because the independent Ivy League schools, especially, have a custom of reunion classes giving something special to the school," Holman said. "I believe that those of us who graduated received a great deal from Georgia Tech and we should do something for the Institute from which we derived so many advantages."

"At M.I.T. in 1973, the 25th reunion class gave \$610,000 to the Institute; the 40th reunion class gave \$816,000; and the 50th reunion class gave \$8 million," Holman said. "The fact that Tech is a state institution does not alter its need for additional funds."

"We hope that other Georgia Tech classes will strive to emulate and surpass what we have done this year," Holman said. "We have a desire to make Tech a better place for those who come after us. We hope we have started a tradition at Georgia Tech."

After announcing establishment of the memorial fund and challenging his classmates at their 45th reunion, Holman wrote a series of four letters asking each classmate to participate. He made personal visits to some of the class members.

"The thing that is important is the *absolute* amount that we get, not the immediacy of the gift," he continued. "Some may be better able to leave something in a bequest, rather than giving from capital funds while they are living." Responses came in the form of pledges, contributions, or commitments for deferred giving (bequests written in wills or provisions in trust agreements). In September, gifts amounted to more than a million dollars.

"We are not going to stop at our 50th reunion, we hope to continue to attract contributors," Holman said.

Holman has substantial experience with fund-raising. He is chairman of the Capital Funds Campaign for Converse College, which intends to raise \$10 million between 1973 and 1983 for the private women's college. Holman's wife, Elsa, is a graduate of Converse. He has been a member of the M.I.T.

Development Committee, the M.I.T. Alumni Fund Board, a trustee of the Foundation for Economic Education and a trustee of New York University. He served as president of the Newburgh, New York Community Chest organization, and as president of the Society of Alfred P. Sloan Foundation Fellows of M.I.T. Holman received the "Man of the Year" Achievement Award from the Graduate School of Business Administration of New York University in 1957.



Holman served as president of his class.

Holman received the Alumni Distinguished Service Award from Georgia Tech in 1953. He delivered the 75th Commencement address to Tech graduates in 1958. He has served as trustee of the Georgia Tech Foundation, Inc. since 1953 and has supported and been president of the Greater New York Georgia Tech Club. He is also a member of the Thousand Club.

At Georgia Tech, Wayne J. Holman, Jr. was a member of Sigma Chi fraternity; treasurer of the Interfraternity Council; Lt. Col. in the R.O.T.C.; and a member of Tau Beta Pi, Kappa Eta Kappa, A.I.E.E., and the Cotillion Club. After captaining his high school football team, Holman went out for the Tech team, but did not make it. "My freshman football team is the one which went to the Rose Bowl our senior year — I just did not have the weight."

Holman remembers Tech as a close knit community in the late 1920's. He recalls long hours of studying, with breaks for dinner and playing bridge. He lived in Knowles Dormitory above Uncle Gus' kitchen as a freshman, then

moved into the Sigma Chi house which was located on Spring Street. "The woodshop, machine shop and foundry were very important in those days, as well as academic subjects."

After earning a degree in Electrical Engineering, Holman was hired as an instructor at Yale University where he earned a master's degree in Electrical Engineering. He then followed in his father's footsteps by joining the Central Hudson Gas and Electric Corp. in New York. His father, W. J. Holman, Sr. EE '01, had captained the Tech football team and later owned a utility company.

Holman was a member of the first group of Alfred P. Sloan Foundation Scholars at M.I.T. from 1938-39. He earned a master's degree in Business and Engineering Administration from M.I.T. He later earned a doctorate in economics from New York University. In 1940, Holman left the utility company to join the Chicopee Manufacturing Corp., a subsidiary of Johnson & Johnson, Inc. He served as president of Chicopee for 14 years, then as general corporate treasurer of Johnson & Johnson, then as a director and member of the Johnson & Johnson Executive Committee. The energetic gentleman retired from his fulltime position and began working a half day in 1973. He and his wife live in Plainfield, New Jersey. Their son, Wayne J. III, earned a doctorate in mathematical physics from M.I.T. and teaches mathematics at the University of North Carolina.

Holman thinks that Tech enjoys an excellent reputation in New York and throughout the country. "Tech does an outstanding job of teaching engineering. It has an excellent faculty and turns out graduates who are well-trained in the basics." He stresses the importance of research for Tech. "An institution like Tech must do research," he said. "It is good training for the staff and students, and it gives their education a dimension beyond the classroom. It affords the opportunity for faculty and students to engage in work which furthers their ability. It is also an important source of income for the Institute."

Holman was pleased to hear that a woman is currently president of the Tech student body. "I think it shows that the fellows are broad-minded and realistic. I would encourage qualified women to attend Georgia Tech."

Holman said that his main involvement with Tech (except for his work with the Georgia Tech Foundation) has been through his class. "I have always promoted class reunions and have enjoyed immensely keeping up with my classmates through the directories and personal contacts." Because of his involvement and dedication, Holman and the other members of the class of 1928 will be known and remembered by future generations of Tech students, alumni and faculty.

A SPECIAL GIFT ...

'28 Memorial Fund

ON OCT. 27, 1978, the class of 1928 marked its 50th year reunion by presenting a memorial fund in the name of the class to Tech President Joseph M. Pettit. The Class of 1928 Memorial Fund is valued at more than one million dollars. It consists of contributions, pledges, and commitments for deferred giving (bequests written in wills, or provisions in trust agreements). The fund will "serve as a perpetual memorial to all of the fine and noble fellows who were members of our class," according to W. J. Holman, Jr., president of the class of 1928.

The fund is to be used "to increase the intellectual excellence of Georgia Tech." The income will inure in perpetuity to the benefit of the institution. Income will be used at the discretion of the President of Georgia Tech.

Contributions to the memorial fund are in addition to sums given annually to the Roll Call. Gifts to the fund are not meant to replace regular individual Roll Call participation.

At the 45th reunion dinner of the class in 1973, Holman suggested that the group establish a memorial fund in the name of the class. He proposed raising \$100,000 for the fund. Dr. Paul Weber, who once served as acting president of Georgia Tech, attended the dinner and stated afterwards that, in his opinion, the goal was not high enough. Dr. Weber's prediction was correct. Class members greatly surpassed that goal.

"It is my hope that other classes will follow the example of our class and even surpass what we have done," Holman said. "We want to establish a continual process which will result in increasing the intellectual excellence of Tech. I am very gratified at what our class has done and we want other classes to do the same so that Tech will have another source of revenue to increase the college's reputation over the coming years. We hope that the income from the fund will be used to increase and maintain the quality of our faculty, rather than for buildings or scholarships. It will be up to the President of Georgia Tech to determine the needs."

"I believe that men and women have an obligation to the institution from which they have derived so much," Holman said.

In a recent interview before his death, Tech Vice President for Development and Public Relations Joe Guthridge said, "This is one of the most magnificent things that has ever been done by a group of loyal and devoted Tech alumni. This action should serve as an inspiration to other classes to perpetuate the memory of their class at the Institute. Income from the corpus will be for the unrestricted use of Georgia Tech."

After the announcement at the 45th reunion dinner, Holman contacted members of the class through a series of letters and personal calls. This marks the first time at Georgia Tech that a class has established a memorial fund in its name. The idea of giving a gift to the Institute from the class of 1928 is not a new one. Members of the class have always been generous to their alma mater. Upon graduation, the class gave the beautiful stained glass window for Brittain Dining Hall. The window was designed by class member Julian H. Harris. Later, the class gave the bust of Dr. Brittain which stands in front of the building named in his honor. On another occasion, the class gave the concrete overhead gate which stands at the intersection of Fowler and Third Streets.



(L-R) Charles Connally, name unknown, Bill Wardlaw, Julian Jett, James Nichols, Julian Harris, Jack Holman, John Nichols, Ed White, Ralph Bullard, Dixie Seaborn, name unknown, and Tom Faires (members of the class of 1928) pose with the bust of Dr. Brittain they donated to the Institute at one of their reunions.

A SPECIAL CLASS

Directories Unite

ALTHOUGH HE SAYS it was not a campaign pledge when he was elected president of the class of 1928, Jack Holman has personally provided a vehicle for keeping class members in touch through the years.

Holman has gathered information and published three class directories. The first was presented at the 10th reunion; another at the 25th reunion; and the last one at the 40th reunion. Because of his work on the Class of 1928 Memorial Fund over the past few years, Holman did not have time to update the last directory which was published in 1968.

The directories have contained the following information about each responding member of the class: home and business address, family information, career summary, hobbies, and some personal comments extracted from letters or questionnaires. In addition, members of the class who did not respond, and those who are deceased, are listed.

Each directory contains the results of a survey and a brief report. Holman conducted a class survey, asking the same questions in 1938, 1953 and 1968. In the 40th anniversary report, he compares responses made over the years and comments on changes reflected.

For example, in 1968, respondents indicated a great swing away from the Democratic party and toward the Republican party. In 1938, 67.8 percent were Democrats, 26.4 percent independent and 4.6 percent Republicans. In 1968, only 24.7 percent were Democrats, 15.9 percent were independent, and 28 percent were Republicans plus 30 percent were "conservative" (closer to Republican). Holman found that more class members attended church in their later years. Other questions asked classmates how many books they read each year; how much television they watched; how much time they devoted to charitable or community affairs; and what was their annual income.

In his introduction to the 40th year report, Holman said, "Running through a very great many of the comments sent in with the questionnaires was the theme that life had been good, and that our fellows had been blessed with wonderful wives and splendid families. Life is good for those who work hard, and bring ability and intelligence to the task, and wives are wonderful because they have shared the burdens, have been loyal, have had faith and have encouraged us every step of the way. I send to all of you, and not only to you, but also to all of those lovely and attractive girls who cast their lots with us, my warmest and most affectionate good wishes."



Sculptor Harris poses in his studio.

Julian Harris

ONE MEMBER OF the class of 1928 has a national and international reputation as one of the finest sculptors in the world. Julian Hoke Harris received an architecture degree in 1928, but had long been interested in sculpture, so he enrolled in the Pennsylvania Academy of Fine Arts for four additional years of study.

Harris returned to Atlanta in 1934 and married Jean Fambrough, whose father was a 1903 Tech graduate and president of his class. For 40 years, the Harris home, studio and sculpture garden have been located on the Tech campus. Harris had been professor of architecture at Tech from 1937 until 1971. Upon his retirement, he was honored with the title of Professor Emeritus from the University System Board of Regents.

When asked about his work over the last 10 years, Harris had a long list of projects to refer to. One of the most significant commissions was the Official Inaugural Medal of President Jimmy Carter for the Franklin Mint in 1977. Harris also did the 1976 Carter Campaign Medal. Harris did the Georgia Tech Medallion for the Georgia Tech National Alumni Association in 1971. In 1975, he created the Sigma Xi Monie Ferst Medallion Award. He was commissioned to do the Sidney Lanier Medallion for the New York University Hall of Fame of Great Americans, and the Georgia Bicentennial Medallion for the National Bicentennial Commission.

Two of Harris' greatest honors were winning a national competition in 1970 over a field of 200 entries to create the medallion commemorating the 40th anniversary of the Society of Medalists, and his selection in 1972 as one of the 12 sculptors in the world commissioned by the Societe de la Sculpture de Medalles to create a medallion with a self-portrait on one side. Harris has created sculpture for more than 50 buildings in the Southeast and has executed more than 50 portraits and memorial commissions.

Recently, Harris completed a Bobby Jones portrait tablet for the Tech Student Center and another of Jones for the Peachtree Golf Club. He did a portrait relief tablet of Fred B. Wenn for the Student Center and a portrait bust of Coca-Cola magnate Robert Woodruff for the Emory Library and the Coca-Cola board of directors room.

His two most recent projects have been a portrait bust of his granddaughter Caroline and a 50th Anniversary Medallion for the Cloister at Sea Island, Georgia.

Harris thinks the two greatest changes at Tech have been admission of women and the expansion of graduate-level programs. He has been a guest curator at many schools of architecture across the country, and he thinks that Tech ranks with the best of them.

Harris remembers "having a good time" at Tech. He was a member of Beta Theta Pi, Pi Delta Epsilon, the Glee Club, the band, the Marionettes, the Blue Print and Yellow Jacket staffs, and served as manager of the basketball team. He received a loving cup for being "best freshman" in 1925.

Harris said that he especially enjoyed last year serving as grand marshal for the parade honoring his hometown, Carrollton, Georgia's, and Carroll County's 150th anniversary. He was elected grand marshal of the parade which included 60 floats.

Oscar Cleaver

OSCAR CLEAVER, WINNER of the scholarship cup for the class of 1928, has had a distinguished career as a military officer and later as a civilian.

One of Cleaver's accomplishments was the development of night vision techniques which were used in the Vietnam War. Cleaver is pleased that his invention is now being developed commercially and used to help blind persons and law enforcement personnel. "The other night, to my surprise and pleasure, I heard that my technique will be used for people who have nothing but tunnel vision. To be effective, there must be some source of light. I think hand-held binoculars will be used by those with

tunnel vision." Cleaver was given the highest award presented by the military to a civilian for his contribution. He also received the next and third highest awards.

Cleaver retired with the rank of colonel from the U.S. Army in 1968. He continued as a consultant in civilian status until 1973, when his contract was terminated as an economy measure.

Cleaver also developed all of the electrical power sources being used by the Air Force and Navy for general power. The Alexandria Gazette wrote of Cleaver: "Although he held the position of acting technical director of the Army Mobility Equipment Research and Development Center at Ft. Belvoir at the time of his retirement, Cleaver gained wide recognition throughout the Army, Department of Defense, and private industry during his long years of service as chief of the Electrotechnology Laboratory at Ft. Belvoir. During his career, Cleaver himself acquired more awards and honors than any other individual at the Center, and he built up a staff of outstanding scientists, engineers, technicians and administrative personnel who have also won a great number of awards."

"I wouldn't miss our 50th reunion for anything," Cleaver said recently. He lives in Sarasota, Florida where he has been acting with the Florida State Theater. He also put many months of hard work into the design, building and decoration of a beautiful home. His home has twice been on the Distinguished Tour of Homes for charity. He enjoys swimming, playing bridge, and traveling. He has been on most of the Georgia Tech alumni tours. Cleaver holds many classified patents which are government property.

Cleaver has left all of his assets in trust, including his beautiful home, for the benefit of Georgia Tech.

"What I remember most about Tech was hard work," Cleaver recalls. "I was a drone. I lived in the dorm for a few months, then moved into a private home on Tech Drive so I could study better. I enjoyed all of my professors and appreciated their willingness to be accessible, in contrast to the impersonality of some larger schools." Cleaver was a member of Phi Kappa Phi, A.I.E.E., the honor roll, and the Marionettes. After graduation, he taught electrical engineering at Yale University. Then he joined Westinghouse, but left there in 1942 to enter the Army Corps of Engineers and devote full time to his distinguished military career.

Cleaver believes that Tech has a strong future in today's world. "I think Tech ranks third nationally behind M.I.T. and Cal Tech. I have the highest regard for the Institute, its system of engineering education, and the quality of its graduates."

Hazard Reeves

"I'M STAYING AS busy as ever. If I don't keep busy, I might get in trouble. Besides, I don't believe in retirement," said Hazard Reeves, ME'28, when asked about his activities.

Over the past several years, Reeves has continued to found companies and reorganize others. Most recently, he founded Realtron Corp., which provides on-line computer services for real estate companies. He owns printing plants for this service in Detroit, Boston and Pompano Beach. He recently sold his interest in plants in Toronto and San Francisco. He has reorganized Reeves Telecom and Reeves Teletape. The latter is the largest independent production/video tape motion picture service company in the country.

Reeves developed the first magnetic stereo sound system and it was used for cinerama. "The one we developed in 1946 was a seven-track stereo, and a four-track is still the closest item available commercially today," Reeves said. Reeves has been instrumental in founding several companies, including Reeves Industries, Inc., Cinerama, Inc., Reeves Broadcasting Corp., Reeves Sound Studios, Inc., Reeves Soundcraft Corp., Reeves-Ely Laboratories, the Audio Devices Company, the Hudson-American Corp. and several others.

In 1957, Reeves received the Distinguished Alumnus Award from Georgia Tech. He is a trustee of the Georgia Tech Foundation, Inc. and has served as president of the New York Georgia Tech Club. For several years, the Tech alumni club meetings were held in Reeves Sound Studios and were catered by Nino's Restaurant which Reeves also owned.

"I came to New York in 1928 and have been here ever since, trying to collect Sherman's booty he took from the South," Reeves said. Reeves lives in Tuxedo Park, New York and has the best amateur radio system in the world at his home. He has won awards with it in worldwide competition. He has donated ham equipment to Tech's School of Electrical Engineering for student use. Reeves started out with Columbia Phonograph for \$25 a week in 1928. He has four children and five grandchildren.

Reeves said that he lived in Knowles Dormitory above Uncle Gus' kitchen and his room always smelled like chicken grease.

At Tech, Reeves was a member of Pi Kappa Phi fraternity, Pi Delta Epsilon, the Radio Club, the Blue Print and Technique staffs, honor roll, A.S.M.E. and he was manager of the track team.

"I have so many pleasant memories of Georgia Tech," Reeves said. "It was a great experience attending school there and I enjoyed the opportunity to meet a lot of interesting people.

Tech is a tremendous school which has grown in reputation over the years. It is a great builder of future citizens."



Guthman works on campus today.

Richard Guthman

ALUMNI FROM THE class of 1928 will probably be surprised to learn that a member of their class works for Georgia Tech three days a week.

Richard Guthman, ME'28, works as a consultant with Tech's Office of Resources Development. For six years, he has donated his time three days a week. He works with the corporations which contribute to Tech and consults with the office. In 1972, he reached mandatory retirement age for his company, the Montag Division of Westab Inc. Guthman had been with Montag since graduation and he retired as a vice president.

"I believe it is good to keep busy," Guthman explained. "I was forced to retire at 65, and didn't want to catch that disease 'honeyitis' which is described by Dean George Griffin. I understand you've caught it when you stay home after retirement and your wife asks you to 'honey, do this' and 'honey, do that.' So I asked the late Joe Guthridge for an assignment and he directed me to the Office of Resources Development."

Guthman has helped plan the 50th reunion for his class, and enjoys working in his yard and traveling for pleasure. He sees a lot of changes at Tech. "During my student years, we had a lot of shop and spent more hours in class. So much has changed in technology, there is so much new material to learn now." Guthman thinks that female students are a "plus" for Tech.

Guthman's son, Richard Jr., a 1956 Tech graduate, is an Atlanta City Councilman, serving the district which includes the Tech campus.

Blanton An Expert On Alumni Tours

ONE MEMBER OF the class of 1928 is an expert on the subject of alumni tours. Milton Blanton and his wife Pauline have gone on the last eight tours sponsored by the Georgia Tech National Alumni Association. They plan to participate in as many future tours as possible.

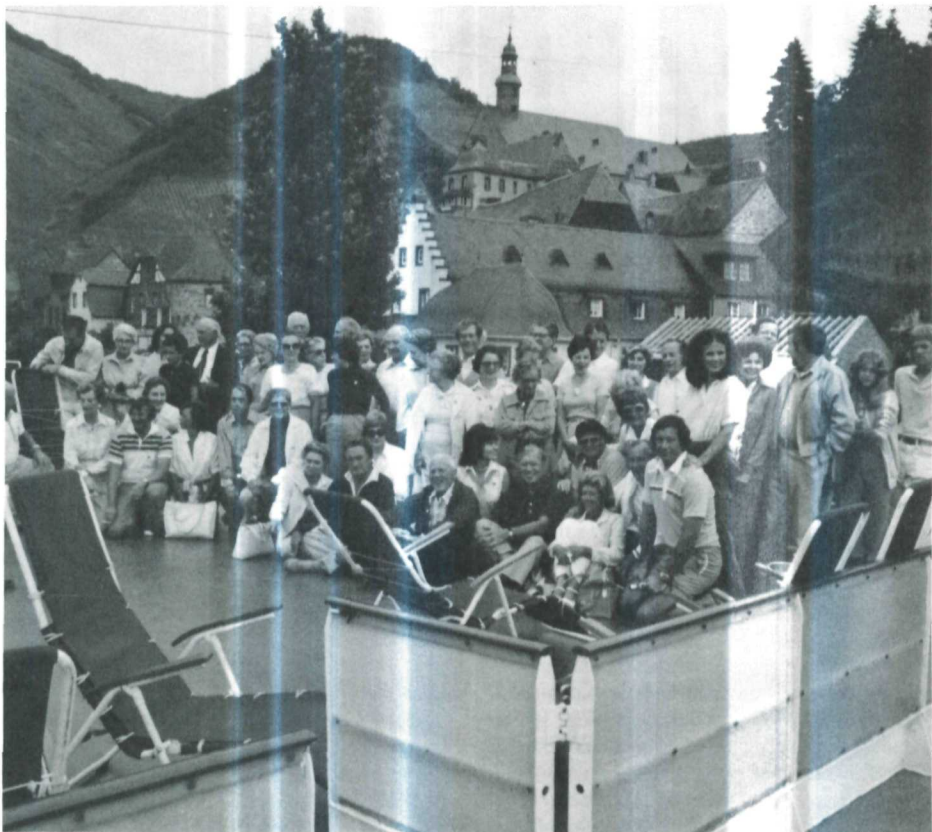
Blanton rates the alumni tour to Paris in June 1978 as the best tour yet. "We have enjoyed all the tours, but this was the best one so far," he said. "The beauty of Paris and the friendliness of the French people were outstanding. People went out of their way to be friendly, especially if we were lost.

"The food was excellent. We had heard about the richness of French food, but we had no trouble with it. We had plenty of free time to wander around and enjoy the sights and the countryside. We took the side trip to Versailles and the Chateau Country, as well as a riverboat dinner trip and attended some of the famous shows.

"Our forebearers were Huguenots, so we especially looked forward to going to France. The trip lived up to all of our expectations."

Blanton said that he normally takes any side trips that are offered on tours, unless he has been on the side trip previously. "Our theory is that we may not be that way again, so we should take advantage of the opportunity," he said.

Blanton said that he and his wife have taken each of their granddaughters on an alumni tour. "I compliment Alumni Holiday Tours," he said. "They give excellent service and go out of their way to see that people are comfortable and satisfied. We always enjoy seeing old friends on these tours."

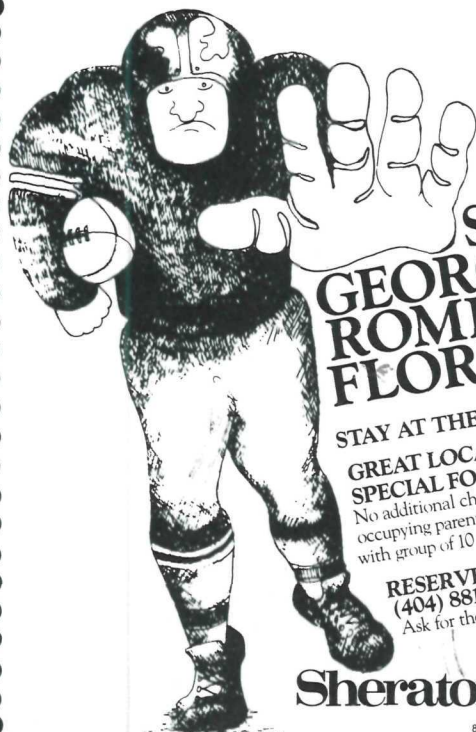


Participants in the alumni tour to Paris in June pose in pretty setting.

The most recent tours which Blanton participated in include those to Rome, Spain, Portugal, the Greek Isles, Munich, the Rhine trip, Switzerland, Scandinavia, and the Vienna-Istanbul-Danube tour. He said that he tries to go once a year.

When he is not traveling, Blanton enjoys gardening and landscape work for his church and the community in which he lives.

Blanton retired after 37 years with the federal government in 1969. He was regional economic director of the Federal Works Agency of the Department of Housing and Urban Development. He once taught banking, finance, economics and statistics at Georgia Tech and Northwestern University.



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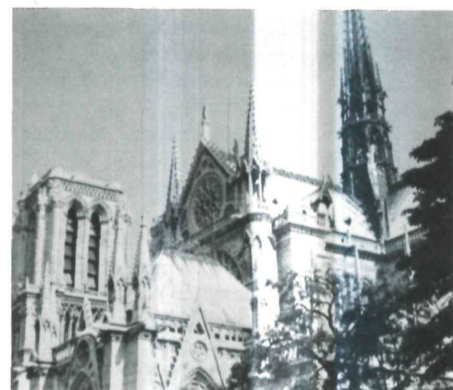
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Cathedral of Notre Dame was one of the famous sites tourists visited.

Placement Enjoys Record Year

GEORGIA TECH'S Placement Center has completed another banner year in every category. According to Placement Center Director Dr. Michael Donahue, "1977-78 was the strongest recruitment and placement year that we have experienced in a decade. It is the strongest year since I've served as director."

The number of employment offers extended was 1,235, an increase of 44.1 percent over last year. Nearly 16,000 interviews were conducted, an increase of 14.7 percent. A total of 527 companies visited campus, for an increase of 11.4 percent, and nearly 2,000 interview schedules represented an increase of 27.3 percent over last year.

Average offers in salary increased for all degrees on the undergraduate, master's and doctoral level. The highest average starting salary for the bachelor's level June graduates was \$1,522 per month in chemical engineering, followed by \$1,416 in mechanical engineering.

Donahue was asked why it had been such a successful year. "In one sense, the economy has been stronger than in recent years," he said. "With the focus on energy and the environment, there is a natural demand for engineers and technical people. In many cases, this is a product of federal regulations such as those on clear air and water."

"Job opportunities for Industrial Management graduates opened up," Donahue continued. "There was an expansion in production/manufacturing areas which resulted in 76 percent of IM graduates accepting employment. Another 13 percent of the IM graduates planned to go to graduate school. Most of the jobs were in industrial engineering, sales, and planning."

"It was also a good year for graduates of the College of Sciences and Liberal Studies," he said. "Historically, 50 percent of these graduates go on to graduate school. But this year, that figure dropped to 23.8 percent, because 49 percent of the graduates accepted employment. The science majors took advantage of the strong job market."

"Another reason we have had success is the outstanding performance of Georgia Tech alumni. Companies which have hired alumni are pleased with their performance and want to hire more employees of the same caliber. My hat is off to the overwhelming majority of Tech alumni. They make my job a lot easier by doing a super job for their company, which reflects well on the Institute and places its graduates in demand."

"For the first time in the Placement Center's history, we were completely booked up last year, in terms of available interview slots. I think it is fair to say that we had more company recruiters here in one year than the Center has had in its history," Donahue remarked. "Women and minorities continued to have great success with employment."

"One area with which I was especially pleased was the number of students who regis-

AVERAGE OFFERS—MONTHLY SALARIES 1977-78 GRADUATES

		% Change
All BS Excluding Engineering	\$1,214	+ 10.26
All B/BS Degrees	\$1,395	+ 9.07
B. in Engineering	\$1,408	+ 8.64
BS/Industrial Management	\$1,144	+ 17.09
All M.S. Degrees	\$1,530	+ 8.51
M.S. in Engineering	\$1,542	+ 9.13
All Ph.D. Degrees	\$1,834	+ 19.32

tered with the Center last year," Donahue pointed out. "We are very proud that nearly 1,600 of the 1,800 graduates last year registered with us, marking an 11 percent increase over the previous year. This indicates that they are knowledgeable about our office and the services we can provide. Our goal is to provide the technical tools and resources which make Tech graduates competitive with those from any other institution."

Donahue said that 1978 graduates followed the traditional reasons for selecting their employers: (1) job content or type of job, (2) geo-

graphical location, (3) facilities (work environment and equipment and resources available), (4) advancement opportunities (recognizable career paths, or graduate schools nearby where advanced degrees could be obtained) and (5) salary.

Donahue expects the coming year to be a good one. "All indications now are that it will be another strong year for recruitment and placement. Interview schedules are shaping up like last year's and we are well-booked into winter quarter already."

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Rose Bowl, Olympics Top Stories

FIFTY YEARS AGO this fall, Georgia Tech's Golden Tornado football team piled up 215 points against 40 for the opponents in their nine regular season wins. Their record sent them to the Jan. 1, 1929 Rose Bowl game to meet the University of California team, which was 6-2-1.

The game was one of the most exciting and memorable Rose Bowl games ever, as California team captain Roy Riegels, a center, picked up a Georgia Tech fumble and ran 64 yards in the wrong direction. The California center has lived with the name "Wrong Way Riegels" ever since. He says that the memory of the game and the ensuing nickname hurt for several years, but he later learned to enjoy the notoriety. Several years ago, Riegels was made an honorary Georgia Tech alumnus in honor of his memorable run.

In the first few minutes of the 1929 Rose Bowl, Tech's Stumpy Thomason had the ball knocked out of his hands. Riegels picked up the fumble, ran several yards toward the Tech goal, then spun around and headed toward his own goal. California teammate Benny Lom chased him, yelling "wrong way!" and finally got Riegels down at the one. No one knows for sure how the famous run came about, but Riegels thinks he saw Tech players coming at him, and in pivoting away, he lost his bearings. There is a famous picture of Riegels, sitting on the ground, head in his hands, wondering what happened.

Later in the game, Lom tried to punt and the kick was blocked for a safety by tackle Vance Maree. Thomason later scored a 14-yard touchdown. California came close in the last few minutes of the game when it scored a touchdown and got the extra point.



(L-R) Roy Riegels, Stumpy Thomason and Benny Lom pose at the 50th reunion of the 1929 Rose Bowl teams held at Tech this fall.

The Tech and California Rose Bowl team members had a 50th anniversary reunion Sept. 16 when Tech played California in Atlanta.

During the 1928 football season, Tech Coach Bill Alexander's team beat Auburn, 51-0; V.M.I. 13-0; Tulane 12-0; North Carolina 20-7; Oglethorpe 32-7; Vanderbilt 19-7;

Alabama 33-13. The Jackets rendered Notre Dame scoreless for the only time that season, 13-0. Tech beat Georgia 20-6 that year.

The Tech team returned home as national champions, greeted by 100,000 celebrating admirers on Peachtree Street.

Ed Hamm, Tech's Olympian

OLYMPIC GOLD MEDALIST Ed Hamm was not a member of the class of 1928, but class members will remember the notoriety he brought to the school during their senior year. Hamm graduated in 1929, served as track coach at Tech in 1930, then joined the Coca-Cola Company. He retired as vice president of Coke's West Coast division. He lives in Albany, Oregon, where he enjoys fishing and listening to and watching football games. He has four sons, three of whom served in Vietnam.

Hamm has not been to the Olympics since he participated in the games in 1928. But he said that he never misses seeing them on television.

The following are excerpts from a 1976 interview with Hamm by the Albany Democrat-Herald newspaper in Oregon.

It was 1928. Amsterdam. The IX Olympiad. The year Herbert Hoover was elected President of the United States. The year before the stock market crashed and the torment of the Great Depression began. The year when gasoline was 16 cents a gallon.

And it was the year Ed Hamm would never forget.

He was 21 years old, a student athlete at Georgia Tech in Atlanta and an Olympian.

On the last day of July, 1928, he would win the broad jump, breaking an Olympic record with a leap of 25 feet, 4.329 inches (7.73 meters) and the gold medal would be his.

Hamm has been witness to Olympiads before and since. But they only serve to remind him of Amsterdam and 1928.

"I wouldn't trade my Olympic experience for anything. For nothing," said Hamm, leaning back in his chair and gesturing throughout the conversation.

"It's a great thrill," he continued, his face still aglow from that moment 48 years ago and a lot of miles away. "When they play the Star Spangled Banner . . . and you're standing there on that platform, I can't express the feeling in words," he said, the emotion still evident in his voice.

Hamm, now a semi-retired resident of Albany, joins the millions upon millions of others who must rely on the media for the flavor of the Olympics.

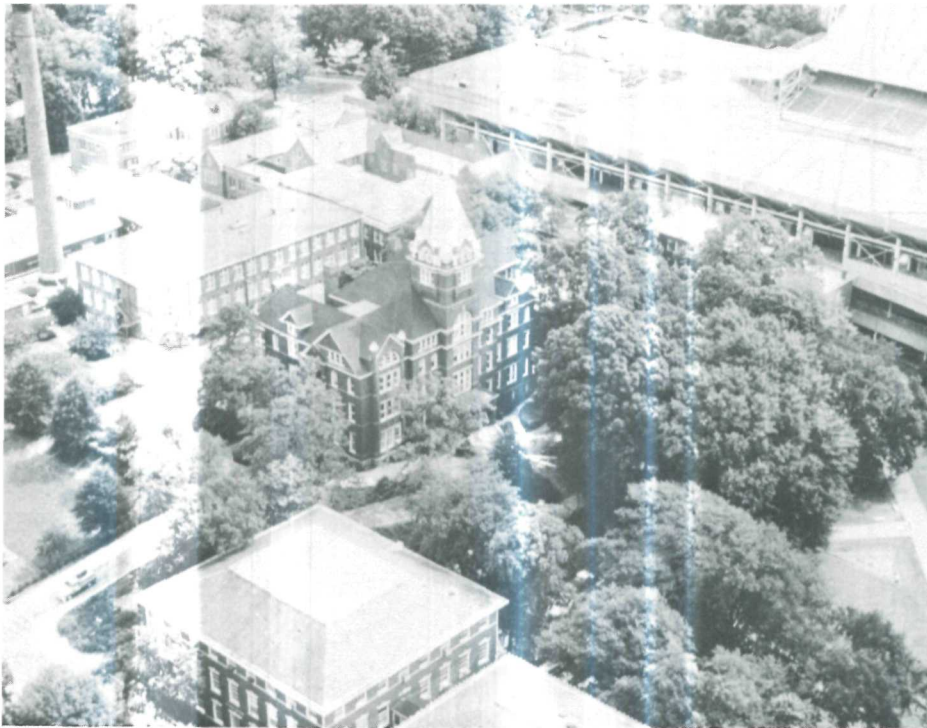
But he absorbed all there was to be had as a member of the 1928 U.S. Olympic team.

(Continued on pg. 24)

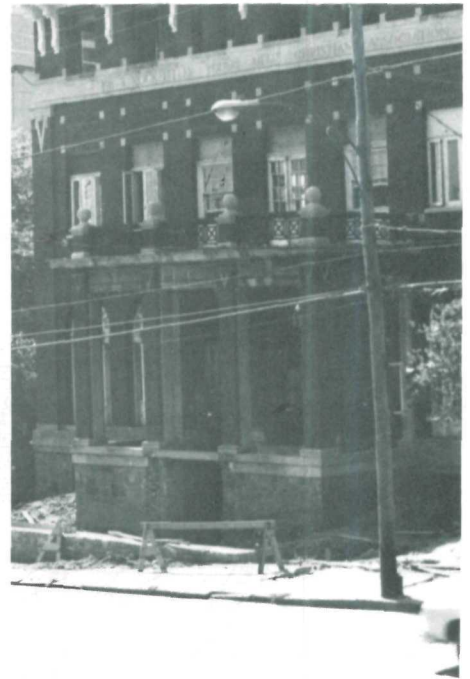


Actual program from 1929 Rose Bowl.

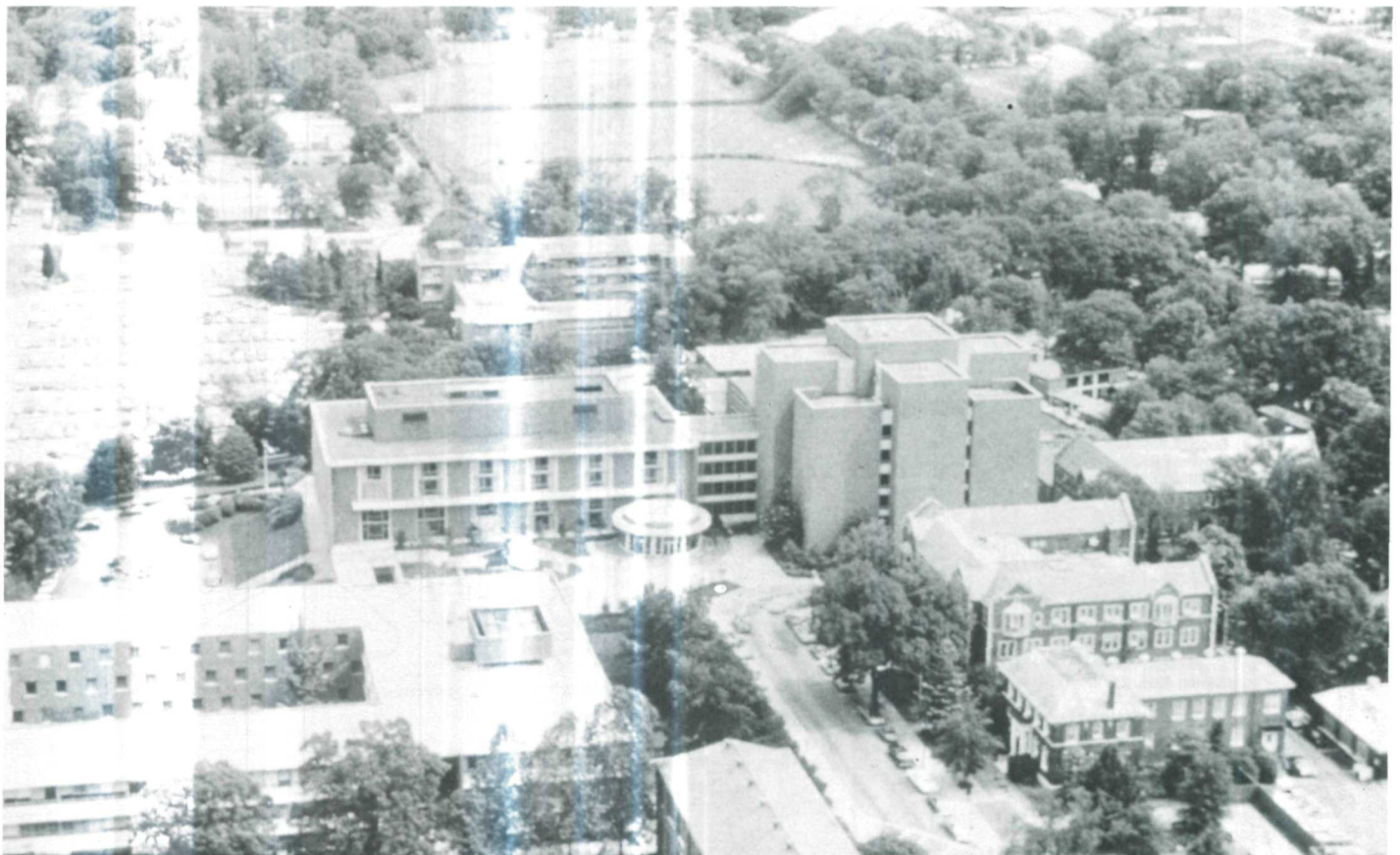
A Pictorial Tour of Campus



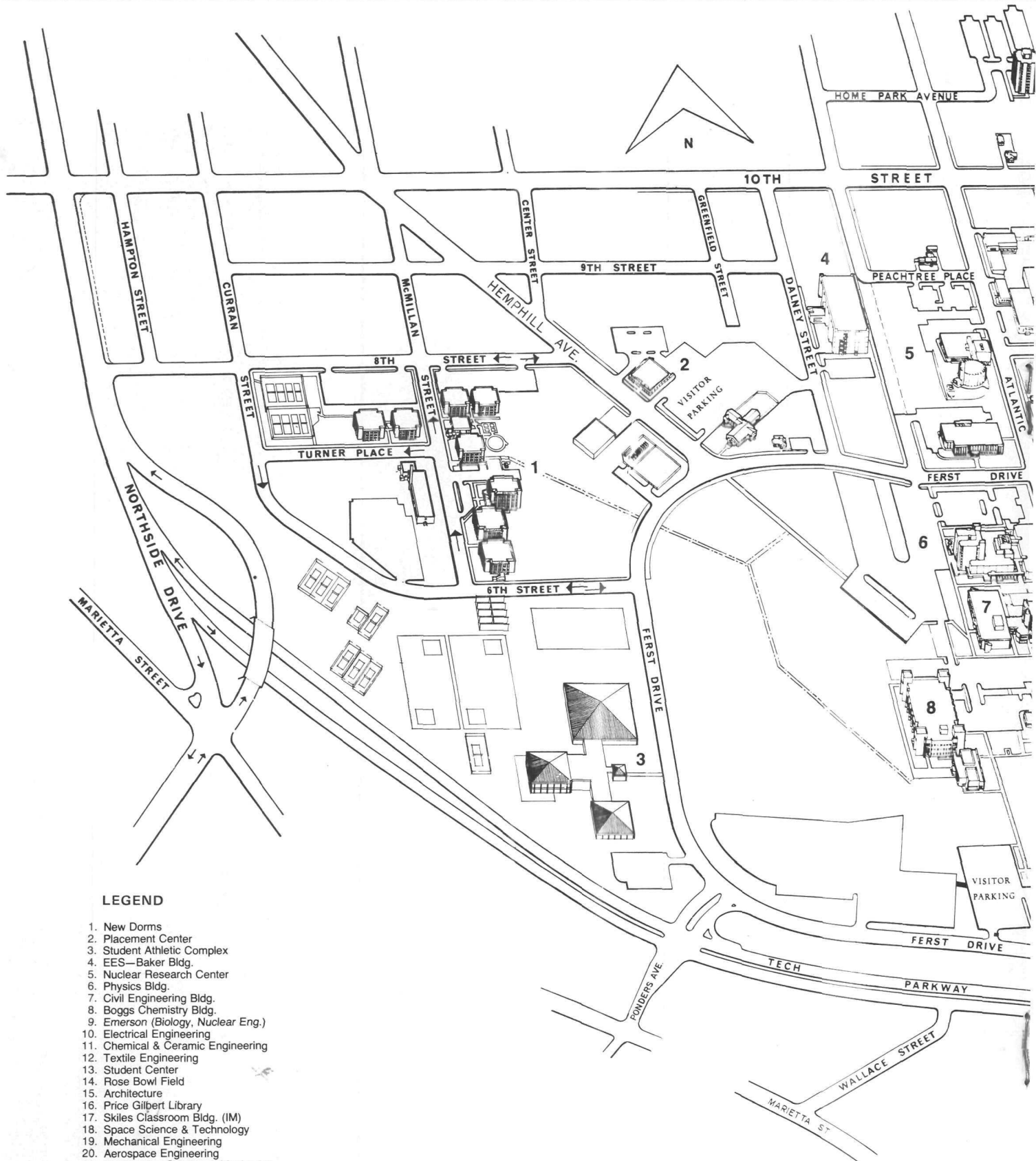
Savant Building (lower left), Industrial Systems Engineering Building (upper left), Administration Building, Grant Field.



The old YMCA is being renovated for an Alumni/Faculty House which is scheduled to open in 1979.



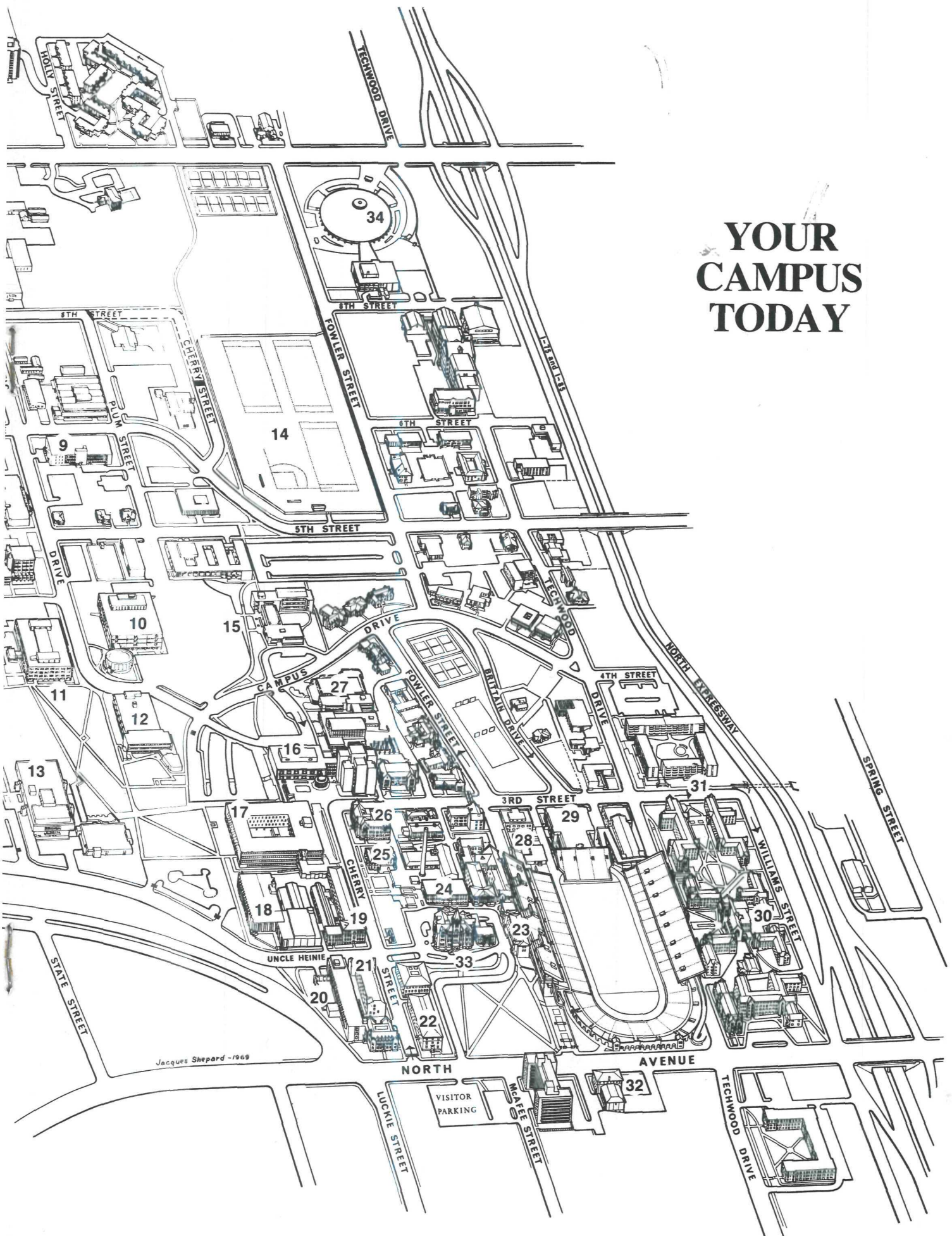
(L-R) Skiles Classroom Building, Price Gilbert Library, Rose Bowl Field (in rear of picture), Graduate Library, D.M. Smith Building, Dean of Students Building.



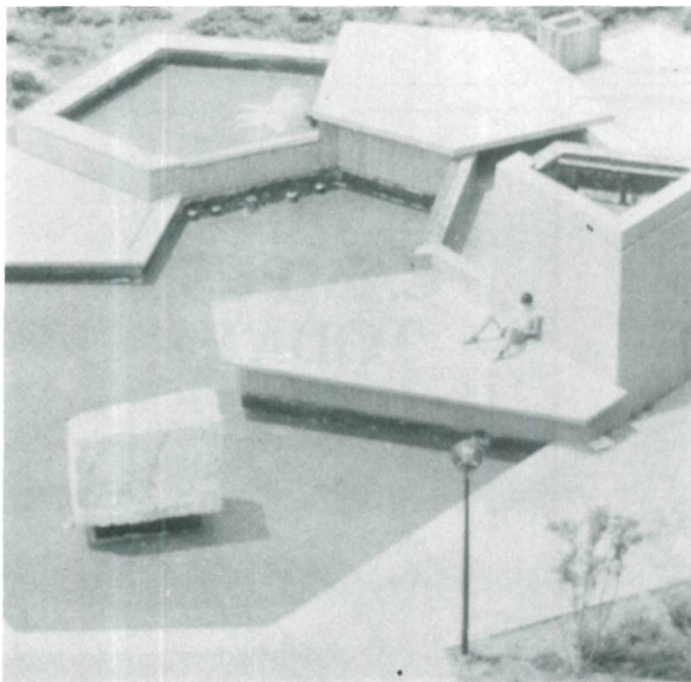
LEGEND

1. New Doms
2. Placement Center
3. Student Athletic Complex
4. EES—Baker Bldg.
5. Nuclear Research Center
6. Physics Bldg.
7. Civil Engineering Bldg.
8. Boggs Chemistry Bldg.
9. Emerson (Biology, Nuclear Eng.)
10. Electrical Engineering
11. Chemical & Ceramic Engineering
12. Textile Engineering
13. Student Center
14. Rose Bowl Field
15. Architecture
16. Price Gilbert Library
17. Skiles Classroom Bldg. (IM)
18. Space Science & Technology
19. Mechanical Engineering
20. Aerospace Engineering
21. Engineering Science & Mechanics
22. Swann Bldg. (Continuing Ed.)
23. Knowles Bldg.
24. Industrial & Systems Engineering
25. Dean of Students
26. Smith Bldg. (Soc. Sci. & Psychology)
27. Computer Center
28. Athletic Association
29. Old Gym
30. Brittain Dining Hall
31. Dormitories
32. Alumni/Faculty House (old YMCA)
33. Administration Bldg.
34. Alexander Mem. Coliseum

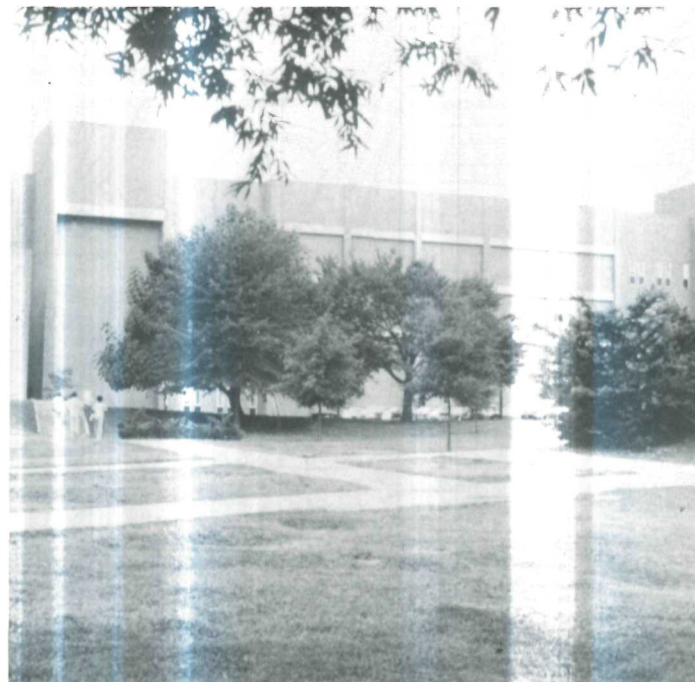
YOUR CAMPUS TODAY



Pictorial Tour (Continued from pg. 11)



Pool and free-form sculpture in front of Price Gilbert Library.



New Boggs Chemistry Building.



View from the library, looking toward entrance to Student Center. Bookstore is in left portion of picture.



Old Lyman Chemistry Hall, a familiar sight.

Technical Opportunities in Atlanta

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Gearing: It's Good To Be Back

AFTER A 20-year career as an administrator and professor at six major universities, alumnus Dr. Charles E. Gearing has returned to Georgia Tech as dean of the College of Industrial Management (IM). Gearing assumed his new responsibilities July 1, and he already has definite goals for and impressions of the College.

"One of my first tasks is to define the direction of the College, to select a single program of development that will describe the College of Industrial Management at the end of the decade of the 1980's," Gearing said. "To accomplish this, I have appointed a Task Force on IM College Goals to study alternatives for the future of the College. My objective is to get broad participation and to discuss what the College should be."

"Task force members will receive input from the faculty and will consider the IM College's role and relationship with other academic units on campus," he continued. "We will solicit input from every quarter and especially welcome comments from alumni on the direction of the College."

"What we are aspiring for is a well-developed plan for the College to guide us in curriculum development, recruitment of faculty and students, and development of our national and regional reputation. This plan will have direct implications for everything that we do in IM over the next several years. I'm optimistic about the results of the committee's work and expect to have their recommendations by the end of fall quarter."

"I define four major constituencies which are served by the College of Industrial Management: the undergraduate students; the master's level or graduate students; doctoral candidates and research programs; and continuing education programs," Gearing said. "Whatever program we follow after the task force completes its work, we will continue to serve these four constituencies. The relative emphasis of one or more of these four programs may differ, however."

Gearing thinks that two of the College's strong points are its faculty and student body. "Overall, we have a very good IM faculty, with a strong nucleus of young, research-oriented scholars. A basic productive factor is the faculty, and we have a good starting point. We have a good student body, because we can be selective in admissions. In many public institutions, you have to accept any high school graduate, but we can be selective because of the large numbers of applicants and high academic standards."

"If you have good faculty members and students, and can create an environment where they can work constructively, then you will have a good product," Gearing said. "If the environment is conducive for research activities, this tends to be a factor toward a national reputation."

When asked which areas need improvement, Gearing replied, "We need more faculty. We have good leadership, but we lack critical mass. We need improved physical facilities. Ours are not truly supportive of a quality, first-class program. Our people are spread out in too many locations and we have large classes for the existing facilities."

"We need research facilities, behavior labs, and computer support with terminal facilities," he continued. "We could use an audio-visual system. Finally, we need improved office space to handle the students effectively."

"We could use more discretionary money to improve the environment and make it attractive to potential faculty members. There is a tight market for teachers in management."

"On most of the important criteria, we compare favorably with other colleges and schools of business administration," Gearing said. "We are among the best in the South and I believe we are in the top 10 percent of the schools nationally. Our faculty have a good visibility and reputation nationally. What we lack is large numbers of graduate students and a doctoral program on a large scale. Most schools with top ranking have viable Ph.D. programs and large numbers of students."

"We lack a long tradition of high quality programs," Gearing said. "We are young in our development phase and have achieved recognition in relatively recent years. We were the first school in the country to be accredited at the undergraduate and graduate levels simultaneously by the American Assembly of Collegiate Schools of Business."

Gearing came to Tech from the State University of New York (SUNY) at Binghamton, where he was acting dean of the School of Management and MBA Program Chairman. Prior to that he was a visiting professor at Dartmouth College's School of Business Administration and at the Middle East Technical University in Ankara, Turkey. For three years, he was associate professor of business administration at the University of North Carolina at Chapel Hill.

Gearing earned his Ph.D. and Master's degree at Purdue University in management science. He taught at Purdue and was graduate admissions coordinator. The new IM dean served as Director of the Engineering Extension Division at Auburn University. He organized the cooperative education program at Auburn, involving 400 engineering students in 100 firms in the Southeast.

Gearing earned his undergraduate degree in electrical engineering at Tech in 1952. He served in the U.S. Army Signal Corps for two years during the Korean War, then went to work for Allis-Chalmers Manufacturing Company from 1955-58. He had worked at Allis-Chalmers for several quarters during school in Georgia Tech's Cooperative Program. He be-

gan his academic career in 1958 when he joined Auburn University.

Gearing has always been active in community affairs and is an expert on tourism. He has delivered papers throughout the world on technical aspects of tourism and travel: operations research, management science applications, decision structures and planning models for tourism. He is the author of two books: *Planning for Tourism Development: Quantitative Approaches* and *Analytical Studies in Travel and Tourism*.

He enjoys running, classical music, traveling and camping. He and his family have camped in 20 countries throughout Western and Eastern Europe. He is married and is the father of three daughters.

Gearing complimented the Georgia Tech National Alumni Association for doing a good job of staying in touch with alumni through the years. "The association also projects an image of quality for Georgia Tech."

"I'm glad to be here again, it's very nice to come back to my alma mater," Gearing said. "I'm excited about having the opportunity to make an important contribution to Georgia Tech."

GUTHRIDGE (Continued from pg. 2)

Robert Rice, executive director of the Georgia Tech National Alumni Association, said, "Joe has demonstrated a vital, enthusiastic example for his associates and friends at Georgia Tech. He dedicated all his efforts and his life toward a better, improved Georgia Tech for the faculty, alumni and students."

Mr. Guthridge was a member of All Saints Episcopal Church, the Council for Advancement and Support of Education, the National Society of Fund Raising Executives, the Southern College Placement Association, the Atlanta Kiwanis Club, and numerous other civic and educational groups.

Pallbearers at the Sept. 27 funeral were Tom Hall, James P. Poole, Alvin Ferst, George Cohen, Larry L. Gellerstedt, Daniel A. Keever, former Tech President Ed Harrison, and J. R. Anthony. As escort were the Board of Trustees of the Georgia Tech Foundation Inc., the staff of the President of Georgia Tech, and the staff of the vice president for development and public relations. The family asked that contributions be made to the Georgia Tech Foundation Inc. in lieu of flowers.

Survivors include his wife, Mrs. Evelyn Faw Guthridge; daughter, Amanda Faw; and son, Joseph W. III.

Crawford Reviews German Tour

Following is Vice President for Academic Affairs Dr. Vernon Crawford's account of his recent educational mission to Germany, at the invitation of the German government. He also describes informal and cultural aspects of his tour.

I FIRST LEARNED of the Federal Republic of Germany's international visitors program in the spring of 1976 when their Atlanta-based Consul General, Dr. Ernst Ingendaay, asked me to recommend someone from Georgia Tech's College of Architecture to spend two weeks in his country visiting sites of architectural interest, with all expenses paid by the West German government. I was Acting Dean of Architecture at that time and was sorely tempted to nominate myself. I forbore out of fear of revealing to outsiders the depth of my ignorance of architecture (I am still half-way convinced that Frank Lloyd Wright is either one or both of the flying Wright brothers) and because I was in process of recruiting a new dean, William L. Fash, and decided to use the German invitation as bait — successfully, as subsequent events proved.

Two years later when Dr. Ingendaay asked President Pettit to recommend someone from Tech for a similar mission, but this time to look at the state of German science and technology, and when the president asked me if I would be interested in being that one, I was quick to accept. The trip which resulted from that decision was one of the most pleasant and informative of my life, so when the editor of the *Tech Alumnus* asked me to share some of my experiences with the readers of this publication, I was happy to grant that request.

Visitors under this program travel in groups with a common interest. The groups vary in size from three or four to 20 or more. The group with which I was associated was one of the smallest — four of us visitors plus the guides provided by the agency in charge of arrangements. This agency is called Inter Naciones and is a most efficiently operated organization.

During the two-week period we were together in Germany, from June 4 to 18, the four of us became fast friends and included in that circle of friendship many of our Inter Naciones guides.

The purpose of the trip was to obtain a close-up look at German science and technology. For 14 days, Sundays excepted, we made two to three visits per day to different government agencies with responsibilities for research and development activities, to research laboratories, to major research installations, and to one industrial plant, Volkswagen at Wolfsburg, specializing in the application of high technology to the manufacture of automobiles. Everywhere we went the people seemed proud of what they were doing, eager to show us anything in which we evidenced a curiosity, and, with one exception, more than willing to answer our questions. The one exception was in the VW plant where some of our questions were

of the nature of prying into trade secrets which the officials would probably have shared with us had they been sure we would not divulge them to Mercedes-Benz or BMW.

Naturally, some of the visits left deeper impressions than others. My first view of the largest steerable radio telescope in the world, eerily peering like an ancient cyclops over the mountains at Eiffelsburg, is engraved on my memory. This dish is 100 meters in diameter, a paraboloid configured to a maximum deviation of 5 millimeters from the ideal surface over its 50 meter radius. It has an actual angular resolution of 1 minute of arc and can be pointed with an accuracy of 5 seconds of arc. Georgia Tech and Scientific Atlanta were well known to the researchers at this facility. Some of them had attended meetings on solar energy research with faculty members from Tech, and some of the control equipment for the radio telescope had been manufactured at Scientific Atlanta.

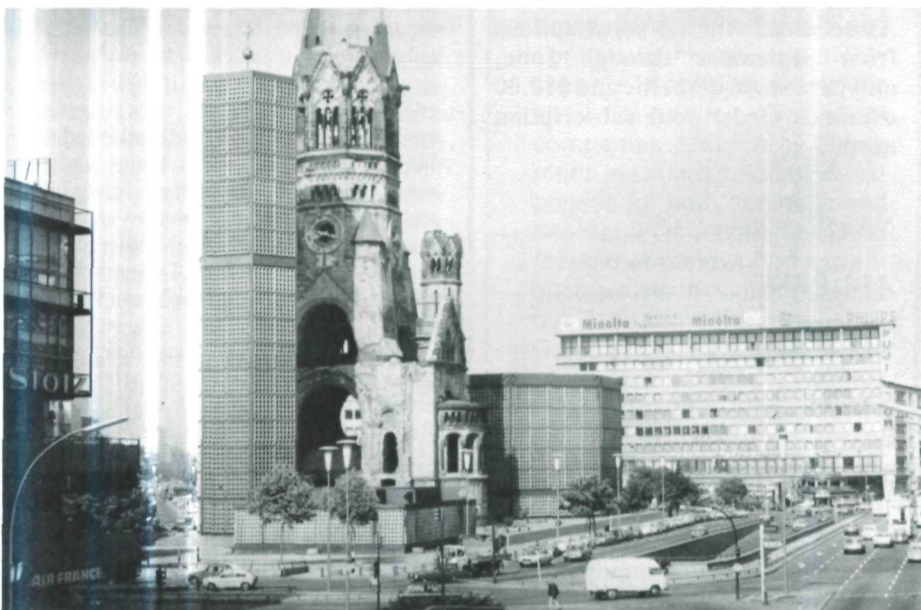
The magnificent electron-positron synchrotron DESY (pronounced "daisy") at Hamburg remains the single most impressive piece of apparatus devoted to pure research that I have ever seen. Comparable facilities exist elsewhere, some in the United States; I just haven't had the privilege of seeing them. In this machine, which consists of a tube about three inches in diameter bent in the shape of a race track and approximately the same size, positrons and electrons are accelerated to enormous energies and allowed to collide. They annihilate one another in the collision and are converted into photons of very short wave length which are then used as the high energy bullets to probe the nuclei under study. Because the photons are massless particles of pure energy with properties known to high precision, the experiments in which they are used are easier to

interpret than those in which the bullets are particles which themselves undergo transformations in the collisions with the target nuclei. When we visited DESY the scientists there were still in a state of euphoria from the discovery of the Ψ -particle which they had made a few weeks earlier.

West Germany is a heavy user of petroleum but has none of its own. On the other hand it is blessed with large deposits of coal which, however, lie very deep under the densely populated Ruhr. It is heavily engaged in all forms of energy research since it senses the coming of a time when it will be priced out of the oil market. Research into techniques for saving energy receives a high priority as does the technology of coal: desulfurization, gassification, and liquefaction. Nuclear energy also receives much attention, relatively much more than in the United States, even though they, as we, are heavily criticized by certain environmentalists for having anything to do with "the poison energy."

German science administrators profess to be mystified by U.S. nuclear policy. In the first place, they do not see how we can afford not to develop nuclear energy as quickly as possible for our own needs. Second, they think it was unconscionable of us to sell nuclear reactors to other countries. Brazil, for example, and then refuse to supply the fuel reprocessing facilities, without which the reactors are virtually useless. The Germans have stepped into the breach and are confident that they have agreements which will be adequate in preventing the proliferation of nuclear weapons, the fear of which dictates U.S. policy.

Of the many applied scientific research projects we visited let me choose two as being representative. One is concerned with the desa-



War memorial, West Berlin.

Crawford (Continued)

linization of sea water. It is being conducted, for reasons which are not obvious, at the Association for the Application of Nuclear Energy in Shipbuilding and Ship Propulsion. It uses no nuclear energy and has no discernible connection to either ship building or ship propulsion. It uses the principle of reverse osmosis through a cellulose acetate membrane and is yielding preliminary results which appear to make it more attractive as a process than distillation.

At the Nuclear Research Center at Julich research is going on into ways of piping heat generated by nuclear reactors over considerable distances for use at remote sites. Conventional ways of transporting heat, e.g. by high pressure steam, are not economically feasible because of heat losses from the pipes. The work at Julich is concentrated on finding reversible chemical reactions in which large amounts of heat are absorbed by the reactants when the reaction goes in one direction and released when the direction of the reaction is reversed. For example, methane and water can be made to react by absorbing heat from the reactor to form carbon dioxide and hydrogen. The carbon dioxide and the hydrogen can be piped to the remote site where they can be induced to undergo the reverse reaction with the release of the heat.



$$\Delta H = 165 \text{ KJ/Mole}$$

Since the gases being transported are at essentially ambient temperature, little heat is lost to

the surroundings. We were told that a system like this has been successfully tested in supplying heat to dwellings located some kilometers from the reactor.

In observing German science and industry one cannot but be impressed by the strong relationship between the two and by the importance which the German government places on scientific research, both pure and applied. As Mr. Diab, our Syrian companion, observed more than once, a nation which decides to move from a primitive, agrarian economy into one which is modern and technological would be well advised to note the extent to which the latter, in a country like West Germany, is dependent on the extensive research and development activities which are in turn dependent on the existence of a good supply of well educated scientists, engineers, and technicians. The Federal Republic of Germany is blessed with these ingredients. The government is generous in its funding of research, and these factors contribute significantly to the vital and vibrant West German economy.

Our travels took us to several of the most important cities in West Germany: Bonn, Cologne, Hanover, Bremen, Hamburg, Berlin (both West and East), and Munich, with side trips to such places as Lubeck, Wolfsburg, and Eiffelsburg. We traveled by train, by car, and by plane, and had a good look at much of the country which is beautiful in the late spring.

Every city has its own appeal and I find it difficult to pick a favorite. Hanover is a city of distinctive charm with several old churches, a few remaining half-timbered houses, and a drink called luttje lage, pronounced as it is spelled, i.e. with great difficulty, particularly after one has downed a few. The luttje lage is served in two glasses — a small glass nearly full of schnaps and a somewhat larger glass of beer — reminiscent of a boilermaker, but with this significant difference: the two glasses must be drained simultaneously. The schnaps glass is held between the thumb and index finger, and the beer glass between the middle and index fingers of the same hand. By tipping the hand correctly, first having positioned it properly with respect to the mouth, one can pour the beer into the schnaps and the mixture into the mouth, at least in theory. A novice will invariably pour half of each liquid in two converging streams onto his necktie, if he is unfortunate enough to be wearing one, onto his navel, otherwise. I was a novice and performed as one, but as the evening wore on things got better. I was still imbibing only half of each drink while the other half cascaded over my person, but I was able to view the whole proceeding more philosophically. In fact, I cannot remember ever having gotten more philosophical in my life.

Berlin was certainly a high point of the trip. West Berlin is a beautiful city with clean modern buildings, lovely residential areas — most Berliners, like their counterparts in other German cities, live in apartment buildings rather than in single family houses — fine shopping districts, splendid museums, galleries and theaters. We attended a concert by the Berlin Philharmonic in the justly renowned Concert Hall. The program featured selections by Bartok, Janacek and Dvorak, and exhibited the power of music to transcend the barriers of time and



Mother Russia, Soviet memorial, East Berlin.

place and culture and language and to speak in universal terms to men and women, always and everywhere.

I saw only one bomb-ruined reminder of World War II in West Berlin, and it is preserved as a memorial to the destructive power of war. It is the remnant of the shrine which was erected to the memory of Kaiser Wilhelm after World War I. The ravaged spire stands now between two modern structures. The contrast is startling, yet the grouping is serene, and I believe it expresses a German resolve to look beyond the false dreams of a blackened past to a bright and peaceful future.

The contrasts between East and West Berlin and the symbolism of the wall separating the two have been dealt with many times by people much more gifted at description than myself. But one cannot, after having passed through the wall at Check-Point Charlie, and having witnessed the cultural discontinuity it represents, refrain from commenting on the experience; at least, I cannot.

Berlin was reduced to rubble in World War II. The rebuilding which has taken place on both sides of the wall in the 33 years since the bombing ceased is truly remarkable. The reconstruction of West Berlin is complete. In East Berlin it is nearly so. Some scarred hulks of old buildings, several churches among them, still stand essentially unchanged since 1945, but the detritus of war is gone and new buildings are everywhere. Most of the new construction in East Berlin is in the form of apartment buildings; even so, apartments are still in very short supply. I found these apartment buildings to be extremely depressing and I believe that the rubble has been replaced with a delayed slum, and not long delayed at that. The lack of esthetics in these buildings is complemented by what appears to be a shoddy construction which will guarantee that their dismal existence will be mercifully short.

There are three kinds of shops in East Berlin, those which are operated by the state, those operated by cooperatives, and those which are privately owned. The state-operated stores are

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Crawford *(Continued from pg. 18)*

most numerous by far, and the stores of private ownership number only a few. During our tour of East Berlin our movements were tightly controlled and did not take us into any of the stores or other business establishments except for a seedy restaurant with one unisex pay toilet that wouldn't flush. We drove through several shopping districts, however, and were impressed by the contrast between these streets in their drab and uninviting sameness, on the one hand, and their counterparts in West Berlin, on the other, which rival New York's Fifth Avenue in their attractiveness and in the variety of their appeal.

Our East Berlin tour guide was a middle-aged woman who fed us the party line without let-up and with apparent enthusiasm. She seemed to be genuinely happy to be a member of a tightly regulated society, and pointed with pride to the fact that the cost of necessities such as food and housing had remained virtually unchanged for the past 20 years. I don't know what has happened to wages in the same period, and she didn't say.

We made two stops at points of real interest which made a deep and lasting impression on me. The first was at the park memorializing the Soviet soldiers who died in the Battle of Berlin. Its magnificent sculptures, particularly the one of a mourning Mother Russia, convey with quiet and understated intensity the grief which was the legacy of this chapter of the Second World War.

The other memorable stop was at the Pergamon Museum, named after its principal exhibit, a temple which once stood on the acropolis of the ancient city of Pergamon. As fine an artifact as this is, it moved me less than did another exhibit, the victory street of Babylon, with its wall friezes looking as if they had just been fashioned, the street down which King Nebuchadnezzar strode to celebrate his triumphs over his enemies. For westerners it is a tragedy that the artificial division of Berlin left this unique repository of things ancient and beautiful on the eastern side of the demarcation.



City gates of Lubeck.

I believe most of us on the bus were relieved to return to West Berlin, even though our West Berlin driver (we changed drivers at the check point), who was evidently on his first run, got lost and had to ask directions from a taxi driver to the bus depot which was in the center of downtown. During our meanderings one of the passengers was hunting through his German phrase book and finally announced in a loud voice that he had found the question he wanted to put to the driver. It was the German equivalent of "Where do I catch the bus for downtown?"

Most visitors to Germany could write a book, I suspect, on their gastronomical experiences while there. I will content myself with a few observations:

1) Germans have excellent food, and obviously relish the joys of good eating; yet the proportion of overweight people in their country is less than in ours.

2) Our Inter Nationes guides were dedicated to the proposition that we, their guests, should not ever be hungry; consequently we spent a large fraction of our time, either between briefings or between meals, stocking up on the many delicacies the country has to offer.

3) One should not order a pepperoni pizza in Bonn unless he is willing to have his digestive tract seared with the hottest peppers east of Juarez.

4) One cannot consume 5×10^4 calories in two weeks without gaining weight.

5) Contrary to widespread opinion in the United States, edible asparagus is pale yellow in color, rather than green, is tender, with none of the texture of hemp, and is delicious.

6) German wines are the finest in the world but when drunk to excess produce a condition almost indistinguishable for inebriation.

7) Bavarian beer is in a class by itself but when drunk to excess acts much the same as German wine (see above).

8) The largest beer hall in Munich seats approximately 4,000 patrons. The beer is served in liter steins (1 liter is approximately equal to 1 quart). A typical patron drinks between two and three steins at a sitting, but many drink more than five. On a typical night 10,000 liters are consumed in this one establishment. The Munich sewer system must be among the most remarkable in the world.

Bavaria is related to the rest of Germany much as "Dixie" is to the rest of the United States. It is the southern region of the country, with a slower-paced and more relaxed life style, and its people consider themselves to be, if not better, then at least more fortunate, than their northern neighbors whom they view with a tolerant amusement. Bavarians are very proud of their capital city, Munich.

Our tour ended in Munich and climaxed with an evening of ballet at the state theater. I cannot claim to be an ardent fan of ballet — in fact, prior to the last evening in Germany I would not even have admitted to liking it — but to see "Sleeping Beauty" performed by the Munich Ballet Company, and to view it from the Royal Box of the most beautiful theater I have ever been in, must rank as the single most enjoyable experience of the trip. Not only did I enjoy the dancing and the music, I believed the story! Afterward, Mr. Yoshii said that it was strange

that the most memorable moments of this trip, the purpose of which was to observe science and technology, were those spent at the opera in Hamburg, the symphony concert in Berlin, and the ballet in Munich.

On looking back over the trip and in attempting to sort out my impressions of it I conclude that I will never be able to express all that it means to me, and that the best I can do is to convey my deepest thanks to all of those people in the German government and in Inter Nationes who made it possible.

— Dr. Vernon D. Crawford

The Georgia Tech Alumni Magazine encourages letters from its readers. Write to: Editor, Alumni Magazine, Georgia Tech National Alumni Association, Atlanta, Georgia 30332.

Employment Opportunities

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Experiment Station: An Integral Part of Tech

THE ENGINEERING EXPERIMENT Station (EES) of the Georgia Institute of Technology is a client-oriented applied research organization carrying out investigations in engineering, science and economic development for a diversity of sponsors, including federal, state and local government agencies, industrial firms, and foreign countries.

Authorized by an act of the Georgia General Assembly in 1919 and activated in 1934, EES was recommissioned by the Assembly in 1960 "to aid in the promotion of scientific, engineering and industrial research, to encourage the more complete development and utilization of the natural resources of Georgia, to advance science, technology and education, to encourage further industrial and economic development, provide technical advice and assistance to business and industry, to provide an industrial extension service to meet the technical information and other needs of industry and local development groups and . . . to promote the general welfare of the people of the State of Georgia through a program of scientific, engineering and industrial research . . . to render assistance to national programs of science, technology and preparedness . . ."

The mission of EES is to accomplish the purposes specified in the legislative act while simultaneously making the maximum possible contribution to Georgia Tech's overall research, educational and service goals.

EES is organized into eight major units according to general areas of research activity. However, interaction among the units is common and joint teams can readily be formed in areas of mutual interest and expertise to provide optimum service to the client.

The major units of EES are: Applied Sciences Laboratory, Electromagnetics Laboratory, Electronics Technology Laboratory, Office of International Programs, Radar and Instrumentation Laboratory, Systems and Techniques Laboratory, Systems Engineering Division, and the Technology and Development Laboratory.

The new Systems and Techniques Laboratory has primary interest in electromagnetic systems, biomedical studies, antennas and electronic countermeasures. The Radar and Instrumentation Laboratory performs research in radar technology, computers (hardware and software) and electronics support measures.

The new Systems Engineering Division has interests in computer simulation of large-scale systems, cost-benefit analyses, operational/systems analysis.

The new Office of International Programs coordinates and conducts the international activities of the Engineering Experiment Station.

The new Technology and Development Laboratory comprises the majority of the technical,

economic and extension capabilities of EES which are concerned with business, industrial and governmental needs, particularly those in Georgia. This laboratory also has programs in waste utilization and industrial chemistry and has responsibility for operating the Georgia Productivity Center which was established at EES in 1975 by the Georgia legislature.

The Applied Sciences Laboratory works in solid state sciences, solar energy and materials technology, energy and environmental analysis. The Electromagnetics Laboratory does research in radiation systems and electro-optics. The Electronics Technology Laboratory conducts research in electromagnetic compatibility and communications technology.

EES Funding for FY 77/78

Total Expenditures	\$20.7 million
Contract Income	\$18.1 million
From State Allocation	2.6 million

Following are summaries of various research projects currently underway at the Engineering Experiment Station. Information was taken from EES news releases.

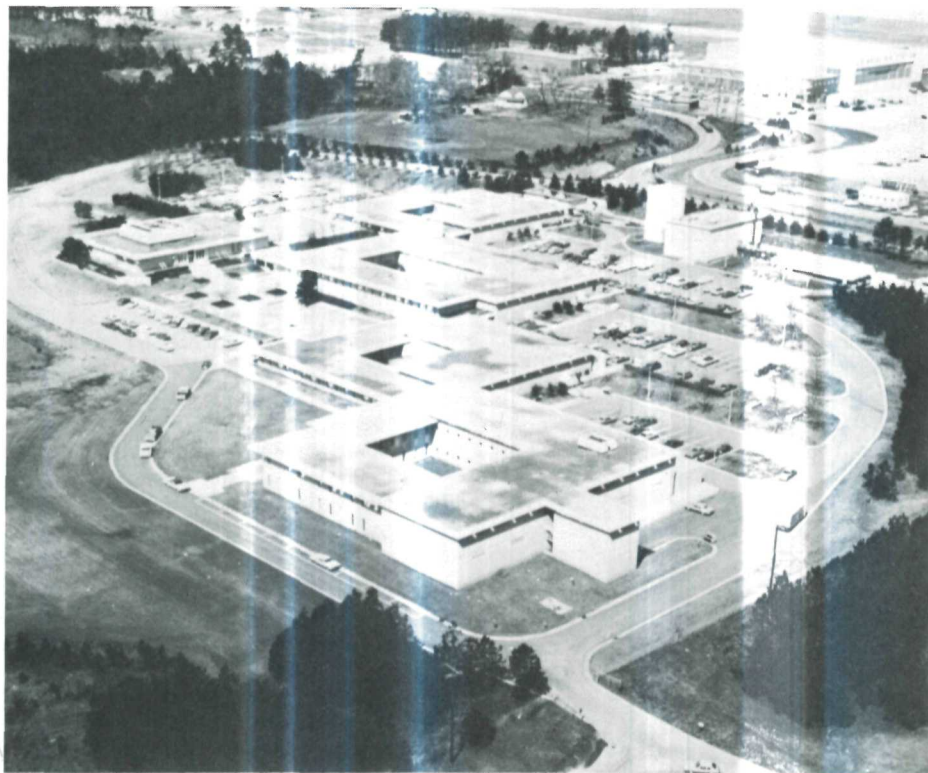
Wood Can Replace Fossil Fuels

THE TECHNOLOGY AND Development Laboratory of EES and the Georgia Forestry Commission are hitting the road this month to demonstrate to Georgia residents that wood can replace fossil fuels and electricity for space heating.

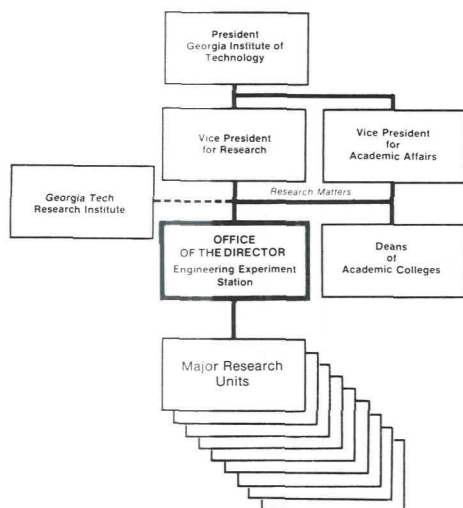
Equipped with two trailers, one fitted with different designs and makes of wood-burning stoves and one fitted with central wood-burning and multi-fuel furnaces, TDL and the Forestry Commission plan a year-long tour of the state in order to show folks how effective wood can be as a fuel source.

The purpose of the tour, according to Carol Aton of TDL, is to educate homeowners, store operators and energy system installers on using wood to replace scarce or costly fuels. Aton says emphasis will be placed on the purchase, installation and safe operation of wood-burning appliances as well as how to obtain a wood supply.

Forestry Commission personnel will do the actual manning of the trailers and TDL engineers will provide training to the foresters on the mechanics behind wood-burning equipment.



Georgia Tech has leased 162 acres of Lockheed-owned property for use as a research complex. The four buildings, grounds, and adjacent parking lots will alleviate a shortage of research space on Tech's main campus.



Georgia Tech and EES Organizational Chart

Explosive Waste Converts To Energy

EACH YEAR THE U.S. Army disposes of thousands of pounds of explosive waste material that Georgia Tech researchers say could be used for energy.

Working with funds from the U.S. Army Armament Research and Development Command, researchers at Georgia Tech's Engineering Experiment Station have found that TNT-contaminated waste, when subjected to a thermo-chemical process called pyrolysis, can yield char, oil and gas — all of which are useful sources of energy.

Pyrolysis, a process which dates back to the Pharaohs, is the decomposition of solid organic waste brought about through the action of heat in the absence of oxygen or with limited amounts of oxygen. Dr. James Knight of EES says Georgia Tech has been perfecting what is called a continuous pyrolysis process for several years as a means of converting waste materials to useable, clean-burning fuels.

According to Knight, the Army is interested in the pyrolysis process as a way of safely disposing their explosive waste material while at the same time converting it to useable energy forms. Explosive waste material used in this project consists mainly of packing material such as cardboard and paper towels that have been contaminated with relatively small amounts of TNT. Ordinarily this material is disposed of either by open-air burning or by incineration. Any energy potential the material has is lost by using these disposal methods.

By using the pyrolysis process, however, this waste material is converted into energy sources — char, oil and gas — and could give the Army a new source of fuels for their bases. Test results show that this can be done without any explosion hazard.

Knight says the char, which is similar to coal, can be used by the Army for heating. "Actually," says Knight, "the char is much better than coal for heating because it has about the same heating value of coal but contains no sulphur and therefore is non-polluting. The

Pittsburgh Energy Research Center, part of the U.S. Department of Energy, has done studies on the feasibility of mixing pyrolysis char with coal in order to lower sulphur levels and lessen pollution."

The recovered oil has about two-thirds the heating value of petroleum-based fuel oils, and Knight says it is a viable contestant for jobs now being performed with petroleum-based

oil. Petroleum oil has approximately 18,000 Btu's per pound and pyrolysis oil has 12,000 to 13,000 Btu's per pound.

According to Knight, the pyrolysis-produced char and oil are storable and transportable fuels. However, the gas which is produced must be used on-site because it has a low-energy value per cubic foot, and all of its energy would be used in the transport process.

Interview with the Director

"WE AT THE Engineering Experiment Station (EES) are anxious to interact with Georgia Tech alumni," said Dr. Donald J. Grace, director of the Station, in a recent interview. "We participate in the Tech Today program and meet with officers of the National Alumni Association. I have an advisory committee which I have asked to determine (1) what would alumni like to hear from us, and (2) how best can we call on them to help us be helpful."

"We would be happy to put alumni on the mailing list for monographs we publish which are in areas of interest to them," Grace continued. "Any alumnus who would like to be on the mailing list for any of our publications just needs to write to us."

"We hope to do more outreach to all of our publics, and to continue our intimate interaction with Georgia Tech," Grace said. "We are unique, in that most universities which have specialized research centers have followed a trend of separating the two units. Unlike many non-profit research and development organizations affiliated with major universities, EES is an integral part of Georgia Tech. Our activities are monitored by and coordinated with research conducted by the academic colleges through the vice president for research, Dr. Thomas Stelson, who has cognizance of all research at the Institute. Most EES facilities are on the main campus."

"Technical resources of EES and the academic schools are readily accessible to each other and are exchanged formally as well as informally," Grace said. "Several academic faculty members have continuing assignments in the Station; others are budgeted into EES contracts as appropriate. Conversely, some EES personnel teach credit courses and others contribute to academic research efforts. Many times, portions of major research contracts are sub-tasks between elements of EES and academic units."

"The Station and its personnel are nationally and internationally known in many circles," Grace said. "We are a focal point in radar and solar energy research. Our microwave antennas research has an excellent reputation, and we are leaders in many areas of esoteric research. For example, we are number one in shielders and grounding."

"We are regularly complimented and visited by observers asking about our field office arrangements in the engineering industrial exten-

sion. Our unique arrangement of working directly with industry is the subject of much discussion, most recently by the regional office of the Solar Energy Research Institute (SERI)."

"The National Science Foundation announcement for fiscal 1977 on engineering research has ranked Georgia Tech second nationally behind Massachusetts Institute of Technology. We moved up from fifth or sixth place to second."

"My goals for the coming year include building more bridges between the Station and Tech's academic units and interacting with other colleges in Georgia," Grace said. "We have begun doing joint projects with the University of Georgia's Agricultural Extension Stations. Other goals are (1) to continue to work with state and county governments in Georgia, (2) to increase the size and staff of field stations throughout the state, (3) to develop new thrusts in alternative energy sources, especially wood energy, (4) to maintain the excellence of our solar facilities and research, and (5) to continue the expansion of our Office of International Programs."

Grace has served as director of the Station since 1976. He was recently named to a three-year term on the SERI University Advisory Panel.



Dr. Donald J. Grace

Poultry Research Funding Extended

THE GEORGIA STATE LEGISLATURE recently approved \$250,000 for continuing research in the poultry industry by EES. The research program, which was first begun in 1974, is funded through the Georgia Department of Agriculture.

An increase of \$20,000 over last year's funding, the new award will allow EES to continue research projects in energy conservation, solar energy applications, automation and mechanization, and waste treatment assistance.

The new funding also provides for research in two new areas which local poultry producers feel are vital areas of concern: egg handling and breakage and broiler catching, loading and hauling. These are important areas because of revenue lost to egg breakage and employee turnover in broiler harvesting due to undesirability of job conditions — broilers are now caught by hand and manually loaded into coops and stacked on trucks for shipment.

According to Project Director Richard Combes of TDL, past Department of Agriculture funding has been instrumental in the building of two solar heated growout houses — one in Cumming and one in Villa Rica, Ga.; the development of a computerized method of finding where losses are occurring on the processing line; the construction of a generator for turning chicken manure to methane gas; and several other programs which are able to increase revenue, save energy and decrease pollution.

Land Maps Made By Satellite Data

RECENTLY, EES RESEARCHERS briefed members of President Carter's Science Advisory Committee on LANDSAT, which involves taking satellite data and making land cover maps of Georgia from it.

The LANDSAT grant is with the Department of Natural Resources and other federal, state and local agencies. The state is using the information for making land use maps and also for satisfying Environmental Protection Agency requirements to monitor non-point source pollution. LANDSAT data is only one component of a natural resources geographic data base and will be overlaid with, e.g., soil data and population data to theorize environmental and economic effects of development and long range planning in Georgia.

Pavement Marking Paint Developed

RESEARCH SCIENTISTS OF EES are working on development of new temporary pavement marking paint systems that are less expensive and safer than those presently used.

Maintenance and construction operations on all classes of highways frequently require temporary pavement markings to provide motorist guidance and safe traffic movement. When ex-

isting pavement marking materials, devices and techniques are used for this purpose, they are difficult to remove in a cost-effective manner without leaving scars on the pavement that may mislead the motorist. There is a continuing need for a temporary pavement marking system for all types of pavement surfaces under all environmental and traffic conditions.

Temporary marking systems are those either easily applied and easily removed or those easily applied and self-destructible under controlled conditions.

Can Microwaves Treat Cancer?

CAN PRESENT TREATMENTS of cancer be improved by using microwave energy? There is evidence to support the belief that the use of electromagnetic energy either before, during, or after use with other cancer treatment methods such as chemotherapy and hard radiation enhances effectiveness of the treatments.

EES recently received a two year research grant for \$130,000 from the National Cancer Institute to measure the dielectric properties of normal and cancerous-type tissue. EES researchers will be working with radiologists and physiologists at the Emory School of Medicine.

According to EES Project Director E. C. Burdette, "Our research is an essential preliminary step that must be taken before doctors can make effective use of electromagnetic energy as a supplemental procedure in cancer treatments." Assuming that such energy enhances the possibility of destroying all of the cancerous tissue during treatment, one must know exactly how to apply the electromagnetic energy to the body. This depends on the interaction of the electromagnetic energy with the cancerous tissue which in turn depends on the electrical properties of the tissue. Georgia Tech's role will be in determining these properties, and one aspect will involve the differences in heat produced by the electromagnetic energy in the different types of tissue.

Burdette is also a principal investigator in a Georgia Tech EES biomedical project involving freezing and thawing of organs for transplantation purposes.

Research Aids Elderly, Handicapped

RESEARCHERS AT EES are conducting a survey and study for the Federal Department of Health, Education and Welfare and the Urban Mass Transportation Administration on transportation services for the elderly and handicapped.

During the past three years, the Departments of HEW and Transportation initiated innovative, cooperative efforts to expand the availability of transportation services to elderly and handicapped persons in urban and rural areas throughout the nation. So far only marginal success has been achieved, so additional studies are being focused on N. Carolina, Kentucky and Georgia.



The State of Georgia and the Southeast benefit from research activities and programs at EES.

CBS Relocates

WHEN CBS, INC. decided recently to locate its \$50 million tape and record manufacturing and distribution facility in Carrollton, Georgia, the Industrial Extension Division of EES played an important role.

Through its economic development assistance contract with that area of Georgia, IED made CBS aware of the 140-acre site. More than 300 different locations in seven different states were considered.

Service Program Conserves Energy

THE INDUSTRIAL ENERGY Extension Service (IEES) is a four-year voluntary program which has a goal of 10 to 20 percent reduction in the projected 1980 energy needs of Georgia's industries. The savings to the state's industrial community from this program could reach a quarter of a billion dollars.

Teams skilled in energy conservation work will assist plant management at selected plants in conducting energy surveys. The IEES teams will then make recommendations, based on these surveys and on the team members' past experience, on ways that surveyed plants can save energy. These recommendations may involve something as simple as turning off lights when not in use to something that may require a modification in a process or to a piece of equipment.

Since the program is purely voluntary, only practical, cost-effective recommendations are expected to be implemented. Emphasis will be placed on measures that do not require capital investments.

Other goals of the program are a reduced dependence on natural gas, a reduced impact of natural gas curtailments on productivity and employment, and a reduced demand on waste handling and treatment facilities. The Georgia Office of Energy Resources sponsors the program, under a grant from the Department of Energy.

Nuclear Research Moved to NE

GEORGIA Tech President Dr. J. M. Pettit has approved the transfer of the responsibility of the Nuclear Research Center from the Engineering Experiment Station to the School of Nuclear Engineering.

The move is designed to enhance the nuclear reactor's use for instructional purposes.

According to Director of Contract Administration E. E. Renfro, the principal use of the center has been for research, while instruction was of secondary importance.

"We just reversed priorities," Renfro said. "Now its real purpose will be to enhance instructional capability."

However, the School of Nuclear Engineering will continue to actively seek sponsored research programs involving the reactor.

Permanent full-time personnel currently assigned to the Nuclear Research center will be transferred to the School of Nuclear Engineering with no significant changes in position, assignment, or salary and benefits, according to Dr. T. E. Stelson, vice president for research. The building and all applicable equipment will be transferred to the School of Nuclear Engineering.

Engineering Experiment Station personnel will continue to occupy some space in the facility on an interim basis.

EES Assists Ohio Energy Needs

GEORGIA TECH'S EES has contracted to help an Ohio city find ways to use waste steam from the city's electric generating plant to heat local homes and businesses.

EES will undertake the energy conservation project for the city of Piqua, Ohio, a small Midwest city located on the Miami River. The major aim of the project is to determine the economic and technical feasibility of adapting the city's homes, businesses and coal-fired electric generating plant so that waste steam from the plant can be used for heat. The project is being funded by the Department of Energy.

Storm Research Uses Radiometer

A MULTICHANNEL MILLIMETER wave radiometer, designed and built by Georgia Tech's EES Electromagnetics Laboratory, is being flown on NASA's Convair 990 aircraft in support of hurricane penetration flights. The radiometer, used to detect electromagnetic energy radiating from a storm, was installed on the Convair by EES research engineers Joe Gagliano and Jim Stratigos. The system was developed for NASA's Goddard Space Flight Center for use in collecting storm-related data. During any hurricane penetration mission, data is collected and is stored on tape for future analysis.

Gagliano and Stratigos will operate the EES

radiometer onboard the aircraft during the hurricane penetration flights. The multichannel radiometer installed in June will remain on the Convair 990 until October. Following the end of this program, the radiometer will be returned to Georgia Tech and modified for further, even higher, altitude flights in the summer of 1979 aboard NASA's modified B57 aircraft. The

feasibility of using this type of instrument on geosynchronous (stationary) weather satellites to profile atmospheric water vapor will be demonstrated by the B57 flight program. Collecting such information onboard a satellite would be a valuable aid in the observation and prediction of severe storms.



Tech's four sororities (Alpha Chi Omega, Alpha Delta Pi, Alpha Gamma Delta and Alpha Phi) pledged 68 women during fall 1978 rush.



Tech's 29 fraternities had a successful fall rush, pledging 641 men, the largest number in the school's history.

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Hamm (Continued)

"When I got the medal I remember thinking that something must be wrong. What was I doing here getting a gold medal.

"I was just a country boy with high-button yellow shoes, like Lil' Abner . . . follow the leader. It was all big, bright lights to me.

"And," he laughed, "I thoroughly enjoyed it."

The medal now lies in a trophy case at Georgia Tech.

"I went to Georgia Tech on a track scholarship," Hamm began, "and if it hadn't been for that scholarship there would have been college and no education. It meant a hell of a lot to me in many ways and it's the least I could do to give them the medals."

The gold medal didn't send Ed Hamm into the movies or any glamorous career, as it had done for others.

"But it did open a lot of doors," he mentioned. "In Atlanta, after the games, I was invited everywhere."

Every four years, when the summer Olympic Games become the focal point of the world, Hamm can sit back in front of his television set and honestly say he knows what the gold medal winner is feeling, deep down where a person allows no outsider.

"The games were run as fairly as you can run a deal like that," Hamm said of the 1928 Olympiad.

But, now, Hamm believes we may be seeing the last of the Olympics "as we know it, because of the politics. Every country should be able to compete. It should be an open field. If you want to compete, fine. If you don't, stay away. No one is being forced to compete in the Olympics."

"Because of the games," he said, "I gained a broader perspective of the world. The king of Sweden was just as nice as anyone, he just happened to be the king."

Hamm is a quiet man, quiet when it comes to talking about himself. Mostly because he'd prefer doing otherwise. Of all the trips he's taken, he's avoided the one marked "ego."

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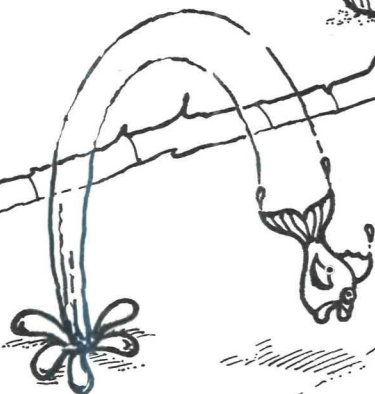
The legendary pot of gold that rests at the end of the rainbow can be like an appreciated asset. When seemingly in your grasp, it can vanish into thin air.

You have worked hard for your pot of gold — you earned it — so why let capital gains and other taxes keep you from realizing the full benefit of your enterprise?

There are ways, not magical or mythical, to avoid capital gains taxes, increase your spendable income and save estate taxes at the same time.

A future gift that provides for a lifetime income for one or more persons, yourself included, can help you achieve all these advantages.

Keep your fortune from fading away. Let Tech help show you how.



GEORGIA TECH FOUNDATION, INC.

John David Morgan
Director of Resources Development
Georgia Institute of Technology
Atlanta, Georgia 30332 ■ (404) 894-5022

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A Commitment to Excellence



The main values of the annual Roll Call are:

1. It is Tech's biggest source of unrestricted gifts.
2. It provides Tech with a degree of flexibility in allocating funds in areas where the need is considered greatest.
3. It is a feeder line for major gifts, bequests and other special gifts of a non-recurring nature from alumni and friends.
4. It is a tangible expression of support from within which encourages gifts from outside sources such as corporations, philanthropic foundations, parents and friends.
5. It provides consistent income which Georgia Tech can count on each year.

Roll Call Gifts are primarily used to:

1. Obtain and retain an outstanding faculty (over 80% of Tech's full-time faculty members hold doctoral degrees).
2. Provide scholarships for exceptional students such as National Merit Scholars and National Achievement Scholars.
3. Provide low-interest loans to deserving students.
4. Promote alumni interest and involvement in Georgia Tech through a variety of activities and services provided by the National Alumni Association.
5. Underwrite special projects for the benefit and development of Georgia Tech which cannot, by law, be financed with state appropriations.

**roll
call** Georgia Tech National
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Atlanta, Georgia